

LOCAL KNOWLEDGE OF, AND RESPONSES TO, HIV-1/AIDS AMONG THE TURKANA OF LODWAR TOWNSHIP

by

John Arianda Owiti, BSc, MSc, Dip (Nursing)
Department of Anthropology
McGill University, Montreal

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Abstract

This study used a broad theoretical framework encompassing an ecosystem approach to HIV-1/AIDS that investigated: local knowledge of HIV-1/AIDS and other sexually transmitted infections (STIs); local knowledge of the nexus between HIV-1/AIDS and tuberculosis on one hand, and other STIs on the other; the factors of the ecosystem that influence the contraction and transmission of HIV-1; and the local responses to HIV-1/AIDS among the Turkana of Lodwar Township.

The study found that, according to the Turkana's local knowledge of HIV-1/AIDS, other sexually transmitted infections, and tuberculosis, these infections are largely contagious, and are attributed to impersonal and natural causes. In addition, in line with biomedical knowledge, the Turkana's local knowledge emphasises a conceptual link between tuberculosis and HIV-1/AIDS. The study also demonstrates a link between other STIs and HIV-1/AIDS. This has implications for the successful control and prevention of HIV-1, as well as that of *all* STIs, tuberculosis, and the management of AIDS.

In addition, the study demonstrates that factors of the ecosystem such as *kaada*, video and disco halls, unsafe medical practices, polygamy, banditry, urbanisation, migration and travel, poverty, long-distance truck drivers, military personnel, refugees, the low use of condoms, the gender-accentuated power imbalance, poverty-accentuated commercial sex work, poor sexual health and the prevalence of STIs, widow inheritance, and other socio-cultural practices play an influential role in the vulnerability of the Turkana to the contraction and transmission of HIV-1/AIDS.

The thesis posits an integrated approach to the prevention of HIV-1 and the management of AIDS that combines structural, public health, and biomedical approaches. In view of this integrated approach, various arenas of interventions are recommended. Some seem obvious, such as HIV-1 counselling and testing, and the development of a more durable healthcare infrastructure. Others are less obvious and concern the empowerment of women, the care of orphans, the training and use of indigenous healers and indigenous birth attendants, home-based care, the promotion of condom use, better nutrition, the provision of a safe working environment for commercial sex workers, socio-

economic development and poverty reduction, health education and mass campaigns, and, finally, the prevention and cure of prevalent, but preventable infections.

Résumé

Dans un grand schéma théorique qui, entre autres, aborde le VIH-1 et le sida sous l'angle de l'écosystème, cette étude a examiné les points suivants : ce que l'on sait, à l'échelon local, du VIH-1/sida et d'autres infections sexuellement transmises (IST) ; ce que l'on sait, à l'échelon local, du lien entre le VIH-1/sida et la tuberculose, d'une part, et les autres IST d'autre part ; les facteurs de l'écosystème qui influent sur la contraction et la transmission du VIH-1; et la réaction locale au VIH-1/sida chez les Turkana du township de Lodwar.

L'étude a constaté que les Turkana de cette région pensent que le VIH-1/sida, les autres IST et la tuberculose sont généralement contagieux et les attribuent essentiellement à des causes impersonnelles et naturelles. De plus, et ce qui correspond aux connaissances biomédicales, les Turkana font le lien conceptuel entre la tuberculose et le VIH-1/sida. L'étude démontre par ailleurs un lien entre les autres IST et le VIH-1/sida. Ces constatations ont des répercussions sur l'efficacité de la lutte contre le VIH-1, *toutes* les IST et la tuberculose et sur l'efficacité de leur prévention, ainsi que sur la prise en charge du sida.

L'étude examine aussi les divers facteurs de l'écosystème qui font beaucoup pour prédisposer les Turkana à contracter et transmettre le VIH-1/sida : le *kaada* (alcool de fabrication locale), les salles vidéo et les dancings, les pratiques médicales insalubres, la polygamie, le banditisme, l'urbanisation, les migrations et déplacements, la pauvreté, le camionnage long parcours, la présence de militaires et de réfugiés, le faible taux d'utilisation du préservatif, le déséquilibre des pouvoirs accentué par l'inégalité entre les sexes, la prostitution commerciale aggravée par la pauvreté, une santé-sexualité laissant à désirer, la prévalence des infections transmises sexuellement, les problèmes de succession des veuves et d'autres usages socio-culturels.

La thèse préconise d'aborder la prévention du VIH-1 et la gestion du sida dans une approche intégrée qui combine les aspects structuraux, santé publique et biomédicaux, et recommande divers axes d'intervention. Certains peuvent paraître évidents, comme le dépistage du VIH-1 et le counselling, et la mise en place d'une infrastructure de santé plus

durable. D'autres interventions moins évidentes concernent l'autonomisation des femmes, le soin des orphelins, la formation et l'utilisation des guérisseurs et accoucheuses autochtones, les soins à domicile, la promotion du préservatif, une meilleure nutrition, la mise en place de conditions sécuritaires pour les travailleuses du sexe, le développement socio-économique et la réduction de la pauvreté, l'éducation à la santé, et des campagnes de masse visant les jeunes, les populations nomades, les chauffeurs de camion et les militaires, et, enfin, la prévention et le traitement des infections prévalentes mais évitables.

Abbreviations

AIDS - Acquired Immunodeficiency Syndrome	KDHS - Kenya Demographic and Health Survey
AMREF - African Medical and Research Foundation	KShs - Kenya Shillings
ART - Anti-retroviral Therapy	MP - Member of Parliament
CACC - Constituency AIDS Coordinating Committee	NAC - National AIDS Committee
CBO - Community-Based Organisation	NACP - National AIDS Control Program
CDC – Centre for Disease Control	NACC - National AIDS Control Committee
CSW – Commercial Sex Worker	NASCOP - National AIDS and STD Control Programme
DACC - District AIDS Coordinating Committee	NCCK - National Council of Churches of Kenya
DASCO - District AIDS and STD Control Coordinator	NGO - Non-governmental Organisation
DASCOP - District AIDS and STD Control Programme	SAPs – Structural Adjustment Programmes
DC - District Commissioner	STD - Sexually Transmitted Disease
DHEO - District Health Education Officer	STI - Sexually Transmitted Infection
DO - District Officer	TB - Tuberculosis
DOTs – Directly Observed Therapies	UNAIDS – Joint United Nations Programme on HIV/AIDS
DPHO - District Public Health Officer	UNDP – United Nations Development Programme
HAART - Highly Active Anti-Retroviral Therapy	USAID – United States Agency for International Development
HIV - Human Immunodeficiency Virus	VCT - Voluntary Counselling and Testing
HIV-1 - Human Immunodeficiency Virus, variant 1	WHO - World Health Organisation
KANCO - Kenya AIDS NGO Consortium	

Table of Contents

Chapter 1: Introduction.....	1
 Chapter 2: The Theoretical Framework: An Ecosystems Approach to HIV-1/AIDS	 6
2:1 Introduction.....	6
2.2 An ecosystems approach to HIV-1/AIDS.....	6
2:3 Local knowledge.....	17
2:4 The aims of the research project	22
2:5 The significance of the study.....	28
2:6 The limitations of the study.....	30
2:7 The research design and methodology	30
2:7:1 The research design.....	31
2:7:2 The research methodology	33
2:7:3 Research ethics	35
 Chapter 3: The Role of Factors of the Ecosystem in the Transmission of HIV and the ‘Cause’ of AIDS.....	 36
3:1 Introduction.....	36
3:2 Colonial politics and economy as ‘causes’ of the HIV/AIDS epidemic.....	41
3:3 HIV/AIDS as a ‘disease’ of development	50
3:4 HIV/AIDS as a ‘disease’ of poverty	59
3:5 Gender and HIV/AIDS	67
3:6 Mobility, migration and HIV/AIDS.....	77
3:7 Poverty-actuated commercial sex work as a cause of the rapid transmission of HIV infections.....	83
3:8 Military conflict, ethnic strife, and refugee crises.....	89
3:9 The role of background infections, sexually transmitted infections,	

and protein-calorie-malnutrition in HIV transmission and the development of AIDS.....	98
3:10 Iatrogenic transmission of infections: the role of medical interventions and lack of medical resources in the rapid transmission of HIV.....	105
3:11 Conclusion.....	117
 Chapter 4: The Turkana People and their History	121
4:1 Introduction: the relevance of Turkana history to the current study.....	121
4:2 Origins of the Turkana.....	122
4:3 The establishment of colonial rule in <i>Eturkan</i>	123
4:4 The ‘creation’ of famine and poverty in <i>Eturkan</i>	128
4:5 The history of health and morbidity in Turkana.....	139
4:5:1 Health and morbidity statistics.....	139
4:5:2 Venereal diseases (sexually transmitted infections)	143
4:5:3 Healthcare resources.....	147
 Chapter 5: The Turkana of Today	150
5:1 Introduction.....	150
5:2 Turkana social organisation.....	150
5:3 Turkana ideology	154
5:4 Settlement patterns and economic occupations.....	160
5:5 Social and economic development in Turkana.....	161
5:6 Environment and ecology.....	166
5:7 The sedentarisation of the Turkana.....	170
5:8 The administration of Turkana District.....	176
5:9 <i>Akoro</i> and famine relief distribution.....	180

5:10 Health and morbidity in Turkana.....	186
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Chapter 6: The Research Location and Introduction of the Research Project to the Turkana of Lodwar Township.....192

6:1 The research location: Lodwar township.....	192
6:1:1 Physical growth of Lodwar town.....	192
6:1:2 The structure of Lodwar's population.....	196
6:1:3 The structure of Lodwar's socio-economy.....	198
6:1:4 Social amenities in Lodwar town.....	203
6:1:5 Sanitation and hygiene.....	205
6:2 Introducing research to the Turkana of Lodwar township: a household survey.....	208
6:2:1 The survey.....	208
6:2:2 The survey results.....	210
6:2:2:1 Economic status.....	210
6:2:2:2 Water.....	212
6:2:2:3 Personal hygiene and sanitation	214
6:2:2:4 Nutrition.....	215
6:2:2:5 Healthcare resources and utilisation.....	218
6:2:2:6 Morbidity types.....	221
6:2:2:7 Turkana perceptions of the influence of the ecosystem on infections.....	223
6:2:2:8 Seasonal changes.....	226
6:2:2:9 Livestock.....	227
6:3 Conclusion	228

Chapter 7: A Synopsis of HIV-1/AIDS in Kenya	233
7:1 The prevalence and distribution of HIV variants in sub-Saharan Africa.....	233
7:2 The current estimates of the HIV-1/AIDS prevalence in Kenya.....	234
7:2:1 Sentinel surveys.....	236
7:2:2 Kenya Demographic Health Survey, 2003.....	244
7:3 Modes of HIV-1 transmission and contraction.....	248
7:4 The government's response to HIV-1/AIDS.....	249
7:4:1 Phase I: From 1984 to 1987.....	250
7:4:2 Phase II: From 1988 to 1991.....	252
7:4:3 Phase III: From 1992 to 1995.....	253
7:4:4 Phase IV: From 1996 to 2000.....	257
7:4:5 Phase V: From 2001 to Present.....	272
7:5 Conclusion.....	278
 Chapter 8: Local Knowledge of HIV-1/AIDS, and other Sexually Transmitted Infections.....	 282
8:1 Introduction.....	282
8:2 The prevalence of HIV-1/AIDS in Turkana.....	284
8:3 HIV-1 surveillance surveys in Turkana District	294
8:3:1 Antenatal HIV-1 surveillance in 1999 and 2001 – Lodwar District Hospital	294
8:3:2 Sentinel HIV-1 surveillance in 1999 and 2001 – Kakuma Mission Hospital.....	296
8:3:3 HIV-1/AIDS surveillance in Lokichoggio.....	297
8:3:4 HIV-1/AIDS surveillance in Nakwanamoru Health Centre.....	299
8:4 The prevalence of sexually transmitted infections	300
8:5 Knowledge of and attitudes towards sex and sexuality.....	304
8:6 Local knowledge of HIV-1/AIDS.....	314

8:6:1 Popular discourse on HIV-1/AIDS.....	314
8:6:2 HIV-1/AIDS prevention.....	318
8:6:3 Perceptions of risk.....	321
8:6:4 Other factors of the ecosystem that influence the risk of contracting HIV-1.....	327
8:6:5 The transmission and contraction of HIV-1/AIDS.....	329
8:6:6 Symptoms and signs of HIV-1/AIDS.....	331
8:6:7 Stigma concerning HIV-1/AIDS	333
8:6:8 HIV-1/AIDS prevention.....	334
8:6:9 HIV-1/AIDS treatment.....	338
8:6:10 Knowledge about people with HIV-1/AIDS.....	339
8:6:11 The impact of HIV-1/AIDS.....	342
8:7 The local Knowledge of other sexually transmitted infections.....	343
8:7:1 Introduction.....	343
8:7:2 Types of sexually transmitted infections.....	344
8:7:3 Factors of the ecosystem that influence the transmission and contraction of sexually transmitted infections.....	348
8:7:4 Stigma concerning sexually transmitted infections.....	351
8:7:5 Perceptions of the risk of contracting sexually transmitted infections.....	352
8:7:6 The influence of gender on the risk of contracting sexually transmitted infections	352
8:7:7 The prevention of sexually transmitted infections.....	355
8:7:8 Treatment of sexually transmitted infections.....	356
8:7:9 Perceptions of the prevalence of sexually transmitted infections in Lodwar township.....	360
8:8 Experiential knowledge of sexually transmitted infections among those who have been previously infected	361
8:8:1 Introduction.....	361
8:8:2 The perceived causality of sexually transmitted infections	362
8:8:3 The treatment of sexually transmitted infections.....	363

8:8:4 Experienced symptoms and signs.....	369
8:8:5 The consequences of sexually transmitted infections	372
8:8:6 Engagement in sexual intercourse while still ill.....	373
8:8:7 Responses from partners.....	373
8:8:8 The nexus between HIV-1/AIDS and other sexually transmitted infections	374
8:9 Local perspectives on sexually transmitted infections among those who presented with sexually transmitted infections at STD Clinic, Lodwar District Hospital	374
8:9:1 Introduction.....	374
8:9:2 Engagement in sexual intercourse while still ill with a sexually transmitted infection.....	376
8:9:3 Condom use.....	376
8:9:4 The consequences of the sexually transmitted infections.....	377
8:9:5 Prevention of sexually transmitted infections.....	378
8:9:6 Interviews with people (n=2) who were infected with gonorrhoea in Napetet Village.....	379
8:10 Conclusion.....	380

Chapter 9: Local knowledge of the Nexus between

Mycobacterium tuberculosis and HIV-1/AIDS.....

9:1 Introduction.....	390
9:2 The clinical link between HIV-1/AIDS and tuberculosis	392
9:3 Local knowledge of tuberculosis among the Turkana in Lodwar township.....	399
9:3:1 Reported and recorded tuberculosis statistics from the Turkana District Hospital.....	399
9:3:1:1 TB morbidity statistics.....	399
9:3:1:2 TB mortality statistics	405
9:3:2: Local knowledge of tuberculosis.....	408

9:3:3 General causes of tuberculosis.....	411
9:3:4 Specific causes of various classes of tuberculosis.....	413
9:3:5 Treatments for various types of tuberculosis	414
9:3:6 The prevention of respiratory infections	417
9:4: Knowledge of tuberculosis among tuberculosis-infected patients admitted at TB Manyatta and Isolation Ward.....	418
9:4:1 The causes of tuberculosis (inferred from the experienced signs and symptoms).....	419
9:4:2 Experienced symptoms and signs of tuberculosis.....	421
9:4:3 Indigenous therapies for tuberculosis	422
9:4:4 The efficacy of hospital treatment.....	424
9:4:5 The consequences of tuberculosis.....	425
9:4:6 Feelings and perceptions of relatives and friends towards those who are infected with tuberculosis	428
9:4:7 Descriptions of therapy regimes followed in the Lodwar District Hospital.....	430
9:4:8 Re-infections with tuberculosis.....	432
9:4:9 Case histories: Trajectories and lived experiences of tuberculosis infections.....	432
9:4:10 Discussion.....	435
9:4:10:1 The nexus between local knowledge and biomedical nosology of tuberculosis.....	436
9:4:10:2 Turkana knowledge of tuberculosis.....	439
9:5 'Mycobacterium tuberculosis (TB) and HIV-1/AIDS are like two wives married to one man': Local knowledge of the link between tuberculosis and HIV-1/AIDS among Turkana of Lodwar township.....	443
9:5:1 The link between tuberculosis and HIV-1/AIDS: A synopsis.....	444
9:5:2 Life histories: cases of double infections.....	449
9:5:3 The link between tuberculosis and HIV-1/AIDS.....	452
9:5:3:1 Causality.....	452

9:5:3:2 Symptoms and signs.....	454
9:5:3:3 Treatment.....	455
9:5:4 Factors of the ecosystem that influence the incidences of tuberculosis and HIV-1/AIDS.....	455
9:5:4:1 Socio-cultural factors.....	455
9:5:4:2 Biological and ecological factors.....	459
9:5 Prevention of tuberculosis and HIV-1/AIDS.....	459
9:6: Implications of the conceptual link between tuberculosis and HIV-1/AIDS for control and prevention of tuberculosis and HIV-1/AIDS.....	460

Chapter 10: Local Knowledge of Factors of the Ecosystem that Influence the Contraction and Transmission of HIV-1/AIDS in Lodwar

Township.....	466
10:1 Introduction.....	466
10:2 Factors of the ecosystem that are seen to influence the contraction and transmission of HIV-1/AIDS in Lodwar township.....	466
10:2:1 Ecosystem factors that encourage unprotected sexual contact	467
10:2:1:1 <i>Kaada</i>	467
10:2:1:2 Video and disco halls.....	469
10:2:1:3 Emerging sexual behaviour and practices.....	470
10:2:1:4 Poverty-accentuated commercial sex work.....	472
10:2:2 Factors of mobility that encourage pursuit of casual sexual partnerships.....	490
10:2:2:1 Migration and travel.....	490
10:2:2:2 Urbanisation and settlement in townships.....	495
10:2:2:3 Truck drivers.....	497

10:2:2:4 Military personnel.....	499
10:2:2:5 Banditry: <i>ngengora</i> (<i>ngoroko</i>) and cattle raiders.....	500
10:2:2:6 Refugees.....	502
10:2:3 Factors of social organisation that encourage risky sexual behaviour / multiple sexual networks.....	507
10:2:3:1 Polygamy.....	507
10:2:3:2 Widow inheritance.....	508
10:2:3:3 Gender-accentuated power imbalance.....	509
10:2:4 Factors of deficient healthcare infrastructure.....	511
10:2:4:1 Iatrogenic factors: unsafe medical practices and unsafe blood for transfusion.....	511
10:2:4:2 Poor sexual health and prevalence of sexually transmitted infections	514
10:2:4:3 Low use of condoms.....	519
10:2:5 Poverty as an ecosystem factor that increases vulnerability and risk.....	522
10:3 The conceptualisation of the evolving impact of HIV-1/AIDS on pastoralist production	525
10:4 Conclusion.....	527
 Chapter 11: Local Responses to HIV-1/AIDS in Turkana.....	 532
11:1 Introduction	532
11:2 Responses by individuals and families.....	533
11:3 Responses at the community level.....	533
11:4 Responses by the Lodwar Catholic Diocese.....	536
11:5 Government's response to HIV-1/AIDS.....	537
11:6 Conclusion.....	545

Chapter 12: A Proposed Integrated Response to HIV-1/AIDS in a Resource Poor Setting: A Case of Lodwar Township	546
12:1 Introduction.....	546
12:2 The rationale for an integrated response to HIV-1/AIDS.....	547
12:3 An integrated response to HIV-1/AIDS in Lodwar township.....	554
12:3:1 Responses to HIV-1/AIDS through mitigation of the factors of the ecosystem that influence the risk and vulnerability to contraction and transmission.....	554
12:3:1:1 Development of the healthcare infrastructure.....	554
12:3:1:2 Empowerment of women.....	560
12:3:1:3 Provision of a safe working environment for commercial sex workers.....	565
12:3:1:4 Socio-economic development and poverty mitigation.....	569
12:3:1:5 Interventions among high-risk occupations such as truckers and armed forces.....	574
12:3:1:6 The prevention and curing of prevalent illnesses.....	575
12:3:2 Response to HIV-1/AIDS through a public health approach.....	578
12:3:2:1 HIV-1 counselling and testing.....	578
12:3:2:2 The care of orphans.....	586
12:3:2:3 Indigenous healers and birth attendants.....	588
12:3:2:4 Mass campaigns and health education.....	591
12:3:2:5 Home-based care.....	594
12:3:2:6 Promotion of condom use.....	596
12:3:2:7 Provision of adequate nutritious food.....	601
12:4 Biomedical interventions through highly active anti-retroviral therapy (HAART): the case of a 'cure' for HIV-1/AIDS in Turkana.....	606
12:4:1 Introducing HAART.....	606
12:4:2 A Proposed biomedical intervention using anti-retroviral	

drugs in Turkana.....	622
12:4:2:1 Prophylactic prevention of mother-to-child transmission.....	623
12:4:2:2 HAART in Turkana: a case of joint tuberculosis and HIV-1/AIDS intervention.....	624
12:5 Conclusion.....	629
 13: Conclusion and summary.....	631
Integrated Bibliography.....	641
Appendix I: Research Ethics Certificate	730
Appendix II: Research Authorisation – Ministry of Education, Kenya	731
Appendix III: Research Authorisation – Turkana District Hospital, Ministry of Health.....	732

Introduction

The study was carried out among the Turkana, a north-western Kenya pastoralist population numbering about 500,000, currently undergoing a process of diversification and separation from nomadic pastoralism, which remains the main system of socio-economic production. The research location was set among the Turkana of Lodwar township with a population of about 40,000, according to the 1999 Population and Housing Census. Additionally, about 40,000 Turkana are settled in other emerging urban centres, while another unknown number are settled in and around irrigation schemes, development projects and other relatively large villages. The population of Lodwar township is comprised of former pastoralists who are either destitute or have diversified into other forms of livelihood, and those who still have a foothold in the nomadic production system through relatives, siblings and other family members. The settled population is likely to become a significant part of emerging urban populations in these semi-arid and arid regions as the process of sedentarisation continues. In Turkana, the settling of refugees in Kakuma, the on-going civil war in the southern Sudan, and the perennial drought and famine conditions requiring reactive intervention, have created an avenue for other Kenyans and foreign expatriates to migrate to the region for employment in the service industry created by an array of international agencies. The immigrants and the Turkana interact both socially and economically, and therefore influence the contraction and transmission of HIV-1, and other sexually transmitted infections (STIs).

The prevalence of HIV-1/AIDS in the township of Lodwar is more than 11.4 percent versus the national average of 6.1 percent (UNAIDS 2006), which declined to 5.9 percent over the last one year (Wakabi 2007). Nonetheless the response to the growing epidemic is deficient and the district continues to conjure up images of traditional and conservative pastoralists who are not exposed to modern influences and thus their vulnerability to HIV-1 is increased. Moreover, there is a lack of research on pastoralists and HIV-1/AIDS in Africa and only a few systematic studies have been carried out (White and Robinson 2000; Coast 2002, 2006; May 2003). Furthermore, the impact of HIV-1/AIDS on pastoral communities

and their mode of production has not been systematically researched (ITDG-EA 2005). With pastoral production representing a significant number of rural communities where HIV-1 epidemics are severe, this anomaly needs to be addressed and rectified. Additionally, there is a lack of research into the impact of the unique characteristics of pastoral production such as: nomadism, migration, arid and semi-arid-environment / ecology, climate (e.g. drought) cattle rustling (banditry), close proximity to cattle, sedentariness, the impact of diversification and differentiation of socio-economic production on the contraction and transmission of HIV-1 and the development of AIDS. This study provides invaluable knowledge of the incidence of HIV-1/AIDS within a pastoralist community. The data gained assisted in conceptualising the vulnerability and susceptibility of the Turkana to HIV-1/AIDS. In addition, the researcher has conceptualised the impact of HIV-1/AIDS on the community and its possible impact upon pastoral production, which hitherto has been lacking due to a dearth of research. While numerous studies have been carried out on the socio-economic factors that influence the spread of HIV-1, there has not been one as comprehensive as this study, nor have any been conducted among pastoralist communities. Furthermore, this study differs from others in that it focuses on a settled pastoralist community as well as looking at the way in which HIV-1/AIDS might affect the nomadic Turkana population.

This thesis investigated the local knowledge of, and responses to, HIV-1/AIDS. The general hypothesis of this study is that diverse socio-economic and ecological factors influence the development of poor health and infections generally, and in particular, influence the contraction and transmission of HIV-1 among Turkana men and women. In addition, Turkana behaviour is partially determined by factors of the ecosystem that render them vulnerable to infections. Moreover, the social epidemiology of HIV-1/AIDS, and its relationship to other sexually transmitted infections and tuberculosis, is better comprehended through the local knowledge system.

To accomplish this broad objective, the study set out to meet the following objectives:

- To determine which ecosystem factors influence the transmission and contraction of HIV-1/AIDS, other sexually transmitted infections and tuberculosis.

- To determine local knowledge, encompassing social epidemiology, of: 1) HIV-1/AIDS (and other sexually transmitted infections); and 2) tuberculosis. The study further explored the nexus between HIV-1/AIDS and other sexually transmitted infections (STIs), on the one hand, and with tuberculosis (TB) on the other.
- To determine local responses to HIV-1/AIDS and the viability and efficacy of administering antiretroviral therapy in resource-poor settings like Turkana District.

To answer these objectives, this thesis presents descriptive and quantitative data gathered through various methods including census survey, structured interviews, semi-structured interviews, unstructured interviews, focus group discussions, and in-depth interviews. The project was introduced to the Turkana through a survey of 100 households with subsequent questionnaire interviews administered among equal numbers of men and women sampled across Lodwar township. Additional focus group discussions and in-depth interviews were carried out. The research was guided by the key methodological elements of transdisciplinarity, social and gender equity, and informant participation.

The study has determined how ecosystem factors mediate the risk for both men and women in HIV-1 contraction and transmission. In addition, the study has determined the impact of the ecosystem on HIV-1/AIDS, other sexually transmitted illnesses, and tuberculosis. The social epidemiology of HIV-1/AIDS could be dissected from the alienation, subjugation, and dispossession of the Turkana during the colonial period. This closely relates to the current socio-economic, structural and ecological/environmental factors that also influence the vulnerability of men, women and children to contraction and transmission of HIV-1/AIDS. Though the distinction is porous, individual factors encompass a gender-accentuated power imbalance, the low use or lack of condoms, low immunity, background infections like STIs and TB. In addition, social factors include *kaada*¹ use, video and disco hall attendance, unsafe medical practices, polygamy, banditry, rape, influxes of refugees, migration and travel, poverty, commercial sex work, immigration, widow inheritance, and other socio-cultural norms and practices. The structural factors

¹ This is an alcohol brewed locally in the township and the surrounding villages.

unearthed include insecurity, urbanisation, poor sexual health, the prevalence of STIs, use of infected blood for transfusion, and development (and health) policies. The ecological/environmental factors that increase the vulnerability and susceptibility of the Turkana to infections include the perennial drought and famine that leads to livestock deaths, migration and socio-economic dislocation, destitution, sedentarisation, and protein-calorie malnutrition. This study has also determined the local knowledge concerning HIV-1/AIDS, other STIs, TB, and the above factors of the ecosystem. In addition, the study has explored the nexus between HIV-1/AIDS and TB, and the local responses to HIV-1/AIDS, including the viability and efficacy of antiretroviral therapy in Turkana. The thesis has proposed an integrated approach to the prevention of HIV-1 and the management of AIDS that combines structural, public health, and biomedical approaches that are relevant to the urban settled Turkana and other semi-nomadic communities. In addition, the impact of nomadism on the transmission and contraction of HIV-1, and the influence of AIDS on the former, has been analyzed.

This study has made a contribution towards the understanding of the peculiarity of HIV-1/AIDS, not only amongst a nomadic and semi-nomadic community, but also in resource-poor sub-Saharan Africa. By using an ecosystem approach, the study has contributed to a broader understanding of, and response to, HIV-1/AIDS.

The rest of the thesis is organised into Chapter 2 to Chapter 13. Chapter 2 presents an outline of the theoretical framework that guided the collection and interpretation of data. The third chapter presents a literature review, which discusses the role of factors in the ecosystem on the contraction and transmission of HIV-1 and the 'cause' of AIDS.

Chapter 4 discusses the history of Turkana people, linking it to their present health, socio-economic, and political status, which is examined in Chapter 5. This discussion leads to the sixth chapter, which defines the research location, that is, Lodwar township and covers the introduction of research to the Turkana, through a household survey. Chapter 7 presents the synopsis of HIV-1/AIDS in Kenya, encompassing the prevalence and the policy responses to the epidemic.

The presentation of the outcomes of this study begins in Chapter 8, which presents a broader local knowledge of HIV-1/AIDS and other STIs. Chapter 9 discusses the local

knowledge of *Mycobacterium tuberculosis*, and its nexus to HIV-1/AIDS. Chapter 10 outlines the factors of the ecosystem that influence the prevalence of HIV-1/AIDS, and other STIs.

In Chapter 11, I have discussed the responses to HIV-1/AIDS in Turkana. Chapter 12 examines the proposed integrated and multi-factorial response to HIV-1/AIDS in Lodwar township. Finally, in Chapter 13, I have presented conclusions and a summary of the thesis, teasing out the implications of this project, and suggesting a way forward for research and intervention in the Turkana District.

The Theoretical Framework: An Ecosystems Approach to HIV-1/AIDS

2:1 Introduction

In this chapter I will outline the theoretical approach that guided the collection and interpretation of data and how these data were collected. The chapter is subdivided thus: an ecosystem approach to HIV-1/AIDS; local knowledge; the aims of the research project; the significance of the project; limitations of the study; and the research design and methodology, which is further subdivided into research design, research methodology, and research ethics.

2:2 An ecosystems approach to HIV-1/AIDS

Every research project and the researcher must have a theoretical perspective, which is customarily outlined from the onset. This is mainly because a theory provides a conceptual framework for explaining the way social forces work and because the theory guides not only the collection, but also the interpretation of data to provide answers to the objectives and questions of the study. Designing a research project in the general field of health and illness, and specifically on HIV-1/AIDS, requires entering into the wide expanse of theoretical paradigms that have influenced previous studies in this realm. Globally, while the varied theories that have informed most of these studies overlap, they could be broadly classed into the following major conceptual frameworks: the biomedical / biological paradigm; medical ecological / environmental theory; political economic theory; cultural interpretative theory (or meaning-centred approach); critical interpretative theory; and social epidemiology. Regionally, the prevalence of HIV-1/AIDS is broadly explained through three overlapping conceptual frameworks, that is, cultural, dependency, and rational choice theories.

The first social scientific researchers concerned with HIV-1/AIDS in sub-Saharan Africa, Caldwell, Caldwell and Quiggins (1989), used the cultural conceptual framework to explain

why the pattern of HIV-1 infection in the region differed from that of the West. They indicated that the difference is mainly due to socio-cultural norms governing African sexual behaviour as manifested in the level and type of sexual activity (promiscuity, prostitution and permissiveness), misconceptions / 'beliefs', ignorance, multiple partnerships, surreptitious extramarital and premarital sexual relations, and lack of or erosions of moral and institutional constraints on sexuality. In addition, Odebiyi and Viuvekanada (1991) attributed the situation to cultural practices such as polygamy, polyandry, and the high value placed on children that drive people to indiscriminate sexual activity. In the same vein, such acts as 'dry and tight' sexual practices increase the efficient transmission and contraction of HIV-1 (Brown, Ayowa and Brown 1993). If the weakness of the cultural explanation model is an exclusive focus on *internal* factors in explaining AIDS patterns, that of the political economy / dependency perspective is a neglect of internal factors.

The opposing position to that of the cultural explanatory model indicates that HIV-1/AIDS could be understood in its wider context of local, national, regional, and global economic inequalities. Schoepf (1988, 1993) argued that the spread of HIV-1/AIDS is influenced by the international political economy, structural adjustment programmes, economic crises, poverty, underdevelopment, unemployment, gender inequality, social structures as well as the actions of individuals and groups variously situated within historically constructed systems. Using dependency and World Systems Theory, Hunt (1989) argued that poverty-accentuated male migration contributed to the spread of HIV-1/AIDS. It was therefore not surprising that large cities and manufacturing and mining towns, with high concentrations of migrant labour, and the major transportation routes frequented by truck drivers have experienced a high prevalence of HIV-1/AIDS. While the cultural model internalises the causal agency, the dependency theory externalises the agency.

There is an assumption that rational choice offers a universal explanatory model for the spread of HIV-1/AIDS. The model makes assumptions about human behaviour, presupposing that the actions of individuals are governed by the calculation of costs and benefits (Philipson and Posner 1995). In this model, sexual behaviour would reflect a rational calculation of gains and losses; thus, rational choices made by individuals influence personal decisions and predict indulgence in risky sex. People may also be impelled to act as a result of emotional impulse, or simply from habit, or even the fact that

most of our actions might just be irrational in origin. Individuals may well be rather less the rational actors and more in the nature of Schutz's (1973) phenomenological actors who proceed on the basis of the here and now reasoning (Hughes and Malila 1996). Virtually no behaviour is more emotionally laden than sex and, as it happens, HIV-1 is a sexually transmitted infection. As Hughes and Malila (1996: 9) point out, the "optimization of benefits that is implicit in the calculative model of rationality is flawed by virtue of lacking meaningful consideration of the temporal dimension that characterises every day action. Risk of infection may be less important than the immediate and pressing relevance of sexual gratification because the apprehended risks (e.g. rejection, loss of income, distrust) are more consequential than the more abstract risk of death in the future".

Sexual practices are at times laden with symbolic meaning and it is this reason rather than rationality that structure is given to lived experiences of sex. In fact, a rational choice model agrees with the cultural explanatory model that prostitution is the norm in Africa, and that sex activity and infection are voluntary. However, the rational choice model does not explain why HIV rates of prevalence are not the same in sub-Saharan African countries; — over 20 percent in Southern African countries, and below 15 percent in East African countries — nor does it eschew the fact that some people contract AIDS involuntarily; e.g., rape victims, newborns, accident victims and so forth.

Despite the efforts of medical anthropologists² and other social scientists to promote a broader, multi-factorial model of health and illness causation, for the most part, illness and health continue to be analysed through narrow discrete theoretical approaches while overlooking the factors that operate in an intricate 'causal web'. There is a profound adherence among HIV-1/AIDS researchers to dissocialising biomedical and epidemiological models (1996a, b; Krueger 1999, 2001a, b; Krueger and Smith 2004).

Over the last two decades, a paradigm of critical interpretative theory, which others have called "critical medical anthropology", has grown because of the limitations of the discrete paradigms mentioned above (Singer 1989, 1995; Morsy 1990). Encompassing a broader,

² See Fabrega 1971, 1972; Dunn 1976; Good 1997, 1994; Kleinman 1978, 1980, 1983, 1986a,b, 1995; Janzen 1978a, 1981; Young 1982; Dunn and Janes 1986; Packard 1989a,b; Kunstadter 1986; Nations 1986; Morgan 1987; Singer 1989, 1995; Inhorn and Brown 1990; Scheper-Hughes 1992; Brown, Inhorn and Smith 1996; Scheper-Hughes and Lock 1996; Farmer 1992, 1997, 1999; Baer *et al* 1996; Kleinman and Kleinman 1997.

multi-factoral approach, the critical interpretative paradigm questions the role of global power relations, social class, poverty, gender, racism, violence, socio-economic dislocation, and the resulting material conditions of urbanisation and industrialisation, and the availability and accessibility of healthcare resources, as determinants of health and illness (Turshen 1984; Packard 1989a, b; Scheper-Hughes 1992; Singer, Singer 1995; Baer *et al.* 1996; Morsy 1990, 1996; Farmer 1997).

In critiquing the narrower discrete theoretical approaches, numerous scholars³ have called for a broader critical approach that emphasises the role of ecosystem factors in poor health, the occurrence of illnesses and in the construction of local knowledge about these factors. As Singer (1995:90) points out, "disease cannot simply be reduced to a pathological entity in nature, but must be understood as the product of historically located socio-political processes" against the backdrop of global, national, and local power relations (see also Onoge 1975; Turshen 1984; Lock and Scheper-Hughes 1986; Packard 1989b). Rather than eschewing contextualised studies, or what Onoge (1975) calls 'socio-culturalism'⁴, or what I would call narrow cultural studies preoccupied with 'tribal enclaves', the critical interpretative approach demands that ethnographic studies be examined and situated within broader socio-economic, political, historical and global / national contexts using macro-level analyses. These analyses extend beyond family, community, and/or ethnic enclosure (see also Janzen 1978b). The critical interpretative theoretical approach does not deny the importance of micro-analytic studies of the existential peculiarities of sickness and poor health. Rather, it endeavours to develop and promote an encompassing framework whereby researchers are compelled to situate their work, according to Frankenberg (1980:1997), in the "context of three processes – development, the making social of disease, and in the more general concern of anthropological analysis".

³ Read the writings of Fabrega (1970, 1971), Kleinman *et al.* (1975), Leslie (1976), Good (1977, 1994), Landy (1977), Janzen (1978a), Frankenberg (1980), Kleinman (1980, 1986a,b, 1988, 1995), Littlewood, (1980, 1990), Young (1980, 1981, 1982, 1983, 1997), White (1980), Comaroff (1982, 1993), Navarro (1984), Turshen 1984; Rubel *et al.* (1984), Kleinman and Good (1985), Sheper-Hughes and Lock 1986, 1996; van de Geest (1987), Morgan (1987); Gordon (1988), Lock (1988, 1993a,b,c, 1998), Singer (1990), Delvechio Good *et al.* (1992), Briceno-Leon (1993), Baer *et al.* 1996; Morsy (1996), Singer (1995, 1996), McElroy and Townsend (1996), Farmer (1997, 1999), Kleinman, Das and Lock (1997), Morris (1997), and Longino (1998).

⁴ According to Onoge (1975) 'socio-culturalism' position blames impoverished populations for their poor health as their cultural beliefs and practices are mainly regarded as the obstacles to full appreciation and adoption of biomedical facilities and resources.

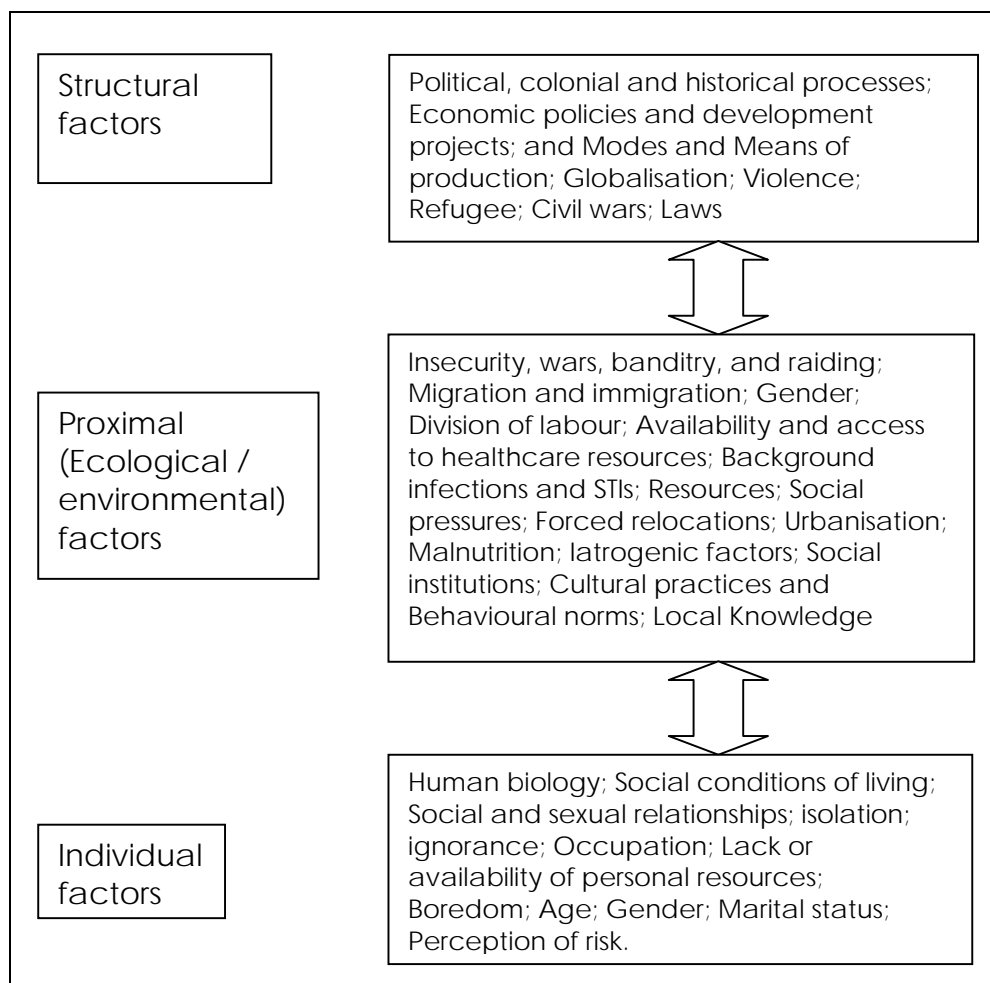
In this study, I have merged elements from the above global and regional conceptual frameworks into a broader multidisciplinary and macro-analytic approach with a multi-factorial and critical perspective on local knowledge and response to HIV-1/AIDS in Lodwar township, Turkana District, Kenya. The theoretical paradigm I have adopted, the *ecosystem approach to human health*⁵, is a mirror image of, if not complementary to, the critical interpretative theory. The *Diagram 1* below is a global conceptual representation of this approach to the study of human health and infections. The emerging conceptual framework is broad and multidisciplinary, encompassing concepts and orientations from many disciplines. The three key methodological elements of the ecosystem approach to health and infections are “transdisciplinarity, social and gender equity, and stakeholder participation” (Bazzani, Noronha, and Sanchez n.d:1). In addition, as Kaufman (2001: 49) states, “the facts of human epidemigenesis do not lie squarely within a single traditional discipline”. Therefore, a comprehensive understanding of the social epidemiology of the HIV-1/AIDS pandemic must be through multidisciplinary, which still, unfortunately, evades the phenomenon (Farmer 1996a, b). A study like mine, that concerns itself with production of local knowledge, must be sensitive to gender equity and to the inclusion of all the diverse members of the community. In addition, the contraction and transmission of HIV-1 and the progression of AIDS is influenced by gender variables and it seems reasonable that studies of this nature tease out the way gender influences not only the risk, but also, the pathways to HIV-1 infection.

In the current project, this theoretical approach encompasses a web of behavioural, cultural, socio-economic, and environmental / ecological factors in an effort to achieve an integrated understanding of the local knowledge of, and response to HIV-1/AIDS, in an urban ecosystem.

⁵The International Development Research Centre of Canada (IDRC) has created a program initiative called *Ecosystem Approaches to Health*, whose purpose is to facilitate research into how ecosystems might be managed in a sustainable fashion to sustain and promote human health. This initiative seeks to promote an understanding of the linkages between personal and cultural choices, the social and economic factors, the environment, and human health and the occurrence of infections. The research project, on which this thesis is based, was mainly funded by the IDRC's *Ecosystem Approaches to Human Health Initiative*. However, their theoretical framework, the 'ecosystem approaches to health', is very much congruent with my conceptual framework, critical interpretative theory that aims to incorporate socio-cultural, political, historical, economic, ecological / environmental facets in the study of health and infections. The concept of the ecosystem approach to human health is discussed by Forget and Lebel (n.d).

The ecosystem⁶ approach encompasses, as indicated in the *diagram 1* below, the biophysical setting (environment), socio-economic factors (economic, development, structural aspects), behavioural aspects of individuals and communities (lifestyle, cultural norms and practices) and their genetic / biological makeup⁷ (Forget and Lebel n.d.).

Diagram 1: A conceptual framework indicating the ecosystem approach to health and infections



⁶ The ecosystem is defined here as the interrelationship among human populations and the physical, biological and socio-cultural environments. Relevant factors include social factors such as socio-cultural norms and practices, politics, economy, history, the process of production, the conditions of poverty and famine, and environmental factors such as the weather, the distribution of rainfall, the incidence of drought, the source and quality of water, prevalence of disease vectors, etc. These socio-bio-physical environmental components not only affect the way people maintain a relationship with their ecosystem, but also their health and the incidence of infections. The ecosystem is therefore considered to be the result of a "dialectical interaction of natural and socio-cultural forces" (Baer *et al* 1996:41).

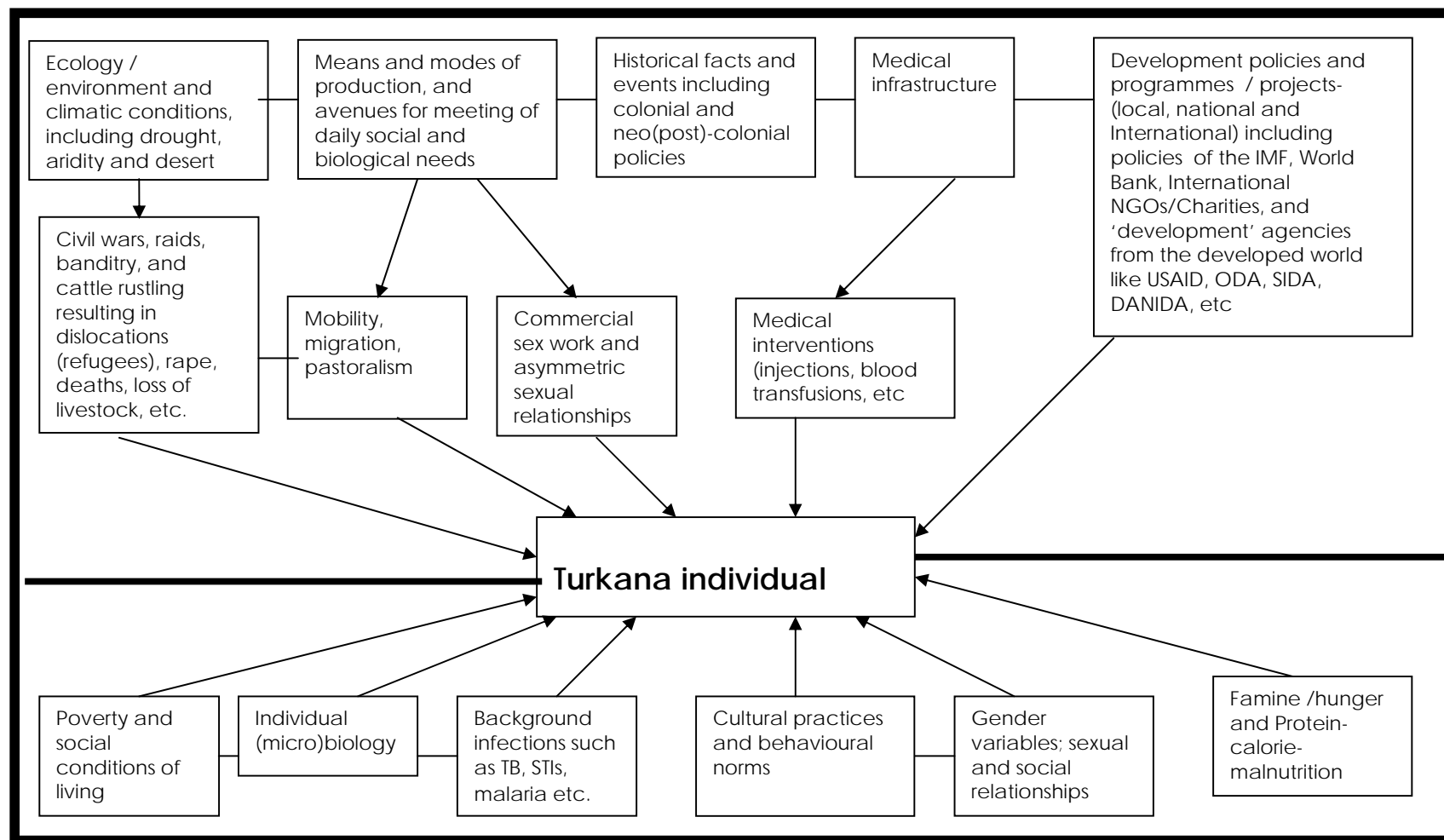
⁷ In fact, poverty and socio-economic and political factors normally affect biology (or individual biologies) to produce disease and poor health.

In addition, this broad perspective recognises not only the extent to which gender disparity impacts the health of either men or women, but also its role in the differential prevalence of infections between men and women.

I have identified three levels of causation in HIV-1 incidence: individual, distal (environmental), and structural. While structural factors include macro-social and macro-political arrangements, physical and resource characteristics and other elements such as economic underdevelopment, sexism, racism, refugee crises, and civil wars, laws, and development policies, environmental factors encompass living conditions, resources, social pressures, forced relocations, migration in pursuit of employment, and urbanisation. The individual level factors relate to how the environment is experienced and acted upon by individuals and includes, amongst others, isolation, ignorance, occupation, lack of or limited availability of personal resources, boredom, age, gender, marital status, and the perception of risk.

As demonstrated by *Diagram 2* a web of factors informs the conceptual framework of the local knowledge of, and in response to, HIV-1/AIDS. In Chapter 3, these factors are broadly discussed in the form of a systematic review of published and unpublished literature concerning each of the factors of the ecosystem in the transmission and contraction of HIV-1 and the 'cause' of AIDS. In this review, I have presented existing evidence linking social and structural factors of the ecosystem to the contraction and transmission of HIV-1 and the progression of AIDS.

Diagram 2: A conceptual framework indicating the ecosystem approach to HIV-1/AIDS among the Turkana of Lodwar township



In the current study, by incorporating the 'ecosystems approach to health'⁸, I will explore the effects of proximate factors of the ecosystem such as the social conditions of living; local customs and behavioural norms; personal and environmental hygiene; background infections; evasive medical interventions; the loss of livestock to drought and banditry and the vagaries of the weather on the vulnerability to the contraction of HIV-1 and the development of AIDS.

Distal factors that would influence the contraction and transmission of HIV-1 and death from AIDS encompasses lack of health services and other social amenities; the political and socio-economic marginality of the community; policies devised by the government and NGOs (e.g. regarding sedentarisation, development projects); gender relations; and alteration of the environment (e.g. through irrigation farming, construction of water sources, the settlement of refugees in Turkana District); and the setting up of UN agencies and international NGOs based in Lokichoggio, in northern Turkana. In addition, the harsh environmental and climatic variables, such as drought, currently frequent in arid and semi-arid Turkana, results in the death of livestock, destitution and protein-calorie-malnutrition, thereby increasing the vulnerability to HIV-1 infection. These factors influence the transmission and contraction of HIV-1. For instance, the lack of resources leads to poverty-induced commercial sex work, which increases the risk of exposure to HIV-1. Banditry and cattle rustling perpetuate poverty, leading to famine and hunger resulting in the efficient transmission and contraction of HIV-1 and the development of AIDS and opportunistic infections.

The clinical course of AIDS and exposure and vulnerability to opportunistic infections is a function of the social conditions of living with poverty that determines the outcome of HIV-1 infection. As the conceptual framework indicates, the study will explore whether the mode of production, especially pastoralism, and the mobility and migration it occasions, increases the vulnerability to HIV-1. In addition, what features of pastoral production, such as food insecurity and susceptibility, isolation from healthcare facilities, etc. influence the social epidemiology of HIV-1 and AIDS?

⁸ Ecosystemic health is a concept encompassing the complex interplay among the environment, and the social and political conditions of a group living in a given area of residence (McMullan 1998).

As demonstrated by the conceptual framework, the Turkana have a diverse set of social institutions that guide behaviour, and are well-adapted to a pastoral life in a semi-arid environment. These include polygyny, with a man ideally having multiple wives and ties to several other families through bride wealth exchanges, an emphasis on fertility and social bonding that allows for discrete sexual bonding outside of marriage, and the building of temporary homes, relatively open to the elements that support rapid household movements. In addition, a life close to domestic animals that are given protection and provide subsistence and a martial culture with highly dynamic livestock raiding of others and the guarding of one's own herd influence Turkana behaviour. Moreover, a seasonal pattern of dividing households into teams that take domestic stock to different ecological sites separates men and women and children in complex ways.

Men and women have various beliefs and values that underpin their social and sexual lives, including notions of the 'naturalness' of sexual relations and the importance of virility (based on a man having sexual access to several women). In addition, the Turkana have confidence in their indigenous knowledge systems, based on a grounded body of empirical knowledge based on both experience and oral transmission. Their knowledge system is based on symbolic linkages or the evocation of supernatural forces which are functional in that they supplement empirical knowledge where it falls short and cannot explain phenomena.

Various aspects of the Turkana political-economic ecosystem increase the risk of HIV transmission and contraction:

- Roads,
- Ingress and egress,
- Migration related to transport and employment,
- Increased urbanism due to poverty and development,
- Increased poverty due to drought, population growth,
- Declining resilience of pastoralism,
- Increased separation of members of families, leading to the multiplication of sexual partners,
- Inadequate health education and health care,
- Transmission of unsound information, and so forth.

Due to many of the same factors, STDs and TB have increased, and these have proven important correlates of HIV-1 transmission and risk factors.

Under the social conditions mentioned above (development, poverty, dislocation, migration, etc.), social institutions and cultural understandings both provide an anchor for people whose grounding in mobile pastoralism is weakened (especially sedentary populations) and who are transformed under these new conditions. Turkana behaviour is shaped both by these institutions and by new conditions, such as urban life, poverty, migration, etc. Most importantly, urban sexual liaisons increase, and in towns, social constraints are reduced since people are not surrounded by family.

Under conditions of increased transmission of HIV-1, STIs, and TB infections, seen as coming from the 'outside' but also as beginning to rapidly circulate within towns and trading centres, practices that accord with some social institutions and cultural understandings actually increase disease risk. Local knowledge increases empirical understanding of these diseases and many people are increasingly aware of what practices put them at risk. But given ecosystem constraints (i.e. urbanism, need for wage labour through migration, drought and less economic resilience, separated families), profound changes in social practices are very difficult. Furthermore, the sort of social supports that are so important elsewhere are not found in the Turkana health and social service systems. People do not feel that they have deep enough knowledge of or control over their lives, so they are largely resigned to the possibility of contracting diseases through their behaviours, though some suggest they will take steps to reduce their risk.

In "explaining" the complex causation of infectious disease transmission, it is thus necessary to point out that there are causal chains that move back and forth, which "over determine" the contraction of HIV-1, TB or STIs. "Channels" of transmission are created through the movement of people, and by concentrations of population through urbanism and sedentarisation. Risk is increased by a failure of government services, and the ecology of pastoralism increases some risks (of TB) while decreasing others (of HIV-1, if high pastoral movement away from towns is practiced). Under new social conditions, some social practices significantly increase risk if perpetuated (any practices that increase the number of sexual partners, especially new ones), while the inability to adopt new

knowledge (about HIV-1 transmission) or adopt risk-mitigating practices (using condoms, maintaining marital partners, avoiding casual liaisons) will increase infections.

2:3 Local knowledge

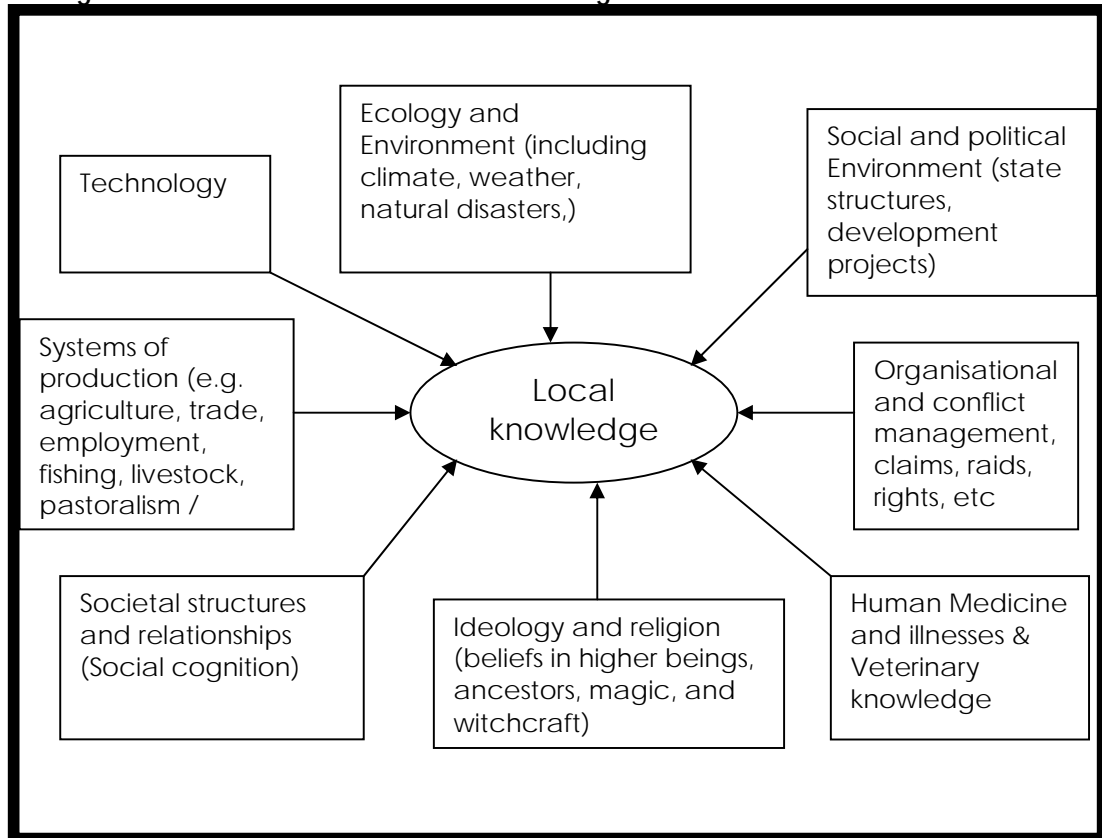
One of the core principles of the ecosystem approach to HIV-1/AIDS is the participatory nature of the research process. There is no greater way to demonstrate this than through an understanding of the occurrence of infections through local knowledge and by involving the local population in the production of that knowledge. Here I aim to set out the nature of local knowledge that informs the theoretical paradigm utilised in the study.

Local knowledge⁹ is used in this study as a lens or avenue through which the factors of the ecosystem that influence the contraction and transmission of HIV, and mortality from AIDS in Lodwar township are determined. I consider local knowledge as socially constructed to include both theoretical and empirical understanding, embodying both 'tradition' and practical information, and reflecting on-going experience that is possessed by members of a particular culture. I view local knowledge as broad, constituting different sub-types of epistemologies. For instance, among the Turkana, I envision them having various sub-types of local knowledge relating to livestock (veterinary - including pastoralism and nomadism), technology, religion, medicine, ecology /environment, climate, past events (history), biomedicine, health (including infections and illnesses), etc. All these facts would comprise the Turkana local knowledge system. *Diagram 3* below is a thematic representation of a web of local knowledge. A cultural system ultimately affects the way individuals perceive their reality, which in turn affects the creation of their world view(s), or cultural way of knowing that differs from one culture to another. However, an individuals' or a groups' (class) knowledge may not reflect the whole culture. As Hess (1995:121) points out, to apply general descriptions of cultures to individuals constitutes "ecological fallacy", the fallacy of thinking that what applies to the group necessarily applies to the individual, or vice versa. I would like to stress that at present the boundaries between other forms of knowing (local forms of knowledge) and the Western epistemologies may be thin and

⁹ The subject of 'Local Knowledge' is thoroughly discussed in my paper, *Ethnoknowledge Among Pastoral Communities in Eastern Africa*, submitted to the Department of Anthropology, McGill University, 1998.

subtle, as we often find that Western concepts have been indigenised, appropriated, or correspond closely to local forms of knowledge.

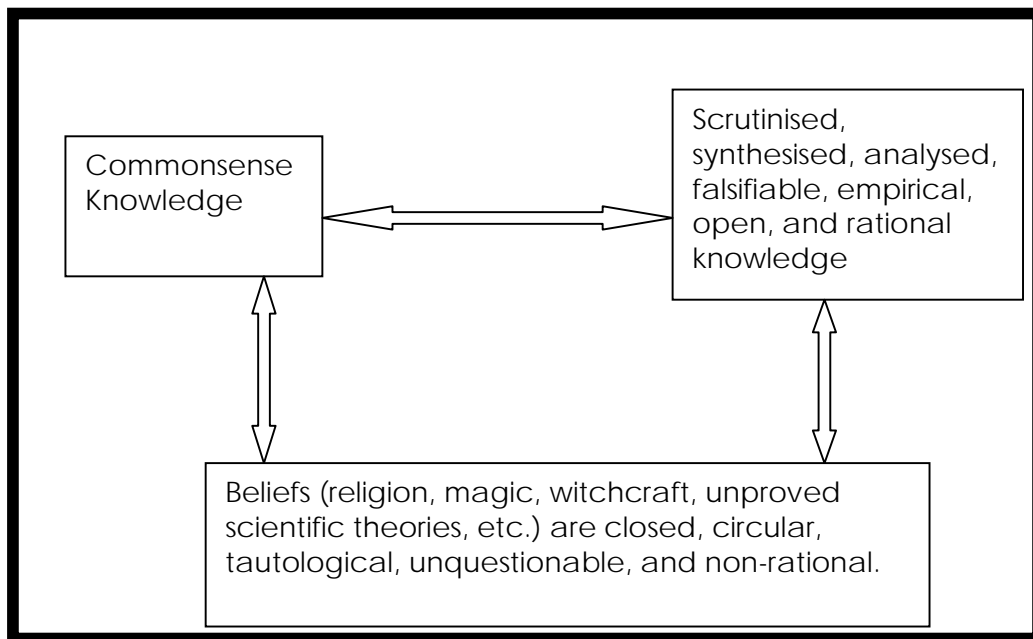
Diagram 3: The thematic web of local knowledge



This is more valid in the arena of HIV-1/AIDS where local knowledge has been influenced by biomedical knowledge, and by national and international discourses and practices¹⁰, which are manifested locally through debates and discourses on the origins and spread of the infection. More recently, this has been shown, during campaigns for universal access-to-treatment programmes. Since HIV-1/AIDS is a global phenomenon traversing socio-cultural enclaves, contemporary anthropological questions, even if focusing on the production of local knowledge, should be framed within the global parameters (Collier and Ong 2005).

¹⁰ A good example of how this is manifested has been discussed by Nguyen (2005). He has called this growing transnational influence of biomedical knowledge and practices as espoused by diverse actors such as people living with AIDS, AIDS activists, NGOs, and multinational pharmaceuticals companies as "antiretroviral globalism" and "therapeutic alliance".

Diagram 4: The circular nature of forms of knowledge



I have suggested that there are three lines to knowledge common to all human societies: commonsense knowledge; analytical and synthesized empirical knowledge; and beliefs (divided into tacit and explicit forms). These forms of information are distinguished by the way and degree to which they are, or can, be validated; and while they are distinct, they can pass from one form to the other as demonstrated in *Diagram 4* above. Rousseau's (1987) and Young's (1978) approaches to sacredness and knowledge, and to the production of knowledge respectively, have also endeavoured to make the comprehension of the interrelationship between knowledge and beliefs clearer. While commonsense knowledge does not constitute a closed, circular, unproved system of knowledge since it is evident knowledge to the *community*, when it is subjected to intense scrutiny and empirical testing, it becomes synthesized and empirically analyzed knowledge (Rousseau 1987).

Commonsense knowledge will thrive as long as there is no challenge. However, when successfully subjected to scrutiny and analysis, it becomes rational and empirical knowledge (Rousseau 1987: 25). People use both common-sense knowledge and analytically synthesized knowledge not as separate domains in a discourse, but concurrently to draw on one to buttress a claim, an utterance or a thought. At times, common-sense knowledge can be lumped together with empirical knowledge.

The production of knowledge is circular in that knowledge, which is generally accepted as commonsense, becomes empirical /scientific knowledge when it is analyzed, tested, and critically synthesized. When the general population accepts this knowledge, it is treated as commonsense knowledge. Common sense and empirical knowledge are two interrelated forms of knowledge as they validate efficacy of peoples' statements, expressions and declarations. Most of the cultural traits / traditions are accepted as common-sense knowledge as long as they are justified by immediate evidence, which 'empirically' might be false. This is why people might also regard some beliefs as commonsensical, especially if they think they have a proven effect, for example, death due to breaking a norm (taboo). This category also contains some information laden with symbolic meaning, which can only be unravelled through interpretation. These are "explicit beliefs" that people use to rationalize events (for example deaths, accidents, illness, etc.) *after* they have happened (Young 1978: 100). This is why a belief may be "legitimated *not just* because it is certified as having come down to us from the ancients, but... [because they] have proved their worth down the ages as instruments of explanation, prediction and control" (Horton 1993: 329). People might accept tacit beliefs because they see them as time-tested and efficacious. This does not mean that they can be scientifically and empirically proved.

When empirical / rational knowledge is deficient in explaining phenomena, people resort to beliefs such as magic, witchcraft, prayer, divination, palm reading, etc. Empirical knowledge is therefore connected to beliefs (Young 1978), though the latter is closed, non-falsifiable and circular (Horton 1967, 1993). At times, a new piece of knowledge that has just been validated may challenge the existing body of knowledge, which could either lead to it being strengthened, that is "epistemological deepening" of knowledge (Young 1978:100), or revolutionized (Kuhn 1962) through a radical transformation leading to increased productivity and efficacy.

As discussed above, local knowledge thus encompasses both analytical and synthetic (practical) knowledge, and links both the tacit and explicit aspect of beliefs to the common-sense domain of explanation, often through evocation of personal or impersonal forces (i.e. witchcraft or magic). Local knowledge often evokes both meta-empirical and empirical forces, underlying principles of agency and demonstrable causal relations.

Methodologically, it is only through a cultural interpretative approach that a researcher can translate (i.e. make meaning out of) and understand forms of local knowledge (especially meta-empirical manifestations) that construct, express, and give meaning to the local experience of illness (Kleinman 1986a, b; Good 1994). As health systems have broadened beyond local medical knowledge, technologies, and practices, the study inclusively views local system of medical knowledge and practices as encompassing available biomedical technologies and resources and local concepts of biomedical aetiology. In addition, diverse practitioners such as healers, herbalists, local birth attendants, medical doctors, nurses, nurse assistants, village drug sellers, village injectors, and pharmacists form the local medical system. In most societies, people are rapidly appropriating the biomedical paradigms of disease causation, categories, and pharmacopoeia into their explanatory models and therapies¹¹. The same is expected of the Turkana, and more so when the focus of study is a pandemic infection. A good example of this is the appropriation of the 'virus theory' of AIDS causation into the local repertoire.

The ecosystem approach will explore forms of knowledge that represent the crucial mediating variables of the ecosystem and the experience of HIV-1/AIDS as well as the prevalence of other background infections, such as other STDs and tuberculosis. Generally, local knowledge reflects continuous interaction among factors of the ecosystem and the human population. This study uses local knowledge as an entry point into the Turkana's perceptions of factors of the ecosystem and their general effect on the health and prevalence of infections, and the specific influence on the contraction and transmission of HIV-1. Though the centrepiece of my study is local knowledge, it diverges from other anthropological studies that have been largely concerned with the rubric of 'beliefs' (theoretical knowledge) relating to magic, religion, witchcraft, ancestral spirits, affliction, and healing (Gillies 1976; Bibeau 1980; Yoder 1980; Young 1980, 1986; Green 1999)¹². As a result, the studies of local medical knowledge and techniques, and theories of illness causation have ignored common sense and empirical pathogenic explanations,

¹¹ A good example is provided by Hutchinson's (1996) brief discussion of change of disease aetiologies and causation theories among the Nuer.

¹² See for example studies by Field (1937), Turner (1967), Evans-Pritchard (1967), and Pool (1994a, b).

and the predominance of naturalistic and physiologicistic aetiology (Green 1999)¹³. They therefore give prominence to personalistic¹⁴ and /or super-naturalistic (meta-empirical) explanations of illness causation rather than empirical illness explanations¹⁵.

In this research, the knowledge of causation theories concerning HIV-1/AIDS and other infections is considered to be fluid and contradictory, and broadly classed into 'externalising' (meta-empirical) and 'internalising' (empirical) modes¹⁶. Past studies from pastoral communities, however, show that causation theories are largely physiologicistic and naturalistic, and even though they acknowledge the presence of sorcerers and witches, they rarely make witchcraft accusations. If they do, it is due to fear of, and incursions by, their neighbours (Gulliver 1955; Baxter 1970; Buxton 1973; Ohta 1984; Arhem 1989; Hurskainen 1989; Olsson 1989; Johnsen 1996; Barret 1998; see also Heinz 1975 for hunters and gatherers). I have nevertheless tread the path of Turkana local knowledge with an open mind, appreciating the fact that causation explanations are contradictory and circular, and that people's ideologies are not necessarily congruent with their practical behaviour (see also Bibeau 1980).

2:4 The aims of the research project

HIV-1/AIDS pandemic, like other infections plaguing sub-Saharan Africa, is a multifaceted problem with many levels of causation, from individual behaviour to social and economic situations. Sweat and Denison (1995) identify four levels of causation in HIV incidence: individual, environmental, structural, and super-structural. While super-structural factors include macro-social and macro-political arrangements, physical and resource

¹³ See also studies by Gillies (1976), Ngumbane (1977), Janzen (1978a), Warren (1979, 1982), Bibeau (1980), Yoder (1980, 1982), Young (1986), Feierman (1981), Bibeau (1980), Davis-Roberts (1981), Nyamweya (1987), Swantz (1990), Johnsen (1996), and Green (1999).

¹⁴ Illness and disease causation theories revolve around witchcraft, magic, spirits, wizardry, and sorcery.

¹⁵ Green (1999) has authoritatively argued for the recognition of and concentration by researchers on the naturalistic indigenous causation theories, especially in contagious diseases. That is, what he calls "indigenous contagious theories" rather than undue focus on witchcraft. Green suggests that most serious infectious disease and illness (such as sexually transmitted infections, cholera, malaria, etc.) are diagnosed within the locus of impersonalistic and naturalistic aetiology.

¹⁶ These terms are adapted from Young (1986). Though his classification concerns medical systems, I find the distinction useful in dealing with illness aetiology in Africa and other parts of the world. I consider externalising (meta-empirical external causative agency i.e. human or anthropomorphosised e.g. witchcraft, spirits) explanation of illness causation to emanate from outside the body, and internalising (internal agency) to be naturalistic and physiologicistic, based on empirical symptomatology and changes in the environment. For a similar line of argument, see Bibeau (1980).

characteristics and other elements such as economic underdevelopment, sexism, refugee crises, and civil wars, structural factors include laws and development policies. Environmental factors encompass living conditions, resources, social pressures, forced relocations, migration in pursuit of employment, and urbanisation. The individual level factors relate to how the environment is experienced and acted upon by individuals and may include, amongst others, isolation, ignorance, occupation, lack or availability of personal resources, boredom, age, gender, marital status, and perception of risk. This study aims to address the above factors in relation to Lodwar township using the ecosystem approach. Caddock (1996) has specifically decried the lack of studies and attention on some of the ecosystem factors that inform the behavioural options among men and women in sub-Saharan Africa. Such a lack not only limits the research questions but also guides the failed response to HIV-1/AIDS in sub-Saharan Africa. However, while this study will examine the cultural context of HIV-1/AIDS in Turkana, it will also endeavour to situate it within the context of the fundamental root causes.

The present study supports previous studies that have shown that public health and biomedical health approaches have very limited efficacy due to ecosystem factors that surround the transmission and contraction of HIV-1 and other infectious diseases. By determining the local knowledge of HIV-1/AIDS and responses to the epidemic, the study will show how ecosystem factors not only influence the social production of HIV-1/AIDS but also constrain the responses or more specifically, the public health approaches aimed at prevention. The ecosystems approach framework (*Diagram 2*) will also allow me to scrutinise the historically derived, and politically, economically, and globally structured determinants of HIV-1/AIDS in Turkana. The study will demonstrate that HIV-1/AIDS is "a biologic expression of inextricably connected social experience" (Zierler and Krieger 1997: 425).

Some of the concerns addressed in this project are the following:

1. To determine which ecosystem factors influence the contraction and transmission of HIV-1/AIDS, other sexually transmitted infections, and tuberculosis among Turkana of Lodwar township.

My assumption is that social conditions incorporate themselves in the body to render the body vulnerable to infections. For instance, the thinness of the prepubescent vaginal mucosal lining among young girls leads to higher risk of HIV infection, especially when they have sex with *older men for economic reasons*. In addition, vaginal tract inflammations and reduced immunity due to insult to the immune system by many infectious diseases leads to a higher risk of HIV infection. These risks are multi-factoral as they are linked to gender, poverty, and biology within the large-scale forces that ultimately drive the pandemic. The biology of the Turkana interacts with ecosystem factors to produce a compromised "body" that is susceptible to infections in a "high risk ecosystem". My aim, therefore, is to determine how human biologies interact with ecosystem factors to influence the contraction and transmission of HIV-1 and the progression of AIDS in Turkana.

My other assumption is that social, historical, economic, and political factors influence the development of poor health and disease. In the same way that soci-economic relations affect behaviour and social inequalities pattern the occurrence of HIV-1/AIDS. In addition, socio-economic dependence of women on men increases the risk to HIV-1/AIDS. My aim is, therefore, to determine how ecosystem factors determine the risk for both men and women to HIV-1 contraction. In Kenya, nearly 50 percent of AIDS cases are acquired out of the district of origin (Government of Kenya 1994a). AIDS also diffuses from urban to rural areas. In view of this, this study attempts to determine the role of migration of non-Turkana into Turkana, and of the Turkana into other districts on the prevalence of AIDS. Will nomadism influence the spatial distribution of HIV-1/AIDS? Connected to migration, this study will determine how the increase in the number of business activities, businessmen, employment opportunities, as well as the establishment of many international and local non-governmental organisations and United Nations bodies, and the creation of refugee camps in Turkana influence the prevalence of HIV-1/AIDS. Loytonen's (1991) analysis of HIV-1/AIDS in Finland notes that those employed in the Finance sector have a higher incidence of infection. In Kenya most of the people who have HIV-1/AIDS have incomes 30 percent higher than the national average (Ouma 1996). Most of those that are either employed in the finance and business sectors or engage in business activities have higher incomes than the average Kenyan (Ouma 1996). It follows that those with higher incomes are more likely to engage in sexual relationships that predispose them

to contract HIV-1. For instance, these people frequent social and entertainment clubs, and have surplus income to spend on either commercial sex workers or multiple partners. In Turkana, those employed by NGOs and UN bodies are remunerated with large amounts of money, followed by those employed by the government, the biggest employer. Most of the business owners and the salaried are non-Turkana who live in a sea of poverty-stricken Turkana. What is the impact of a high cash inflow for the immigrant non-Turkana population and a few Turkana males living among a vulnerable poor population who are mostly female?

Behavioural norms and practices, including those related to sex, are guided by culture. My aim is to find out how individual Turkana behaviours are guided by cultural norms. Are there behavioural norms and cultural practices that put the Turkana population at risk of contracting HIV-1? Can cultural practices and behavioural norms like polygamy, wife inheritance, widow remarriage, premarital sex, and curative practices, and notions of illness aetiology facilitate HIV-1 transmission and contraction? What factors would motivate the Turkana to change the behaviours that put them at risk for HIV-1, and other STIs?

So far, statistics demonstrate that AIDS cases are concentrated in towns, most of which lie along the most famous and important highways, such as Mombasa, Nairobi, Naivasha, Gilgil, Molo, Nakuru, Kisumu, Busia, etc (Government of Kenya 1994b). Most of these towns are located along the Trans-Africa Highway from Mombasa to Lagos, Nigeria. Numerous other major and minor roads in Kenya connect to, or exit from these roads to other towns and trading centres. These roads are used by long distance truck drivers and other long-distance traders who consider it a normal practice to have either casual sex with commercial sex workers or semi-permanent lovers in the towns (or truck stops) along the highway or other roads. HIV-1 contracted from these centres and town diffuses into the rural areas. My main concern in the current project is the role that the Kitale (Kenya) - Juba (Sudan) highway plays in the spread of HIV-1 in Turkana. The main urban centres in Turkana have emerged along this road. An additional question concerns the role of emerging towns in the spread of HIV-1. These towns are mostly located along the highway and have high population densities that are composed mainly of the poor Turkana, and have resulted in increased social networks.

In addition, I aim to determine and explore the nexus between pastoral modes of production and vulnerability to HIV-1 and AIDS. As over 70 percent of the Turkana population rely on pastoral production, it is pertinent to explore whether there are features of the same that influence the vulnerability and / or resilience to HIV-1 and AIDS.

2. To determine the gender-related factors that influences the contraction and transmission of HIV-1/AIDS.

Though gender is one of the ecosystem factors mentioned in the first objective, I have given it prominence due to its vital role in the prevalence of HIV-1 and other sexually transmitted diseases. In addition, the methodological approach adopted here is sensitive to issues of social and gender equity. As relations between men and women affect health especially when mediated by sexual and physical violence (rape, forced sexual liaisons, poverty induced commercial sex work and refugee women), they determine the risk to HIV-1 infection. My aim is to discover how gender inequalities affect the transmission and contraction of HIV-1 among women as well as among men. What are the consequences of women's struggles against deepening poverty, violence, and famine in their endeavour to survive in Turkana? Are there specific factors that determine the vulnerability of either men or women to the risk of contracting and/or transmitting HIV-1 infection?

3. To determine the local knowledge and social epidemiology of: 1) HIV-1/AIDS (and other sexually transmitted infections); and 2) tuberculosis. Furthermore, the study explores the nexus between HIV-1/AIDS and other sexually transmitted infections on one hand and with tuberculosis on the other.

This broad perspective is taken because data show that sexually transmitted infections are prevalent in urban Turkana, and empirical studies show that a background infection of sexually transmitted disease contributes to the efficient transmission and contraction of HIV-1. In addition, tuberculosis is not only prevalent in resource-poor settings like Lodwar township, but is also one of the virulent opportunistic infections related to HIV-1/AIDS. In sub-Saharan Africa, over 60 percent of HIV positive children and over 70 percent of HIV positive adults are dually infected with TB (Elliot *et al.* 1992; Luo *et al.* 1994). In addition, local knowledge and discourse indicate that HIV-1/AIDS is inextricably linked to TB.

To address this objective, informants with on-going illnesses of tuberculosis and sexually transmitted diseases, including HIV/AIDS, were interviewed. In addition, data were gathered on the aetiology, symptoms, attitudes, modes of treatment and other types of responses, and practices of the people directly related to their transmission, contraction, and prevention.

4. To determine the responses of the government, local and international non-governmental organisations, and Church Missions to HIV-1/AIDS in Lodwar township and the Turkana District as a whole.

Like other districts in Kenya, it is expected that there are government structures in place as laid out in various HIV/AIDS policies with regard to responding to HIV-1/AIDS. In addition, since most healthcare facilities in the Turkana District are operated by Church Missions, followed by National and International Non-governmental Organisations, it is important to determine their level of responding to the HIV-1/AIDS epidemic.

5. To determine the effective methods of HIV-1 prevention among the urban settled Turkana and other semi-nomadic communities, and factors that might hinder prevention of HIV-1 among the Turkana populations¹⁷ in Lodwar township.

After determining Turkana vulnerability to HIV-1, the study aims to further establish how this has influenced and / or might influence response to the epidemic. In relation to this, I aim to discuss the multi-sectoral responding that might be effective in combating HIV-1/AIDS in resource-poor settings like Lodwar township.

6. To determine the viability and efficacy of administering antiretroviral therapy in Turkana.

During this research project in 2002, both national and international HIV/AIDS activists were actively debating the relevance of highly active antiretroviral therapy (HAART) in the mitigation of AIDS in poor countries. This information, though anecdotal, mainly reached the Turkana District through the mass media and the NGOs. Since AIDS drugs were

¹⁷ Analytically, and even from a public health point of view, it is hard to separate the urban Turkana from non-Turkana as they interact both socially, behaviourally, and economically. In fact, my discussion will show that non-Turkana play a great role in the spread of HIV-1, and other sexually transmitted diseases in Turkana.

already incorporated into the local discourse on the 'cure' for HIV-1/AIDS, it is important that this project does not lose sight of discussing the viability and efficacy of responding to HIV-1/AIDS in Turkana District using HAART.

2:5 The significance of the study

This study aims to make a contribution to the understanding of the peculiarity of HIV/AIDS, not only amongst a Nomadic and semi-nomadic community, but also in resource-poor sub-Saharan Africa. By using an ecosystem approach, the study would contribute to a broader understanding and response to HIV-1/AIDS. In the same vein, a local understanding and knowledge of an epidemic would be brought to the fore.

It will complement other studies that have demonstrated how ecological / environmental diversity, weather, and seasonal changes not only influence the occurrence and spread of infections, but also the way they are perceived by the affected communities. Other studies have shown how the interplay among ecology / environment, culture (i.e. magic and religious devices, cosmetic and mutilation practices), housing conditions, personal hygiene, density of populations, unhygienic waste disposal, and food habits influence the health status and the prevalence and distribution of morbidity in local communities¹⁸. More generally, few studies in Africa have looked at local knowledge and ideologies concerning specific illnesses or how cultural ideology influences what are perceived as the underlying causative agents of illness¹⁹. In particular, local knowledge of HIV/AIDS and other sexually transmitted infections has not been thoroughly explored for nomadic and semi-nomadic communities, an aim that the present project pursued.

This study will make a contribution to the data already unearthed by some studies that have indicated the importance of incorporating political and socio-economic factors into the study of illness and disease, but at the same time recognising the "particular, the existential and subjective content of illness, suffering and healing as lived events and experiences" (Scheper-Hughes and Lock 1985-86:137) within the critical interpretative

¹⁸ Studies relevant to these questions include: Hughes 1963; Scholfield *et al.* 1963a, b.; Dubos 1965; Dunn 1968, 1985; Alland 1970; Hesser 1982; Nations 1986; Caldwell *et al.* 1989; Brown and Inhorn 1990; Bierlich 1995; Opala and Boillot 1996.

¹⁹ However, see Janzen 1978a; Taylor 1988; Pool 1994a,b; Bierlich 1995; Opala and Boillot 1996; Green 1999.

paradigm. Such a paradigm recognises poverty, oppression, and marginality as factors that influence the incidence of illness and disease; and the perception and representation of illness, health, and disease. For instance, Scheper-Hughes (1985; 1992) identified hunger, exploitation, and poverty, that is, political economy, as significant factors that influence the perceptions of child health, and high infant and child mortality in Brazil. Farmer (1992, 1997) also combined historical, socio-economic and clinical epidemiological factors to explain the incidence of HIV/AIDS and tuberculosis in Haiti. In the same vein, Packard (1989b), in a significant study, has shown how the social epidemiology of tuberculosis among black South African mining workers is related to working conditions and mining policies. Such studies demonstrate that most diseases and illnesses are *social* in their origins; that is, their genesis and prevalence is influenced by poverty and underdevelopment, socio-cultural, economic, historical, and political conditions.

On the other hand, a few studies²⁰ from Africa have delved into some of these issues, some revealing the deleterious consequences of development projects, policies, and industries to human health in relation to the incidence of malaria, sexually transmitted infections, tuberculosis, and other infections. This study will contribute to this emerging broader understanding of infections and poor health in sub-Saharan Africa.

Currently, a few systematic studies on HIV-1/AIDS (e.g. May 2003; May and McCabe 2004) have been carried out in pastoral communities. In this regard, this study promises to provide invaluable knowledge of HIV-1/AIDS among a pastoralist community. The data will aid in the conceptualisation of the susceptibility and the impact of HIV/AIDS on the community and the possible impact of the same on pastoral production, which has been lacking due to a dearth of research. In addition, there is lack of research into the impact of the unique characteristics of pastoral production like nomadism, migration, arid and semi-arid-environment / ecology, climate (e.g. drought) cattle rustling (/ banditry), close proximity to cattle, and sedentarisation on the contraction and transmission of HIV-1 and the development of AIDS.

²⁰ Read Livingstone 1958; Hughes and Hunter 1970; Scudder 1973; Kjekshus 1977; Kloos *et al.* 1977, 1983; Hugh and Gilles 1978; Janzen 1978a, b; Fenwark *et al.* 1981; White 1982; Kloos 1983; Gruenbaum *et al.* 1983; Turshen 1984; Packard and Brown 1987; Packard and Brown 1987; Anderson and Marks 1989; Packard 1989a, b; Schoepf 1998).

2:6 The limitations of the study

Every study of this magnitude and theoretical scope has its limitations and I cannot claim to answer all the questions regarding HIV-1/AIDS among the Turkana. Since a multi-factorial approach to the causal web of HIV-1 and AIDS as presented in *Diagram 2* presents a methodological challenge to any social epidemiologist, as the study demonstrates, I have been biased towards answering 'why', rather than 'how', HIV-1 and AIDS is prevalent in Lodwar township, Turkana District.

This study has not been helpful in showing the distribution of the factors of the ecosystem within the Turkana population, and their *specific* contribution to the prevalence of HIV-1/AIDS. However, the framework has generally demonstrated how the prevalence and distribution of HIV-1 and the progression to AIDS is influenced by many of the indicated factors of the ecosystem.

There is reduced statistical power in this study as the data presented are incomplete, as adequate data could not be obtained. The data are therefore an underestimation of the prevalence of HIV-1 and AIDS in Turkana. We do not, therefore, know the distribution of infection in Turkana and how the specific factors of the ecosystem influence patterns of distribution. The data were obtained from a self-selecting sample²¹, and therefore do not constitute a representative epidemiological data set. This means that the measurement of causal analysis is lacking due to the paucity of statistical data. The hospital and clinic-based data have been used to estimate levels of STD and HIV-1 infections among the general population even though there are very high levels of self-treatment using either over-the-counter generic drugs, the sharing of drugs amongst the infected, or traditional medicines.

2:7 The research design and methodology

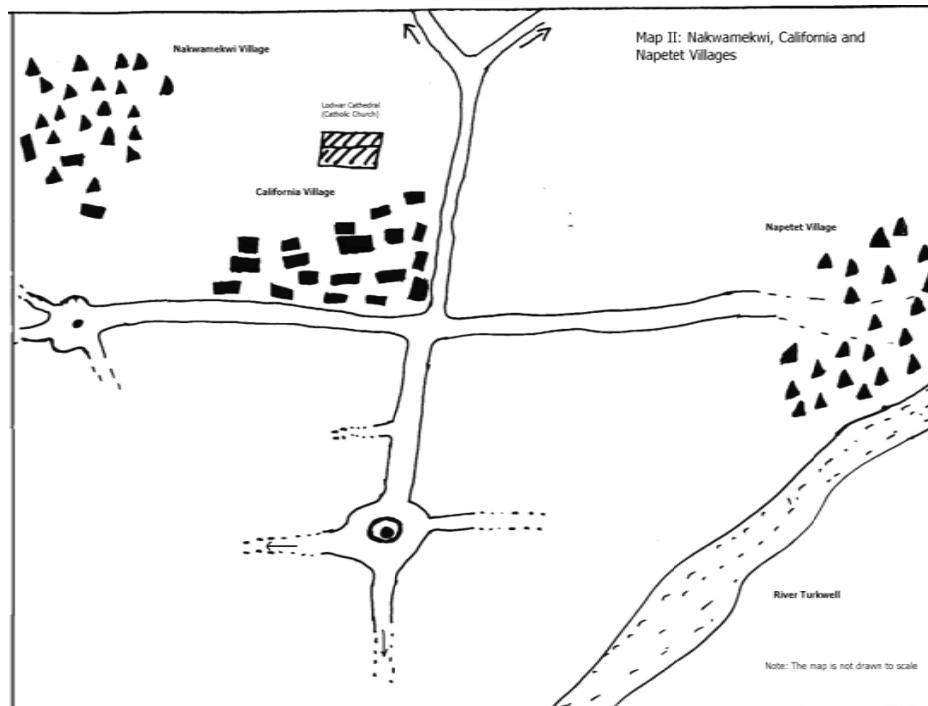
Our interest here is two fold: to look at the research design; the research methodology; and the research ethics. Under the topic of research design, we shall look at issues such as the rationale for choosing the research location, the sample frame, the timetable for the

²¹ Prevalence data are often obtained through anonymous testing of the blood of women attending antenatal clinics. In addition, chronically ill patients like those suffering from TB are often tested as well.

research, logistics / personnel, and protocol. The concern under research methodology is largely about the strategy for collecting data or the necessary information for analysis. As is expected under research ethics, I have outlined how relevant bodies approved the project, and the way informed consent and confidentiality guided my relationship with the informants.

2:7:1 The research design

The research was carried out in Lodwar township, the Central Division of Turkana District. The study sample is representative of the whole of Lodwar township. However, the initial household survey covered 100 households, ten each from ten villages in the Kanamkemer Sub-Location, which is part of Lodwar township.



The Sub-Location was chosen because it was more representative of the township. More data on specific topics was collected from respondents drawn from the Kanamkemer sub-location, Napetet village, Nakwamekwi village, the town centre incorporating California market, and Lodwar District Hospital. Additional information was collected through the Lodwar Catholic Diocese's Mobile Health Clinic and AMREF's Mobile Health project in Lokichoggio and Lokangae.

The research took place over duration of twelve months, between December 2000 and December 2001. The first three months were used for the exploratory study, the survey, mapping / census of households and research locations, introducing myself to the local administration and inhabitants, and setting up general logistics. The next nine months were spent in data collection.

I hired five bilingual research assistants. The research assistants included three men and two women who had various degrees of experience in different types of research. The research assistants were duly trained in the methods of data collection and recording. My working knowledge of Swahili was highly valuable as a significant section of the Lodwar township population could speak the language.

On arrival in the Turkana District, I identified the community leaders, government administrators, and politicians in order to explain to them the objectives of my study and the purpose of my stay in Lodwar township. I explained to the informants, the Turkana local leaders, the administrative officers, and the civil servants that this project would attempt to understand local knowledge of health and HIV, and that the aim of the research would be useful to governmental and non-Governmental agencies in the design of effective health care policies and projects, and in the control of HIV/AIDS epidemics. To be accepted by the Turkana, I convinced one of the influential community leaders to adopt me into his household. Being taken into one of the Turkana households allowed me to reach other households, and in the long run, I was accepted by the Turkana community. The hiring of five Turkana research assistants from the community enhanced my smooth entry into the community.

The project was introduced to the Turkana through a census survey. A basic baseline survey of 100 households was carried out through a fully-structured and closed questionnaires aimed at recording information on the following variables: age; sex; occupation of the adult members; level of education; number and type of livestock; number of wives; number of children; number of dead children, if any; sources of water; toilet facilities; labour migration; frequent illnesses experienced; illnesses experienced in the past month; sources of health services and frequency of use of health services; and

immunisation status of children. Results from this survey influenced the design of subsequent questionnaires and realigned my research focus, aims, and objectives.

The main data were collected through semi-structured and fully-structured interviews consisting of both open-ended or closed questionnaires and tape recording of all the conversations during open-ended unstructured interviews, both informal and formal conversations, and focus group discussions. The one hundred randomly sampled informants were from the Kanamkemer, Nakwamekwi, California and Napet villages.

2:7:2 The research methodology

The main research strategy employed was participant observation. This was carried out in conjunction with a census survey, structured, semi-structured and unstructured interviews, focus group discussions, and in-depth interviews. The research methods used were as follows:

1] I conducted unobtrusive participant observation, which allowed me to gain entry into the Turkana social network. At the same time, I was cautious not to disrupt the normal life in the homes and camps by my joining and living in near households. Through direct observation, I was able to collect data on: on-going illness; what people do when they are sick; therapy resort; and practices related to hygiene and food preparation.

2] I formed *focus groups* for discussions on health, HIV/AIDS, and tuberculosis as follows: i) community health committee members in Kanamkemer, California and Lokangae (a nomadic population); ii) Turkana nursing students at the Medical Training College; iii) indigenous birth attendants from Kanamkemer; and iv) primary and secondary school students. The composition of the focus groups was gender sensitive, having an equal number of men and women. Focus group sessions yielded invaluable insights that not only complemented other research methods, but also enabled me to unearth some of the information that I was not able to obtain via normal interviewing and participant observation. It also brought forth the nuances and contradictions in the Turkana's understanding of various issues mentioned above. In addition, it allowed me to probe issues related to my research objectives in more detail, and later triangulate the results with other data from other research methods to enhance the validity of my findings.

3] Interviewing using research protocols such as structured interviews and open-ended and closed questionnaires were conducted among the informants for local knowledge of: health, tuberculosis, sexually transmitted infections, HIV-1/AIDS, and the link between HIV/AIDS and tuberculosis. The questionnaires were administered to a section of the urban population / community. Healers, and local men and women of various ages were interviewed. In most cases, an equal number of men and women were interviewed. In addition, primary and secondary schools pupils and students respectively were interviewed on their knowledge of HIV-1/AIDS.

4] Questionnaire interviews were conducted among: patients with tuberculosis in TB Manyatta and TB Isolation Wards of the Lodwar District Hospital; those who had been previously infected with a sexually transmitted disease in Napetet Village; and those presenting with a sexually transmitted infection at the Sexually Transmitted Disease Clinic at the Lodwar District Hospital.

5] In-depth interviews were carried out with: co-infected patients with TB and HIV-1; however, they were not aware of their serostatus. In addition, in-depth interviews were carried out with the District Commissioner, the District Public Health Officer, the Turkana District AIDS and STIs Control Programme (DASCOP) Coordinator (also doubles as the head of the Sexually Transmitted Disease Clinic), the clinical officer in charge of the tuberculosis clinic, the Lodwar Catholic Diocese's Head of Primary Healthcare, nurses working at the TB Manyatta and isolation wards, clinical officers working at TB isolation wards, the Divisional Public Health Officer, the District Health Education Officer, the head of World Vision, and the assistant chief, and the chief of Lodwar township. The Director of the Mama Mzungu Foundation, a charity involved in feeding in-patients in the Lodwar District Hospital's TB isolation wards and TB Manyatta, was interviewed. Informal discussions were also carried out with the local population, other health care workers, and immigrant workers from other parts of Kenya.

6] Statistics were collected from the Lodwar District Hospital's records, Kakuma Mission Hospital and the Lopidding Health Centre of the AMREF. Statistics were collected on tuberculosis, HIV/AIDS, other sexually transmitted diseases, and other morbidity types. In addition, I requested that private clinics in Lodwar town record their statistics on patients

presenting with sexually transmitted diseases. This was done from January 2001 to April 2001.

7] Secondary data were gathered from various government departments, non-governmental organisations, and international bodies dealing with HIV-1/AIDS. I conducted a review of the literature, newspapers, and archival research data both in Turkana District's archive and the Kenya National Archive in Nairobi to gain information on both Turkana history and culture. A number of library researches were carried out among Non-Governmental Organisations like AMREF's and *Medicins Sans Frontiers'* reports and publications.

2:7:3 Research ethics

The research project was approved by the Proposal Defence Committee and the Research Ethics Committee of the Department of Anthropology, McGill University. The Ministry of Education, Science and Technology of the Government of Kenya issued a research permit.

On arrival in Turkana, I disclosed the research aims and methods to various leaders in Lodwar township. I also explained how I intended to use the research results. Research assistants were duly trained on research techniques and issues concerning ethics. Each one of them signed a confidentiality clause forbidding them from disclosing any information that pertained to the research.

In my project, the informants are considered to be participants, not *subjects*. Their participation was based on informed choice and on a voluntary basis. I have maintained the anonymity and confidentiality of informants and households. In data analyses, pseudonyms have been used. In my report and subsequent writing, I have strived to maintain the Turkana's dignity and worth, while stressing their diversity.

The research outcome in the form of copies of a dissertation, papers, and books will be deposited with the Kenyan Government (Office of the President), the Institute of African Studies, University of Nairobi, and the Turkana District Library.

The Role of Factors of the Ecosystem in the Transmission of HIV and the 'Cause' of AIDS

3:1 Introduction

Having examined the ecosystem²² factors that are mainly historical, political and socio-cultural, and economic, we shall now examine the role of these factors in the 'cause' of AIDS and the transmission of HIV. Using the available research reports and literature, this chapter forms a critique of the studies that have ignored the relevance of the array of factors of the ecosystem in the prevalence of HIV/AIDS in sub-Saharan Africa.

HIV/AIDS is pandemic, a global sexually transmitted infection. Nevertheless, cumulatively its impact has so far had an ominous bias towards sub-Saharan Africa. Both biomedical and social science researchers in the field of HIV/AIDS have been trying to unravel why this infection has such a ferocious affinity to Africans. Some earlier researchers in the field of the then newly emerging and mainly sexually transmitted infection, HIV/AIDS, attempted to discover the determinants of the African epidemic by focusing primarily on sexuality and other behavioural patterns and norms. Their focus, which in a way influenced their findings, drew parallels to the earlier studies in Africa concerning tuberculosis and other sexually transmitted diseases. The theories developed at that time concerning STDs and tuberculosis were commingled with racial stereotypes as 'risk' was simply equated with 'race' or being African (Hunt 1988; Packard and Epstein 1991; Setel 1999). These behavioural theories, however, heightened the preoccupation with African sexuality and sexual patterns. The spread of syphilis was therefore explained on the basis of the "extreme sexuality of Africans" (Packard and Epstein 1991: 773). In parallel, it was argued as early as 1995 that heterosexual transmission of HIV in Africa was the result of higher levels of sexual promiscuity among Africans or in the current language of social science research on AIDS, "poly-partner sexual activities" (ibid 773) or, as one

²² These factors encompass history, economy, biophysical environment, politics, socio-cultural factors, human biology, etc.

researcher has termed it, the “sexual irresponsibility” of men (Aud Talle 1995: 28). Since HIV/AIDS has been associated with African sexuality, it is the nature, manner, and practices surrounding African sexuality that is considered to be at the centre of the HIV/AIDS pandemic. This is why Larson (1990:16), despite acknowledging that other socio-cultural and economic factors play a role in rapid HIV transmission in Africa, points out that it is still “indisputable that features of African social (and cultural) life encourage multiple sexual partners and frequent partner change that make Africans especially vulnerable to a deadly sexually transmitted disease”.

Other explanations of why HIV/AIDS epidemiological patterns in Africa are unique have, in addition, focused on culturally-determined norms and practices such as polygamy, crytopolyandry²³, scarification, indigenous therapies, circumcision, (non-circumcision), patrilineal and patrilocal lineage patterns, and matrilineal and matrilocal lineage patterns. Cadwell and Cadwell have endeavoured to identify the cultural practices that put Africans at risk of contracting HIV/AIDS. In one of their claims, they have stated that sexuality outside marriage is not effectively opposed in most African cultures (Cadwell and Cadwell 1987). The implication is that this leads to free-for-all, multi-partner sexual relations, even among married sections of the populations. In fact, the anthropologists that have ventured into AIDS research, mostly as consultants to international non-governmental organisations, and at times in the company of biomedical scientist, were often given the mandate to untangle the cultural practices and behavioural norms that were risk factors in the propagation of HIV virus. Anthropological ethnographic research is normally seen as having the necessary tools to unravel the socio-cultural practices, and the norms and behavioural patterns that facilitate the spread of HIV, and if possible, provide solutions to how they could be contained, if not moderated. From the beginning of the epidemic, HIV/AIDS was reconstructed as both a behavioural and a cultural problem. When a radical transformation of behaviour fails, it is rigid African sexual norms and cultural practices that are blamed. In effect, the “question became not what is the social context within which HIV transmission occurs in Africa, but rather what are the patterns of behaviour that are placing Africans at risk of infection. While the first construction would have allowed for open-ended

²³ Setel (1999:54) has used this term to describe the nature of sexual unions involving women who marry many men semi-permanently with or without the knowledge of other men. This normally happens at truck drivers’ stop routes (trading centres) where in fact such men pass for a rest.

discussion of a wide range of social, political and economic conditions that may be affecting health levels in Africa, the latter formulation quickly narrowed discussion to an inquiry into the customs of the natives. At the same time, it placed responsibility for transmission on the actors themselves in a not too subtle form of victim blaming (Packard and Epstein 1990: 774-775)".

However, more recent research focusing on poverty, migration, violence, gender vulnerability, and political factors has undermined the dominant view that the African sexual culture is responsible for the epidemic. Such an approach that focused on the 'unique' sexual patterns or cultural and behavioural norms *per se*, ignored the social, historical, and political factors that distinguish African populations from those of the West. The 'unique' African and socio-cultural practices and norms, however, do not exist in a vacuum. Following explanations based on the African sexuality, cultural practices, and norms and behaviours, it is not surprising that intervention to check the spread of HIV/AIDS in Africa has focused on numerous attempts to change the sexual behaviour of the African and culturally sanctioned practices that allegedly put the Africans at risk of HIV infections. The predominant thinking in AIDS-related organisations, including UN bodies, international donor agencies and charities, and individual programmes, and the reports from the Western press, is that unless there is a fundamental change in sexual behaviour, there will be no drastic change in the evolution of the epidemic in sub-Saharan Africa²⁴. This is because, as one of the researchers has noted, it is the social context of the various forms of sexual relations found in sub-Saharan Africa that has implications for the dynamics, the constraints on behavioural change, and the effects of such change (Larson 1990: 17). As the above author has stated, it is not only the African culture in its originality that is considered a risk, but also, paradoxically, its transformation. In fact in the colonial period, public health officers often argued that changes in cultural norms, especially in the emerging urban centres, was leading to engagement in extramarital affairs and to growth in venereal disease epidemics. In Uganda in the 1930s, physicians, missionaries, and other officers of the colony blamed the high rates of syphilis on the breakdown of socio-cultural norms governing female sexuality (Vaughan 1991: 130). Colonial health officers in

²⁴ Shillinger, K. 1999. A Continent's Crisis: AIDS and the African' *The Boston Globe*, October, 10, 1999 [online]. Available from: www.boston.com/globe/nation/packages/aids_african/part1.htm. Accessed on: October, 15, 1999.

the Turkana District blamed Turkana who were displaced to administrative centres for spreading sexually transmitted diseases both among the colonial officers and the indigenous populations. In the same vein, migrants to mining locations in South Africa were regarded as disease vectors (Packard 1989a,b). In connection with mobility and migration, urbanisation has often been blamed for not only eroding African sexual morality, but also for leading to the enlargement of sexual networks available to male migrants. Reflecting popular discourse in the West, as one journalist has put it, sub-Saharan Africa “faces a crisis of shattered mores, where sexuality is no longer guided by traditional norms. In an environment where old rules have clashed with, or been eclipsed by, rapid change, African men are killing themselves – and their women and children with sex”²⁵. In fact, this is a Catch 22 situation: not only are African socio-cultural practices, and norms and sexual behaviour patterns in their original forms at the centre of the HIV/AIDS epidemic, but their modification, in addition, exacerbates the risk.

Most of the issues mentioned above are significant for the social epidemiology of HIV/AIDS, and are equally important to its subsequent mitigation. In addition, researchers have also found that HIV/AIDS in Africa is mainly heterosexually spread and that the high presence of sexually transmitted diseases exacerbates effective transmission of the virus. Some studies that have focused on African sexuality have also found that commercial sex workers and the entertainment of multiplicity of sexual partners play a role in the transmission of HIV. Others have indicated that a breakdown in some of the stringent traditional norms governing sexual relations in African socio-cultural settings have eased the way in which people engage in poly-partner relationships even if they are married, both in urban and rural settings²⁶.

The authors who have criticised the biomedical (and or public health) approach to HIV/AIDS and the focus on African sexuality do not deny that HIV/AIDS is heterosexually

²⁵ Shillinger, K. 1999. A Continent's Crisis: AIDS and the African' *The Boston Globe*, October, 10, 1999 [online]. Available from: www.boston.com/globe/nation/packages/aids_african/part1.htm. Accessed on: October, 15, 1999.

²⁶ The breakdown and change in social and cultural practices and norms governing African sexuality, i.e., when to have sex, and whom one can or cannot have sexual relations with, has been entirely pinned on the intrusion of Western cultures and values that encourage sexual promiscuity (enjoyment of sex as distinct from reproduction) or sexual liberation through films and pornographic literature. If in fact researchers and commentators (especially the Western press) blame promiscuous African sexuality, they should know that, on the other hand, Africans hold the same Western culture to be responsible for the promotion of that alleged promiscuity.

transmitted, and that a multiplicity of sexual partners exacerbates the risk of contracting and transmitting HIV. However, they posit that “explanations which viewed this pattern as either a cultural phenomenon or as a product of declining social constraints ignored the context within which urbanisation [and socio-economic change] is occurring in Africa” (Packard and Epstein 1990:776). Most researchers have not attempted to unravel the mysteries surrounding male-dominated urban migration and the factors that influence migration. Why is it that Africans continue to migrate to over-populated, slum-dominated, and unemployment prone urban centres? What are the underlying socio-economic, historical, and political structures sustaining the ‘pull’ or ‘push’ to urban centres? And more generally, why is it that AIDS in sub-Saharan Africa is epidemiologically and clinically distinct from AIDS in European or North American setting? In addition, when these studies focus on African sexual promiscuity and other socio-cultural practices and behavioural norms, they have succeeded in directing attention away from other co-factors, which may be as important for the heterosexual transmission of AIDS in Africa as the number of sexual contacts, thus blaming the most vulnerable (Packard and Epstein 1990; Farmer 1992).

This thesis brings a broad perspective to the study of the social epidemiology of HIV/AIDS, and to the mitigation programs aimed at checking the transmission of HIV virus. What are the co-factors that ultimately underlie the cause of HIV transmission in sub-Saharan Africa? To answer this question, we must retrace the present socio-economic and political environment of sub-Saharan African countries from the colonial period. This will be followed by a systematic discussion and review of the literature on the factors of the ecosystem that “cause” HIV/AIDS while endeavouring to advance a broad perspective on the epidemic. I argue for the utilisation of conceptual tools that are both historically, politically, and socio-economically deep, and geographically broad to analyse both the origins and the spread of HIV infection in sub-Saharan Africa. In this section, I will review the literature to which the conceptual framework used in this thesis owes credit, under the following headings: (i) the colonial politics and economy as a cause of the HIV/AIDS epidemic; (ii) HIV/AIDS as a ‘disease’ of development; (iii) HIV/AIDS as a ‘disease’ of poverty; (iv) gender and HIV/AIDS; (v) mobility, migration and HIV/AIDS; (vi) poverty actuated commercial sex work as a ‘cause’ of the rapid transmission of HIV infections; (vii)

military conflict, ethnic strife, and refugee crises; (viii) the role of background infections, sexually transmitted infections, and protein-calorie-malnutrition in the transmission and the development of AIDS; and (ix) iatrogenic transmission of infections: the role of medical interventions in the rapid transmission of HIV.

3:2 Colonial politics and economy as ‘causes’ of the HIV/AIDS epidemic

Some of the co-factors in the transmission of HIV in sub-Saharan Africa have their roots in the colonial political economy. The expansion and subsequent scramble and partition of Africa were largely driven by greed for economic wealth, which was later efficiently repatriated to the mother countries. The colonial economy was mainly based on mining and agriculture, and later agriculture-based industries. Like Kenya, the colonial economy relied on African cheap and unskilled labour. In most instances, Africans were forced to provide the required labour through force. To make it seem less like slavery, poll taxes and land alienation that forced Africans to look for wage labour in order to pay taxes and buy food were introduced. This resulted in the mass migration of African men into the European plantations (which in Kenya were referred to as the white highlands), industrial centres, and emerging towns. In the Kenyan case, the colonial administration maintained distinct ‘reserves’ for the Africans under the pretext of preserving their cultural roots. In major towns, like Nairobi, African populations were segregated in squalid quarters far removed from the White and Asian²⁷ neighbourhoods. In the extreme case, like in South Africa, the apartheid system maintained a pronounced separation between the Boers (Afrikaans) and the Africans. In most cases, men were therefore required to travel back and forth from the villages or reserves to work in the cash crop farms, mines, and industries. Men often moved to the cities without their families because the accommodations in the reserves or African quarters were not large enough for their families. In fact, in most cases, African quarters consisted of hostel-like accommodation

²⁷ The Asians, who had (and still have) significant population in Kenya, were second in the racial ladder.

such as those in the case of the South African mines, or the bed-sits²⁸ in Kenya. Lack of adequate housing, and in some cases colonial policy, necessitated that wives were left at home, and socially and psychologically their living quarters developed into male dominated worlds. In some instances, women were also left at home to maintain a presence in the village farm so that the husbands would not be circumvented in land inheritance. This meant that men would be separated for up to a year from their wives. There were, in addition, instances where colonial officers (clerks, DCs, DOs, army personnel, police officers) were specifically instructed not to travel with their spouses to stations of duty²⁹. As a consequence, for instance, this left the local Turkana women at their mercy for sexual gratification. Often Turkana women were lured into administrative centres as an easy way of getting social services such as cash and *posho* (maize/corn flour). Some of these populations had been previously uprooted by famine. Their sexual liaisons with colonial employees led to the unprecedented spread of sexually transmitted diseases among the local populations in and around emerging settlements and administrative centres, and even further into the general population. During the Second World War, while the colonial soldiers on the Kenyan side raped many Turkana women and girls, those loyal to Ethiopian government even abducted some.

The disruption and replacement of the traditional agricultural life with cash crop farming not only displaced men but also women. In Kilimanjaro, single women and children were socially dislocated and moved to urban centres to work in the coffee factories (Setel 1999). In Turkana, the colonial District Commissioners documented the presence of children in the emerging administrative centres where colonial officers employed most of them as domestic servants. The colonial officers blamed the migrant women and children for settling in administrative centres yet they did not recognise that they contributed to their

²⁸ In fact, most servant quarters in Kenya, which were built during the colonial time, are bed-sits. The postcolonial government has often maintained this phenomenon by still building one-roomed roundavals for police, prison, and army officers.

²⁹ This was mostly the case in the marginalized frontier districts of the Kenyan colony. Specifically, this was a documented case in Turkana District, where the colonial employees, including the District Commissioner and the District Officers who were White, were instructed that their wives could not accompany them while on duty. In addition, there were many soldiers (both foreign and non-Turkana Africans) and tribal police (indigenous Turkana) were stationed in the district without their spouses. It is unimaginable that even now, women workers in flower farms in Kenya are still being subjected to these heinous rules that their spouses enjoy only limited visiting rights in hostels, and are often arrested for trespassing if they overstay (Njue, L. 2002. 'Women tell of rape in farms' *East African Standard*, March 9, 2002 [online]. Available from: www.eastandard.net/news. Accessed on: March 10, 2002.

social dislocation through their frequent punitive raids against the Turkana and their herds. Generally, the few women who migrated to urban centres lacked job opportunities as male migrants dominated the job market to the extent that they occupied positions such as cooks, domestic servants, and cleaners. Most women, despite fulfilling the biological sexual needs of the male migrants (both married and unmarried), resorted to such jobs as petty trading as food sellers in makeshift kiosks, alcohol brewers, or to the most lucrative 'trade' by becoming full-time or part-time commercial sex workers. As well, women sometimes engaged in sex for favours like accommodation, alcohol, male companionship or just for biological sexual needs. As the female population increased and the network of casual multi-partner sexual relations widened to encompass most colonial outposts, railway stations, and smaller towns, this created a fertile environment for syphilis to spread (Dawson 1988). Commercial sex workers, soldiers, and colonial employees who lived in colonial towns (administrative centres) became important sources of the disease in rural Kenya. Migrants efficiently transmitted the acquired 'new' infections to their spouses at home. The circular patterns of migration and economic relations not only influence(d) the epidemiology of sexually transmitted diseases, but also other infectious communicable diseases and infections. African medical history researcher, Dawson (1992), has clearly demonstrated how the smallpox epidemiology was influenced by population dynamics in the 1900s in Kenya. He points out that in the pre-colonial period, the prevalence of smallpox was low due to limited travel and inter-population contact amongst communities and sparsely located populations. However, in the twentieth century, during the colonial period, conscription into the armies, labour migration, and long distance (mostly inter-ethnic) trade, increased the growth of market gatherings. Circular migration to and from urban centres created a fertile environment for the rapid and devastating spread of the disease. In addition, the increase in populations in urban centres often led (and leads) to poor living conditions, especially poor sanitation, and personal and environmental hygiene, which often leads to the prevalence of such illness as malnutrition, tuberculosis, and diseases associated with poverty (Packard 1989b; Setel 1999).

Drawing parallels between Europe during the industrialisation period and Africa, Leslie Doyal (1979: 114) has pointed out that "whatever the miseries of industrialisation in Britain, it was usually possible for workers to keep their families together, but this has not been the

case in the third world countries". Presently in Sub-Saharan Africa, as it was during the colonial period, male workers continue to migrate from far places, entailing prolonged family separations, which always result in serious physical and psychological consequences. Lack of employment, affordable housing, and decent wages force men to leave their spouses at home or postpone marriage. In Kenya, most police quarters are still tinny single-roomed roundabouts. Civil strife, wars, economic stagnation, increases in educational and training opportunities, and structural adjustment policies of the last twenty years have heightened the 'push' and 'pull' of both male and female populations towards urban centres. This migration now passes trans-country boundaries. For example, Nairobi city in Kenya currently has a significant population of Ugandans, Congolese, and even Nigerians, most of whom are illegal immigrants. It was therefore unanticipated that this pre-colonial and post-colonial pattern of migration and its accompanying disintegration and dislocation of the economic and social foundations of communal life would lead to the dislocation of traditional marital and sexual patterns. "In this context, the growth of prostitution represented one form of adaptation to the intolerable strains by men and women alike. In the case of male migrants, the absence of their wives was compounded by the fact that their new environment was almost exclusively masculine. This unequal sex ratio made it difficult for men to establish stable sexual liaisons with women, and encouraged prostitution. For the women involved, prostitution was usually a matter of sheer economic necessity.....The structure of colonial economy made it virtually impossible for women to sell their labour so most were compelled to live off low wages of male workers. Often this involves either formal or informal prostitution" (Doyal 1979: 116).

White colonial settler farmers introduced most of the cash crops grown in sub-Saharan Africa. The colonialists alienated land both prior to the establishment and after the institution of the colonial state. Quite often, the indigenous populations were forcibly pushed out of their traditional lands to pave way for large-scale cash cropping by the white settlers. In Kenya, these processes caused mass displacement in alienated areas, and especially among the Kikuyu of Central Kenya. This situation gave rise to a mass of people without land rights- the squatters. In addition, other indigenous populations who were members of mostly semi-nomadic communities were forced to vacate their grazing grounds, which were later referred to as the 'white highlands' as the white settlers later

predominantly owned them. These marginal lands, especially in the Rift Valley, were further subjected to overpopulation as the squatters displaced by the colonists from the fertile highlands moved to the Rift Valley to either sell their labour in the fertile regions alienated by the settler farmers, or to marginal arid and semi-arid regions to farm. Some of the displaced populations moved to the then emerging Nairobi City³⁰ to live on the fringes of the towns to sell their cheap labour to industries. In the rural areas, the push for cash crop farming marginalized the local food production from the fertile lands. After independence, the postcolonial Kenyan government put in place a program of acquisition of the White highlands through the establishment of several settlement schemes and purchase programs. These lands were to be dominated by the African middle class, further alienating the poor squatters. The postcolonial government abandoned the subdivision of land, the pinnacle of the fight for independence, as they were convinced that consolidating property rights in land would intensify agricultural production on which the economy depended. Therefore, after independence the consolidated land was simply transferred to a few indigenous Kenyans. In addition, the problem of squatters intensified, partly due to population increases. This has led to the formidable land crisis in Kenya whereby these farms still remain consolidated in the hands of a few indigenous, rich farmers. The imposition of English property law, and its acclamation of title and private property rights, has also heightened land alienation through subdivisions and titling of former common property regimes. This has led to further marginalisation of the poor communities who have been pushed to arid and semi-arid regions not suitable for either food farming or rearing of livestock. As it occurred among the Chagga in Tanzania, the introduction of coffee plantations led to a land crisis through a squeeze in family holdings (Setel 1999). Those who were pushed out of agricultural land in Kilimanjaro and pulled into Moshi towns are reported to have been living in poor overcrowded conditions and polluted environments. Often, they were involved in public drunkenness and prostitution (Setel 1999). In such social ecosystem, can we blame African sexuality and cultural practices, norms, and behaviour for the rapid transmission of HIV? The rural populations in sub Saharan-Africa

³⁰ Currently, slum dwellers and squatters comprise the majority of Nairobi's nearly 3 million people as nearly 60 percent of the Nairobi urban population reside in over 1000 slums and squatter communities found on the fringes and within the city. Often these are characterized by high population density, and poor environmental and personal hygiene conditions.

are just as vulnerable as the urban migrants. The coffee and tea plantations' designated lands cannot be subdivided because of their alleged value to the economy in terms of earning foreign exchange. This means that the fertile lands have been diverted from staple food production. This has created overpopulation³¹ in most of the arable regions, and has pushed local populations into marginal arid and semiarid lands, which are unsuitable for local food production.

Why have I discussed the history of health and disease in sub Saharan Africa? I have done so for the following reasons: Firstly, there is parallel to be drawn between the origins of these diseases and that of HIV/AIDS. The political and economic structures that were introduced by the colonial government have continued, in even more virulent forms and structures, resulting in dependent development and a debt crisis. Secondly, the response to these diseases by the colonial government mirrors the way HIV/AIDS has been responded to today. As in the colonial period, the response was through victim blaming, segregation, and stereotyping of the African cultures and behaviour, and poor hygiene, rather than focusing on the social and economic living environment in which they were caged. It was the structure of the colonial economy, introduced by the colonial government that was responsible for the rise not only of sexually transmitted infections, but also other infectious diseases.

To expound on the first point, it is important to state that the trends that originated in the postcolonial era have continued, and population movement and urbanisation have remained important dynamics in the social and clinical epidemiology of HIV/AIDS in sub-Saharan Africa (Dawsons 1988; Hunt 1988; Larson 1990; Packard and Epstein 1990; Good 1991; Schoepf 1991; Setel 1999). The same historical forces that shaped the sexually transmitted disease pattern in twentieth century Africa are very vital in the understanding of the social epidemiology of HIV/AIDS today (Dawson 1998, Hunt 1988). For instance, we find that in sub-Saharan Africa, male-dominated labour migration patterns and increased urbanisation often in the form of slums has mainly followed the social-economic structures laid out by the colonial economy. Though many females have migrated to balance the sex ratio, we still find that males are slightly more than females.

³¹ Population increase, land titling, subdivisions and the general squeeze in the value of land and output have occasioned this overpopulation over land.

For example, in 1971 a survey of employed workers in Nairobi found out that 57 percent of employed males were without spouses in the city. When looked at more closely, 6.7 percent of men had wives both in Nairobi and their rural homes, while 45.9 percent of the men had wives outside of Nairobi and only 34 percent had wives living in Nairobi (Dawson 1988). Similarly data from the 1980 census indicated that urban ratios were above 120 in Burundi, Kenya and Rwanda and over 110 in Malawi, Mozambique, Sudan and Zimbabwe (Larson 1990). This means that many urban males seek to fulfil their biological sexual needs through relations with non-married women in the city estates. Is it by coincidence that migration was strongest in these countries and they are also countries that have, or appear to be on the verge of a serious AIDS epidemic?

Social dislocation and urbanisation intensified in the 1980s, luring both women and men into the urban centres. This is vividly captured by Setel (1999:73) in his description of the Kilimanjaro in Tanzania:

...Throughout this century, there were many men for whom this increased pressure [migration to urban centres] proved irresistible. They were the ones for whom, in the first decade of the epidemic; AIDS was such a deadly paradox. The men were pushed off the mountain by land scarcity and economic stagnation and pulled to the town and the market by desires both modest and magnificent, their journey of dislocation from the Kihamba [household land holding] became emblematic of the moral demography of Kilimanjaro. Over the years the cultural logic that had long linked sexuality to ordered social reproduction in fixed locations on the mountain had to be stretched to accommodate the shifts in domesticity of those who could not be physically provided for on the mountain. The strains from this process began to show most clearly when men began to return home to die from AIDS, their devastated bodies the portentous signs of dislocated and disordered desire.

Suddenly a visit from a long-absent spouse raised the spectre of infection with HIV, and the moral demography of Kilimanjaro quickly became a moral epidemiology of infective manhood against a background of vulnerable, pliant woman".

For many people in sub-Saharan Africa engulfed in colonialism (and/or neo-colonialism), imperialism, ethnic and civil wars, and world economic recessions, HIV/AIDS is one of a

major series of disasters (Collins and Rau, n.d; Rugalema 1999). For many, HIV/AIDS can be related to other previous problems, or as just one more problem on top of many other equally significant problems needing urgent solutions. Many communities in sub-Saharan Africa are overwhelmed by many socio-economic issues and infectious illnesses. Therefore, it is normally not the case that people are preoccupied with HIV/AIDS. In Turkana, malnourished populations reeling under the impact of drought and famine were the least interested in my talks about HIV/AIDS and tuberculosis. They had more immediate problems than an imaginary illness that is perceived to belong to the urban populations of Kenya. In addition, the local population could develop a nexus between the problem of HIV/AIDS and other previous problems. The Tanzanian villagers, as Rugalema (1999:69) points out:

“did not think of AIDS as something terribly new rather they saw it in the wider context of other crisis predating it. During and for a few years after World War II, the study area was struck by famine (*eifa*) partly due to drought and partly due to rationing imposed by the British colonial government in Tanganyika.... Most households had to dispose of their assets, and the most common asset disposed of was corrugated-iron roofing sheets.... The 1944-1947 famine was thus named *eifa iya ikambula mabati* (“the famine in which iron sheets were removed from the houses.....

In the early 1970's, drought led to widespread food shortages (*ejala*) in the area particularly in 1973-1974. This was a generalised hunger throughout Tanzania and the situation was made worse by the world oil price shock.... A few years later there was *olushengo iwa Amin* (Amin's war), that is the 1978-79 war between Uganda and Tanzania. Although the village is about 72 kilometres from the border it not only received some of the displaced people from the border villages but it suffered the economic disruption wrought by the war. Much of the period from 1970 has been characterised by poor national economic performance and consequently the decline of the coffee crop in the area. The economic downturn has continued with only brief hiatuses in some years.

In the village AIDS is viewed in the context of all these problems”.

If the local populations can make such neat and important contextualised connections among HIV/AIDS and other historical, political and economic problems, why do most HIV/AIDS researchers and interventionist continue to perpetuate a narrow focus?

The destruction of the traditional economy, and the subsequent introduction of western goods that can only be purchased using 'money', not only increased the African populations' 'desire' for them, but also created a class division into those who can and cannot afford them. The money for purchase of these goods can only be earned either through trade or employment. For the rural populations, the declining viability of small-scale farming and declining commodity prices, higher inflation rates, and increased dependence on diets based on industrially produced commodities purchased from shops, has forced most of rural households to rely on the few salaried household members. Yet unemployment is always high. Moreover, salaries paid to labour migrants are too low and cannot even sustain them in the urban settings where the majority live in overpopulated slums. For men, this means that they cannot afford better housing or travel home regularly. Instead, it is economical for them to stay in the town for a year, and send the little money they have home, rather than travel home every month. Since men must be separated for long periods from their wives due to these economic structures, their sexual patterns have also undergone modifications. The women, who cannot afford bare necessities for existence resort to earning extra income through sexual exchange. This is a result of the Western capitalist system of materialism, which has objectified sexuality and turned it into an exchangeable commodity that can be sold in the market or exchanged for desired material goods. The structure of economic development in sub-Saharan Africa has led to the "creation of a class of semi-proletarianized men and women" that labour in urban and industrial environments, but ironically cannot afford to sustain their families in urban settings hence continued separation from households (Packard and Epstein 1990: 776). This separation, combined with the Western system of capitalism and patterns of development adopted by the postcolonial governments structured along colonial policies, has fostered the outgrowth of "multiple sexual partners". This situation sometimes involved women working as full or part-time prostitutes in urban industrial settings when other forms of employment were unavailable, or men taking on second 'wives' near their place of employment, or women left alone at home for long periods of time taking on

'lovers'" (Packard and Epstein 1990: 776). In fact, the economic hardships occasioned by the world economic recession in the late 1970s and 1980s, the subsequent structural adjustment programs, and the reduction in donor funding after the fall of the Soviet Union has placed added "strains on geographically and economically stretched households" (Setel 1999: 74) and in addition, has increased the vulnerability of many African populations and the dislocation of many.

The unique epidemiology of HIV/AIDS in Africa lies in the "political economy of African sexuality" (Packard and Epstein 1990: 776), which can be traced to the historical, political, economic and social environment in which biological cause, the HIV, acts.

When viewed this way, it is obvious that the main historical fact of African [socio-economic and political]...reality is the position of dependency, which those nations found themselves in with respect to the core capitalist centres. It is this relation of dependency particularly as it affects African health, African labour market organization, and rural agricultural development...that has largely determined the pattern of the disease in Africa (Hunt 1988:12).

The biological cause operated within the social, economic, and historical milieu. It is these factors that have led venereal disease to become a major health problem in many parts of the Third World where they were previously absent (Doyal 1979). When HIV/AIDS found its way into the African population, it found a vulnerable population that was already suffering from an unusually high level of sexually transmitted diseases, malnutrition, an avalanche of infectious diseases, perennial civil wars, and general poverty. It is the inadequacy of development policies that has generally created the conditions in which the HIV epidemics has thrived and which also constrains effective responses to its (HIV/AIDS) deepening socio-economic impact. The differential virulent patterns of the HIV/AIDS epidemic in the world has, in effect, laid bare the depth of global inequities.

3:3 HIV/AIDS as a 'disease' of development

'Development', which is normally assumed to bring positive change to the recipients' economic and living conditions in most cases, has some negative outcomes. Besides characteristically not alleviating the poverty of the local population in a sustainable way,

'development' at times leads to the development and production of new infections. These have been referred to as 'diseases of development' (Hughes and Hunter 1970). Hughes and Hunter, in their seminal paper, argued that colonial "development" often led to the spread of infections; in most cases they altered the ecology, disrupted social relations and lifestyles, and resulted in enormous health problems. In their article, "Disease and Development in Tropical Africa", they suggest that what is supposed to be a positive improvement in the social conditions of living, is often maldevelopment. There are numerous cases in which even the supposedly successful multi-billion development projects have worsened the health of the local populations, apart from, in some cases, resulting in the production of tangible benefits for the country (e.g., hydro-electric power stations).

In Kenya, the Sondu-Miriu Hydropower Project, funded by a credit from the Japanese government at a cost of Kshs 12 billion, was seen as a project that would produce 60 megawatts daily into the national grid to fill the perennial and often severe shortfall in electric power³². However, the project has led to the displacement of the local community (85 families), the attraction of immigrant workers and the creation of a suitable habitat for disease vectors. By creating economic opportunities, constructing small towns, and allowing the flow of cash into the economy in an area that was economically stagnant, the project has also attracted hordes of unemployed Kenyans and business people from both near and far, and created, as a by-product, a breeding ground for HIV and other sexually transmitted infections and infectious diseases. It is just a matter of time before the project will become foci of the HIV epidemic in Nyanza Province. The situation is even exacerbated by the fact that the nearby Nyando is a sugar belt and therefore also attracts migrant labourers who do not travel with their wives. Its creation as a context for the spread of HIV/AIDS and other sexually transmitted infections resembles the case of the Volta River Dam in Ghana. Built to generate a huge amount of electric power for use in processing bauxite into aluminium for export, construction of the dam in the 1960s necessitated that some 8,500 square kilometres be cleared for the dam's reservoir (Decosas 1996). This displaced thousands of farmers, many of them women. While some men took up fishing, others migrated down river for jobs on the construction site. But many

³² The Big Issue, 2001. 'Troubled Sondu-Miriu' *East African Standard*, June 18, 2001.

women farmers ended up as service workers in the hotels and bars built to cater to the construction workers. A generation later, the fatherless daughters of the migrant construction workers who built the huge dam had little choice but to follow their mothers into the occupations of working as barmaids, commercial sex workers, and in housekeeping and waitressing jobs. In the mid-1990s, HIV prevalence in the area surrounding the dam was found to be five to ten times higher than in the rest of Ghana. In addition, many commercial sex workers migrated from the area to urban areas such as Accra and Kumasi, creating a chain for the spread of HIV.

Gabriel Rugalema, in his study of several commercial agro-estates in Kenya, graphically describes the “physical, social and economic” living conditions that he argues contribute to the susceptibility of workers who come to the estates (Rugalema 1999: 29). He stresses that the living quarters are crowded and lack privacy. “As for those who are unmarried or have left their spouses in a rural area, sharing an accommodation is fairly common. A worker sharing a room with two or three others is unable to invite a sexual partner in the house and goes outside the camp for sexual gratification” (Rugalema 1999: 30). Workers who were interviewed told Rugalema that the lack of room to accommodate families was a reason they left their families behind. They also said that taking care of family land is also a factor that makes it necessary for the family to split up, with the wife tending the family farm. Separation of spouses (fragmented families) was mentioned as one of the factors that drive agro-estate migrant workers from various parts of Kenya into casual sex (Rugalema 1999: 31). A similar study carried out in sugar cane plantation communities in the Dominican Republic found that these communities, comprised mostly of female migrants, had higher rates of HIV infection among women than those estimated for the general population in the republic (Brewer *et al.* 1998). Rugalema (1999) also cites the lack of satisfactory recreational facilities (and even electricity that could be used for music or video) as contributing to widespread boredom. This vacuum in societal activities and commitments, and the lack of social control mechanisms leads to “very common” alcohol abuse, which was viewed by the workers interviewed as encouraging risky sexual behaviour, including both “casual sex” and visits to commercial sex workers.

Most social living conditions, whether altered or in their original states, produce illnesses or increase the vulnerability of a population to infections. As Schoepf (1991: 750) argues,

"a biological event (such as presence, introduction or evolution of a pathological agent) triggers disease which is amplified and given direction by the social forces set in motion by economic change". She provides several additional examples of the social production of diseases in Zaire. African men conscripted in 1981 to fight against the German armies on the eastern border of the Belgian Congo returned to the mines with influenza. As the epidemic raged, the mine labour camps were left emptied, as survivors, fleeing death, took the epidemic to their villages. In addition, Schoepf (1991) presents a case that relates to the production of schistosomiasis in the rural hinterland of Lumbumbashi, formally the site of a copper consortium that included Belgium, Britain, the US, and South Africa. In order to provide hydroelectric power for running the copper mines and smelters, a dam was built on the Lufira River. The gently sloping valley above the falls became a shallow catchments basin. The basin was ideal for reproducing snails that bore bilharzias, a parasitic infection that leads to severe pain and eventually causes death in humans. It is the local population, who were not benefiting from the proceeds from the mines that bore the brunt of the infection. Colonial officers monitored the spread of bilharzias over several decades. Schistosomiasis became endemic throughout the area and by the 1960s constituted a major health problem. The spread of schistosomiasis was attributed not only to labour migration that was assumed to have introduced the disease-causing parasites, but also to the inhabitants' "cultural practices" that spread the vector locally. This led Schoepf to comment:

"What were the cultural practices? People used the shallow lake as they formally had used the flowing river: to catch fish, swim, wash clothes, bathe, and the like. Not having been effectively warned, they urinated in the water or defecated along the shore. Without preventive measures (a vaccine or molluscicides) or a safe cure to offer, researchers blamed the people whose situations of everyday life placed them at risk in the new conditions created by colonial mining development and labour migration" (Schoepf 1991: 750).

There are causative co-factors in the emergence and virulent spread of diseases. These co-factors encompass ecological changes often necessitated by agricultural or economic development, human demographic changes, human behaviour, travel and commerce, technology and industry, microbial adaptation and change, and the breakdown of public

health resources (Morse 1995). Humans have played a major role in enhancing the pathogenicity of many infections (Farmer 1999). This is the anthropogenesis of disease and HIV/AIDS exemplifies the role of humans in the creation of a conducive social and economic environment for the transmission of the disease.

Besides colonialism and neo-imperialism, the oil and debt crises of the 1970s and 1980s' and structural adjustment programmes have in the postcolonial era, affected countries of sub-Saharan Africa (Collins and Bill n.d). These factors have severely exacerbated the already precarious living conditions of most people, making them more susceptible to sexually transmitted infections and exacerbating the impact of HIV/AIDS (Rau 1991; Setel 1999). Most of these factors are aggravated by the pattern of dependency development that exists in the poor countries. For instance, there is clear-cut interrelationship among the oil crisis of the 1970s, the debt crisis of the 1980s that followed the recession, and the structural adjustment programmes. This debt crisis, originally due to the effect of the oil crisis³³, resulted in an economic recession that gave the industrialised world, through their lending institutions by way of the IMF and the World Bank, permission to force a series of economic and social policy reforms, popularly christened the structural adjustment programmes (SAPs), down the throats of the debt-ridden, poor countries. Unfortunately, the policy changes enacted through SAPs focused on the reduction of domestic expenditure and cutbacks in core government-funded services (especially health and education), the reduction of public sector employees, privatisation of public corporations, and the further reorientation of economic development towards export oriented products (e.g., cash cropping) rather than domestic consumption. It was argued that by producing and earning more from exports, and subsequently consuming fewer imports, these poor and debt-ridden countries would theoretically have surplus resources that could be used to repay the World Bank credits. For instance, Kenya has over the previous years laid off numerous civil servants in civil service reforms as dictated by the World Bank. In addition, Kenya reduced expenditure on healthcare and introduced

³³ Due to a political crisis in the Middle East involving the Arab world and Israel, the umbrella of oil producing countries, the Organisation of Petroleum Exporting Countries (OPEC), in their response to the crises, slammed oil embargo in 1973, which led to the quadrupling of oil prices. As the resulting recession in the industrialised world led to a significant decrease in demand for developing countries' products, most of these countries faced steep increases in the prices of the imports, just as the prices and volume of their exports fell (Rau 1991; Collin and Rau, n.d).

prohibitive user-fees for low-quality healthcare infrastructure. These so-called economic reforms over the last decade have caused widespread social distress and rising unemployment rates. In addition, it has not only reduced access to essential social services, but also led to the deterioration of public services such as education and healthcare resources. The introduction of SAPs, instead of solving the debt crisis and the problems of poverty, exacerbated the debt problem. Moreover, countries of sub-Saharan Africa spend most of their surplus resources in servicing their ever-spiralling foreign debts³⁴. Kenya spends about US\$ 30 million annually servicing interest rates accruing from foreign loans³⁵.

Specifically, economic development in the name of SAPs have exacerbated poverty and the debt crisis in sub-Saharan countries, which in turn has increased the transmission of HIV and sustained the HIV/AIDS pandemic in numerous ways. The economic crisis and poverty engulfing the poor countries has intensified poverty, class, and gender inequality. Reliance on cash cropping has further undermined the rural economy, leading to nutritional deficiency, and increased labour migration and urbanisation. Though migration and urbanisation preceded structural adjustment programs, they have intensified through the emphasis on export-oriented growth, which has led to the undermining of the rural subsistence economy. For example, between 1980 and 1981, Thailand's World Bank's SAPS-related loans further impoverished rural areas and focused resources on the principal urban centres, encouraging millions of Thai men and women to migrate to the cities (Bello, Cunningham and Bill 1994).

Building on the debate regarding the impact of structural adjustment programmes initiated by UNICEF, some researchers have argued that structural adjustment-related policy changes in the 1980s, combined with previous and current economic hardships, foster(ed) situations promoting behaviours that could place greater numbers of people at

³⁴ For instance, while in 1979 there was a net flow of US\$ 40 billion from industrialised to developing countries, interest payments on existing loans soon outstripped new loans, and by the end of the 1980s US\$ 60 billion was being transferred from their developing world to the OECD countries annually (Kanji and Manji 1991). From the 1980s up to the present, poverty and unemployment have increased and income distribution has worsened in most countries in the developing world. In sub-Saharan Africa, per capita income fell by over one quarter. In 1995, almost one-third of the population of the developing countries was living below the World bank-defined poverty level (Colin and Rau, n.d).

³⁵ Mwaniki, M. 2001. 'Ongeri wants Kenya's debt written off to fight Aids' *Sunday Nation*, July 15, 2001 [online]. Available from: www.nationaudio.com/news/DailyNation/Today/News. Accessed on: July 5, 2001.

risk for HIV infection (Cornia, Jolly and Steward, 1987; Anonymous, 1990; Sanders and Sambo 1991; Larie, Hintzen and Lowe, 1995.) In fact, the prevalence of malnutrition and infectious diseases that have resulted from poor nutrition due to the reduction in local food production, as well as the total or partial breakdown of healthcare infrastructures and other vital services, has resulted in a population whose health is continually compromised (Hunt 1988).

More importantly, the forced reduction of healthcare and other social services spending has constrained the availability and accessibility of these services. Between 1980 and 1985, there was a 26 percent decline in spending on health, education, and other social services for low-income persons (UNDP 1990). In all low-income countries (excluding India and China), health spending dropped from 5.5 to 2.8 percent of (shrinking) national budgets over the same period. At the beginning of the 1990s, the average annual per capita expenditure on health by African governments was a mere US \$2 (Weeks 1992). In many countries of sub-Saharan Africa, governments have been forced to introduce cost sharing towards medical services that were previously free. These have, however, had negative consequences for the poor and in most cases have led to the reduction of the number of people that visit hospitals. For instance, in Kenya the visits to public STD clinics fell by 35-60 percent when a charge of US\$ 2.15 was introduced as dictated by the SAPs (Moses *et al.* 1992). Most people come to the hospitals when they are severely ill. Similar decreases in clinic utilisation in the wake of the introduction of, or increases in, user fees have been reported in Mozambique, Zaire, Ghana, and Zimbabwe (de Bethune, Alfani, and Lahaye 1989; Waddington and Enyimayew 1989; Logie 1993). In many countries, most notably in sub-Saharan Africa, nothing could have been more inappropriate than decreasing access to health services, given the already very high rates of untreated STDs (Grosskurth 1995) and non-specific bacterial and vaginal infections, now recognised to be a leading factor in the spread of HIV infection. Cutbacks in funding for public clinics reportedly also encouraged the re-use of disposable syringes, potentially contributing to HIV transmission (Mann 1986). In addition, due to the lack of fresh funds, the hospital facilities are always dilapidated, and there are chronic shortage of medical staff and low morale among the current staff due to low pay. Even in some parts of Kenya, like Turkana where the government provides free drugs through International Development Credit (IDA),

the general shortages of staff, the lack of facilities and the crumbling healthcare infrastructure has negatively impacted on such services. This has led to the erosion of the public's perception of the efficiency of such government-sponsored services.

Sub-Saharan Africa is full of surplus unskilled labour because of the shrinking economic base, stagnation in economic growth, the marginalisation of Africa's economy, and globalisation. Aided by exploitative labour laws in sub-Saharan African countries, most capitalists' employers and investors exploit these high unemployment rates to make astronomical returns on investment. The semi-skilled and unskilled employers are often subjected to poor working conditions, lack of pensions, temporary contracts, and most of all, slave wages. Women, however, apart from forming the bulk of the unskilled labour force, also suffer from sex arrangements and assaults by senior male colleagues. In most cases, for them to maintain their temporary positions, they must succumb to the sexual demands of supervisors. Women workers in flower farms in Naivasha and Ruiru in Kenya have recounted how they are daily subjected to sexual harassment and demands for sex, including rape³⁶. Even in the era of HIV/AIDS, women in similar situations suffer in silence for fear, not only of victimisation, but also the fear of losing their only source of livelihood. Most of these employers, after creating conducive environments for the spread of infectious diseases including sexually transmitted infections, do not care about the provision of social amenities like healthcare facilities and resources or even health insurance for their employees. When the workers become incapacitated or become ill due to HIV/AIDS, they are easily dismissed and replaced.

Some of the working environments influence the transmission and contraction of HIV. A study of agro-estates in Kenya with high levels of HIV prevalence found that workers are highly susceptible to the transmission of HIV because their social and economic environments in the estates are patterned by: housing estates characterised by poverty and overcrowding; lack of recreational facilities leading to boredom; and over-use of alcohol and drugs (Rugalema 1999). In addition, most agro-estates like those in the sugar belt region of the Nyando and Nandi Districts are populated by migrant labourers who did not travel with their wives but have relatively large sums of money, which encourages

³⁶ Njue, L. 2002. 'Women tell of rape in farms' *East African Standard*, March 9, 2002 [online]. Available from: www.eastandard.net/news. Accessed on: March 10, 2002.

casual and commercial sex. The same could be argued for the vulnerability experienced by men who work in the tea estates of Kericho and Nandi, and the fishermen along the beaches of Lake Victoria. It is no surprise that the Nyando District has the highest prevalence of HIV/AIDS in Nyanza Province, which in turn has the highest prevalence of HIV/AIDS in Kenya.

Is it a coincidence that HIV/AIDS is more prevalent in the developing world than the developed world? The global patterns of HIV/AIDS distribution mirror the level of development. After analysing the United Nations Development Programme (UNDP)'s Human Development Index (HDI)³⁷, Decosas (1996) found that countries with relatively higher HDI values were the same countries with very low HIV seroprevalence, while countries with lower HDI had higher rates of HIV seroprevalence. He went on to argue that the risks of countries or societies for experiencing serious AIDS epidemics are clearly not equal. The dramatic differences in HIV-1 seroprevalence between, for instance, many European and sub-Saharan Africa countries could never be explained by whatever differences there might be in sexual behaviour patterns. He points out that "the only way this difference can be explained is by invoking a number of powerful cofactors that facilitate the transmission of HIV" (Decosas 1996: 70). He considers these cofactors to be rooted in the "uneven or dysfunctional social development" (pg. 73). Perhaps the most palpable measure of the inequalities in power in the countryside in most developing countries has been the concentration of land and the productive resources from land in the hands of the minority. In fact the perpetual conflicts in the horn of Africa are due to fights over scarce resources. Through the creation of state boundaries and the alienation of land for cash cropping, the colonial regime created a mass of landless populations. However, the postcolonial governments in Africa have put little efforts toward altering land tenure inequities over the past two decades. In some cases, the situation is worsening³⁸.

³⁷ The HDI is a UNDP's composite index constructed from the following variable: life expectancy at birth, adult literacy rate, mean years of schooling, and adjusted measure of per capita economic production, to measure the relative status of a country's development.

³⁸ The current violence in Zimbabwe is about land alienation by the whites. However, it has taken the postcolonial government nearly two decades to come to terms with imbalances in land ownership occasioning violence, the destruction of property, and death. In Kenya, land is a hot political issue.

As certain socio-economic conditions in sub-Saharan Africa generated by national and international development policies have contributed to the HIV/AIDS epidemic, we should question what in so many countries and international arenas have been called 'development', as well as the means used to achieve it. Dr. Ronald Masika, a senior policymaker in Zambia who works on the HIV/AIDS problem, has captured the theme of this thesis when he pointed out that: "Is HIV a symptom of development gone wrong? If the answer is yes, then we need to tackle the diseases 'development,' as we deal with the symptoms 'HIV'" (Barnett and Whiteside, cited in Collins and Rau n.d). Unfortunately, we find that HIV/AIDS, though surpassing all past phenomena in its devastation, has not had the expected and required effects on the development debate.

3:4 HIV/AIDS as a 'disease' of poverty

Medical anthropologists and other researchers that have discussed HIV/AIDS in the context of the socio-economy have often acknowledged the role of poverty in the spread of HIV. Poverty cannot be considered as just another co-factor along side biological considerations, gender inequality, and cultural considerations as it is key to HIV/AIDS causation and transmission (Farmer 1996a,b,c; UNAIDS and PANOS 2001). Farmer (1996c: 53) notes that "all biological factors predisposing girls and women to increased risk of infection from chronic anaemia to genital mutilation and early first coitus – are aggravated by poverty", thus "*fundamentally social forces and processes come to be embodied as biological events*" (Farmer 1999: 14). Richard Wilkinson (1996), in his research on health in industrial countries, also concludes that inequality is pivotal in determining health outcomes. In *Unhealthy Societies: The Afflictions of Inequality*, he suggests that it is obvious that the scale of income differences in a society is one of the most powerful determinants of health standards in different countries.

Farmer (1999) argues that poverty, racism, and the cramped living conditions of the poor compromise cell-mediated immunity due to malnutrition, alcohol and drug addiction, and the numerous concurrent infections increase the likelihood that one will not only be infected by *Mycobacterium tuberculosis*, but die from it. Poverty constrains the mitigation to TB. Poverty is a pathogenic force. Many of the so-called 'tropical' disease predominantly afflict the poor. The groups at risk are often bounded more by socio-economic status than

by geography or latitude. This further demonstrates the importance of looking at the sociogenesis of disease rather than the pathogenesis. As Collins and Rau (nd: 9) asks: "if on a worldwide basis poverty constitutes the primary risk environment for HIV infection, should we not be asking what causes poverty?" Why should we be devoting most of our energy to public health approach to HIV and focusing on the individual risk? Why is it that if poverty is mentioned it is in the context of mitigating the consequences of HIV/AIDS rather than preventing HIV transmission through poverty alleviation? Or when donors and policy makers cite poverty, it is like fate accomplice, there is nothing that can be done about it". The donors and NGOs seem to be saying: it (poverty) cannot fit into the programs time table, it's left to poor governments to tackle, with us let us just concentrate on the individual, let's prevent the occurrence of new infections, let us reduce HIV sero-prevalence through individual behavioural change – education and condom promotion. Farmer (1999) faults such thinking, and much of the writing on HIV/AIDS for obscuring the ways in which poverty drives so much of the epidemic and instead focuses on "risk behaviours". They ignore socio-economic and political structures and power relations, which through myriad and often-subtle mechanisms constitute the primary risk environment for HIV/AIDS infections. For such terms like 'risk behaviours' and 'risk groups', unless carefully contextualised, also exaggerate individual agency, and leave unacknowledged and unexplained the ways in which large-scale social and economic factors structure risk for individuals and groups, particularly those who are systematically marginalized from power and from access to the goods, services, and opportunities which power ensures (Farmer 1999).

Krueger and his colleagues, in a study carried out in the US in 1990, found that there is nexus between poverty and HIV sero-positivity as the poor are more likely to be HIV infected than the rich. They pointed out that "since poverty spans the lines of age, ethnicity and sexual orientations, programs targeted specifically to the impoverished may be difficult to devise and implement" (Krueger, Wood, Diehr and Maxwell 1990: 813). This is more so as most of these programs are normally aimed at behavioural change and the provision of HAART, oblivious to the socio-economic, ethnic, and gender variables that make certain groups of people vulnerable to HIV infections, and even make the infected mass succumb to AIDS faster. Despite the global patterning, and the differential course of HIV into AIDS

and then death, to date, not a single factor has been convincingly shown to explain disparities in distribution or outcome of HIV diseases (Farmer 1999). Cohen (1998a) stresses that applied research on the socio-economic causes and consequences of the HIV/AIDS epidemic in sub-Saharan Africa are yet to be carried out. Typically, most researchers have focused on cultural differences and the nature of African sexuality (Packard and Epstein 1990). As Farmer points out, AIDS "follows the general rule that effects of certain types of social forces on health outcomes are less likely to be studied" (1999:51). Researchers, programme designers, and policy makers have ignored the idea that "the most well-demonstrated co-factors are social inequalities, which structure not only the contours of the AIDS pandemic but also the nature of outcomes once an individual is sick with complications of HIV infection" (Farmer 1999: 51-52). The prevention of HIV transmission and the management of AIDS and related illnesses through education and drugs, focus on the individual who has been prejudged to be either at risk or already infected. However, ignoring "critical contextualization will not reveal these deep transformations, nor will it connect them to disease emergency" (Farmer 1999: 53). Currently, there is much hullabaloo and preoccupation concerning the HAART and the assumption by activists that they would be cost-effective as well in the developing world where HIV is most endemic. But will these drugs, despite their enormous costs, change the prognosis for the vast majority of HIV/AIDS sufferers? The prognoses are instead determined by the social living conditions and by poverty. This is why the risk for an infectious disease like HIV/AIDS should be analysed in terms of not only poverty but also socio-economic inequality and the imbalance of power. Poverty and social conditions of living, which leads to the poor health status of both men and women, in part explains the more rapid progression from HIV infection to death for those who are HIV positive in Africa compared with rich countries. For instance, it has been pointed out that Namibia, despite being one of the relatively stable and rich countries in sub-Saharan Africa, continues to have one of the highest rates of HIV seroprevalence (38.80 percent) due to income and asset inequality that has created ideal conditions within which HIV is transmitted (Cohen 1998a,b,c).

While I do not deny that relatively rich people³⁹ in the developing and developed world are HIV-infected, generally the trends in HIV seroprevalence show that the most affected class is the economically disadvantaged and the powerless. In the developed world, the highest seroprevalence rates are found among the economically disadvantaged members of the community like immigrants, African-Americans, Hispanics, and other ethnic minorities, and many of the infected are women, injecting drug users, and the homeless⁴⁰. It is not surprising, therefore, that HIV/AIDS in the USA is growing most rapidly amongst the socially and economically excluded urban populations. However, while most people with HIV/AIDS are poor, "there are many of the non-poor who are also infected and affected (Cohen 1997:2)", but their exposure to HIV seems to be related to work and leisure patterns, and to high levels of labour mobility. In impoverished communities, the only means of survival involves strenuous manual labour, low job security, and little or no control over working conditions. Such work can lead to frustration and lack of personal satisfaction, which are released in escapist behaviour such as getting drunk, taking drugs or engaging in indiscriminate sexual intercourse (UNAIDS and PANOS 2001).

In Kenya, for instance, why do up to 18 teachers die daily from AIDS-related illness? Why are teachers the third highest infected job group in Namibia, after truckers and the military?⁴¹ Teachers have modest incomes and we cannot claim that they are poor or that the teaching profession puts them at risk. As well, they are not ignorant about HIV/AIDS. However, it is a fact that teachers are often posted outside their home areas, and due to limited resources they often leave their wives at home and only see them during the weekend or occasionally. They therefore engage in extramarital affairs with either school-girls or with women in small town centres that they normally reside in during term time. In fact, this is the situation with most government civil servants and private sector employees that cannot always afford to reside in their place of work – mostly in towns - with their spouses. Though we might at first say that these well informed individuals are not poverty

³⁹ This is a class of person that we think would not be influenced by poverty to expose themselves to HIV/AIDS. For example in Kenya, HIV infects even the relatively better off masses like teachers, military officers, and other professionals.

⁴⁰ In the developed world, these categories of people are always economically challenged.

⁴¹ Shillinger, K. 1999. A Continent's Crisis: AIDS and the African' *The Boston Globe*, October, 10, 1999 [online]. Available from: www.boston.com/globe/nation/packages/aids_african/part1.htm. Accessed on: October, 15, 1999.

constrained so as to be at risk of contracting HIV, however, they are economically constrained such that they cannot live with their spouses all the time. The government's labour policy and the patterns of recruitment and deployment of the labour force hence play a role in HIV prevalence. Even if the relatively rich are infected with HIV/AIDS, we cannot dismiss prematurely the role of poverty in their predicament. For if the commercial sex workers were not there, driven into the business of selling or exchanging sex for monetary or material gains due to the lack of economic opportunities, the rich would not have sex with them. It is the economic poverty and powerlessness of the girls that exposes them to infection, and quite often these girls or women do not have the power to choose when and how they should engage in sex with their lovers. What they want is money, as some of them have bills to pay, and children to cloth, feed, and educate. Inevitably, women left at home for periods of time (at times up to one year) by their migrant husbands will be tempted to engage in sexual transactions, sometimes for material gain or for gratification on an occasional basis⁴². On the other hand, their husbands may also engage in sexual relationships with town women.

The relationship among a confluence of social forces, inequality, poverty, gender, and HIV infection must be deeply analysed to tease out the subtle connections. In fact, sub-Saharan Africa is unique in the way HIV seroprevalence is predominantly a poor man's burden and predominantly infects more women than men. Based on the knowledge of income distribution and infection rates across countries in sub-Saharan Africa, the World Bank (1997) calculates that many more poor people are infected than non-poor people and posits that such would be the case, although with less striking magnitude, in other developing regions. However, the greater the inequality in wealth and power, the more stratified the society, the faster and further the virus spreads among both the rich and the poor. So while the rich are mobile and can afford lifestyles that put them at risk, the powerless and the poor are less able to make choices about their life conditions. The poor are also often forced to work away from home and family, or far worse, even forced into commercial sex work. The poor cannot only afford the cost of healthcare services, but their health and nutritional status is also low (Reid 1992)

⁴² Back in Kenya, I am aware of numerous men in my village who migrated to Nairobi for work often visiting home where their spouses are left once a year, especially during Christmas. In some cases, men marry two wives: the senior wife is left in the village while the second wife stays in the city.

The relationship between poverty and HIV is “bi-causal (Cohen 1998b)”. Poverty is a factor in HIV transmission and an exacerbating factor in the impact of HIV/AIDS. The experience of HIV/AIDS by individuals, households, and even communities that are poor can readily lead to an intensification of poverty and even push some non-poor into poverty. Thus HIV/AIDS can impoverish or further impoverish people in such a way as to intensify the epidemic itself. The bi-causal nature of HIV/AIDS and poverty is unique as “the epidemic is deepening poverty, reversing human development achievements, worsening gender inequalities, eroding the ability of governments to maintain essential services, reducing labour productivity and supply, and putting a brake on economic growth. These worsening conditions in turn make people and households even more at risk of, or vulnerable to, the epidemic. This circle must be broken to ensure a sustainable solution to the HIV/AIDS crisis” (Loewenson and Whiteside 2001: 1). HIV/AIDS has its origins in African poverty, and unless poverty is tackled, there will be little success in reducing the prevalence of HIV.

So far, any mention of poverty and development in relation to HIV/AIDS has been in connection with mitigating its consequences. HIV/AIDS is seen as a cause of poverty, adult and child mortality, the over stretching of health services, the collapsing education system, the reduction in economic growth, the threatening of food security, etc, but not as being caused by poverty in the first place. In fact, HIV/AIDS is seen as just a worsening of poverty. So instead of talking of mitigating poverty and the problems caused by HIV/AIDS, we should talk of eradicating poverty, social inequality, gender disparity (especially poor powerless women), structural violence, etc. If we try to eradicate poverty, we will also, in effect, be mitigating the poverty as a consequence of HIV/AIDS. Before one can mitigate a consequence of something, is it not logical that you try eradicating what is causing it? In fact, the UNDP⁴³, the global custodian of human development, only talks of mitigating the consequences of HIV/AIDS in relation to poverty reduction, but not of viewing poverty as the ultimate cause of an epidemic that has been shown to have an affinity to poor and powerless populations, especially in sub-Saharan African. The UNDP’s thinking reflects

⁴³ Loewenson and Whiteman (2001) prepared a background paper on *HIV/AIDS: Implications for Poverty Reduction* for the UNDP meant for the UN General Assembly Special Session on HIV/AIDS, 25-27 June 2001. The paper talks of poverty as a consequence of HIV/AIDS and proposes priorities for mitigation. However, it does not consider poverty and structural inequality as causes of HIV/AIDS.

that of the local, regional, and international community. In fact this is why efforts aimed at HIV/AIDS focuses on public health and biomedical approaches. The UNDP states:

The responses to HIV/AIDS so far has focused, rightly so, on the challenge of containing the epidemic and preventing new infections through advocacy, information and education campaigns, behaviour change communication, condom distribution, programmes targeting groups that are particularly vulnerable to infection and other key interventions. The other part of the response is focussing on treatment and care for people living with HIV/AIDS – efforts that are expected to intensify, as new treatment become more accessible and affordable. Both prevention and treatment are top priorities in not only saving lives and reducing human suffering, but also in limiting the future impact on human development and poverty reduction (Loewenson and Whiteside 2001: 2)

They continue to point out,

“However, despite intensifying efforts focussed on prevention and care, the epidemic continues to spread unabatedly, and as people infected by HIV become ill and die, its devastating impact is now being felt in the worst affected countries” (Loewenson and Whiteside 2001: 2).

The above statement invalidates the above public health approach.

Previous prevention efforts have failed because they did not tackle the underlying causes of the HIV/AIDS epidemic. Political, economic, and gender inequality, structured violence, and social conditions of living have deeply and geographically structured the risk for HIV/AIDS. Poverty not only dictates the exposure to risk, but also the mechanism through which people can limit the danger and fatal consequences of the infection. Loops of steel bind HIV/AIDS to the scourge of poverty. While in the developed world the vertical transmission of HIV is contained, in sub-Saharan Africa innocent children continue to be infected and die due to the epidemic. Poverty is also hindering the prevention of transmission of HIV through breast milk. Mothers cannot afford baby formula and clean, safe water. Poverty curtails the adoption of a form of prevention known to limit HIV transmission from mother to child through breastfeeding.

Conditions of poverty also relate to social and political exclusion. The lack of healthcare resources means that many STDs remain untreated and undiagnosed and these are signified co-factor in the transmission of HIV. With the introduction of user fees in hospitals by most countries in sub-Saharan Africa through the World Bank's SAPs most households are too poor to afford treatment. Even if it is free, like in the Turkana District in Kenya, political and social marginalisation and exclusion make the Turkana unreachable through treatment programs or even education aimed at behavioural change. In addition, the poor and famine stricken Turkana are more concerned with the here and now – filling their empty bellies. Talk about matters of sex is antithetical to their hunger and whatever is said is far fetched to them and falls on deaf ears. Normally, grinding poverty and hunger often make the possibility of dying from HIV/AIDS far less frightening than the immediate need for food or companionship. If we simply treat HIV/AIDS as a disease, rather than seeing it as an integral and important element in a social maelstrom of people, then we shall continue to misunderstand the significance of HIV/AIDS for Africa, and continue to underestimate the efforts of those who seek constructive change rather than the opportunistic exploitation of crisis scenarios (Richard 1999). The public health and biomedical approaches to HIV/AIDS amounts to opportunism. The developed world is a general case where drug companies, policy makers, and those who have access to healthcare can ignore the deeply rooted and economic basis of poverty and inequality, and the obvious nexus between HIV and poverty (Smith and Cohen 2000). Their perception of poverty might fundamentally lead to the questioning and eventual remedying of unemployment, poor housing conditions, lack of education and training, racism, discrimination, drug policy, and social exclusion, all of which trail the HIV/AIDS victims. The above factors are responsible for the rapid transmission of HIV among the poor masses irrespective of gender and race. However, the industrialised world has a preference for quick fix solutions, which is being imposed on poor and undeveloped settings. Like the failure of needle exchange programs in halting the transmission of HIV among the poor drug users in the West, the promotion of condoms among the poor populations of sub-Saharan Africa faces a similar failure. Lack of motivation for behavioural change predicated on 'safer sex' or 'safer needles' are influenced by the existing social-economic conditions. Such attitudes are not statements of fatalism, but of disillusionment and realism.

3:5 Gender and HIV/AIDS

Gender inequality is universal. Gender alone does not influence one's vulnerability to HIV infection and transmission in a vacuum. Economic and social vulnerability, as well as stereotypical gender roles, influences women and men's vulnerability to HIV infection, while fuelling the overall course of the epidemic. Poverty, inequality, and gender are inextricably intertwined and compound each other. Though we talk of gender and poverty, men and women are differently affected by poverty and have unequal access to political and socio-economic-resources. In addition, some women are, in a demeaning way, subjected to violence, and physical and sexual abuse. Normally when we talk of gender, many people construe it to mean that we are only talking about the marginalisation of women by the patriarchal male society. However, unequal gender relations can be seen in many ways that are particularly visible in the vulnerability of women to HIV infections in developing countries, and men's risk-taking behaviours (Rivers and Aggleton 1999). In fact, factors such as economic and power inequality, poverty, sexuality, race, age, migration, and urbanisation, which often interact with one another, play a key role in HIV prevalence by making some groups more vulnerable while protecting others (Reid 1992; Sweat and Denison 1995; Rivers and Aggleton 1999). However, in most situations not all women are at risk for HIV/AIDS and other forms of infections because they are women, for gender alone does not define risk. It is poor women who are most susceptible to HIV infections (Farmer 1997). Of course, not all women are affected equally. As Schoepf 1993: 57) observes,

"Macroeconomic conditions operating in a context of pervasive gender inequality have different effects upon the lives of women in different regional, class and family circumstances. Different circumstances also produce different negotiating strengths among women as well as different HIV risks".

In writing about the US, though this could be relevant to a sub-Saharan Africa country, Ward (1993: 414) points out:

"The collection of statistics by ethnicity rather than by socio-economic status obscures the fact that majority of women with AIDS in the United States are poor.

Women are at risk for HIV not because they are African-American or speak Spanish: women are at risk because poverty is the primary and determining condition of their lives".

No one has dramatised the nexus among poverty, gender, and HIV/AIDS better than Jodi Jacobson (1992: 3), though she writes about poverty *per se*,

"Two out of three women in the world presently suffer from the most debilitating disease known to humanity. Common symptoms of this fast-spreading ailment include chronic anaemia, malnutrition and severe fatigue. Sufferers exhibit an increased susceptibility to infections of the respiratory and reproductive tracts. And premature death is a frequent outcome. In the absence of direct intervention, the disease is often communicated from mother to child with markedly higher transmission rates among females than males. Yet, while studies confirm the efficacy of numerous prevention and treatment strategies, to date few have been vigorously pursued. The disease is poverty".

The appalling state of the sexual health of the poor, especially very high rates of untreated sexually transmitted diseases and non-specific bacterial and parasitic vaginal infections among women is an important co-factor in the susceptibility of many women in sub-Saharan Africa to HIV infection. HIV infection is spread more successfully through unprotected, penetrative sexual intercourse, especially if there is an existing inflammation of the genitalia that is normally exacerbated by hygiene practices, nutritional status, access to health care services, and cultural norms and practices. Women generally receive less health care than men do and the failure to treat STDs in women is indeed a major problem given the link between STDs and HIV transmission. In addition, access to reproductive health care services is often determined by availability of resources. It has been found in Kenya that due to the financial, socio-cultural and logistical inaccessibility of health services to treat sexually transmitted diseases, women are compelled to wait twice as long as men to address symptoms of STDs (Moses *et al.* 1994). In most situations, women are normally forced to have sex at an early age when their sexual organs are still immature and vulnerable to inflammation by the relatively mature males. Due to their reproductive and productive roles, women are often subjected to more virulent infections and are more

vulnerable to death than men are. Due to the anatomy of the human reproductive system, a lack of access to healthcare services may leave infections and lesions untreated. Most STDs in women are asymptomatic. And with the stigma attached to STDs and as any mention of the illness would be interpreted by the partner as an accusation, most women suffer in silence. The natural healing of the female genitalia through the production of mucus is also slowed by protein-calorie malnutrition, which depresses the immune system. In most countries, a poor woman is the least likely person to have access to proper medical attention.

Data from sub-Saharan Africa shows that women are more susceptible to HIV/AIDS than men (UNAIDS 2002). It is partly because of low socio-economic and political status of the majority of women. This absence of power means that poor women have no control over the circumstances (how, when and where) in which sexual intercourse occurs. Though there are reports in sub-Saharan Africa that more women are infected with HIV than men, no studies have been specifically carried out to determine the differential effect of poverty on women's susceptibility or vulnerability to HIV infection. But it is poor, powerless women who have no say in decisions on how and when to have sexual intercourse, and on the frequency of sex with their husbands. It is the poor unmarried women, often with children, who eke out a living through commercial sex work, and are easily lured by the economic and political power, and charm of men, that are susceptible to HIV infection.

Several studies in sub-Saharan Africa have indicated that HIV prevalence in young women is higher compared to young men (Gregson *et al.* 2000; Boerma *et al.* 1999; Fontanet 1998; Fykesnes *et al.* 1998; Gregson *et al.* 2002; Joesoef *et al.* 2003). Statistics indicate that women outnumber men in terms of HIV seroprevalence (UNAIDS 1999d; UNAIDS 2002). Of the 38.6 million people worldwide living with HIV, 19.2 million of them are women (UNAIDS 2002). In addition, some 4.2 million adults (2 million women) were newly infected in 2002, and 2.5 million died (1.2 million women) (UNAIDS 2002). In sub-Saharan Africa, more than 60 percent of HIV infected individuals are women. Statistics also indicate that young women have seroprevalence rates much higher than boys and young men. In a study in Western Kenya, it was found out that 25 percent of girls aged between 15 and 19 years were HIV positive compared to only 4 percent of boys in the

same age group. Most infections occur between the ages of 20 and 24 for women, and 30 and 39 for men (National AIDS Control Council, 2000). An analysis of differential HIV prevalence in men and women who attended sexually transmitted disease clinics at HIV sentinel surveillance sites in Kenya between 1990 and 2001, found that prevalence in women was higher for all years (Joesoef *et al.* 2003). The same sentinel surveillance results show that the number of women infected with STDs was consistently higher than that of men over the ten year period. The discrepancies in HIV rates between girls and boys indicate that girls are more likely to be infected by older men than by boys of their own age group. In most cases, men have more sexual partners than women do and they not only begin their sexual activity at an earlier age, but also marry later than women (McCauley and Salter 1995; Schell and Green 1997; Singh, Wulf, Samara and Cuca 2000). What this suggests is that they have a long period of casual sexual activity, often with multiple partners, heightening the risk of HIV infection and transmission. It is the dynamic relationship between men and women that is at the centre of this gloomy picture. What emerges is the differential gender equality and social status between men and women, which increases the latter's vulnerability to HIV. In addition, higher infections rates among girls reflect their biological vulnerability to infection as very young women have immature genital tracts that are prone to trauma, hence render them more susceptible to HIV infections. This is compounded by the loss of virginity, which occurs in girls and has been associated with increased vulnerability to infection, more efficient transmission of HIV from men to women than vice versa, their social and physical vulnerability in sexual relations, the impact of gender discrimination that leads to women having no or less say in sex or condom use, and poor sexual health that is compounded by prevalence of asymptomatic STDs (UNAIDS 1999d; Gregson *et al.* 2000; Boerma *et al.* 1999; Fontanet 1998; Fykesnes *et al.* 1998; Gregson *et al.* 2002; Joesoef *et al.* 2003).

Because of imbalance of political power and dependence on men for material and economic resources, most women do not question their husbands on matters of sex and fidelity. This dependence is due to deeply rooted socio-economic structures that subject women to a subordinate level when it comes to access to job opportunities, fair wages, poverty, and education, making them vulnerable to HIV infections (Zierler and Krieger 1997). The economic power of men is buttressed by their biological and anatomical power

as HIV is more efficiently transmitted from men to women than from women to men (Mastro and de Vincenzi 1996). Women do not complain even if their husbands have other girlfriends. In fact, polygamy is sanctioned and one of the ways of acquiring a wife is to seduce her, and have sex with her outside marriage. In essence, every unmarried woman that a married man has sex with is a prospective wife. In most instances, these women are married after they have conceived. It is also an unofficial rule that a woman should be faithful to her husband and can be divorced on the grounds of unfaithfulness. On the other hand, a man cannot be accused of infidelity or divorced on that ground. Women can be beaten or chased away from home if they are unfaithful, as men ground their power on the premise that they are the breadwinners and the land is titled in their names. Men, in short, own the means and mode of production. Women, on the other hand, must remain faithful and loyal to one husband. It is unimaginable for a woman to discuss condom use or persuade a husband to use a condom for fear of violence and loss of material support. Normally, women's desires to have protected sex with their husbands fall on deaf ears, while men can decide whether to have protected sex. In addition, the men have the economic capability to buy condoms (invest in protecting themselves). A study of African-American women in Los Angeles found that women who depend on their male partners for financial assistance and housing were more likely to have sex without condoms than women who did not depend on men for economic reasons (Wyatt 1991). It is this imbalance of the power relations in marital union that make women unwilling recipients of infections. The above scenario reveals how HIV infection will always be higher in situations where there is differential access to socio-economic resources, and an imbalance of power between men and women. In addition, communities with sexual behavioural norms and partners that separate sexual gratification (satisfaction) from procreation are likely to tolerate male philanderers.

Women's risk for HIV/AIDS is also linked to non-economic gender-based inequalities related to sexual violence or fear of violence. It is, in addition, related to the way women may depend on the social and personal esteem that comes from being in heterosexual union, the need for social status, or the need for men to provide physical protection (Fullilove *et al.* 1992; Amaro 1995; Zierler 1997). Prevailing gender relations have a serious impact on men's sexual health and the sexual health of partners in addition to

shaping the broader marginalisation of women. Estimates indicate that between 60-80 percent of women currently infected with HIV/AIDS in sub-Saharan Africa have had only one sexual partner, their spouses (Adler *et al.* 1996). Research in many parts of the world suggests that men have a greater lifetime number of sexual partners and that there are clear double standards regarding the behaviour of men (de Bruyn *et al.* 1995, International Centre for Research on Women 1996). For example, while in many cultures women are expected to preserve their virginity until marriage, young men are encouraged to gain sexual experience (International Centre for Research on Women 1996). Indeed, having had many sexual relationships may make a man popular and important in the eyes of his peers (Karima and Morar 1995). Men can freely express their sexual desires and roam about satisfying their imagined or real sexual fantasies while women cannot do the same. While key qualities in women are presumed to encompass virginity, fidelity, and fertility, for men, it is virility (UNAIDS and PANOS 2001). Male sexuality is often thought of, by both men and women, as unrestrained and unrestrainable, and in some parts of the world having a STD is considered a badge of honour, which confirms manhood (de Bruyn *et al.* 1995). So, while lack of knowledge and sexual inexperience remain highly valued for young women, men may be stigmatised if they cannot demonstrate wide sexual experience. In both upper primary and secondary schools, boys who have not had (m)any sexual experience(s) or girlfriend(s) are often chided and looked down upon. The situation is expressed excellently by two different youths, from different countries. A boy from Guinea noted:

"If a girl runs after you and you don't have sex with her, everybody will laugh at you. She makes your name public in town that you are not a real boy, that you are impotent" (UNAIDS and PANOS 2001: 11).

And a 24 year old man from Dar-es-Salaam expressed the sexual 'norm' among the youth thus:

"Prestige comes with having had sex especially when you are telling stories about girls and love. If someone has never had sex with a woman, he is viewed as inexperienced and foolish" (UNAIDS and PANOS 2001: 11)

These are the dominant masculine discourses on sex and women in most societies, especially among the male youth. In most cases, women hold similar views as they are under social and peer pressure to have as many boyfriends as possible. For a woman to hold on to a man means yielding to sexual demands. Men, on the other hand, may find that by conforming to stereotypical versions of masculinity, they place themselves and their partners at heightened risk (Rivers and Aggleton 1990.) These contradictions need to be exposed in order to identify the consequences to both women and men when existing gender roles are adhered to, transformed, or cease to be obeyed.

Men often control sexual decision-making. In many impoverished communities, coercive sex, and sexual violence and rape are not unusual (de Bruyn *et al.* 1995; Wood and Jewkes 1997). Women are more likely to sell sex than men are. It is accepted that unequal power relations between male and female often mean young women are more vulnerable to forced sex and less able to protect themselves from sexually transmitted diseases as well as unwanted pregnancy (Long and Ankara 1996; Weiss *et al.* 1996; Rivers and Aggleton 1999). Everyday, disheartening wickedness is meted out to women in impoverished communities. They are raped, battered, knifed, and many other heinous things are done to them. One reason is economic hardship. In South Africa, a woman is raped every 26 seconds, the highest in the world⁴⁴. In urban centres, many girls roam the streets looking for men to marry them or men to buy them lunch or supper or provide a bed for the night. Men take advantage of, and try to get the maximum out of, such situations. Many women have black spots on their faces, not because they have birthmarks, but from blows and kicks meted out by their temporary sources of livelihood. Approximately 25-50 percent of women with sexually transmitted diseases, including AIDS, are involved in abusive relationships (Champion and Shain 1998). This is because most of the risky practices, like multiple partner relationships, drug and alcohol abuse, and early age at first coitus, result from past history of abuse, and the long term sequel of sexual abuse (Champion and Shane 1998; Miller 1999). In Kenya, one study found that violence against women was expected in relation to positive HIV test results (Rakwar *et al.* 1999). In the US “before adulthood, young girls’ vulnerability to experiences of gender-based violence, such

⁴⁴ Shillinger, K., 1999. ‘A Continent’s Crisis: AIDS and the African’ *The Boston Globe*, October, 10 1999 [online] Available from: www.boston.com/globe/nation/packages/aids_african/part1.htm. Accessed on: October, 15 1999.

as incestuous sexual and physical abuse lay groundwork for drug and alcohol addiction and dissociated sexuality in which women may not be aware of their right and capability to claim when, how, and with whom they are sexual" (Zierler and Krieger 1997:418). According to both boys and girls interviewed in Brazil, for example, girls and women are often coerced into sex and some young women may obey their boyfriend's wishes because they believe that girls are 'meant' to be compliant and subservient (Vasonceles, Garcia and Mendonca 1997). Some studies in the US have found that among women living with HIV infection, nearly half report forced sexual experiences in childhood or in their teenage years (Deamant *et al.* 1996; Zierler *et al.* 1996; Zierler 1997). In addition, the teenage girls and women that are most at risk for HIV infection are likely to have witnessed or been affected by violence in their neighbourhoods (Zierler and Krieger 1998). While there may be differences in prevailing definitions of masculinity, greater freedom, power and control characterise male sexuality across a wide spectrum of different cultures. In fact, women fear that if they refuse to engage in sex with their boyfriends, they would simply move on to other women. A political economic analysis of gender-based violence and discrimination reveals that men who inflict this violence and put their spouses or lovers at risk are likely to be living amidst social and economic hardship. Further, where women are most economically dependent on men, their ability to make decisions about sex may be constrained. In Turkana, as I will discuss later, some women are obliged to have sex with men if they are to pay their school fees.

The fishing industry, which offers employment to many men, is a major factor in the spread of HIV/AIDS in Nyanza province as it fuels sexual exploitation of women and young girls. First, it has led to a number of families headed by girls since when parents go fishing, young girls are left to look after their younger siblings, denying them the opportunity to go to school and ensuring that they follow in their mothers footsteps. Such situations tend to make girls feel mature and they are likely to make decisions that might be detrimental to their over-all wellbeing. Even though fishing is a man's domain, the lesser jobs like cleaning, frying, smoking, drying and fish mongering is largely a female activity. Some of these jobs are sub-contracted by women to their young daughters. In most cases, a large number of women engage in retailing fish on a commission basis. Such stereotypical division of labour has brought a large influx of women looking for employment in the

beaches. In addition, eateries and drinking establishments set up to cater to fishermen and transporters, offer constant clientele for commercial sex workers. Because of the belief that young girls are free from sexually transmitted infections including HIV/AIDS, fishermen and transporters prefer young vulnerable girls for their sexual escapades over older women. Poverty and the urge to make quick money lure young girls into commercial sex work. Women employers, mostly single mothers who also supplement their income with commercial sex work, keep teenage girls in their business establishments to entice male customers. The situation is compounded by the fact that fishermen and transporters, with a high purchasing power but with little to buy along the beaches, readily pay young girls for sexual favours thus exposing them to sexually transmitted infections, including HIV/AIDS.

An interaction between gender, ethnicity, and class as determinants of sexual risk taking has been shown among mine workers in South Africa (Campbell 1997). Here, as in other countries, lack of employment opportunities close to home encourages men to migrate. Working in highly dangerous conditions, and removed from the usual sources of familial and social support, life in cramped conditions is both stressful and lonely. Drinking and paying for sex too readily become normative, heightening the HIV-related risks for men and their partners. This shows that our analysis of gender and HIV/AIDS must move from a simplistic focus on women alone. Our analysis of gender, sexuality, and inequality need to take into account the manner in which factors such as age, class, ethnicity, and culture interact to determine the form that gender and sexual decisions take (Rivers and Aggleton 1999). Gender relations and ideologies interact with other social inequalities, including those based on class, sexuality, age, religion and race. In addition HIV/AIDS has graduated into a barometer of gender relations. As one informant in Tanzania indicated when asked about what has changed between men and women, HIV/AIDS demonstrates the condition of the trust and closeness between men and women (Setel 1999). For spouses to be clear of the risk of infection, they should stay together, even in the face of rampant migration, in order to ward off any extramarital sexual desires or temptations. The HIV-infected couple is a testimony to the breakdown of the trust between married or regular partners.

Recent research in Tanzania (Setel 1999), and Zimbabwe (Runganga and Aggleton 1998) suggests that young men may attempt to redress inter-generation inequalities through sexual activity with multiple partners, which is seen by them as symbolising adulthood and enhanced status⁴⁵. In fact, normally marrying many wives is a show of higher status among generations. Those who cannot acquire the property and status that goes with education and wage employment often compensate for that inadequacy through polygamous marriages.

Decades of changes in economic activity and gender relations have placed many women in increasingly difficult situations. HIV/AIDS has accelerated the process and has made "normal" sexual relations very risky. Married women often have little control over the sexual behaviour of their husbands, or protection from the consequences of male behaviour. Even though women recognise the risk of infection with HIV by their husbands, they are generally too fearful to confront their spouses. "Better they remain silent, risk death and preserve their marriage [the Kilimanjaro women] openly say, than the stigma and upheaval of trying to refuse sex or demand the use of condoms" (Setel 1999:83). While men infected with any sexually transmitted disease would not suffer reprisals from their wife(ves), infected women would attract violence. Revelation of HIV status would trigger partner violence (Rothernberg 1995). In Kenya there are reports of situations whereby widows have been driven away from their marital homes or had property violently taken from them under the guise that they 'killed' their husbands with AIDS.

Women whose husbands have migrated for work are said to fear the return of the men, knowing they may be HIV infected. The range and depth of women's responsibilities have increased during the era of AIDS. More active care giving for sick and dying relatives has been added to the existing workload (Outwater 1996). In most cases, children especially girls, have been withdrawn from school to add to the labour force within the household. In situations where children are likely to be withdrawn from school due to the shrinkage in funds because of AIDS-related costs, it is the female that is normally the first casualty. HIV/AIDS is thus facilitating a rapid differentiation along gender lines. HIV/AIDS has directly or indirectly made the availability of cash more problematic. Substantial

⁴⁵ Apart from age, young people having less economic power compared to the old generation as manifested in intergenerational inequalities.

investments in medical care in households affected by HIV/AIDS divert meagre resources from other needs. In most cases, assets are disinvested, aggravating poverty. Household food security is often affected in negative ways (Kusimba *et al.* 1996). Waller (1997: 33) points out that farmers “have struggled on a daily basis to overcome the combined shocks of cattle disease, years of drought, and marketing reforms. The onslaught of HIV/AIDS has further impaired household responsiveness as it cuts into available labour and household resources” (Waller 1997: 33). To cope with these shocks, small-scale/low asset farmers have sold their own labour to other farmers, working for low wages or for in-kind payments during peak labour periods. In Zambia and Malawi, work on the farms of others affects the ability of rural women to tend to their production, not infrequently contributing to further impoverishment. In Malawi, women and men have increasingly taken on work on the farms of larger and/or wealthier farmers in order to earn income or in-kind payments, often neglecting production on their own holdings (Whiteside 1999). In sub-Saharan Africa, women are likely to lose the remaining household assets, including land, if any, after the death of a husband. In fact most of these assets and savings are normally depleted by the time the breadwinner dies, and thus it is even more complicated when the wife dies soon afterwards. This would push widows and female children into situations where sex is coerced in exchange for small cash or in-kind payments (International Centre for Research into Women 1999).

3:6 Mobility, migration, and HIV/AIDS

The pattern of industrial development that was followed by European colonial powers in Africa and that has progressed, unabated, into the postcolonial period was (is) based on a system of labour migration from rural areas to either urban centres where the industries and social amenities were located or to cash crop plantations. In many countries, the development paradigm imposed by and for colonial powers, and pursued since by post-colonial governments in conjunction with international development agencies, lending institutions and donors, and multinational corporations, has focused on exportable cash cropping and minerals. Plantations, mines, and industries, have required and attracted massive quantities of labour from the traditional areas. As was discussed in the previous section, the economic structures and strategies in sub-Saharan Africa thrive on, and

encourage, migrant labour patterns. Most countries in Africa, often with support of lending institutions like the World Bank, have pursued economic policies that are urban-based, favouring those who live and work in cities to the disadvantage of rural populations (Cohen 1998b). If one wants to escape the vicious circle of poverty, there is a misconception that this only happens if one migrates to urban centres. The colonial governments' division of colonies into urban centres (government centres) and 'reserves' (rural areas) has largely remained in the form of urban versus rural residence. Mobility and migration play an important role in the transmission of HIV through out sub-Saharan African region.

With monetarisation of the economy, high rates of inflation, increased dependence on industrially manufactured food products, stagnation of economic growth, deepening poverty, decreased out-put from land and diminished land holdings, most of the populations in the rural areas of sub-Saharan Africa have developed increased dependency on wage labour. Most of the industries are located in the urban centres and most of the cash crop plantations and mines that depend on both skilled and unskilled labour are far removed from the villages. This necessitates the migration of both skilled and unskilled labour, which is a key livelihood strategy for many millions of people, mostly young men. There is, therefore, an indefatigable attraction to urban centres despite the fact that there are high levels of unemployment and congestion in urban centres, coupled with a lack of housing. In addition, most social amenities, like referral hospitals and educational institutions, are located in the cities and towns. Both men and women, specifically young men who face the prospects of unending poverty, travel in search of jobs, some within their countries and others across international borders, some to towns and cities and others to plantations and mines. After being educated, people are expected to move to the city in search of employment. Being resident in the city itself, in addition to having a job, enhances not only one's status but also that of the whole extended family. One female informant in Kilimanjaro, Tanzania captured this scenario: "[men] travel so much, and we do not stay together. It decreases our togetherness. They only come back once in a while" (Setel 1999:75). In Kilimanjaro, many women who had been left by their husbands in the villages were seen, and regard themselves as vulnerable at two levels:

- i) They were subjected to sexual demands by their husbands whenever they travelled back home from urban centres or places of work.

ii) Women left in the village often accepted sexual offers due to either emotional vulnerability (or sex as a biological need) and/or lack of resources (engaging in remunerative sexual relationships) (see also Larson 1990). The number of women seeking abortions in the local clinics evidenced this infidelity (Setel 1999).

Truck drivers often travel for long distances, spending many days without their spouses. At their many stops along the highway, they come into contact with economically challenged, marginalised women - barmaids, hotel workers, or commercial sex workers - some of whom become regular sexual partners. Inevitably, in all that traffic, HIV is a passenger. Not surprisingly, in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe some of the highest incidences of HIV/AIDS have been found at cross border sites where there is a high concentration of truck drivers, migrant workers, and commercial sex workers⁴⁶. In some cases, such as among the truck drivers in northern Nigeria, they establish semi-permanent homes at these stops through formalised polygynous unions (Orubuloye and Cadwell 1993). Ironically, these women enter into such unions with many men, at times with the tacit knowledge of all the men that they are involved with. The adoption of this form of polygamy by men, and the "cryptopolyandrous" existence of women, demonstrates how the social and epidemiological consequences of HIV/AIDS are due to geographic, economic and social mobility (Setel 1999:54). Labour migration has expanded the demand and supply sides of the commercial sex industry. For example, in India, early half of its goods are transported by millions of trucks. Sexual activity along their routes is common and pervasive. According to an article in the Harvard AIDS Review, "India's long-distance truckers average 200 sexual encounters each year; at any given time, 70 percent of them have STDs"⁴⁷. They also transport the HIV virus between commercial sex work groups and back to their home areas. In Plumtree, a town in Southern Zimbabwe near the South African border, truck drivers have sex with young girls in the belief that it minimises their chances of being involved in road accidents (Machipisa 2001).

⁴⁶ IRIN 2002 'South Africa: Corridors of Hope Against HIV' [online] February 13, 2002. Available from: www.irinnnews.org Accessed on: March 20, 2002.

⁴⁷ *Harvard AIDS Review*, Fall 1995.

Labour migrants have higher infection rates than those who do not migrate, independent of the HIV prevalence at the site of departure or the site of destination (Decosas and Adrien 1997). The epidemiological relationship between migration and HIV status in villages in Northern Senegal has also been studied (Kane *et al.* 1993). In a study carried out in early 1990s, Kane and colleagues found out that 27 percent of the men who had previously travelled to other African countries and 11.3 percent of the spouses of men who had migrated were infected with HIV. Of the 414 men living in neighbouring villages and selected as the control group because their spouses had not travelled outside Senegal in the last ten years, only one man and one woman were infected with HIV. High HIV prevalence rates in areas of high out-migration have been documented in Mexico (Santamarriaga *et al.* 1996), Senegal (Pison *et al.* 1993), and in rural communities in West Africa (mostly to the southern areas of Cote d'Ivoire such as the area of Tambacounda in Senegal, Sikasso in Mali, the district of Many Krobo in Ghana, the area of Mono in Benin and the Otukpo) (Decosas 1996). The local government in areas of Nigeria are recording HIV infection rates two to three times that of the national rates (Decosas 1990). Using 1993 data, a study of migration in Kenya concluded: "Independent of marital and cohabitation status, social milieu, awareness of AIDS, and other crucial influences on sexual behaviour, male migrants between urban areas and female migrants within rural areas are much more likely than non-migrant counterparts to engage in sexual practices conducive to HIV infection. In rural areas, migrants (returning) from urban places are more likely than non-migrants to practice high-risk sex" (Brockerhoff and Biddlecom 1999). When migrants return, they lure women into having sex with them due to their socio-economic status.

Normally migrants are engaged in "circular" migration. Migrant labourers stay for a period of several months to several years at their destination, and return for brief visits to their places of origin. In Kenya, most migrants travel home either during Easter or Christmas periods. Only middle class migrants travel home every month or every weekend. Decosas write:

"When the male migrant returns to his village, his pockets are full of money, and he returns to a society where many young men are absent, usually he will look for a wife....This wife searching involves a certain amount of trial and error. There is again

a situation of the asymmetry of networking, this time in the other direction: a small number of men with a high probability of being HIV-infected have many female partners, and a large number of women have occasional intercourse with one or the other of these men" (Decosas 1996: 5).

Thomas Painter, in his research on "livelihood mobility" in coastal areas of West Africa (Ghana, Togo, and Cote d'Ivoire) reports that "Typically these individuals are men, often married who spend 3-9 months each year in coastal areas having risks of HIV infection. They spend this time unaccompanied by female partners from their home communities..." (Painter 1996: 625). Painter ascribes the century-old phenomenon of labour migration in West Africa - now involving some 200 million people - to the region's uneven and inequitable socio-economic development. He suggests that this results from the uneven distribution of natural resources (fertile soil, water, and mineral deposits) compounded by the cumulative impact of "choices made by individuals, groups, communities, by private capital, governments, international development assistance organisations and finally the impact of market forces within a global economy" (Painter 1996: 646). As a consequence, he notes that throughout sub-Saharan Africa there is a highly uneven distribution of investment, marketing, and transport and communications infrastructure, as well as education, and health and other social services.

While there are far fewer female migrants than male migrants, several case studies point to the same basic theme of rural impoverishment leading to migration in search of a livelihood. Decosas gives an example of female migrants: the girls from Many-Krobo, Ghana, who (at least several years ago) boarded buses to Abidjan and Bouake' to become sex workers (Decosas 1996: 6). In Thailand the mechanisation of agriculture in practice favoured the employment of males over females, leaving young rural women with few opportunities outside of migration to the cities and coastal resorts, to fulfil their traditional gender roles of supporting parents and younger siblings. Ann Danaiya Usher draws the link between environmental devastation in Thailand and the out-migration from the northeast of so many adolescents to work in the sex industry in the cities (Usher 1992). Moreover, in the cities and coastal resorts, "commercial sex work offers them financial resources that would be far beyond their reach in any other line of work" (Wawer 1996: 460). Commercial sex work remittances thus secure the subsistence of the rural

household, provide consumer goods, educate siblings, upgrade the family's economic status in the village, and thereby satisfy traditional female responsibilities for the domestic economy. A seminal study, commissioned by the International Labour Organisation (ILO), investigated Bangkok masseuses (migrant commercial sex workers in massage parlours) and concluded that, in the women's view, there was an entrepreneurial decision, "a perfectly rational decision within the context of their particular social and economic situation" (Phongpaichit, 1982, cited by Wawer *et al.* 1996). Wawer and colleagues (1996) state the sex workers interviewed for their study in Thailand indicated that they did not insist on condoms because their fear of poverty is greater than their fear of AIDS.

Women left at home by their husbands often have sex with other men in the village in return for monetary gain or just for pleasure, especially if the husband stays away for a long time, normally up to a year. In addition, some husbands do not bother to send money, especially if they have another wife in the city. While, it is not on the same scale as the commercial networks in the cities and gold mines, it is a pattern that increases the vulnerability to HIV infection. This situation helps explain the rural enclaves of high HIV prevalence sprinkled throughout Africa (Decosas 1996: 5; see also Painter 1996: 652). Women in rural Tanzania told researchers that they lived in fear of their husbands coming home for Christmas since they thought they would be bringing AIDS (Collins 1994). In some circumstances, female sex workers also return home with money and in search of a husband. As Decosas wryly comments, "they have the means to afford a certain amounts of trial and error" (Decosas 1996: 6). The patterns of sexual networking that emerge in villages when many of the young men are absent for months or more at a time are not known (Decosas and Adrien 1997: 79). The phenomenon of unprecedented levels of HIV/AIDS infection in rural areas far removed from urban centres, however, has not been empirically studied.

Most studies of HIV prevalence among mobile populations are problematic because they focus attention on migrants rather than on the reasons for migration and the living conditions at the destination (Decosas and Adrien 1997). Decosas (1996) makes a critically important comment about the likely asymmetrical pattern of sexual networking in these locations. These labour sites typically have a vast excess of young men who obtain sexual services from a very small number of female sex workers. One example is the

miners at the Goldfields mines in South Africa, which employs about 7,000 males who live in single-sex hostels and who buy sex for about three American dollars⁴⁸. The men may buy the services of female prostitute only once each payday. Each time they do, however, they have sex with a female who has had sexual intercourse with 15 to 30 other men within the same day. Therefore, the probability of exposure to a sexually transmitted infection is very high" among such male-dominated workplaces like mines (Decosas 1996: 5). Is it a surprise, therefore, that Southern Africa has become the epicentre of HIV/AIDS in sub-Saharan Africa? Mining and agriculture makes up a large chunk of the economies of South Africa, Zimbabwe, and Zambia, and they rely on migrant labour from the three countries as well as from other neighbouring states.

3:7 Poverty-actuated commercial sex work as a cause of the rapid transmission of HIV infections

Commercial sex work is believed to play a key role in the fuelling of the HIV/AIDS epidemic in sub-Saharan Africa⁴⁹. That engagement in sexual intercourse with commercial sex workers increases the risk of contracting HIV has been documented by many studies (Caldwell, B. *et al.* 1999). That there is high prevalence of STDs, including HIV, among commercial sex workers has also been researched and documented. This also applies to male sex workers (transvestites or transsexuals) who, for example, in Karachi, Pakistan, had a significant prevalence of syphilis compared to the general population (Baqi *et al.* 1999). However, what has been stressed is the importance of comprehending the socio-economic and political context in which such sexual behaviour occurs. There are two categories of involvement in trading sex for money or material goods. The first category is composed of full or part-time commercial sex workers that exchange in sex for money or gifts. The second group is composed of women or young girls (married or unmarried) that

⁴⁸ Haygood, W. 1999. 'Prostitution plays a key role in fuelling Africa's AIDS crisis' *The Boston Globe* [online] October, 11, 1999. Available from: www.boston.com/globe/nation/packages/aids_afriocan/prostitution.htm. Accessed on: October 15, 1999.

⁴⁹ Haygood, W. 1999. Prostitution plays a key role in fuelling Africa's AIDS crisis' *The Boston Globe* [online] October, 11, 1999. Available from: www.boston.com/globe/nation/packages/aids_afriocan/prostitution.htm. Accessed on: October 15, 1999.

occasionally accept gifts (money or material goods) or favours from men in return for sex. While this category does not constitute classical commercial sex work, it does however constitute the exchange of sex for material goods, favours, or money. Of all the categories, what is clear all over the world is that women and girls trade sex as a strategy for meeting basic needs (McGrath *et al.* 1993; Weiss *et al.* 1996; Dowsett *et al.* 1998; Bohmer and Kirumira 2000.) In discussing the poverty-driven sale of sex, we should remind ourselves that, while there are many millions of women and men who engage in commercial sex work on a regular basis, even more people not thought of as "commercial sex workers" find themselves needing to exchange sex for money or goods on an occasional basis (Cohen 1998a: 6). In the absence of alternative opportunities to earn a livelihood for themselves and their families, millions of people sell sex. In no other area is the evidence for the economic determinants of HIV-risk behaviour clearer than it is for sex work. Tawil and colleagues observe that, "evidence from all regions of the world suggest that the overwhelming motive behind the exchange of sexual services for the provider is economic opportunity" (Tawil *et al.* 1995: 130, see also Thant 1993, Anarfi 1992, Ford and Koetsawang 1991). A 1993 study of 678 female commercial sex workers in three urban centres in Thailand found that a distinct majority came from the economically neglected rural areas of the northern region, where cultural norms place the burden on women for support of parents and for sponsoring any younger siblings who go on to higher education. The study concludes: "In its simplest form, the explanation for the exodus of younger women from the North and Northeast to cities and resort areas is that it enables them to fulfil these traditional gender roles. Commercial sex work offers financial resources that would be far beyond their reach in any other profession" (Wawer *et al.* 1996:456).

For many, sex work is a desperate survival strategy. For others, it can sometimes be more of a lucrative alternative to existing poorly remunerated employment "opportunities". In Thailand, for example, an ILO study found that some female sex workers were able to generate incomes 25 times as high as the medium level that could be expected from other potential occupations, such as work in textile mills (Phongpaichit, 1982). As Tawil and colleagues (1995: 130) comment, "The absence of employment opportunities to generate incomes of comparable magnitude or of educational opportunities that might lead to such employment is why some may choose to remain in sex work." For others, especially for

adolescent girls, sex is a means of acquiring luxurious goods that parents cannot afford to provide. A study of adolescent behaviour along the Trans- African Highway in Kenya found that of the girls who exchanged sex for money, the majority reported a lack of adequate income for essential items, such as food and clothing (Nzyuko *et al.* 1997). In Nairobi, students from Nairobi University and other prestigious colleges, who were among the commercial sex workers arrested on the streets by Police, wanted to earn money because of tough times or simply to buy expensive clothes and associate with high class people⁵⁰. In Cambodia, prostitution was widely accepted by both young males and females as an easy way for young girls to generate income. In fact even young males negotiate for sex with girls using money and gifts (Nzyuko *et al.* 1997). In a study focused exclusively on young males and females not attending school in Uganda, the influence of poverty as a factor in the exchange of sex for gifts was apparent, as girls acknowledged that financial (US\$ 0.20 to 2.50) and material gain (underwear, shoes, perfume, soap, creams, sodas) was their primary reason for having sex with older men (Bohmer and Kirumira 2000). Men (especially sugar daddies) take advantage of poverty to put more pressure on girls by offering gifts and spending money due to the belief that younger girls are more likely to be uninfected with HIV/AIDS or other STDs. Such men are not always poor migrant labourers, but include the wealthy and politically powerful in society. In Nairobi, one cabinet minister, an assistant minister, a member of parliament, and seven wealthy businessmen were among the people arrested by police in the notorious red light area of Koinange Street, with half-naked girls in their luxurious cars⁵¹. Along the Thailand-Burma border, many sex workers are young women, caught up in the "green harvest". Their work is a means to repay loans made to their families by money - lenders, who recruit young women for the sex industry. Most of the young women return to their villages when they are diagnosed as HIV positive (Sakboon 1996).

Indeed, the economic attractions of the exchange of sex for money should be understood in the context of the perceptions and aspirations of the majority in lower positions in increasingly unequal societies. The intense commodification / monetarisation

⁵⁰ Gitonga, L. 2003. University students among twilight girls caught in street. *Sunday Nation*, December 14, 2003. [Available from: www.nationaudio.com/News/Daily Nation]. Accessed on: December 17, 2003.

⁵¹ Muiruri, S. 2003. Ministers and MP caught picking up girls' *Sunday Nation*, December 14, 2003. [online] Available from: www.nationaudio.com/News/Daily Nation. Accessed on: December 17, 2003.

of most societies over the last quarter century has served to step up the financial pressure on many people and the reliance on purchased industrially manufactured food products. As noted above, today's global consumerist culture surely makes untold numbers of people acutely aware of their relative poverty. Ford and Koetsawang (1991: 408), in their study of the context of HIV transmission in Thailand and the motivation for commercial sex work, suggest that conspicuous opulence, advertising, and the lavish department stores of Bangkok might also be expected to foster increasingly consumerist desires. The capitalist and insatiable consumerist culture, engulfing the once traditional societies in sub-Saharan Africa, has created desires that are very hard to satisfy due to increased inflation and rising commodity prices in ever declining economies with limited ways of earning money. A change in socio-economic relations and the increased desire for Western goods amid very limited employment opportunities and/or meagre unsustainable income increases the possibility of one gravitating towards commercial sex work (Setel 1999).

Sex work that is due to scarcity and poverty fosters behaviours that are more risk-taking than might otherwise be the case. Even some other risk-taking behaviours, such as injecting drugs, are also frequently caused by socio-economic deprivation (Zierler and Krieger 1998). For instance, the sharing of needles by injecting drug users is more common because it is perceived to be a less expensive way to administer drugs, and a relatively cheaper method of getting 'high'. Just as in the case of the re-use and sharing of needles, poverty is a compelling reason for a commercial sex worker to engage in sexual intercourse with a client who refuses to use a condom. Wawer *et al.* (1996: 459), in their study of commercial sex workers in Thailand, cites the response of one female sex worker because it was so typical: "sometimes I will allow it (sex without condom). Some times not. If I had no alternative, no money to buy food, I would accept". In low-class brothels in Ecuador and Honduras, for example, women avoid asking clients to use condoms because, as they have told researchers, their customers would exclaim "What! Do you have AIDS?" and give their patronage to others. Due to pressing economic needs, such women cannot refuse such offers. In a stunning indication of risk-taking behaviour induced by a desperation born of poverty, some commercial sex workers reportedly have opposed the use of condoms because they fear it would delay their clients' ejaculation, thereby prolonging penetrative sexual intercourse and reducing the total potential number of clients

with whom they could have sexual intercourse (Ford and Koetsawang 1991: 407). Sex workers who are poor are likely to work in low-class establishments or on the street. These poor women are less likely than better-off women to be able to insist that clients use condoms. They are less likely to have access to the treatment of other sexually transmitted infections, with such untreated infections being a key co-factor in susceptibility to HIV. Their clients are less likely to be aware or to take seriously the risks of HIV and other sexually transmissible infections and less likely to comply with the precaution of condom use. Their own poverty might well play a role here. Women whose livelihood strategies expose them to a high risk of infection are, precisely because they are poor, less likely to take seriously the treatment of an infection whose fatality is deemed to be far fetched. Such women are struggling with day-to-day survival for themselves and their families. Farmer spoke with women engaged in unprotected sex work in Harlem (New York City) and Bombay. He writes: "It seems fair to assert that the decisions made by the women profiled were linked to their impoverishment and their subordinate status as women. Furthermore, it is important to remember that [these women] were born into poverty. Their attempts to escape poverty were long bets that failed - and AIDS was the form their failure took" (Farmer 1996c: 22).

As Cohen states: "Even if the poor understand what they are being urged to do (to avoid behaviours that exposes them to HIV infection), it is rarely the case that they have either the incentive or the resources to adopt the recommended behaviours. Indeed to take the long-view in sexual or other behaviours is antithetical to the condition of being poor. For the poor it is the here and now that matters" (Cohen 1998b: 5). Anthropologist Martha Ward offers us the same observation more dramatically: "For poor women AIDS is just another problem they are blamed for and have to take responsibility for. They ask, 'How am I going to take care of my family? I have to put food on the table now.' You think AIDS is a problem! Let me tell you - I got real problems'" (Ward 1993: 61). The predicament of women in Messina⁵² town, which serves as an entertainment centre for truckers, mirror the

⁵² Messina is a frontier /border trading town at the north-eastern tip of South Africa's gateway to the rest of the continent. Army trucks trudge through, drooping off and picking up soldiers who operate the security fence on the border. Its population is a mix of the local South Africans, old mine workers from Zimbabwe and Zambia who have stayed on, and new immigrants who have arrived in Messina under varying degrees of legitimacy (IRIN 2002 'South Africa: Corridors of Hope Against HIV' [online] February 13, 2002. Available from: www.irinnnews.org Accessed on: March 20, 2002).

above description. When truckers park for the evening, women from the nearby farms and mines flock to the bars and lodgings looking for some action, turning sex into a highly tradable commodity. But the poverty of the women engaged in commercial sex work here means that it is neither lucrative nor safe. Sex without a condom costs around R50 (US\$ 4), and with a condom just R15-20 (less than US\$ 2)⁵³. The higher the risk, the higher the pay. But is it worth the risk? The lure of extra money for poor and vulnerable women means that sex without a condom is common. Other women from across the Zimbabwean-South African border are forced to trade sex for immigration status or as a protection against harassment by the authorities, and therefore have little negotiating power concerning whether to use a condom or not. According to a Malawian Truck driver, prostitutes are after money so they do not insist on the wearing of condoms⁵⁴. However, at times they are forced not to wear condoms. A study of sex workers in Brazil found that 23 percent of women reported fear of violence if they insisted that clients wear condoms, and the prevalence of concern for violence tripled when requesting condom use with men whom they regard as non-clients (Lurie *et al.* 1995). An effective intervention strategy would not be to try to change their sexual behaviours (e.g., telling the commercial sex workers to be faithful to one partner, abstain, or consistently use a condom or even leave sex work totally), but rather an effort to reduce the dependency that makes sex work the mainstay of income for so many.

Though the homosexual transmission of HIV is minimal in sub-Saharan Africa, there is presently growing concern over, and research interest in, its impact on HIV prevalence. Particularly, there is concern with street children, and their risk to HIV infection and transmission. In Africa, it is estimated that there are over 10 million street children, most of whom are boys (UNAIDS and PANOS 2001). Many of the street children are vulnerable to prostitution and sexual exploitation. A study in Nigeria found that truck drivers force many homeless boys living along the transport routes into sexual relations (Araoye, Onile and Jolayemi 1996). In South Africa, street boys engage in sex work and their clients often insist on unprotected and /or oral sex (Swart-Kruger and Ritcher 1997). Apart from street

⁵³ IRIN 2002 'South Africa: Corridors of Hope Against HIV' [online] February 13, 2002. Available from: www.irinnnews.org Accessed on: March 20, 2002.

⁵⁴ IRIN 2002 'South Africa: corridors of Hope against HIV' [online] February 13, 2002. Available from: www.irinnnews.org Accessed on: March 20, 2002.

boys, men often sell sex to other men in many centres around the world due to poverty. In sub-Saharan Africa, this often happens in tourist resorts and beaches like Mombasa, along the Kenyan coast. The sale of sex, therefore, is not just a phenomenon confined to women. The practice as an economic venture is growing in sub-Saharan Africa, largely due to poverty, and possibly due to the myth that homosexual unions are safe from HIV.

3:8 Military conflict, ethnic strife, and refugee crises

Conflicts and ethnic strife constitute some of the main causes of vulnerability, mortality, and economic insecurity in sub-Saharan Africa. These wars and conflicts pitting ethnic groups or clans against one another are due to the scramble for resources, poverty, local and international economic policies, and ethnic sensibilities. Population dislocations and the creation of both internal and external refugee populations have been the hallmark of these perpetual wars. In 1993, there were a total of 5.4 million refugees⁵⁵ reported throughout Africa⁵⁶ (UNHCR 1993). It was reported in 2002, that the Horn of Africa alone had a total 6.3 million refugees, returnees, and internally displaced people (IDP)⁵⁷. At the height of Mozambican civil war, Malawi, Zimbabwe, Tanzanian, Zambia and Swaziland hosted 1.7 Mozambican million refugees (De Hulsters *et al.* 2002). Nearly three quarters of sub-Saharan African countries have been directly or indirectly affected as either a source or destination (host) of refugees (Kalipeni and Oppong 1998). Most countries that receive refugees also contribute to the refugee crisis by exporting their own refugees. This is typical of countries such as Mozambique, Tanzania, Uganda, Sudan, Ethiopia, Liberia, and the Democratic Republic of Congo. No scientific studies into the prevalence of HIV/AIDS infection among refugees has been carried out so far, but experts assume that displaced people, separated from their families and with no independent source of income, may be more susceptible to the threat of HIV/AIDS than other groups.

⁵⁵ Internally displaced people (IDP) are excluded from this figure.

⁵⁶ This is distributed as follows: Malawi (1,050,000); Guinea (478,000); Burundi (222,000); Liberia (100,000); Sudan (726,000); Zambia (142,000); Kenya (402,000); Cote d'Ivoire (174,000); Zimbabwe (134,000); Uganda (196,000); Tanzania (292,000); Zaire (391,000); and Ethiopia (432,000).

⁵⁷ Of the total, 2.9 million people come from Sudan, Burundi (907, 250), Uganda (710,926), Tanzania (480,000), Eritrea (379,378), Somalia (355,200), Ethiopia (220,179), Kenya (215,000), Rwanda (80,000), and Djibouti (25,605). (Mburu, C. 2002. 'Famine and Conflict: Africa's Deadly Nexus' *The East African*, [online] April 9, 2002. Available from: www.nationaudio.com. Accessed on: April 9, 2002).

Refugee situations are often characterised by poverty, scarcity, rape, and destitution. These deplorable social living conditions in refugee camps, in conjunction with the effect of social dislocation, manufacture a conducive atmosphere for the breeding, transmission, and contraction of numerous infections. In addition, sexual violence is very widespread (Jewkes 2003; Karanja 2003). Most refugee camps are characterised by re-emerging, rapidly increasing, and newly emerging forms of infections (Burnharm 1992; Kalipeni and Oppong 1998; Baluku *et al.* 1999; Berns and Roger 2000). In addition, the camps are characterised by gender-based violence and the lack of access to prevention services as well as STI diagnosis and treatment (McGinn 2000; Ward 2002). Some of these infections become lethal to the populations, especially for people with no immunity (for instance, when people from low malaria endemic areas are forcibly driven into high malaria endemic areas). Refugee influx and settlement alters the ecology of infections, thus affecting the spatial patterns of disease prevalence (Berns and Roger 2000; Kazmi and Pandit 2001). In addition, this disrupts normal livelihoods and living conditions leading to protein-calorie-malnutrition, which in turn contributes to immunosuppression and vulnerability to infections. An assessment of the nutritional status of older Rwandan refugees found a prevalence of malnutrition (Pieterse *et al.* 1998). Psychological trauma often leads to the reduced perception of other risks apart from war and heinous crimes. The devastation of disease and hunger is often greater than that of the warfare that drives the people from their homes. A 1980 study of Ugandan refugees in war-zones attributed only 2 percent of the deaths to violence, while 20 percent were attributable to diseases and 78 percent to starvation (Ressler *et al.* 1993). Generally, the toll of morbidity and protein-calorie-malnutrition reduces the immunity of refugees, thus exposing them to higher risks of contracting and transmitting HIV efficiently. Refugees are also often cramped in poor social living conditions characterised by overcrowding, poor personal and environmental hygiene, the lack of clean water, limited food, and ramshackled shelters, which “create increased *exposure* and *susceptibility* to disease and often leads to death” [emphasis mine] (Kalipeni and Oppong 1998: 1646).

Since men and boys serve as soldiers in wars, women and children normally comprise more than 75 percent of the internally displaced persons (UNAIDS 1997a). Unfortunately, these women and girls are also subjected to rape, often resulting in unwanted pregnancies

and psychological and mental scars. Women and girls experience sexual violence and exploitation before flight, in the course of flight, and at the destination. Rape is often common among both local friendly women and women within the enemy territory (Wiss and Giller 1993; Lindsay 2000). Therefore, rape as a common practice or a weapon of war amplifies the spread of HIV. During the Rwandan genocide, almost every woman and girl past puberty that survived the massacre was raped by militias (Anonymous 1995; UNICEF 1996). As a consequence of rape during the civil war, more than 5,000 unwanted children were born, many of whom were abandoned (Refugee Policy Group 1997). Rape is very common in all refugee camps. In Cote d'Ivoire, humanitarian workers among Sierra Leonean refugees pointed out that there is greater number of STDs and unwanted pregnancies among young refugees due to rape⁵⁸. Rape is widely reported in the Kakuma refugee camp, in Turkana Northern Kenya. UNICEF (1996) reports that in 1993, hundreds of Somali refugees in the same camp were raped at night. More than 1,200 girls who escaped fighting between the Sudan Peoples Liberation Army and the Khartoum government forces in 1992 are being forced into marriage in exchange for dowry by their adopted parents at the Kakuma refugee camp in northern Kenya⁵⁹. A report compiled by the United Nations High Commission for Refugees (UNHCR) in Nairobi states "Kakuma refugee camp has become a free market for girls, who are married off to rich men in Sudan". The preliminary report compiled by the United Nations High Commissioner for refugees (UNHCR) and Save the Children (SC-UK), pointed out that humanitarian staff working for national and international NGOs and the UN, armed peace keepers, local government officials, and community leaders have been demanding free and paid sex from desperate refugee girls as young as 13-years old in Guinea, Liberia, and Sierra Leone, in exchange for food and other services⁶⁰. This is exemplified by the case of Helen Kamara, a 40-year old mother who told investigators about her ordeal in a Sierra Leone refugee camp: "The Secretary General of our camp once told me that if I did not make love to him or give him one of my seven girls aged between 22 years and 7 months, they would not

⁵⁸ IRIN 2001. 'Cote d'Ivoire: IRIN Focus on Sierra Leonean and Liberian refugees' [online] Available from: www.irinnews.org/report. Accessed on: April 10, 2002.

⁵⁹ Kwayera, J. 2002. 'Sudan's Lost Girls' Sold into Early Marriages' *The East African*, [online] Available from: www.nationaudio.com/News/EastAfrican/current/Regional/Regional4.html. Accessed on: March 4, 2002.

⁶⁰ Kamau, J., 2002. 'Food for sex at refuges camps' *Daily Nation*, March, 14, 2002 [online] Available from: www.nationaudio.com/news/nation. Accessed on: March 4, 2002.

supply us with food". Reports from Kosovo also indicate that girls as young as 13-years old are forced to provide sex for UN foreign European Peacekeepers⁶¹. Dislocated women and girls often subjected to sexual demands from both refugees and those who are entrusted to protect and rehabilitate them are at heightened risk of contracting HIV. In some cases, refugees are pressed to exchange sex for money from the highly paid UN and NGO workers, the majority of whom are from the local population. UN peacekeepers and other UN and NGO workers are reportedly among the highest paid. They use the money they receive to buy sex from the poor and desperate refugees or from the local populations that live on the fringes of the refugee camps. Some male refugees, who also have a great deal of money compared to the poor populations, often buy sex from members of the local population. Hosting communities, therefore, often become centres of heightened sex work. It is reported that in communities around Kigoma Tanzania, women and adolescent girls - some escapees from refugee camps - engage in commercial sex⁶². This portends a higher risk to the local, often poor populations, especially when members of the refugee population emigrated from a high HIV prevalence area to an area of very low HIV prevalence (host), or if refugees from two different HIV prevalence rates are mixed altogether. During the Rwanda genocide (1994-95), refugees in the Democratic Republic of Congo (DRC) camps from Kigali where HIV rates preceding the crisis were between 20-30 percent were mixed with populations from rural areas with lower infection rates (UNAIDS 1997b). This resulted in the diffusion of HIV among the refugee and non-refugee populations through sexual contracts.

For a growing number of women from the Democratic Republic of the Congo (DRC) in the refugee camps in Zambia, the way out of legal exclusion and deprivation lies in finding an indigenous male partner. Marriage to a local means a female refugee can automatically assume Zambian citizenship, while less permanent relationships imply at least a level of material support⁶³. Such 'marriages of convenience' have inadvertently presented a more serious problem: the spread of HIV/AIDS among vulnerable refugees. That Zambia has one of the highest incidences of HIV/AIDS in sub-Saharan Africa, with an estimated 20

⁶¹ Lloyd-Roberts, S., 2002. 'The new warlords of the sex trade' *Evening Standard*, London, June 14, 2002.

⁶² Africa News Service, 2000. 'AIDS Pandemic Grips Tanzania' *Africa News Service*, January, 26, 2000.

⁶³ IRIN, 2001. 'Zambia: UNHCR tackles HIV/AIDS in refugee camps' *IRIN*, August 9, 2002.[online] Available from: www.irinnews.org/report.asp. Accessed on: April 10, 2002.

percent of its 10 million people believed to be HIV positive, makes the picture grim. Yet Zambia has the highest number of refugees in Southern Africa, most of them from Angola, Burundi, the DRC, and Rwanda, all residing in long-term refugee camps in northern and western Zambia.

A baseline study conducted by the Centre for the Study of Violence and Reconciliation (CSVR) on behalf of UNHCR investigated refugees aged 10-24 in Gauteng province, South Africa to determine reproductive knowledge among young refugees. The results showed that although there is a general awareness about HIV/AIDS, specific knowledge concerning how the disease is transmitted and prevention strategies is "alarmingly low". One in five respondents (male and female) believes that it is a woman's fault if she is raped. Fear of social stigma, rejection, and ridicule contributes to the creation of a context in which a significant minority (17 percent) of refugees believe that rape should be kept quiet, said the report⁶⁴. According to the study, violence against women was widely "accepted" by both male and female refugees and was often seen as an "expression of love or as necessary means of disciplining a woman". One in 10 of those interviewed reported that they had been previously raped.

In addition, blood transfusion in temporary medical facilities used by refugee also accelerate the spread of HIV (UNAIDS 1997a). There is considerable danger in war situations and, as such, emergency medicine is often rudimentary; hence, testing for HIV antibodies is seen as taking time away from the race to save as many lives as possible. There are also many women and children who are normally in urgent need of blood transfusion. Testing for HIV from locally donated blood is often seen as a luxury, yet it could result in the spread of the HIV virus. In most cases, the medical infrastructure is so rudimentary that there are no facilities for HIV testing or for the storage of blood.

Most countries in sub-Saharan Africa have either previously engaged in, or are currently engaged in, armed conflicts that involve many countries⁶⁵. Wars and civil violence have contributed to situations of increased susceptibility to HIV/AIDS, but epidemiological data is usually lacking in the affected areas. Literally, all countries of Eastern and Southern Africa

⁶⁴ IRIN 2001. 'South Africa: New study about reproductive health among refugees' *IRIN*, May 17, 2001. [online] Available from: www.irinnews.org/report.asp. Accessed on: April 10, 2002.

⁶⁵ While internal civil wars have been in Uganda, Somalia, Sudan, Ethiopia, Liberia, Burundi, Rwanda, Democratic republic of Congo, Sierra Leone, internal ethnic strife have taken place in Kenya and Nigeria.

have been engaged in, or have experienced repercussions from, wars or major civil violence since the mid 1970s. Is it a coincidence that major refugee spots, from the horn of Africa to the central and eastern parts of southern Africa, are the epicentres of the HIV/AIDS epidemic? Wars and internal civil strife also divert resources from desperately needed improvements in access to healthcare, especially STD treatment and other forms of HIV prevention. Wars also directly lead to the destruction of hospitals' infrastructure and the destruction of other social amenities. And, as the HIV/AIDS epidemic has grown more serious, military expenditures in many countries continue to divert needed resources from health care. In 1999, for example, Zimbabwe spent about 70 times more on its military presence in the DRC than it did on HIV/AIDS prevention (Sayagues 1999). Generally, military expenditures normally exceed health investments in almost all developing countries (UNDP 1998c, 1999).

Uniformed forces are predominantly male in most parts of the world. In sub-Saharan Africa, active combatants in the army are largely male. Service in the military also presents HIV risks, both for military personnel and for the civilian population with whom they come in contact. These uniformed officers are often stationed away from home in mostly remote parts of their respective countries. They therefore entertain a high number of sexual partners, have multiple sexual partners, and, since they are disproportionately wealthy compared to the local populations, have sex with commercial sex workers, practice unsafe sex, associated with alcohol and drug abuse, and have high rates of sexually transmitted infections. The male soldiers eventually move on, but the women stay behind or move to the villages where they transmit the infection. HIV is more prevalent in military personnel than in the general population (Foreman 2002). Some African military forces have HIV prevalence rates of 75 percent or more, with the highest rates being seen in Malawi and Zimbabwe⁶⁶. In Kenya, at least eight soldiers die every week from HIV-related illnesses, according to the Department of Defence⁶⁷. It is common for soldiers to engage in rape and coerced sexual relations, indicating that some adopt rape as a weapon of war (Melby 2002; Wakhweya 2002). In addition, military personnel are often stationed away from their

⁶⁶ *AIDS and violent conflict in Africa*, October 15, 2001. US Institute of Peace: Washington DC. [online] Available from: www.usip.org. Accessed on: May 30, 2003.

⁶⁷ Otieno, J., 2003. 8 soldier dying weekly' May 1, 2003. [online] Available from: www.nationaudio.com. Accessed on: May 2, 2003.

wives (Heineken 2001). During the 1980s, for example, the thousands of US troops that were stationed in Honduras had sexual relations with impoverished rural girls and women (known as *las gringueras*) (Collins and Rau n.d). When the US troops withdrew, some of these women moved to other places with a high sexual demand, including the city of San Pedro Sula, which has become an epicentre for HIV/AIDS in the country. Today, Honduras has the highest HIV/AIDS prevalence of any country in Central America and the highest number of abandoned women living with AIDS. Given the high prevalence of HIV/AIDS among soldiers and the violence of rape, they have become a mode of transmission of HIV. In addition, the vulnerability of displaced populations has increased through the broadening of sexual networks, thus increasing of the risk for contracting the virus.

In many countries, HIV infection is much higher in the armed forces than it is in the general population as indicated by the estimates in the 1990s for Africa, which show that 40-60 percent of Angolan soldiers (2.8 percent of adult population), 10-25 percent in Congo-Brazzaville (6.4 percent of adult population), 4.6 percent in Eritrea (2.8 percent of adult population) 15-30 percent in Tanzania (1.8 percent of adult population) and 50 percent in Zimbabwe (25 percent of adult population) were HIV positive (Foreman 2002:3). War therefore brings these high-risk groups into contact with new populations often producing localised epidemics. For instance, an HIV-2 epidemic was associated with the war of independence from Portugal in Guinea Bissau (Lemey *et al.* 2003) and more recently, with the Congolese war (Nguyen and Strovel 2004). Several factors put soldiers at a high risk for contracting and transmitting HIV and other STIs: they often have unprotected sex and frequently travel and mix with civilian population; they are young and sexually active; and often have easy access to sex, and power and influence over their potential partners. Their professional ethos excuses or encourages risk-taking. As one career soldier in Peru puts it: "I don't think we are different. It's just that the army has taught us to dominate fear and be more decisive, not be afraid" (Foreman 2002:1). Some factors that expose soldiers to HIV infections include: handling injured bodies; alcohol and substance abuse; multiple partners; unprotected sex through inconsistency and /or incorrect usage of condoms; and the sharing of razors and skin-piercing instrument. Some soldiers, especially insurgent forces with limited discipline, use drugs habitually. In the 1990s, the children who fought for the insurgent forces in Sierra Leone commonly used

cannabis, while in Somalia, soldiers of different militia chewed *miraa*, also known as *qat* (Foreman 2002).

Communities that surround army barracks often have higher rates of HIV infection than the national average. In Northern Uganda, where the Uganda army is in combat with the rebel movement, the Lord's Resistance Army (LRA), women known locally as *Jua Kali* (hot sun) live in small settlements next to the billets, selling alcohol and sex (Foreman 2002). In fact, during times of war rates of consensual sex rise, commercial sex work increases, the age of commercial sex workers declines and protection against sexually transmitted infections is considered to be less important. In some cases, rape becomes the order of the day in war environments, while poverty forces or encourages many women and girls to have sex for financial gain. As a RENAMO soldier in Mozambique, indicated: "One day we entered a village and axed to death all the old people and invalids, took away the girls and the boys and raped women in front of their own husbands and parents-in-law" (Foreman 2002: 20). In Rwanda in early 1993, between 250,000 and 500,000 women were raped during the genocide, while a UNICEF report indicated that almost a third of Rwandan children had witnessed a rape or sexual assault (Foreman 2002). Between December 1998 and December 1999, 3,000 case of rape by the Congolese military were recorded in Brazzaville (Foreman 2002: 20).

The consequences of war on the HIV/AIDS epidemic may extend beyond the infection of individuals. It is suggested that the influx of troops from several nations into the Democratic Republic of Congo has led to a recombination of HIV, as genetic elements previously restricted to different countries are found in new strains of the virus⁶⁸. In fact, as part of the war propaganda in late 2001, Radio-Television Nationale Congolaise reported that 'two thousand HIV-positive Rwandan and Ugandan soldiers [had] been dumped in the Democratic Republic of Congo...Kigali and Kampala's action demonstrates their determination to carry out the plan of establishing a Hima-Tutsi empire by infecting the soil of the DRC'⁶⁹. Scientifically, this could be true, as soldiers infected with diverse variants of HIV, some of whom probably had utilised antiretroviral drugs, mix together and share

⁶⁸ *Epidemic rages behind front lines of Africa*. Laurie Garret, [online] quoted on www.smh.com.au/news/specials/int/aids/aids16.html. Accessed on July 2 2003.

⁶⁹ Monitored by the BBC and reported in *The Guardian* (London), 21 November 2001.

sexual partners, thus creating new variants of HIV infections. The spread of recombinant HIV will complicate the antiretroviral therapy programme in sub-Saharan Africa.

Due to insecurity and armed conflict, Ugandan and Sudanese young people in northern Uganda are concerned about abductions, forced recruitment, and sexual enslavement⁷⁰. They are least concerned about HIV/AIDS, to which they are dangerously exposed. In the same region, a 17-year old conflict, massive displacement, HIV/AIDS, poverty, and a lack of development have created a world of "unimaginable misery" for youths. More than 11,000 young girls from northern Uganda have been abducted and forced into sexual slavery. The exposure to violence and death makes many refugees and abducted child soldiers consider the risk of HIV as minimal, benign, and not comparable to the immensity of what they have encountered and experienced. For example, a survey of unaccompanied minors in southern Sudan found that 92 percent of the interviewees had been shot at, 99 percent had witnessed murder/killing, and 85 percent had witnessed death from hunger (UNICEF 1996). The most notorious abuse of children in warfare is carried out by the LRA waging guerrilla warfare in north-west Uganda (Foreman 2002). Over 26,000 cases of child abduction by the LRA have been documented, some as young as eight years old. Up to 90 percent of LRA soldiers are abducted children, with 20 percent of abductees being young girls who are pressed into the service as soldiers' 'wives'. What would make such youth fear AIDS in their lives? They have experienced the worst in their lives, and, what they are least worried about is HIV/AIDS.

Moreover, the refugee populations have so far been excluded from interventions aimed at slowing down the rate of HIV-infection in the host countries, as they are often seen as outsiders. In one case, a concerted campaign targeted at the youth in Zambia that is credited with curbing the rate of HIV-infection among urban teenagers, has been extended to the refugee camps⁷¹. The countries affected by civil strife/wars face population movements that contribute to the increased vulnerability for sexually transmitted infections including HIV. The relationship between refugees in Kakuma and the Turkana is discussed in detail in this thesis. However, in this section, I have tried to demonstrate how the African

⁷⁰ IRIN, 2001, 'Uganda: Northern youth lament "unimaginable misery"'. November 9, 2001. [online] Available from: www.irinnews.org/report.asp. Accessed on: April 10, 2002.

⁷¹ IRIN 2001. 'Cote d'Ivoire: IRIN Focus on Sierra Leonean and Liberian refugees' [online] Available from: www.irinnews.org/report. Accessed on: April 10, 2002.

refugee problem is deeply influenced by political, economic, historical, and environmental/ecological forces, with dire implications for the HIV/AIDS pandemic in most parts of Africa. The breeding and transmission of infections in refugee camps due to the social conditions of living, desperation and destitution, and the creation of an optimal environment for contraction and transmission of HIV and other sexually transmitted infections has partly led to the high prevalence of HIV/AIDS in countries of sub-Saharan Africa that are perpetually plagued by civil wars and conflicts.

3:9 The role of background infections, sexually transmitted infections, and protein-calorie-malnutrition in HIV transmission and the development of AIDS

Numerous infectious and communicable diseases continue to plague the sub-Saharan African populations with impunity. The susceptibility of the populations to these infections is exacerbated by chronic protein-calorie-malnutrition. More than one hundred million people have no access to adequate drinking water, more than 70 percent of the population do not get enough to eat, and more than 72 million people suffer from serious protein-calorie-malnutrition (UNICEF 1998). In addition, one in three children in sub-Saharan Africa is malnourished (UNICEF 1998). Protein-calorie-malnutrition is responsible for the more than 90 percent of the deaths of persons aged between one and four years. Protein-calorie-malnutrition also indirectly cripples millions of children, causes mental retardation, and increases vulnerability to infectious diseases (UNICEF 1998). There is a complex synergistic relationship among poverty, malnutrition, and infectious diseases. Malnutrition and infectious diseases are a cause and consequence of poverty (Keusch *et al.* 1986). For example, diarrhoea, which is a significant cause of childhood death, is a major contributor to malnutrition, and acute respiratory infections are worse among malnourished children (Berman and McIntosh 1986; Rhodes 1986). Protein-calorie-malnutrition and other infectious diseases like tuberculosis and malaria also suppress immunity leading to more infections and deaths. Apart from protein-calorie-malnutrition, African populations continue to suffer from infectious diseases such as malaria, tuberculosis, gastrointestinal infections, sexually transmitted diseases, polio, trachoma, neonatal tetanus, cholera, and

schistosomiasis, among others (Kitts and Roberts 1996). One in nine people suffers from malaria in Africa (Nowikowski 1997). What does this burden of infectious diseases and the fertile breeding grounds for infections have to do with HIV/AIDS? In this section, I will endeavour to show the correlation among infectious diseases, protein-calorie-malnutrition, the efficient transmission and contraction of the HIV virus, and the eventual rapid development of AIDS. Some studies have indicated a positive correlation between HIV sero-positivity and the presence of other immunosuppressant conditions, such as malnutrition, tuberculosis, malaria, and trypanosomiasis. In fact, it is widely accepted that HIV breaks down the immune system resulting in AIDS, which renders the body defenceless against other infections such as malaria, tuberculosis, pneumonia, diarrhoea, etc. What this portends for regions like sub-Saharan Africa is that these diseases will run rampant as they follow immunosuppression caused by HIV infection.

Some studies, however, raise the possibility that these immunosuppressed conditions may have preceded HIV infection and facilitated its transmission. Lamoreaux *et al.* (2000) noted that among Haitians and Africans, it appears that many cases of infection with *M. tuberculosis* appear to have preceded HIV infections. They note: "..... we feel that the prevalence and resistance of *M. tuberculosis* infection in Africans and Haitians, along with the concomitant increase, due to infection, in CD4+ lymphocytes and macrophages, which are the target cells of HIV, as well as the frequent provocation often immunosuppressed state in such TB-bacillus-infected individuals, probably represents a common factor predisposing these two populations to infection with HIV when exposed to the virus". It is a foregone conclusion that there is connection between AIDS and TB. This, in effect, plays a role in the high prevalence of HIV infection. The HIV virus is efficiently passed to populations with depressed immune systems, and HIV is reversing gains made in tuberculosis control throughout the world. Based on notification and annual risk estimates, the CDC and WHO estimate that 7.5 million cases of clinical TB occurred in 1990, and that this number would increase to 11.9 million by 2005. This global increase is due to changes in population age structure (77 percent) increase and HIV infection (23 percent of increase) (CDC 1993). In sub-Saharan Africa, protein-calorie-malnutrition, prevalent malaria, and tuberculosis among other infections are effective immune depressors. Due to these co-factors, the risk of transmitting the HIV virus through heterosexual intercourse may be

higher in Africans infected with HIV than in other HIV infected persons who are not subject to the same co-factors of infectious diseases, poverty, and protein-calorie-malnutrition.

Today, we are aware that the infectivity of HIV positive persons progresses with the amount of viral load in the blood and other fluids. So a person with a high viral load is highly infectious. The body increases its viral load as it deteriorates. Among the African populations, reduced immunity due to protein-calorie-malnutrition and other numerous infections leads to rapid viral production in the body and this makes them efficient transmitters of the virus within a short period of time after the infection. In addition, this accelerates the rate of death and also shortens the life span of the infected. This is why there is fear that the severe food shortages experienced by many sub-Saharan African countries and the resultant poor nutrition could contribute to a rise in HIV/AIDS- related deaths in the region⁷². Lack of health services and protein-calorie-malnutrition make poor communities more vulnerable to HIV infections during periods of food shortages. This, in turn, makes a person more vulnerable to opportunistic infections and shortens the incubation period of HIV, meaning that symptoms appear sooner and the person dies faster. According to the National Co-ordinator of the Zimbabwean AIDS Council, food shortages in Zimbabwe affect poor rural women the most: "Poor women are especially vulnerable, especially if they are HIV-positive or have AIDS. They have little power over any aspect of sexual relations, meaning that they are at high risk if their husbands are infected"⁷³. In Southern Africa, the worst affected countries, Lesotho, Malawi, Mozambique, Zambia, and Zimbabwe, are also among the top nine African countries most affected by the AIDS epidemic. The implications of this scenario are far reaching since in Sub-Saharan Africa, most countries that are perennially affected by food shortages are highly HIV-infected.

Some researchers, like Root-Benstein, suspect that HIV transmission and contraction through heterosexual intercourse is only possible in the presence of multiple background infections. "HIV is not the whole story of AIDS. Multiple immunosuppressive agents act

⁷² IRIN 2002, 'Southern Africa: Food shortages could increase HIV/AIDS deaths' [online] Available from: www.irinnews.org/report.asp. Accessed on: April 10, 2002.

⁷³ IRIN 2002, 'Southern Africa: Food shortages could increase HIV/AIDS deaths' [online] Available from: www.irinnews.org/report.asp. Accessed on: April 10, 2002.

synergistically with each other and HIV to create...a vicious cycle in....which each new agent produces further immune suppression, allowing yet more infections to catch hold... No one at risk for AIDS has a normal immune system to begin with" (Root-Benstein 1993: 172). A good example is malaria causing anaemia, which is very immunosuppressive (Root-Benstein 1993: 305). That HIV is often associated with the condition of diarrhoea (Bonacini *et al.* 1999) that often kills many AIDS patients in sub-Saharan Africa follows from the fact that many sub-Saharan African communities are characterised by poor personal and environmental hygiene due to insurmountable structural factors.

Sub-Saharan Africa also plays host to other virulent bacterial and viral infections. Quinn *et al.* (1988) points out: "our serological studies, as well as others, demonstrate that Africans are frequently exposed, due to hygienic conditions and other factors, to a wide variety of viruses including CMV [cytomegalovirus], EBV [Epstein Barr virus], hepatitis B virus⁷⁴, [hepatitis C virus (HCV)] and HSV [herpes simplex virus], all of which are known to modulate the immune system... Furthermore, Africans in the recent study are at a risk for immunological alterations since they are frequently afflicted with a wide variety of diseases, such as malaria, trypanosomiasis and filiaris that is known to have a major effect on the immune system. The frequent exposure to these multiple microbial agents could act collectively or individually to result in immunological modulations rendering a host more susceptible to HIV infection by influencing disease progression by increased viral replication and cytolysis of T4-positive cells". Sub-Saharan Africa has the highest prevalence of HCV (5.3 percent) and, ironically, a concurrent HIV epidemic (Madhava, Burgess and Drucker 2002). The HCV prevalence in sub-Saharan Africa is higher than those witnessed in the developed countries.

Chronic helminths infections have a profound effect on the immune system through decreased CD4 lymphocyte counts (Kalinkovich 1998). Malaria, which is prevalent in tropical Africa, contributes to HIV transmission through blood transfusion due to the anaemia it causes, especially in children as HIV screening is often not feasible in HIV-prevalent, resource-poor communities (Jager *et al.* 1990). It is evident that large numbers of the African population have compromised immune systems, which contribute to the expeditious deterioration of the body thus developing AIDS with its concomitant numerous

⁷⁴ Mozambique has the highest hepatitis B virus incidence in the world (Green 1999).

opportunistic infections. According to Packard and Epstein (1991: 777), "the susceptibility of Africans [to HIV] and the facility with which it is transmitted heterosexually may be a direct result of the high background levels of infection and malnutrition and other immunosuppressant conditions that exists in most African countries and not simply a question of frequent sexual contacts or other 'cultural practices'". The heterosexual transmission or contraction of HIV is facilitated by factors not in anyway related to African sexuality and behavioural norms. Quite often, however, as discussed above, the co-factors in HIV transmission are normally sexual in nature. In fact, if protein-calorie- malnutrition and the prevalent infectious diseases suppress the immune system predisposing Africans to HIV, and if HIV is transmitted through heterosexual contact, then the potential risk group may be very large indeed. In addition, it would certainly not be limited to the so called 'high risk groups' like commercial sex workers, truck drivers, and bureaucrats (Packard and Epstein 1991). Large numbers of the populations in sub-Saharan Africa are therefore at a higher risk of HIV infection, and can more efficiently transmit the virus than in any other region of the world. It follows, therefore, that a higher proportion of the population in sub-Saharan Africa would die from HIV/AIDS than their counterparts in the developed world.

Sexually transmitted diseases, including HIV/AIDS, are common in developing countries. The World Health Organisation (WHO) estimates that, in 1995, 333 million new cases of syphilis, gonorrhoea, chlamydial infection, and trichonomiasis occurred. The burden of these diseases is higher in sub-Saharan Africa, where the estimated incidence of these four diseases is 254 per 1000 population at risk (WHO 1995). In addition, UNAIDS estimates that over 90 percent of the 33 million people infected with HIV by December 2001 live in developing countries (UNAIDS 2001). A large proportion of these people live in sub-Saharan Africa. HIV and other sexually transmitted diseases are interdependent. Similar behaviours put people at risk of both infections. In addition, numerous epidemiological and biological studies have shown how pre-infection with sexually transmitted diseases, both ulcerative and non-ulcerative, precipitate the efficient transmission and contraction of HIV (Cameron et al. 1989; Wasserheit 1992; Laga *et al.* 1993; Grosskurth 1995; Dickerson *et al.* 1996; Cohen, *et al.* 1997; Robinson *et al.* 1997; Cohen and Myron 1998; Wilkinson and Wilkinson 1998; Flemming and Wasserheit 1999). Though the relative importance of ulcerative STDs appears complex, it is argued that the

frequency of non-ulcerative STDs in many populations in sub-Saharan Africa may be more responsible for HIV transmission and contractions than genital ulcers (Wasserheit 1992; Cohen, *et al.* 1998; Flemming and Wasserheit 1999). This is, however, most active if a sexual partner's immune systems have been suppressed by the numerous infections like malaria, schistosomiasis and helminthic infections (Root-Benstein 1993) and protein-calorie-malnutrition. On the other hand, genital diseases are seen as disrupting genital epithelium (mucosal tissue) and thereby facilitating the sexual transmission and contraction of HIV (Cohen and Myron 1998). HIV has been identified in the genital tract of both males and females and found to be both cell-associated and cell-free (Levy 1993). HIV has also been isolated from the exudates of both female and male genital ulcers (Kreiss *et al.* 1998, Plummer *et al.* 1990) and has been quantified in semen (Vernazza *et al.* 1997; Combs *et al.* 1998) and female genital secretions (Xu *et al.* 1997; Ghys *et al.* 1997; Mostad *et al.* 1997). The shedding of HIV in genital fluids is increased by STD-related inflammations making men and women who are STD-infected and HIV-positive more infective (Clemetson *et al.* 1993; Kress *et al.* 1994; Moss *et al.* 1995; Operskalskii *et al.* 1997). Even changes in the vaginal flora characterised by bacterial vaginosis facilitate acquisition of HIV (Sewankambo *et al.* 1997) and it has been found that a concentration of HIV in blood correlates with the concentration in semen (Royce *et al.* 1997; Venazza *et al.* 1997).

Researchers in Kenya (Mostad *et al.* 1997; John *et al.* 1997) and Cote d'Ivoire (Ghys *et al.* 1997) have found that there was a high concentration of HIV DNA in cervico-vaginal fluids in patients with STDs. In Cote d'Ivoire patients with gonorrhoea, Chlamydia and cervicovaginal ulcers had an increase in HIV DNA in their cervico-vaginal-lavage samples. While in Kenya, though Mostad and co-workers (1997) found that there was a significant increase in the detection of HIV in swab samples in women with gonococcal cervicitis and vaginal candidiasis, John and co-researchers found no effect for trichomoniasis or chlamydia (John *et al.* 1997). In another study, genital secretions of women infected with non-ulcerated STDs like chlamydia displayed a significant increase in CD4 lymphocytes, the HIV target cells, compared with controls (Levine *et al.* 1998). Sperm also facilitates the efficient genital-mucosal transfer of HIV in the cervico-vaginal environment (Scofield 1998). This may be why HIV is more efficiently transmitted from men to women than from women to men (Mastro and de Vincenzi 1996). In addition, HIV changes the natural history of

some STDs (Clottey *et al.* 1993). In fact, the prevalence of HIV is significantly higher in STD infected patients than in the general population. In Kenya, of the 15,889 STD patients who participated in the HIV sentinel surveillance from 1990 to 2001, 4076 (25.7 percent) had HIV infections (Joesoef *et al.* 2003).

Some studies have demonstrated that treating STDs reduces the percentage of men in whom HIV is detected and the amount of HIV in an ejaculate (Enron *et al.* 1995; Moss *et al.* 1995). In a community-based randomised trial in the Mwanza District of Tanzania, treating STD-symptomatic individuals reduced HIV incidence in the study population by 42 percent (Grosskurth *et al.* 1995). The importance of STD in HIV transmission and contraction portends that the prevention of HIV would not be effective if we ignore the numerous STDs in sub-Saharan Africa. Treatment of STDs can be expected to significantly reduce the transmission of HIV in a cost-effective manner (World Bank 1997; Gilson *et al.* 1997). At the individual level, the treatment of a STD in an HIV-infected person reduces the detection of HIV DNA (Ghys *et al.* 1997). For example, the effect of gonorrhoea on the excretion of HIV in semen supports the timely treatment of this infection (Cohen *et al.* 1997). This suggests that early detection and treatment of both symptomatic and asymptomatic STDs in HIV positive persons would reduce their viral infectiousness thus reducing the efficient transmission of the virus. More than ten years ago, Quinn and his colleagues (1998) pointed out that to reduce HIV transmission in developing countries, priority must be placed on the syndromic management of STDs and the use of effective antimicrobial drugs. The non-treatment of these infections leads to their chronicity and to the development of ulcers, which facilitates transmission and contraction of HIV. To have maximal effect, STI intervention will have to be applied to the whole population of sub-Saharan Africa, since the spread of STIs knows no ethnic, national, or international boundaries. Population-wide intervention would have the combined effect of reducing HIV shedding among HIV infected people who have STIs, and reducing the susceptibility of HIV-uninfected people with an STI for acquiring an HIV infection (Mabey 1996). If the magnitude of the coverage of STI intervention is wide and high (i.e., countrywide), it may reduce the overall transmission of STIs in the population (Wilkinson and Rutherford 2002). Due to population-wide poverty, the lack of resources, and countrywide under-funding of healthcare resources, there is poor healthcare infrastructure. Due to the dictates of

Structural Adjustment Programs, many countries in Sub-Saharan Africa have been forced to cut spending on health and introduce cost sharing in many health facilities. This means that many of the infected persons cannot afford the cost of healthcare resources to treat their sexually transmitted infections, thus leading to the increase of STI prevalence in the general population.

3:10 Iatrogenic transmission of infections: the role of medical interventions and lack of medical resources in the rapid transmission of HIV

The role of the nosocomial and iatrogenic transmission of HIV in sub-Saharan Africa has been ignored (Packard and Epstein 1991; Brewer *et al.* 2003; Gisselquist *et al.* 2003; Gisselquist and Potterrat 2003). Gisselquist and Potterrat (2003) argue that contrary to popular knowledge, only roughly one-third of the spread of HIV in sub-Saharan Africa can be associated with heterosexual transmission. Two thirds, therefore, have been or are being spread through unsafe injections and other medical exposure to HIV-infected blood (Simonsen *et al.* 1999; Gisselquist *et al.* 2002; Gisselquist and Potterrat 2003). Using data from researches and estimates of the incidence and prevalence of HIV in sub-Saharan Africa over the last 17 years, Gisselquist and Potterrat (2003: 170) concluded that: "The consensus view that 90 percent of adult HIV in Africa is from sexual transmission has not – to our knowledge – been derived from or tested against this evidence. Hence, our estimate that sexual transmission accounts for 25-35 percent of HIV incidence in African men or women is the first empiric estimate". The World Health Organisation's estimate that 90 percent of cases in Africa are caused by heterosexual sex is based on inaccurate assumptions about African sexual mores. Writing in the Royal Society of Medicine's *AIDS* journal, Dr David Gisselquist and his team suggest that the risk of being infected by HIV during an act of heterosexual sex is about one in a thousand. While the risk from being injected with a contaminated needle, they say, is 1 in 300 - three times greater than the risk associated with having sex.

Though few in number, there continue to be reports of HIV sero-positivity in persons denying coital exposure and in persons claiming a sole lifetime sexual partner who is

reportedly HIV negative (Gisselquist *et al.* 2002). Similarly, there are persistent reports of HIV in infants with seronegative mothers (Gisselquist *et al.* 2002). Therefore, the prevalence of HIV in sub-Saharan Africa could be attributed to medical care and the common use of injections (Somonsen *et al.* 1999; Drucker *et al.* 2001; Potterat and Brody 2001; Gisselquist 2002; Gisselquist *et al.* 2002). Commercial sex workers, the so called 'high risk' group, are often exposed to many injections in their lifetime in the STI clinics, possibly leading to the acquisition of HIV. This could be one of the reasons that there is a high prevalence of HIV among commercial sex workers. Re-use of syringes used for blood tests for infections such as malaria, HIV, and STDs constitute a source of HIV transmission in Africa and other parts of the poor world. For example, in Elista, Russia, nosocomial HIV infection through the reuse of syringes led to an outbreak of HIV among children and mothers (Pokrovsky and Eramova 1989). Likewise, in some hospitals in Africa, it was reported that one unsterile needle was used to inject a whole ward full of children (CDC 1989a). In a mission hospital in Zaire, five needles were used to inject up to 400 outpatients daily, and were only rinsed in water and sterilised once a day (Seale 1986).

AIDS in Africa might have been caused, to some extent, by medical interventions and health care: such interventions include initiating mass vaccination campaigns, injecting antibiotics, and blood transfusions before the risks were well known, especially before the introduction of throw-away needles. The risk of the transmission of HIV through injections is based on good estimates of transmission efficacy, which varies depending on the type of injection and the circumstances that cause re-use of contaminated medical equipment. For instance, the probability of needle stick exposure is about 1 in 300 (Tokars *et al.* 1993); of medical injection about 1 in 30 (Gisselquist 2002); and of illicit-drug injection is about 1 in 100 (Kaplan and Heimer 1992); all are more probable than penile-vaginal exposure of about 1 in 1000 (Royce *et al.* 1997).

The prevalent parenteral transmission of other viruses like Hepatitis A, B, and C should be consistent with the transmission of HIV. A review found consistent evidence of high Hepatitis C virus (HCV) prevalence in the general population of sub-Saharan African countries compared to the developed countries (Madhavani, Burgess and Drucker 2002). HIV could be transmitted iatrogenically through medical injections in the same way that HCV transmission has been related to the schistosomiasis campaign in Egypt in 1960-

1980 (WHO 1999). Studies in Pakistan identified medical injections as the most important channel for HCV transmission (Pasha, *et al.* 1999). In the UK, injecting drug use accounts for 92.3 percent of all transmissions of HCV, while *sexual exposure only 1.5 percent*, transfusions 1.4 percent blood product recipients 1 percent, mother to baby 0.9 percent, renal failure 0.5 percent, and unknown (sharing tooth brushes, razors, or unsafe practice during tattooing or piercing) 2.4 percent (NHS 2002). In the same way that injecting drug use and contaminated medical equipment is a potential factor in the epidemiology of HCV, it could be with HIV among the general population of sub-Saharan Africa, especially as a result of the numerous immunisation campaigns that previously involved the use of shared needles. In addition, given the low transmission of HCV through sexual contact, the indication of a rising prevalence with age supports the view that unsterile injections and other iatrogenic routes of transmission may be the main risk factor for HCV infection in sub-Saharan Africa (Madhavani, Burgess and Drucker 2002: 301). Donated blood is rarely tested for HCV in sub-Saharan Africa, unlike the procedure in developed countries. In addition there is rising injecting drug use in some major cities in sub-Saharan Africa that would amplify the prevalence of HCV and HIV.

Due to the prevalence of infections in Africa such as malaria, there is a very high frequency of the use of hypodermic needles. Though most countries in Africa have adopted the policy of using disposable needles, the reuse of needles was very common until only recently. Previously, even though there was an attempt to sterilise the needles, adequate sterilisation procedures were not often observed, and this was obvious during mass vaccination programs, which were often carried out in the villages where sterilisation was primitive. In a study in Kinshasa, Zaire, Mann *et al.* (1986) found that infants and children were often injected in dispensaries with inadequately sterilised re-usable needles, frequently given by untrained personnel. The risk is further heightened by the frequency of intramuscular injections, which are highly valued by parents. The same studies by Mann *et al.* (1986) also indicate that infected children had previously undergone transfusions as a result of anaemia due to malaria infections. Due to the belief in efficacy of injections even among the adult population, the risk of contracting HIV through injections would be more widespread.

Ironically, the rapid transmission of HIV in sub-Saharan Africa has been associated with countries that have relatively good access to healthcare like Botswana, South Africa, and Zimbabwe (Brewer, *et al.* 2003). The authors argue that high rates of HIV in rural South Africa have paralleled aggressive efforts to deliver health care to rural populations.

Quacks and indigenous healers that often dispense Western medicine, frequently re-use needles in the villages without proper sterilisation. Due to poverty, the healers or the sick in the community are forced to re-use disposable hypodermic needles. In addition, one needle could be shared by people in the same household. A study among the Luo of Kenya found that several villagers provide injections and pharmaceuticals to family, friends, and neighbours for a fee (Prince, *et al.* 2001). These healers, when called upon, often infect the whole household using one hypodermic needle. Infection with contaminated needles and syringes, as well as exposure to non-sterile skin-piercing instruments, might have played a significant role in the transmission and contraction of HIV in Kenya. Since clean supplies of water and medical facilities are unevenly distributed in Kenya, this has severe implications for the sterilisation of needles and syringes and the availability of medical supplies in health facilities.

Indigenous medical and aesthetic practices such as skin cutting and piercing may also contribute to the transmission and contraction of HIV if non-sterile paraphernalia are used. Indigenous healers often use razor blades and knives, which, if used amongst a whole community during one healing episode, may facilitate the transmission and contraction of HIV. The same would apply to the unsterilised knives used in mass circumcisions.

Warfare also contributes to the re-use of needles in sub-Saharan Africa. In such emergency situations, it is likely that the needles would be re-used without sterilisation. In addition, the lack of equipment and the need to provide emergency medicine would necessitate the multiple use of one hypodermic needle without recourse to sterilisation.

The political economy of healthcare in sub-Saharan Africa contributes to the re-use of needles. For instance, the privatisation of health services, coupled with the imposition of user fees in public health facilities has created a market for the unregulated injectionists (Nguyen and Stovel 2004). In Kenya, patients are forced to buy their own needles for injections. Mothers are supposed to buy the same for their children. Poverty, which

constrains the buying of non-reusable needles, also necessitates that quacks, visit the sick since they are ready to re-use needles unlike hospital and dispensaries that would simply turn the patients away if they could not afford needles. The shortage of needles may also contribute to the upsurge of HIV/AIDS in sub-Saharan Africa. In poor countries, disposable syringes may not be available through public medical services. The private clinics make a profit from selling these items, due to the failure of the public sector to provide these items at cost price or free. The buying of syringes heightened after the introduction of cost sharing in hospitals at the behest of the World Bank and international Monetary Fund. In these circumstances, patients are forced to buy their own syringes for each injection, and currently it is common practice in Kenya for patients to buy their needles for injection. In Lodwar, out-patients, including children, must buy their own syringes. As such, many patients were too poor to afford these injections.

The mass vaccination of children under five in remote villages in sub-Saharan Africa often involved the use of unsterilised needles and this might have been a potential avenue for the transmission of HIV (Packard and Epstein 1991). UNICEF reported that most countries of sub-Saharan Africa achieved 50-80 percent coverage for BCG and DPT vaccination of infants and anti-tetanus vaccination of pregnant women during the 1980s (UNICEF 1991). Due to the shortcomings in infection control principles and practices, mass transmission of infections could have taken place during this vaccination program. A field survey in nine African countries indicated that the health care infrastructure has a diminished capacity to administer safe vaccinations due to the re-use of unsterilised needles and syringes (Jones 1987). Shortages of both needles and syringes led to deficiencies in sterilisation such that unsterile needles and syringes were used more frequently.

Mass vaccinations through the WHO's Expanded Programme on Immunization, a yearly ritual in sub-Saharan African countries, often exceeded the capacity to administer them safely due to the lack of personnel and equipment and the drive to meet targets within a short period of time. In one study, sterile needles were used more commonly than sterile syringes and workers interviewed were not aware of the risks involved in administering vaccines using the same syringe for multiple injections without sterilisation (Jones 1987). Due to the possibility that young children exhibit a longer HIV progression, it is possible

that cases that were acquired a long time ago when re-use of needles was prevalent in Africa are beginning to show now.

The conditions in clinical settings in developing countries are unhygienic and deplorable, which results in routine procedures, such as blood tests, vaginal examinations, invasive procedures, abortions and injections, being carried out in unsafe conditions or settings. In Zaire, a history of placing objects in the vagina of commercial sex workers for medical or contraceptive purposes was positively associated with HIV infection (Mann *et al.* 1988). In medical environments where there is no control of infections, this may partially explain the proven nexus between genital ulcers and HIV infection among people attending crowded, under-funded and understaffed STD clinics (Minkin 1991).

Transfusion of HIV-contaminated blood is said to be the most efficient mode of transfer, with approximately 96 percent of recipients becoming infected (Colebunders *et al.* 1991). It is estimated that 43 percent of the 30 million blood donations in developing countries are not tested for transfusion-transmissible infections such as HIV, HCV, HBV, syphilis, and Chagas disease (WHO 2000). On the other hand 100 percent of the 45 million blood donations in the developed world are tested (WHO 2000). Globally, between 5 percent and 10 percent of HIV infections are caused by unsafe blood and blood products, with 80 percent of the world's population having no access to reliable and safe blood (UNAIDS 1997a; WHO 2000b; WHO 2004). According to WHO (2001), 25 percent of the units of blood transfused in Africa are not tested for HIV, with about 10 percent of cases of HIV transmitted and contracted through infected blood. In Eastern Europe, Tajikistan, reportedly did not test 40 percent of those who donated blood in 2002 (WHO and UNAIDS 2003). In addition, severe epidemics have affected some communities in China where unsafe blood collection and transfusion practices occurred in the 1990s (WHO and UNAIDS 2003). Unsafe blood transfusion also contributes to the spread of HIV in Bangladesh, mostly with injecting drug users selling blood, and in North Africa (WHO and UNAIDS 2003).

In Kenya blood is donated by campaign donors, mostly composed of secondary school pupils through mobile blood campaigns, and non-campaign donors usually recruited by the patient's family members at hospital blood banks. Blood donations are screened for the

presence of HIV antibodies with a single enzyme immunosorbent assay (EIA) or rapid test, and reactive units are discarded. The reactive units are not retested or subjected to the Western blot for reference and improvement of safety. There is marked shortage of reagents in most hospitals. For instance in 1994, no HIV test kits were available nationwide for four weeks (Moore *et al.* 2001). A research project provided test kits for use in their research sites and nationwide, and when 762 (42 percent) of donations were tested using kits supplied by the research team, 44 blood donations were HIV-reactive and were removed from the blood supply (Moore *et al.* 2001). Of the 1915 donations studied, the hospital laboratories tested 1813 (94.7 percent) for HIV. Of that total, 120 donations tested positive at the reference laboratory, 109 had been tested for HIV at the hospital of which 79 (72.5 percent) had been tested for HIV and had been removed from the blood supply. Another 19 (17.4 percent) of these had been recorded as non-reactive and were not removed from the blood supply and 11 (10.1 percent) had no test result recorded in the hospital laboratory. In one hospital, 11 (45.8 percent) of 24 HIV positive donations had not been screened despite the availability of test kits as routine testing was not practiced on donations from mothers to their children because hospital personnel assumed that children of HIV-infected mothers were also HIV-infected. Of the 1482 blood donations used for transfusion, 2.1 percent were later found to be HIV-positive at the reference laboratory. Of these 31 donations, one was reported as positive by the hospitals, 14 were reported as negative by the hospitals, 13 were not screened, and three were recorded as having been screened but no test result could be found. HIV tests were available for 1290 donor-recipient pairs. Of these, 26 donations were later identified at the reference laboratory to be HIV-positive, and these units were given to individuals who were identified as HIV-negative. An estimated 2 percent of transfusions transmitted HIV. The study concluded that a high proportion of blood transfusions transmitted HIV in Kenya primarily because of erroneous laboratory practices, the lack of reagents, and the lack of resources and personnel. A similar study at a University Teaching Hospital in Nigeria on blood transfusion related paediatric HIV/AIDS found out that 18 of the 263 children, screened between March 1991 and March 2001, had a history of blood transfusion and 12 (66.7 percent) of the 18 were HIV positive (Adejuyigbe, *et al.* 2003). Eleven (91.7 percent) of the 12 HIV-positive patients were transfused with blood supplied by private laboratories in

private hospitals. The blood with which the HIV-positive children were transfused was unscreened in three cases, screened in two and the HIV status unknown in the others. The study indicated that transfusion with infected blood is an important route for HIV infection in symptomatic children and that HIV-positivity is higher among paid donors. This research has far reaching implications because children are the most transfused group in sub-Saharan Africa (English *et al.* 2002). In sub-Saharan Africa, blood transfusion accounts for between 15 and 25 percent of paediatric HIV infections (Quinn *et al.* 1991).

The potential contribution of unscreened blood to the transmission of HIV that might have occurred when test kits were not available is great. This may have led to the transmission and contraction of HIV on a large scale. Even in the era of limited availability of test kits, there was also a risk from pre-sero-conversion of donated blood that would generally be eliminated by second tests after some time. Such luxury is not available in poor countries where resources – reagents- are scarce, and blood is mostly donated by relatives when it is urgently needed to save lives. In most cases, positive or negative tests are never confirmed. In a study, it was found that four percent of a population of patients who were transfused with screened blood was found to be HIV positive (Davach 1994). This is why even in situations where blood for transfusion is screened, there remains a measurable risk of HIV transmission through blood (Roberts *et al.* 1994). The reason for this is that there is a 'window period'⁷⁵ of 6-12 weeks between HIV infection and sero-conversion (McCullough 1998). The use of tests that can detect the virus and/or its antigens during this period is necessary, but unlikely to be affordable in sub-Saharan African countries. There are some tests that detect the virus itself rather than the antibodies to it (the HIV p24 antigen tests), but they are deemed not to be cost-effective and are not recommended by WHO (UNAIDS 1997b).

Just like the preoccupation with injections, preoccupation with transfusions might be increasing the risk of the transmission of HIV through contaminated blood. Some studies in Tanzania, Ghana, and Kenya, have indicated that nearly half of paediatric transfusions

⁷⁵ HIV is mostly diagnosed by detecting antibodies, which the body produces as it tries to resist the virus. These antibodies usually begin to be produced within three to eight weeks after infection. The period following infection, but before the antibodies becomes detectable, is known as the 'window period'. If a person donates blood during this window period, the usual antibody tests may give a false-negative result even though the person is infected.

may have been preventable if medical practitioners had adhered to standard guidelines (Addo-Yobo and Lovel 1991; Lackritz *et al.* 1992; Gumodoka *et al.* 1993). In most instances, many people access the healthcare resources when their prognoses require blood transfusion to save lives. Blood transfusion is over-used in sub-Saharan Africa, even in situations where a child could survive without donated blood (Adejuyigbe *et al.* 2003). In addition, anaemia exacerbated by malnutrition and dehydration, conditions characteristic of children in poor communities, often make blood transfusion a necessity.

Most laboratories do not have quality assurance programmes. Though some countries in sub-Saharan Africa, like Zimbabwe and Uganda, have centralised transfusion services supported by donors, they rarely serve the population in rural areas. Even though Kenya has followed in establishing regional transfusion centres with the support of USAID, they are not accessible to the rural-based hospitals that continue to rely on demand-driven blood donations. Research in Kenya found that that infrastructure for the testing, storage, and transportation of blood is poor and this is compounded by the lack of equipped transfusion centres (Moore *et al.* 2001). For instance, test kits that required refrigeration were transported over long distances at ambient temperatures. Moore *et al.* (2001) also indicate that hospitals use household refrigerators for blood storage with limited space for storing units of blood. HIV-negative and HIV-positive blood was often stored together in the same refrigerators, at times on the same shelves and without clear labels and records. Shortages of blood meant that most government hospitals relied on patients to bring their relatives and families to the hospital as blood donors. The handling and storage of blood affect its infectiousness: the longer blood samples are stored, the less the likelihood of transmitting the virus (Davachi 1994; Donegan *et al.* 1990). However, in Africa most of the blood is transfused within hours of donation because of the urgent need (Jager *et al.* 1990).

The lack of blood banks encourages the sale of blood through paid donors. This, in turn, influences the transfusion of sero-positive blood. There is evidence of significantly higher HIV positivity among the paid donor population, hence the higher risk of transmitting the virus to blood recipients (WHO 2000; Moore *et al.* 2001; Quinn *et al.* 2001; Adejuyigbe *et al.* 2003). The reliance on paid donors for blood transfusion has also been associated with the transmission of hepatitis and HIV viruses (Volkov *et al.* 1998). In addition, family

donors are also more likely to carry transfusion-transmissible infections (UNAIDS 1997a). This situation presents a grave picture for sub-Saharan Africa, as most donors are normally relatives since hospitals often do not have stored blood for transfusion. While in developed countries whole-blood donations are mainly from voluntary, unpaid donors, in developing countries 80 percent of the donated blood comes from paid or replacement (usually family)⁷⁶ donors who, in general, are more likely to carry transfusion-transmissible infections. Paid donors are often from the lowest and poorest segments of the community who may sell blood to obtain money for injectable drugs and who may already be afflicted with poor health and undernourished, and be at risk for HIV infections.. The safest blood donor is the voluntary, unpaid donor. However, access to blood from these types of donors is limited in remote health care settings due to the lack of infrastructure for blood transfusion services.

In a Nigerian study, parents used unscreened blood for transfusion because they could not afford screened blood (Adejuyigbe *et al.* 2003). Also, due to greed and the quest for profit, many private laboratories release falsified or unscreened blood for transfusion. Poverty, therefore, drives the spread of the HIV epidemic through unsafe blood transfusion.

Most blood transfusion requests (51.8 percent) in Kenya were for children aged ten years or younger, and 37.3 percent of all transfusion orders were for children who were younger than two years (Moore *et al.* 2001). Transfusions were mostly given to patients for the management of malaria-associated anaemia (48.6 percent), for surgery (13.6 percent), or for chronic paediatric anaemia (11.1 percent). In Nigeria, the most common reason for blood transfusions is the high prevalence of severe anaemia caused by malaria, followed by sickle-cell anaemia, which is endemic in sub-Saharan Africa (Olanrewaju and Johnson 2001; English *et al.* 2002; Adejuyigbe *et al.* 2003). Peak periods of malaria prevalence correlate with peak periods of blood transfusion (Moore *et al.* 2001). It has therefore been suggested that control of malaria infections will reduce the number of transfusions in tropical Africa, especially among the under five age group and therefore reduce exposure

⁷⁶ In the replacement donor system families of people needing a transfusion are asked to donate the same quantity as that given to their relative. The blood may be used directly if compatible or placed in a blood bank.

to iatrogenic blood-borne HIV transmission (Jager *et al.* 1990; Olanrewaju and Johnson 2001).

Even in developed countries, there is still a risk of transfusing infected blood and blood products. For instance, in southern China, Spanish manufactured Rglobulin was found to be HIV infected (CDC 1989b). In addition, blood donation has often put donors at risk for contracting HIV through the re-use of blood collection equipment. In Mexico, a direct association between plasma, donation, and the risk of becoming HIV infected was documented among 62 people, 87 percent of whom had no known risk factors for HIV infection. Employees revealed that they frequently re-used disposable blood collection equipment (Avila *et al.* 1989).

The role of blood transfusion in the transmission of HIV/AIDS should also be looked at in view of the lack of resources to adequately screen donated blood. Due to emergency medicine and the fact that most people in Africa are taken to the hospital after receiving a poor prognoses requiring the emergency transfusion of blood, there is often no time to screen blood, or screen it twice to confirm sero-negativity. This is compounded by the fact that there are no facilities for the processing and storing of blood. Blood is often donated on as when needed basis by the relatives of the recipient. Several studies have shown that minimising the risk of transfusion-transmissible infections depends on the careful selection of donors and that this is more efficient than HIV antigen testing (UNAIDS 1997a). In addition, a good infrastructure of national and local blood transfusion services with both testing kits and viable stocks of blood would reduce the possibility of false negative results.

Most hospitals in sub-Saharan Africa do not have enough protective devices to guard against the contraction and transmission of infections from patients to patients. The lack of protective materials forces workers to flout infection control principles, which puts them and their patients at risk of contracting infections. In the Turkana District Hospital, there were no gloves for the nurses. They had to nurse patients, some of whom were HIV-infected, bare-handed even though they handle body fluids. Hand washing was done with cold water and normal bathing soap. One nurse summed up the desperate situation: 'we nurses survive because of God's protection'.

As the healthcare system in Africa continues to deteriorate, the iatrogenic transmission of HIV is likely to increase. Even though most governments have instituted policies aimed at the prevention of such transmission of infections, this has further put the burden on the impoverished healthcare user who must buy disposable hypodermic needles. This further drives the poor to seek healthcare from quacks and indigenous healers where they are likely to receive injections from re-usable needles and syringes.

An evaluation of the heterosexual transmission of HIV will require a rethink of past and current interventions and a refocusing of resources from sexual behaviours to other structures connected to the nosocomial and iatrogenic transmission of HIV. The cases of Egypt and Pakistan indicate the potential of iatrogenic factors to establish HCV reservoirs that can then spread to the general population through widespread use of unsterile injections. Nevertheless, there has been very little epidemiological research on injections and other medical procedures as risk factors for HIV transmission in sub-Saharan Africa. It is critical that this becomes a focus of epidemiological study and prevention efforts.

Since the transmission of HIV through blood transfusion and injections is the most amenable to prevention, one wonders why it receives less attention than behavioural change in Africa. While developed countries have put various strategies in place for the prevention of the nosocomial transmission of HIV, most African countries still wallow in unsafe medical practices, including the transfusion of untested or poorly tested blood. Minkin (1991) has argued that the often cited uniqueness of the African HIV/AIDS epidemic could be a myth when the importance of iatrogenic transmission in Africa is contrasted to the heterosexual transmission of HIV in the USA. In the USA, 53 percent of HIV infected women are injectable drug users, while another 20 percent have male partners who are drug users. On the other hand, as medical consumers, African women face a variety of unsterile procedures including injections, blood tests, and transfusions. In addition, African women are also exposed to the heterosexual transmission of HIV through men that are HIV infected, and through exposure to hospitals, TB centres, and STD clinics. In The USA, children of drug users are at high risk for contracting HIV, just as African children face infection through the unsterile use of injections and the transfusion of infected blood, and in-uterine exposure. Like drugs users, the poverty-stricken people of sub-Saharan Africa

lack the political will and resources, accompanied by the shift in priorities and the ignorance of ecosystem factors, to control the spread of the epidemic.

As Ssemakula (2003) posits, could the use of unsafe medical practices - in conjunction with health systems or lack of them in Africa – be the missing link that could explain the rapid spread of HIV in sub-Saharan Africa when compared to other parts of the world?

3:11 Conclusion

In sum, socio-economic and political factors have shaped the environment in which HIV/AIDS has found fertile ground. Several of factors noted here that increases vulnerability to HIV are a direct outcome of the development paradigms pursued by international donor agencies, and changes in economic structures. Other risk factors reflect deep structural factors (some social and cultural, others political and economic) that have made many societies and specific groups within society especially vulnerable to conditions conducive to HIV transmission. Few authorities have given sufficient attention to the existence of, and changes in, gender inequalities, recognising that men are the driving forces behind the epidemic, particularly in rural areas (Collins and Rau n.d). However, what I am trying to reveal are some of the historical, political, global and socio-economic reasons that place both men and women in situations where they are susceptible to STDs, including HIV infection. I have therefore moved away from the simplistic, non-contextualised socio-cultural and behavioural explanations for the prevalence of HIV/AIDS in sub-Saharan Africa, which, I posit, is a function of the social, economic, and political conditions that influence the social conditions of existence.

The above discussion has revealed one thing: contrary to what infection rates in sub-Saharan Africa suggest, HIV is not easy to contract in a stable environment. A person afflicted with other sexually transmitted diseases and background infections is more likely to contract the virus, if exposed, than one who is free of other infections and whose immunity is not compromised.

I am not in any way denying the fact that the sexual transmission of HIV has played a role in its epidemiology, not only in Africa, but also in other parts of the globe. However, what I have emphasised is that the sexual transmission of HIV be viewed in a broader

perspective. This is why the prevention programmes in Africa, largely focused on condom promotion and behavioural change, have failed dismally to halt the transmission and contraction of HIV due to their failure to focus on the factors that influence the sexual transmission of HIV.

As I mentioned above, the retracing of the colonial policies' contribution to the emergence of sexually transmitted diseases, and later HIV/AIDS, is important because it sheds light on why the response to HIV/AIDS mirrors the response that was adopted years earlier by colonial officers. The response has so far focused on behavioural change, particularly change in sexual patterns and the use of condoms. However, comprehending "the political and economic context within which the pattern of multiple sexual partners is occurring is critically important. For it suggests that efforts to combat the spread of AIDS through sex education, just like efforts to control population growth in Africa through birth control, or TB through segregation, is working against social, political and economic forces and not simply culturally determined patterns of behaviour" (Packard and Epstein 1991: 776). The preoccupation with the public health approach, and recently the emergence of a biomedical approach through HAART drugs, is being derailed by deep socio-economic and political structures. As the authors say, if "efforts to control the spread of HIV infection do not include policies that deal with the underlying causes of both family separation and the high demand for family labour, we may be fighting an uphill battle in trying to reduce the heterosexual transmission of AIDS in Africa through behavioural modification and condom use" (Packard and Epstein 1991: 776). The previous and current interventionists, by developing and/or using prevention methods that are simply based on public health and medical models, have opted for a cheap and easy, but ineffective solution to the HIV/AIDS crisis.

Preoccupation with the biomedical and public health models continues to influence the response to numerous infections, including sexually transmitted infections. This is why even the TB control programs in Africa continue to view TB as purely a behavioural problem, focusing on treatment failures due to 'patient default' rather than on the failure or inability of governments or donor agencies that usually aid chemotherapy, to cope with factors of ecosystem that continue to generate new cases of this disease (Packard and Epstein 1991). They cannot, however, explain why TB cases continue to rise unabated.

The public health and biomedical models are quick fix solutions to a deep-rooted health problem grounded in socio-economic, political, historical, and environmental structures. To most previous and current interventionists the answer to sexually transmitted diseases, including HIV/AIDS, lies in the modification of sexual behaviour to prevent HIV transmission, and the provision of drugs to AIDS victims. Though, generally this view is now seen as too simplistic, interventions are still focused on education to influence behavioural change, on the consistent and proper use of condoms, and on the use of anti-retroviral therapy for those who can afford it. In fact, this redefining of the problem has its origins in the perceived ineffectiveness of the global response to HIV and AIDS. In all countries, HIV/AIDS continues to spread in spite of policies and programmes designed to reduce the transmission. In addition, over the last decade, numerous researchers have advanced a much more complex understanding of the social, cultural, and economic determinants and consequences of the epidemic. These have helped in understanding the epidemic as not simply spreading, or being unstoppable, due to behavioural phenomena alone. However, the response to HIV/AIDS by governments, UN agencies, donors, and non-governmental organisations is still shows a miss-definition of the problem as being solely a public health and biomedical problem and not one of poverty and underdevelopment. The attitude the interventionists display is that either they regard these broad-based perspectives as mere academic exercises or they do not have the will to stop the spread of HIV in sub-Saharan Africa.

However, as experience shows, the interventionists are the ones engaged in prevention *ping-pong*, behaving like the proverbial ostrich. For we know that a pure public health and biomedical approach will not be effective unless the socio-economic, political, and historical structures on which the epidemic thrives are dismantled. Since *social causation* is at the root of the HIV epidemic, a *social cure* is ultimately needed. As Packard and Epstein point out:

"it is critical that the medical research community and the social science community working with it, develop research agendas which will illuminate these complex interactions, rather than obscure them through a precipitous move to find quick answers which can be easily translated into AIDS containment programs" (1991: 781).

It is clear that in sub-Saharan Africa, factors of the ecosystem that influenced the extensive spread of HIV-1 infection are: the subordinate position of women, the prevalence of sexually transmitted infections, poor healthcare infrastructures, impoverishment and the decline of social services, rapid urbanisation, rapid modernisation and culture change, socio-economic disorganisation, wars and conflicts, colonisation and neo-colonialism, development patterns that favour male migration, gender inequality, gender violence, mass poverty, and poor conditions of living. In addition, other factors include numerous communicable infections such as malaria, tuberculosis, sexually transmitted infections, the prevalence of protein-calorie-malnutrition, and poverty-conditioned commercial sex work and multiple-sexual partnerships. It is apparent that millions of Africans have been infected with HIV not as a result of unsafe sex, but because doctors injected them with infected needles or transfused them with HIV-infected blood. Furthermore, blood transfusion and unsafe biomedical practices and equipment such as the re-use of hypodermic needles and the lack of infection control principles and mechanisms contribute to the transmission and contraction of HIV. As pointed out: "HIV is not transmitted by sex, but only by specific risky practices [conditioned by particular factors of the ecosystem]. It is not transmitted by 'injections', but only by contaminated implements...[and blood]" (Brewer *at al.* 2003: 146).

Even though particular determinants of the HIV epidemic in Africa are too complex to discern, all the individual, environmental and structural factors of the ecosystem discussed in this chapter influence the prevalence of HIV. The ecosystem factors that facilitate the efficient transmission and contraction of HIV form the theoretical basis of this thesis.

The Turkana People and their History

4:1 Introduction: the importance of Turkana history to the current study

A history⁷⁷ of a people is very significant as it helps us contextualise their present circumstance in relation to the past. It is also a significant factor of the ecosystem approach to HIV-1/AIDS adopted in this study. This focus on history and the ecosystem will help demonstrate that the Turkana's vulnerability to HIV-1 infection and to general poor health can be traced to their past relationship with the colonial and post-independence governments. The Turkana's history will present an important backdrop to the present Turkana community under study. In this chapter, I will discuss the following: the origins of Turkana; the establishment of colonial rule in Turkana; the creation of famine in Turkana; and health and disease in Turkana. The establishment of colonial rule in Turkana is particularly pertinent because of its impact on Turkana pastoral production, which led to the 'creation' of famine, which still reverberates today. More specifically, it will show that the process of establishing colonial rule devastated the Turkana through its contribution to the loss of livestock, the loss of life, hunger, and poverty. These are some of the ecosystem factors that this project aims to investigate. The chapter on health and disease will delineate the history of disease in Turkana and the introduction of biomedicine in the region.

⁷⁷ The Turkana history in this thesis will be principally reconstructed from Turkana District Annual Reports, Turkana Province Annual Reports, Northern Province Annual Reports, Handing Over Reports, Miscellaneous Reports, Intelligence Reports, other special reports written by colonial officers, the works of eminent Turkana historian, John Lamphear, the pioneer Turkana researcher, Philip Gulliver, and other researchers.

4:2 Origins of the Turkana

The Turkana people are closely linked to other communities in east Africa, namely the Jie, Karamojong, and Dodoth of Uganda; the Nyangatom of Ethiopia; and the Toposa of Sudan. The Turkana and their history are very much connected to these communities, with whom they share common boundaries despite recent political borders that were created by the colonial governments and later maintained by the independent governments. Together with the Turkana, these groups are considered to belong to the larger Nilotic cluster, which Kenyan historians consider to have branched off from a para-nilotic population (Ochieng 1976). The para-nilotic cluster differentiated into three distinct groups, namely the River-Lake Nilotes, the Plains Nilotes, and the Highland Nilotes. The Turkana belong to the Plains Nilotes, which they share with the Maasai, and together with the Jie, Teso, Karamojong Toposa, Dongiro, and Dodoth form what Gulliver (1955) calls the 'Karamojong cluster' or what Lamphear (1976) calls the 'central para-nilotic-speaking peoples'. The split of the para-nilotic cluster into several distinct groups of the Karamojong cluster took place in the mid-eighteenth century (Gray 1992). Within this group, there is a mutual intelligibility of language and similarity in political, cultural, and economic features (Dyson-Hudson 1966). The central para-nilotic nucleus, which the Turkana descended from, are said to have settled in the Koton-Magros region of Karamoja by the fifteenth or sixteenth century, establishing a broad-based economy with sub-groups specialising in cultivation, pastoralism, or hunting and gathering (Lamphear 1976; Gray 1992).

The Turkana migrated to their present territory in two phases. In the first phase, the movement was from Uganda, while the second phase involved their subsequent expansion from what is today central Turkana from the south, north, and eastwards to Lake Turkana. During the first phase of Turkana expansion, they migrated into their present country, *eturkan*, by the turn of the nineteenth century from the Karamoja District in Uganda (Lamphear 1992). The Turkana extended their rangelands through raids and counter-raids, military warfare, and the assimilation of conquered groups to increase their power and wealth (Gray 1992). The Turkana easily subjugated and displaced, or assimilated other communities who were weakened by famine and the loss of livestock due to drought or disease epidemics. As Lamphear (1976: 196) states, "in a span of a single generation set,

the Turkana swept aside all opposition and occupied a vast territorial area almost equivalent in size to the area they presently inhabit. The population was greatly increased by the absorption of vast numbers of defeated aliens".

During the second phase of Turkana expansion, they carried out a systematic territorial expansion eastwards towards Lake Turkana that was to remain unsurpassed by any other group of the Karamojong cluster (Gulliver 1955; Lamphear 1976). The Turkana through raiding displaced other ethnic groups like the Samburu, Boran, and Rendille to their present territories. Even though Turkana maintained uneasy relationships with their neighbours, they still traded with them, especially with the Merille and Donyiro for millet, calabashes, iron, and tobacco. In addition to intermarriage, in lean years some Turkana even preferred to remain with their supposedly hostile neighbours. The Turkana fully occupied their present territory, which corresponds to the present Turkana District, in the Rift Valley basin by the middle of the nineteenth century (Lamphear 1992). It was the Turkana practice of raiding and warfare that enabled their systematic expansion that featured prominently during the colonial administration. The Turkana apparently became very powerful as by the 1880s, they began to acquire firearms (guns and ammunitions) from the Abyssinians (present day Ethiopia) (Gulliver 1951). The Abyssinians also helped them to organise some raids to the south. The possession of arms coinciding with famines must have given the Turkana considerable advantage over their neighbours. In addition, by the time the British arrived, the Turkana were being armed, encouraged, and led by the Abyssinians against the Samburu, Pokot, Karamojong, Dodoth, and Toposa in effort to expand the Abyssinian territory southwards and to hunt for ivory (Gulliver 1951; Mburu, n.d).

4:3 The establishment of colonial rule in *Eturkan*

Diverse visitors to Turkana had diverse experiences, which are reflected in reports that were, in some cases, highly judgemental. While other visitors who encountered Turkana experienced resistance and a harsh reception, others were met with friendly approaches (Cavendish 1898; Wellby 1900:300 in Shelly 1985). The colonial expansion reached the Turkana's doorstep by 1906. In 1908, the Turkana experienced a devastating rinderpest epidemic. Driven by population pressure, the Turkana needed to replenish their stocks by

making a series of raids on the Pokot inhabiting the Upper Kerio River, thereby destabilising them (Lamphear 1992). Reports of the Turkana attacks on Pokot villages left many people dead and this further worsened the relations between the British and the Turkana. In response, the first military post was established in 1908 at Kalosia, on the upper Kerio River, for the purpose of administrating the Turkana.

The military units of the Kenya African Rifles (KAR), many of which were established in tandem with the British expansion into northern Turkana, were used for mounting punitive raids on the Turkana (Lamphear 1992). The British viewed the Turkana as hostile, and heavily and dangerously armed with rifles. The Turkana gave ten heads of cattle, 100 goats, or one large elephant tusk or two small ones for a gun with bullets. The presence of the post with armed troops was mainly to check Turkana raids against friendly ethnic groups (Lamphear 1992). Through such punitive raids, the British seized large numbers of stock to serve, in the first instance, as a punishment for the Turkana, and secondly to compensate the other ethnic groups for Turkana raids against them (Lamphear 1992). However, most livestock ended up being used to feed the Kenya African Rifles personnel and the Kenya Police. The impact of this, as will be discussed later, was the emergence of famine as an integral part of the Turkana social history.

Between 1910 and 1918, the King African Rifles, the military arm of the colonial administration, mounted disarming operations in an attempt to repress the endemic pattern of livestock raiding and warfare (Lamphear 1992: 137). During the colonial rule, besides the punitive raids, any Turkana diviner or war leader who was seen as encouraging and abetting raids was arrested, imprisoned or taken to Nairobi for arraignment in court (Lamphear 1992).

The British attempt to establish colonial rule among the Turkana did not proceed smoothly. Their expansion northwards, in conjunction with their competition with the Abyssinians for the control of the northern part of Turkana, met with significant resistance from the Turkana. It was noted that the Turkana could ordinarily mount up to well over one thousand armed forces and by 1917, they could field as many as four to five thousand men (Lamphear 1992). Ironically, this force was not only directed towards the British. With these arms, and in some cases with a force of over three thousand men, the Turkana could

mount raids against the Pokot giving traditional raiding practices a semi-professional status. This raiding was not only directed against the Pokot, but also their other neighbours. For instance, in 1917, a Turkana army of one thousand men raided the Dodos (Lamphear 1992).

The only significant activity carried out by the British during their occupation of *Eturkan* was in the form of the raiding activities they carried out. This made the Turkana very apprehensive about the intentions of the British. The *Turkana District Annual Reports* and the *Handing Over Reports* reveals how raiding was a thorn in the flesh of the British. For the most part, the main aim of the colonial administration, which in effect concentrated most of their resources and time, was the fight against raids. However, they did manage to separate the communities through establishing artificial boundaries and those who trespassed were often severely punished, killed, or fined. The persistence of raids and trespassing of boundaries, which the Turkana pastoral way of life dictated through the search for available pastures, led to them being stereotyped as resistant to transformation and not amenable to development. The colonial government often mounted disarming operations in an attempt to suppress the endemic pattern of livestock raiding, which was perceived to be a form of warfare.

In addition to the containment of raiding, the British were also interested in the control of grazing lands, and this put them into direct conflict with the Turkana. They thought that through the control of grazing lands by drawing boundaries and demarcations between ethnic groups, they could minimise conflicts among them. In addition, the British thought they could also control overgrazing and the rapid exhaustion of grazing areas. According to oral traditions recorded by Lamphear (1992:225):

“Before the British came here, the Turkana were one people with the Marille and Dongiro... But then the British put a boundary line between the Marille and us and said we could not cross over to the other side...The British controlled migrations of homesteads. They said people should be in one place during a particular month and then move on to another place in another month.... When the British created [the boundaries and rules] fights between the Turkana and Marille increased”.

Controlled grazing was, in addition, aimed at banishing the hunger perceived by the administration to result from the uncoordinated use of grazing areas. These attempts were, however, counter-productive as the nature of the Turkana region did not permit the success of the ranching model.

In 1918, Kenya, Sudan, and Uganda jointly launched a large expedition against the Turkana called the '*Labur* Patrol'. With an awesome force of over 1,300 heavily armed troops, this was one of the most eventful military operations against an East African society (Gulliver 1951; Lamphear 1992). The intention of the British was to subdue the Turkana once and for all, including the northern part of the *Eturkan* where Ethiopian troops were known to make regular forays. The expedition led to the massive movement of Turkana populations away from the approaching British army and led to the expedition being called *Aparatet* (the scattering) (Lamphear 1992). After the Turkana were weakened by the patrol, the British moved in swiftly to establish several posts manned by the military (KAR), from which patrols and minor raids could be sent out regularly to punish raiding groups and grazing boundary trespassers. But the depletion of Turkana livestock through raids and forcible hut tax collections in fact exacerbated the problem of raiding by encouraging the Turkana to raid their neighbours even more to replenish their stocks.

The resistance of the Turkana to the establishment of British administration in *Eturkan* necessitated it being done in stages from the southern to the northern region. Between 1910 and 1918, civil administration was carried out in southern and western Turkanaland (Gulliver 1951), though northern Turkana was left to Uganda to administer, however ineffectively. It was the Abyssinians who were the most influential in the northern part of Turkana, even supplying arms to the Turkana, and trading in ivory. In addition, they assisted the Turkana with the organisation of some raids in the southern part of the district and among the Karamojong, with devastating consequences. The history of the Turkana during the early twentieth century indicates how they were split into two, as they attempted to co-operate with the British administration to the south and the Abyssinian authorities to the north (Lamphear 1992). The Turkana region was included in the Northern Frontier District by the British Colonial Administration. A military administration was finally established for the entire *Eturkan* country from 1918 to 1926. That was followed by the founding of a KAR post at Lokitaung in 1927, in the northern part of Turkana to

administrate the north. Lokitaung became an administrative post headed by a district officer. In contrast to other administrative districts established by the colonial administration in Kenya, the Turkana District was defined as a military district, significantly characterised by controlled entry and exit into the district by non-Turkana (i.e., missionaries, explorers, and native politicians). Any non-Turkana, especially a foreigner entering the district, was required to apply for a permit. The KAR were retained in northern Turkanaland until 1942 for frontier defence and control.

From 1926, the British Civil Administration took over the control and administration of Turkanaland. This was also when the extreme northern part of Turkana was hived off from the ineffective control of the Uganda Protectorate. Under Turkana Province, there were, at the time, two Turkana Districts (North and South) and a West Suk⁷⁸ District (administering the Pokot). In 1933, the two Turkana Districts were amalgamated into the present single Turkana District, headquartered at Lodwar with a district commissioner and two district officers posted at Lokitaung (the military frontier), and southern Turkana. The development of colonial administration in Turkana was based on indirect rule, through the appointment of chiefs whose role was foreign to a people who were a cephalous and democratic in airing their opinions. The district administration was demilitarised in 1942, when the Kenya Police relieved the Kenya African Rifles from security duties. British administration was only established after the Turkana had displayed protracted resistance to the British advancement to the north. After much fighting, which resulted in further stock and human losses, the Turkana were finally colonised like all other communities in Kenya. The final emasculation of the Turkana is, however, ascribed to the huge losses in stock inflicted by the British, which considerably weakened them from 1918.

Though the British finally established their rule over the Turkana, confiscating their weapons, they did not succeed in protecting them. The Turkana continued to suffer from Merille raids. The Abyssinians saw an armed, warlike frontier tribe serving as a good bulwark against the supposed aggression of the British. The Abyssinian soldiers were even training the Merille in the use of arms, because having a well-armed Ethiopian tribe along the border could save the government the expense of maintaining large forces of soldiers there. Along the frontier, just as the Ethiopians did nothing to deter the Merille, so the

⁷⁸ West Suk District is presently West Pokot District. During colonial period the Pokot were called Suk.

Sudanese failed to control the Toposa and Donyiro. Turkana were therefore left wondering about British justice, which punished them when they raided, but allowed their neighbours to raid them with impunity. Therefore, even during the British rule, the Turkana continued to lose life and livestock. However, according to the British, the administration was bearing fruits as raids were becoming fewer, the people were becoming more settled, and the inter-tribal tribunals were gradually becoming appreciated by the people (R.G. Stone, *Turkana Province Annual Report 1929*). The Turkana District, however, remained closed to the outside world as it was considered "dangerous for tourists, too difficult for missionaries, [and] too demanding for developers" (Watkins 1996:147). The question that becomes important to ask here is: What was the effect of the colonial administration on the Turkana? My argument, developed in the following section, is that colonial rule contributed to the creation of some of the conditions that perpetually increase the vulnerability to famine and poverty in *Eturkan*.

4:4 The 'creation' of famine and poverty in *Eturkan*

My main thesis here is that the recurring famine in the Turkana District today is partly a consequence of the colonial government's activities since the beginning of the twentieth century. The government of Kenya has perpetuated poverty and suffering among the Turkana through neglect. Numerous punitive expeditions that led to the loss of livestock and the decimation of able-bodied men led to socio-economic dislocations that surpassed the normal depletion and recovery cycles of livestock production. Some other authors (Hendrickson, *et al.* 1999) have also indicated that the indigenous livestock economy in Kenya was seriously weakened following pacification by the colonial regime at the turn of the century. The Turkana historical records are replete with administrative "raids", which led to the destruction of stock and lives. I am not suggesting that the British were out to subjugate and humiliate the Turkana; they possibly had the best intentions at the time. However, their actions (probably unwitting) caused untold suffering and deprivation whose effect the Turkana still experience today. One could refer to these as the negative experiences of the colonial policies. Some of these policies are still being perpetuated by the independent Kenyan government, which has continued to undermine the social, economic, and political fabric of the Turkana. The hardship that ensued intensified the

competition for resources, the unsustainability of pastoral production, the disfranchising and dislocation of the many, and the increased vulnerability to poor health and infections. These acts have, in addition, undermined Turkana's social cohesion and their indigenous structures, leading to the intensification of conflicts (banditry and cattle rustling/raiding) within the Turkana nation and among their competitive neighbours.

In this chapter, I will try to expose the chronology of the punitive raids by the British against the Turkana (in concert with other factors of the ecosystem) that led to social dislocation, poor health, economic loss, and impoverishment. This consequently created a situation of instability in livestock production, the mainstay of economic activity and the source of food. This has since made the Turkana vulnerable to famine and threatens their survival. The Turkana people told me that, even though starvation is well known in their land, large-scale famines resulting in deaths and malnutrition are relatively recent, heightening in the 1970-80s.

Before colonialism, the Turkana had access to firearms obtained from Ethiopian gunrunners and Arab and Swahili slave traders, poachers, and merchants from the east African coast⁷⁹. By 1910, private armies operated in the Turkana borderlands with Ethiopia and Sudan, which were organised in tactical units of between six hundred and one thousand fighters using single shot rifles⁸⁰. The British, therefore, had the aim of pacifying the Turkana along two fronts: disarmament and stopping cattle rustling.

The District *Annual Reports*, *Handing Over Reports*, and *Miscellaneous Reports* often mention raids on the Turkana by the colonial administration and by their neighbours. They also recorded the effects of such "raids". As the Turkana refused to surrender guns peacefully, colonial administration conducted numerous disarming raids. The first raid on the Turkana by KAR was in February 1910, which resulted in thirty people dead, and 16,000 heads of stock captured (Lamphear 1992). In a four-month military operation between 1911 and 1912, 417 Turkana were killed and 130,000 heads of livestock confiscated. In 1915, the Turkana lost heavily in the "raid" by the British in which at least 400 people were killed, and 19,000 cattle and 213 camels and goats were confiscated by the military (Rowlands n.d.). As disarmament failed, Turkana was declared a 'closed

⁷⁹ The Earl of Lytton (1966). *The Stolen Dessert*. London: Macdonald Press.

⁸⁰ Robert O. Collins (1961). The Turkana Patrol, 1918. *The Uganda Journal*, vol 25 (1):16-33.

district' where movement within and outside was restricted, without a pass, to contain the spread of livestock diseases down south particularly rinderpest and pleuro-pneumonia. However, this policy ostensibly led to the beginning of the sedentarisation and pauperisation of the Turkana who previously had a thriving agro-pastoral economy, and barter trade in grain, ornaments, and livestock. This also insulated them from mainstream nationalism and the fight for independence in the south.

As the interaction between the Turkana and their neighbours continued to be hostile and violent, resulting in raids and counter raids for livestock, the British had no option other than to intervene in an attempt to restore peace and demonstrate 'fairness' to Turkana's neighbours. One such response was a retaliation by the British, in 1917, for a Turkana raid on the Pokot, which was so severe that many people were dispersed throughout southern Turkana and "*many thousands of cattle taken sufficient to trigger off the next famine five years later*" [emphasis mine] (Watkins 1996:139)⁸¹.

The most catastrophic expedition was the 1918 *Labur* patrol, which resulted in the loss of thousands of head of cattle. It is estimated that the Kamatak Section alone lost more than 250, 000 head of cattle, with most of the northern Turkana sections losing nearly all their livestock (Lamphear 1992). Ironically, the bulk of the livestock simply perished in British hands. Many Turkana starved to death because of the *Labur* patrol, as they were deprived of their staple food. Loss of livestock led to the final emasculation of the people. Other Turkana moved to join the Kebootok section along the shores of Lake Turkana, in an effort to eke out a living farming. This expedition marked the inauguration of famine in Turkana country, as we know it today. The consequences of the loss of livestock among the Turkana could be predicted as it forms the core of their existence, providing them with their socio-cultural and economic needs. The losses of livestock, in addition, curtailed the Turkana pastoral strategy, that is the maximisation of herd numbers, the ubiquitous objective of herders, so that when there is drought or disease, some herds would survive to the next season. This strategy also makes the regeneration of herds possible. The loss of livestock through punitive raids meant that the few remaining livestock could not survive the frequent droughts that followed.

⁸¹ This account is from Watkins in her memoirs. She was the wife of one of the colonial DOs that served in Turkana.

Though, according to the British, the expedition led to the subjugation of the Turkana people, for the Turkana it was a calamity, the most catastrophic occurrence their society had ever experienced. According to survivors' accounts in the Turkana traditions, "the British raided peoples' livestock, from goats to camels. They killed many people. They took peoples' daughters and made them be concubines of the askaris [police officers]" (Lamphear 1992:196). The abduction of girls not only represented a social loss, but also deprivation of labour. In addition, during the *Labur* patrol, the Turkana were disarmed through forceful confiscation of arms. Consequently, ownership of firearms was prohibited. The Turkana, on the other hand, found it hard to get arms from the Ethiopians, and to make matters worse the British withdrew their attempts to maintain an administrative presence in northern Turkana. The Turkana were therefore rendered defenceless against neighbouring ethnic groups like the Marille, Dassanetch, Nyangatom, and Toposa, who had an array of arms. These groups continued to raid the Turkana with disastrous consequences. In the Second World War, the Italians, during their short-lived invasion of Ethiopia, provided modern arms to the Dassanetch, and even trained some of them in guerrilla war and encouraged them to attack the Turkana. In addition to taking livestock and killing people to deter resistance, the Merille are known to have been keen on capturing the Turkana as slaves. The disarmament of the Turkana turned the Merille into a formidable force to the extent that they penetrated Turkana grazing grounds.

At the end of 1923, the situation in the northern part of Turkana became precarious. The Turkana named the period from late 1923 to most of 1924 as *Aurienkiru* (heavy rain) or *Ekaru a Apetakaale* (the time of scattered floods) to reflect the rare occurrence of two good rainy seasons that followed each other in succession and normally would have resulted in increased livestock production, plentiful food, and a season of joy (Lamphear 1992). Despite these conditions, the British had to open the first famine relief camp at Kalokol on the Lake Turkana shore in 1924. Many Turkana, destitute thanks to the *Labur* Patrol in 1918 and previous punitive raids, flooded the famine camps.

Even as late as 1933, many Turkana herds had still not attained their size prior to the colonial punitive 'raids' (Gulliver 1951; Lamphear 1976). The recurring famine in Turkana is a demonstration that they have not recovered from the unnatural decimation of their livestock during the colonial period, especially the *Labur* Patrol. That military 'raid' had a

devastating effect on the Turkana was also recognised by some of the administrative officers. In his *Handing Over Report* in 1927, Hopkins noted:

"A study of old records leaves one with the overwhelming conviction that much of the trouble which these people gave in the past and their present poverty and distress has been brought about by repeated punitive campaigns against them, carried out, over a long period by forces of the Kenya, Uganda, and Sudan governments... The stock taken from the Turkana in these expeditions totals hundreds of thousands of which the bulk appears to have died at our hands. Under the circumstances, it seems natural that a certain degree of bitterness exists. Notwithstanding this, however, the Turkana appear to react readily to personal contact with their officer and it would I think be difficult to find a district in Kenya where the natives under similar circumstances would be more friendly or where a larger proportion of the people attend ones *Barazas* [public gatherings]" (Hopkins, HOR 1927).

Also, as stated by Watkins (1996:148), "always looming on the horizon was the cloud of famine.... [and] the very success of British Administration exacerbated the likelihood of famine". In essence, the British administration was not beneficial to the Turkana as they were disarmed, impoverished, and more than ever made susceptible to famine and easy targets for their old enemies from neighbouring counties.

In fact, the arms-race among the pastoralists intensified after the Second World War. At the outbreak of the war, Britain recruited heavily from Turkana and Karamojong due to their existing dexterity with firearms and knowledge of their harsh physical terrain (Mburu, nd). As a consequence, from the 1940s, the two pastoral communities strengthened their raids using the weapons and skills gained in the colonial wars to revitalise the tradition of raids and predatory expansion. As other Turkana neighbours like the Merille were also armed, between 1941 and 1942, the Merille threat to the Turkana was so serious that the DO considered arming the Turkana, a view soon dismissed as counter-productive. In 1941, the Merille were estimated to have in excess of 3,000 fighting men, and 100 rifles, breda guns, and grenades. Unfortunately, the Turkana found themselves caught in hostilities between the British and Italians. In addition, Turkana women were subject to rape by Ethiopian troops. Furthermore, European (Italians) and African (Abyssinian) soldiers took women as

concubines and unnatural offences were practised on the boys (Rowlands n.d.)⁸². Reports indicate that some male children were even castrated. To punish the Turkana further, the Italians even endeavoured to forbid their trade with the Merille in millet to the detriment of the impoverished Turkana populations.

It is my assumption that the effect of British policy in this district still reverberates in the form of famine and poverty. The British reacted to the appearance of famine by issuing rations as far back as 1924. To this day, the Kenyan Government and a myriad of NGOs still react to famine through the provision of famine relief.

By reacting to food shortages through non-sustainable means while still strangling the pastoral economy, the colonial administration played a major role in the creation of famine and famine camps, consequently making hunger and poverty perennial in Turkana. The District Annual Reports constantly highlighted hunger and destitution, with miserable people being herded towards Lodwar and Ferguson's Gulf. Following these recurring and frequent famines, permanent paupers' camps were constituted at Lodwar and Ferguson's Gulf (Kalokol) at the shore of Lake Turkana. They were mostly fed on posho (corn / maize flour) and fish. In view of my assertion, it is important to note some of these recorded instances of famine and their consequences for the Turkana. Most of these famine situations were triggered by a *proximate* cause, lack of rainfall and pasture that leads to loss of stock. I maintain, however, that the *ultimate* cause of these famines was the previous socio-economic dislocations that were occasioned by the colonial raiding activities and the disarmament of the Turkana, which left them at mercy of their neighbours. Coincidentally it was during these stressful periods that the Merille also subjected the Turkana to raids. For example, in 1929, there were raids and slaughtering forays by the Donyiro and Merille in which a large amount of stock and people were lost. In 1934, despite drought and famine, the Merille attacked the Turkana at various times, resulting in the death of 58 men, women and children, brutally mutilating some, and making away with large quantities of stock. Again in 1939, the Donyiro, Merille, and Toposa raided the Turkana, despite the fact that there was drought, famine and starvation during which 48 men, 91 women, and 159 children were killed. The Merille raid of 1958 left so many Turkana destitute that they had to depend on relief food.

⁸² The Italian and Abyssinian soldiers had sexual intercourse with male minors.

The available *Turkana District Annual Reports*⁸³ mention the occurrence of famine and the provision of famine relief. Due to the brevity of these reports, it is very difficult to determine the extent and impact of famine in the Turkana District during the colonial period. However, we know that the administrative *reaction* to shortages of subsistence, initiated by the colonial government and carried forward by the post-colonial regimes, is not in accord with the traditional Turkana coping strategies - reliance on social relations, friends, and relatives. The creation of famine camps and the provision of non-sustainable, non-pastoral subsistence, led to a greater perpetual problem. As part of drought mitigation, the Turkana were encouraged to plant millet. Even though a report of 1937⁸⁴ indicated that good millet crops were reaped in the Tarach Valley, and parts of the Turkwell and Kerio, this depended on the chance of good rainfall. As one DC remarked, prosperity in Turkana depends on the availability of rainfall. For some Turkana, adopting a sedentary mode of life was the only remedy to perpetual famine. The colonial government also encouraged the destitute populations to settle and pursue either agriculture or fishing. As years passed, the reports indicate a progression in the severity of famine in the Turkana District. In 1944⁸⁵ famine posho was distributed throughout the year, chiefly at Lodwar, Kapedo, Loiya, Kaputir, Lokichar, and Kalokol (permanent pauper camps), while in 1948-1949 reports of large numbers of deaths signalled the onset of famine in many parts of Turkana. In 1949, responses to famine were four-fold: subsidised posho was sold in the shops; free posho was provided to thousands of old men, women, and children; a food for work program was implemented whereby able bodied men constructed roads for food; and, lastly, a few young Turkana enquiring for work were sent off to the Trans Nzoia District Council for work and to Kitale to work on settler farms. By then, the Turkana were very much sought after by white cattle ranchers.

By 1948/49, it was apparent that as famine was becoming a recurring phenomenon, many paupers and the destitute were becoming sedentary in permanent camps. The then DC of Turkana, Mr. F.W. Goodboy⁸⁶, commented:

⁸³ Turkana District Annual Reports of 1929, 1937, 1942, 1947, 1948, 1949, 1950, 1951, 1953, 1958, and 1960/61

⁸⁴ R.D.F. Ryland, Turkana District Annual Report, 1937.

⁸⁵ Lt. Commander Dennis McKay, Turkana District Annual Report, 1944.

⁸⁶ F.W. Goody, Turkana District Annual Report, 1949.

"No measures for the prevention of famine exist at present. The Turkana have always depended upon supplies of imported foodstuffs since it has not so far been possible to raise sufficient crops in their own country. Unless means are found to grow sufficient food locally and moreover to set aside stocks of food for use in bad seasons, famines are bound to occur from time to time. The Pauper's Camp at Ferguson's Gulf must be accepted as a permanent institution"

Mr. Goodboy, also suggested, prophetically, that more effort should be devoted to banishing hunger from Turkana before many years pass by. This cannot be more true than today. This presence of perennial famine led Mr. Goodboy to write in 1950, "starvation and malnutrition is common place in Turkana and full belly the exception rather than the rule. There is probability that the Turkana have developed unusual resistance to starvation and semi-starvation to an extent that when a Turkana is supplied with unlimited food they appear to be able to eat quite exceptional quantities without discomfort". The formation of permanent paupers' camps laid the foundation for continuing colonial and post-colonial intervention in the district and marked the beginning of government activities, which both directly and indirectly exerted control over traditional subsistence and economic ways (Shelley 1985). As I write, famine has remained a central issue in the development of the Turkana District. The district's development processes, driven largely by NGOs and international donors and partly by the Kenyan government, focus on famine mitigation.

Apart from providing troops for imperial policing duties, the Turkana region remained economically deprived, having the lowest literacy and highest infant mortality rates and lacking road networks and other infrastructure. After independence, they were excluded from the social, economic, and political changes and hence were not fully integrated into the Kenyan state. Ironically, the end of colonial rule was marked by the most severe famine ever experienced in the district. This situation even led to the opening up of the 'closed district'⁸⁷ to outsiders. Following the prolonged drought of 1960 and 1961, a large-

⁸⁷ Since Turkana was classified as a military district, it was closed to outsiders who could only enter through permission from the Provincial Commissioner. Prior to 1960, missionaries were not allowed to permanently establish activities in the district.

scale program of famine relief was originated with headquarters at Lodwar. Missionaries⁸⁸, especially of the Catholic Church, had just commenced work in Turkana and played a great role in the provision of emergency relief. In fact, it has been estimated that between 1961 and 1963, the number of people that were dependent entirely upon free food in famine relief camps varied from five to ten thousand (Brainard 1981). Estimates from Catholic Church records indicate that there were as many as 30,000 people seeking relief in the Lodwar Famine Camp from December 1961 to mid-1962. Another 5,000 people were located at Lorugum, not very far from Lodwar.

The post-independence governments have expanded and have made the famine situation worse in Turkana through their policies and continued neglect of the 'arid and semi-arid' region. Over the years, physical insecurity in Turkana has also increased phenomenally due to civil wars in Uganda, Sudan, Somalia, and Ethiopia, leading to the widespread availability of weapons. It is ironic that the post-independence government has contributed to the insecurity. In the 1980s and 1990s, the Kenyan government covertly armed pro-government Turkana with Kalashnikovs through a former cabinet minister in President Moi's government. It is unclear whether the arms were for destabilising Uganda, for politically motivated cattle rustling, or, as claimed by some, for Turkana's self-protection (Mburu nd). Though there are currently no reliable estimates for the quality and quantity of firearms possessed by the Turkana, it is clear that they form a significant role in their spiritual and material culture. The modern arsenals have increased the hostility among the Turkana and their neighbours, and have, in addition, propelled raiding to new levels in terms of scale and the short and long-term effects. Despite the raids, famine in Turkana is often attributed to drought, a politically neutral and a 'naturally' occurring phenomenon. As Cullis and Pacey (1992:8) indicate:

...drought is politically neutral, and to present it as the cause of crisis avoids blaming national governments or district administrators for failure to control the security situation. It also avoids the need to identify and remedy other factors, which may

⁸⁸ Applications were made by the African Inland Mission, the Bible Churchman's Missionary, the Dutch Reformed Church, and the Roman Catholics, in 1951, to open up missions in Turkana. The colonial policy was opposed to purely evangelical missions but allowed only those that would be useful in terms of educational and medical work in conformity with general development plans. Most applications floundered, therefore, because of practical and financial obstacles on the part of missionaries, whose primary objective was pacification and civilisation.

encourage raiding factors – factors that might include chronic poverty, alienation from national institutions, and trading in weapons”.

Following a severe drought from 1970-71 and from 1979-1981, many Turkana settled in order to access food-for-work programs and relief food. The famine of 1979 through to 1981 resulted in 80,000 Turkana people receiving some sort of famine relief, nearly 30 percent of the Turkana population (Hogg 1982; TDCPU 1992). In February 1982, 80,000 Turkana in the north were still receiving food aid, many of them in relief camps. Many, in addition, settled down along Lake Turkana as fishermen or at irrigation schemes on the Turkwell and Kerio rivers, while others opted for settlement in and around Lodwar township and other trading and administrative centres (Henriksen 1974). Due to the 1990/1992 drought, in 1994 Oxfam was still providing food to as many as 155,000 people (Bush 1995). The last famine of 1999-2001, which I witnessed, affected the entire Turkana District. Learning from past records, famine will remain a recurrent feature in the Turkana District for many decades to come and its scale of magnitude and consequences will continue to spiral. This will continue as long as insecurity and raiding are not curbed. A study by Ecosystems (1985: 9.3.1) pointed out that the problem of raiding “is one of the most dominant and intractable of constraints to the full realisation of livestock potential” in the district. McCabe (1990) argues that raiding and generalised insecurity played a key role in the 1979-81 famine in north Turkana. Buchanan-Smith and Davies (1995) have also argued that raiding is a prominent feature of famine and chronic food security in the district. Predatory raiding has increased in frequency and intensity over the past few years. Most of these raids are largely initiated by people outside Turkana, including armed military or bandit groups in Kenya or the surrounding states as well as economic entrepreneurs whose motive is commercial or to feed warring armies (Hendrickson, *et al.* 1999: 191). The markets are controlled by people in positions of power or who have access to weapons. The Turkana District has militarised as local herders adapt to the insecure environment for defensive and survival purposes. The greater state control, undermining the influence and legitimacy of indigenous leaders and leading to the breakdown of indigenous conflict-resolution structures, has aggravated the raiding.

Extreme poverty, a succession of droughts in recent years, and insecurity exacerbated by raiding have led to virtually a permanent state of destitution and famine vulnerability for

many herders. These factors have reduced their ability to cope when human and livestock disease, drought, and raiding occur simultaneously. Livestock diseases are often spread through raiding and the incidence of raiding increases when there is drought. It is indicated that the famine of 1979-81 in northern Turkana was exacerbated by an epidemic, which stemmed from infected livestock seized during a massive raid that the Turkana carried out on the Karamojong of north-eastern Uganda (Cullis and Pacey 1992).

Raiding directly contributes to loss of human life as in 1992, when a cross-border raid in northern Turkana resulted in more than a 100 deaths (Buchanan-Smith and Davies 1995). In September 1997, 50 Turkana were killed in a raid by a combined force of Kenyan Pokot and Ugandan Tepe ethnic groups armed with AK47 rifles, stealing 700 cattle⁸⁹. In March 1999, 1000 Pokot gunmen from Kenya attacked Turkana village killing 30 people before escaping with 2000 herds of cattle⁹⁰. Five months later the Turkana formed an alliance with the Karamojong in a raid that massacred 140 Dodoth of Uganda. They burned food crops, gang raped women, set 50 huts on fire and threw seventy children into the flames⁹¹. The psychological, economic, social, and environmental / ecological impact of such devastating raids and bloodletting cannot be overstated. Indirectly it creates a condition of insecurity, which leads to constraints on pastoral mobility in terms of where to go, and increased frequency of mobility. A 1985 study found out that 47 percent of the Turkana District, comprising much of the best grazing lands, was virtually unused during the 1982-1984 period due to threats of raids faced by local herds (Ecosystems 1985). McCabe (1990, 2004) found that one-quarter of the territory of Ngisonyoka Turkana, comprising the best highland grazing areas, was rarely used due to threats from raids. These fears result in the restriction of grazing areas, which results in over-grazing and forced sedentarisation of populations. While response to famine in Turkana has largely treated it as a drought-driven phenomenon requiring food for the hungry and restocking programmes, they have largely failed to address violence and predatory raiding that undermines the viability of herds, and pastoralism as an economic activity. The current cattle rustling, which appears to be becoming increasingly militarised, commercialised, and politicised continues to make the

⁸⁹ 'Slaughter of Turkana' *Weekly Review*, Nairobi, 20th September 1997.

⁹⁰ Will Police ever control rustlers? *Daily Nation*, Nairobi, 11th August 1999.

⁹¹ 'Cattle raiders kill 140 in Uganda' BBC Online, 11th August 1999. Available from: <http://www.news.bbc.co.uk>.

impact of the frequently occurring drought deleterious. Whereas the loss of livestock to drought could regenerate, the artificial loss through cattle rustling makes the natural process impossible.

4:5 The history of health and morbidity in Turkana

My main objective here is to provide a historical lens into the Turkana's health and their susceptibility to infections. In addition, the history of sexually transmitted diseases in Turkana is discussed.

Since most nomadic and semi-nomadic pastoral regions were often of no economic importance to the colonial governments, limited systematic attempts were made to invest in healthcare and socio-economic development. Nevertheless, colonists, conquerors, and their African soldiers and porters even brought with them new human and animal infections that were alien to the Turkana. For instance, animal diseases that ravaged and decimated livestock in Africa in the late nineteenth and early twentieth centuries reached Turkana through the foreigners. One significant of such epidemics is the rinderpest plague introduced to Africa by the invading Italian army in Ethiopia, which spread all the way to southern Africa with disastrous consequences for livestock-keeping populations, including the Turkana (Majok and Schwabe 1996).

Various church missions introduced the first medical services, even though their activities and movements were restricted. This section will deal with the role of the colonial government and church missions in the provision of healthcare services in the Turkana District. Since information on the systematic introduction of biomedical services is lacking, what I have presented is largely anecdotal. For the sake of clarity, I have divided information on the history of health and morbidity into: 1) Health and Morbidity Statistics; 2) Venereal Diseases (Sexually Transmitted Infections); and 3) Health Resources.

4:5:1 Health and morbidity statistics

The history of health and disease among the Turkana can be gleaned from the monthly medical reports summarised in the *Annual Reports*, *Handing Over Reports* and *Miscellaneous Reports*. However, these medical reports, though important for the meagre

information they give about health, cannot be used as precise indicators of the health conditions, morbidity prevalence, and causes of death. These reports are confined to descriptions of the conditions of the populations (mostly the destitute in towns and single males attached to military posts) in the few administrative centres that existed during the colonial period, and were just the cases of morbidity presented at the hospitals. Most of the recipients of the medical services were government employees (KAR, Kenya Police, clerks, Tribal Police, and the servants of civil servants) and a few indigents residing in these centres. The main aim of Western medicine in Turkana was to look after the colonial officers and the security forces. In fact, the assistant surgeon's job was to look after the health of the government employees at Lokitaung and the outposts. This was why he was posted at Lokitaung, where there was a military outpost, instead of Lodwar, which was and still is the central administrative headquarters for the district. That the provision of health services for the rest of the Turkana population was not a priority for the colonial administration, was stated by Knowles, in his *Handing Over Report (1945)*, when he wrote: "most predecessors have advocated bringing the Turkana to hospital, and encouraging them to believe in European medicine. In the event of cattle diseases, the policy is to let disease run its course. The question arises therefore as to whether it is desirable to cure a man of dangerous but fairly rapid diseases in order to preserve him for a slower death by starvation". This officer did not think that the Turkana deserved medical services. The morbidity statistics are, therefore, a representation of the illnesses that were presented by the settled Turkana and mostly those associated with the administration and the administrative officers (government employees). In addition, they indicate the infectious, communicable illnesses that were prevalent among the sedentary populations. According to yearly statistics from Lokitaung Hospital in northern Turkana, the following illnesses were the most common: coryza, rheumatism, malaria, illnesses of the respiratory system, wounds and injuries, gastro-enteritis, gonorrhoea, eye infections (conjunctivitis and trachoma), skin infections, and syphilis (Turkana District Annual Report 1952). These statistics were collected from the settlement centres that were the foci of colonial administration.

Reports filed by colonial officers mentioned the prevalent illnesses found in the district for a specific year. These statistics were based on the cases that were presented at the

hospitals. Though they are not conclusive, they convey important information on the illnesses that were present in the settled villages. Malaria is frequently reported to be a problem, especially near water sources such as the Turkwell and Kerio Rivers. However, as I experienced in Lodwar, malaria is a problem even during the worst drought periods. In 1940, the DC reported that malaria, venereal diseases, pneumonia, and bronchitis were the diseases most frequently treated in Lodwar Hospital. It was the same case in 1941, when influenza, measles, and bronchitis were, in addition, the most common complaints. In 1945, the incidence of malaria (reported cases) was 1239 cases at Lodwar and 592 cases at Lokitaung. Over the years, tuberculosis and other diseases of the upper respiratory system and conjunctivitis (especially when sand is being blown during dust storms) were common complaints. In 1957, unusual number of complaints and deaths resulted from chest complaints at Lokichoggio. In 1950, 1951, 1960, and 1961, trachoma, liver and spleen complaints, ulcers, eye problems, dysentery and diarrhoea, gonorrhoea, constipation, malaria, chest problems, rheumatism, various skin diseases, and starvation were common. Influenza and pneumonia were reported to be common in the villages and an unusually high number of people died due to them.

Outside the station, the most common health problem reported was malnutrition. In her research in 1979, Brainard (1981) also found that the worst health problem facing the district was malnutrition and starvation, especially during recurrent periods of stress (drought and famine). However, generally it is said that the nomadic Turkana are healthy, with a low prevalence of intestinal parasites (Shelly 1985). On the other hand, the settled populations of Nakwanamoru were found to have a high incidence of gastrointestinal infections that could be due to poor sanitation and hygiene associated with overcrowded sedentary population (Brainard 1992). Since settlements are frequented by poor and impoverished non-nomadic populations, we always find that their health status is poorer than that of the nomadic populations. The settlers in these centres wallow in poverty and poor environmental and personal hygiene conditions. The close proximity of the dwellings exacerbated their poor environmental hygiene conditions. The traditional hygienic practices of the nomadic pastoralists are consistent with a sparsely populated, dry, and sun-irradiated environment. When people find themselves in more dense settlements, traditional waste disposal practices become inadequate and diarrhoeal diseases, malaria,

and other water related diseases take on epidemic proportions. People who move into towns for a better future often find frustration as the health-related problems of malnutrition, tuberculosis, sexually transmitted infections, violence, and depressive psychosomatic disorders increase and very often defy treatment.

Table 1: Morbidity presented at Nakwanamoru Catholic Mission Health Centre from 1973-1978.

Diagnosis	Number of Cases	Percentage of Total Cases
Malaria	16, 316	21.1
Cough chest	15,999	20.7
Eyes, conjunctivitis	7,854	10.2
Vomiting, diarrhoea	6,481	8.4
Tuberculosis	4,525	5.9
Accidental	3,711	4.8
Malnutrition	3,643	4.7
Ulcers, sores	3,342	4.3
Ears otitis media	1,421	1.8
Perinatal	1,034	1.3
Measles, mumps	962	1.2
URTI, pneumonia	682	0.9
Scabies	533	0.8
Dysentery, gastro-enteritis	477	0.6
Leprosy	301	0.4
Tonsillitis	179	0.2
Gonorrhoea, syphilis	147	0.2
Therapeutic abortion, menstrual problems, infertility	129	0.2
Anthrax, brucellosis, hydatid cysts	117	0.2
Other	9240	12.0
Total	77, 193	99.9

Source: Brainard (1992).

In an examination of 111 individuals in 1985, Shelley observed that liver enlargement (often symptomatic of malarial infections) was found among the 45 percent of Turkana aged 14 years and younger. She found that the most common illnesses as reported by Turkana women in order of prevalence were: respiratory infections, rashes and *puru*

(measles), malaria, conjunctivitis, diarrhoeas, sores, and injuries (insect bites, scorpion stings, burns, and injuries of the eye caused by acacia thorns).

In general, over the years, as portrayed by the morbidity statistics, malaria and respiratory infections in addition to other infectious preventable diseases are the most common illnesses in the district. This could be associated with the living conditions such as overcrowding in villages where those who present themselves at the various health facilities in the district reside. This was the situation found at Nakwanamoru by the Shelly study and supported by morbidity data that covers a six-year period (table 1 above) from the Nakwanamoru Catholic Health Centre. Nakwanamoru's catchment area is the settler agriculturists living in and around irrigation schemes. The settlements and towns are normally also characterised by poor sanitation and poor environmental hygiene. The incidence of most of the common infections is directly proportional to the development of sedentary villages and towns.

The statistics from Nakwanamoru reflects those of the whole of the Turkana District. As indicated by the table below, the statistics are from those who still reside in and around urban and other relatively big settlements. Most of the diagnoses are for the infectious diseases associated with poor living conditions and high population density, whose impact is huge for the former pastoralists who are not adapted to living in overcrowded conditions of poverty.

The sedentary Turkana are plagued by infectious diseases such as malaria, diseases of the respiratory system (including pneumonia), diarrhoeal diseases, diseases of the skin, eye infections, and urinary tract infections (including gonorrhoea). The densely populated ecosystem, a function of sedentarisation driven by poverty, drought, famine, and government and NGO policies, create conditions conducive for the breeding and spread of infectious diseases.

4:5:2 Venereal diseases (sexually transmitted infections)

The current project focuses on sexually transmitted infections, especially HIV/AIDS. It is therefore pertinent to endeavour to trace the origins of sexually transmitted infections (STIs) (herein referred to as venereal diseases) in Turkana. The occurrence of venereal

disease is regularly mentioned in the reports, and some DCs identified it as a major problem in the administrative centres and outposts. It is without doubt that venereal diseases were brought into the Turkana District by the KAR, the Kenya Police, and the civil servants who were not allowed to bring their partners into the district. Therefore, they depended on the local women for sex. Venereal disease prevalence mirrors the current prevalence of HIV/AIDS and other sexually transmitted infections. Just as the prevalence of venereal diseases was localised in the outposts, the current dominance of HIV/AIDS and other sexually transmitted infections is localised in urban and administrative centres and villages.

The district commissioners always underscored the notion that venereal diseases were devastating to the settlers in and around settlements in their annual and handing over reports. As early as 1933, a report indicated that there was a high incidence of venereal diseases among residents of an administrative post in Southern Turkana. The magnitude of this emerging health problem in Turkana was given warranted recognition by no other than the head of the Kenyan Colony. When His Excellency the Governor of the Kenya, Sir Robert Brooke-Popham visited Lodwar for two days in 1938, during his *baraza* (meeting) with the Turkana chiefs and the people he said that he was sorry to hear that the venereal diseases were spreading so fast in Turkana. He impressed upon the people the necessity of early treatment. The topic of the high incidence of venereal disease was featured again in 1941. The DC in his report wrote:

"Unfortunately venereal disease is on the increase and is brought by the troops. These askaris [troops], in practically all cases, catch infection in Kitale and it is to be sincerely hoped that concrete action will be taken to combat this menace. And menace it is, as while in the past it was only to be found in the stations of Lodwar and Lokitaung (where attempts could be made to deal with it), it is now spreading amongst the tribesmen in the far many parts (where it is impossible to deal with the problem)"⁹².

As expected, venereal diseases were a new form of illness in Turkana and were spreading fast in the settlements. Those who had been in the settlements quickly spread

⁹² Major H.G. Gregory-Smith, Turkana District Annual Report, 1941.

the diseases to the interior, presumably when they went back to their homesteads or villages.

Table 2: Number of Venereal diseases presented at Lokitaung and Lodwar Hospitals

Year	Number of recorded venereal infections
1943	300
1944	128
1945	331

Sources: Turkana District Annual Reports

In 1947⁹³, it was reported that Lokitaung registered a 50 percent decrease in cases of venereal diseases; however, cases in Lodwar showed a slight increase. As shown in *Table 2* above, even though the number of cases of venereal diseases reported in 1943 showed a decrease, that of 1945 indicated a high incidence. According to the DC's report of 1945⁹⁴, in addition to malaria, venereal diseases were the chief complaints at Lokitaung and the DC thought that both could be controlled through efficient sanitation and the compulsory registration and examination of women in 1945. In 1946⁹⁵, the DO of Lokitaung was alarmed by the number of cases of venereal disease, which appeared mostly amongst the personnel who have served a tour of duty at the Namaraputh Fort. According to the DO, the villages were probably riddled with venereal diseases. He made frantic efforts to impress on the chiefs the need to send every infected person to the hospital. However, it is not clear how the chiefs or even the local Turkana population could have diagnosed venereal disease, as it was a new form of infection in *Eturkan*.

In 1951, the incidence of venereal diseases was being checked among the tribal police through the institution of a weekly inspection of the *askaris* (police and army officers) and their women. According to the annual returns of diseases presented at Lokitaung Hospital in 1952, 290 cases of gonorrhoea and 27 cases of syphilis were recorded. Sexually transmitted diseases accounted for the top six diseases presented at Lokitaung Hospital in

⁹³ L.E. Whitehouse, Turkana District Annual Report, 1947.

⁹⁴ L.E. Whitehouse, Turkana District Annual Report, 1945.

⁹⁵ L.E. Whitehouse, Turkana District Annual Report, 1946.

1951⁹⁶. The prevalence of gonorrhoea and syphilis could have been higher than recorded cases. In addition, they were new diseases not known to the local populations. The cases recorded must have been those presented by members of the army, police and civil servants, excluding the local population, many of whom could have been infected.

In his 1953⁹⁷ report, Turkana DC, Mr. L.E. Whitehouse, indicated that there was an increase in the incidence of venereal disease mainly due to its importation from other areas. He noted that the Turkana are, or were until recently, remarkably free from all forms of these venereal diseases. Venereal disease increased steadily in Turkana, probably because of the increase in the number of people who were settling down in administrative centres, many of whom were being dislocated from the traditional mode of lifestyle due to famine and illusions of a better life. Upon arrival at these centres, they were exposed to venereal infections. Such people are the ones that sought medical care in hospitals, hence becoming part of the statistics for the region. The fact that venereal diseases were increasing among those exposed to 'Western life' in the administrative centres and outposts even outside Turkana, was confirmed by the *Northern Province Annual Report in 1959*⁹⁸, which indicated that venereal disease was a menace in some other districts like Moyale, in north-eastern Kenya. It also reported that prostitution was common in townships and pauper Manyattas. Prostitution was, therefore, a dominant factor in the spread of venereal infections among the autochthonous populations.

At present, venereal diseases (sexually transmitted infections) are very common in the Turkana townships. As the present study will demonstrate, this is a rather silent epidemic that not many Turkana recognise as a problem. However, the available statistics that I managed to put together from the various medical facilities demonstrate a steady increase in the number of cases presented every year. Comparative statistics were very hard to come by as the district's statistics, especially those of sexually transmitted infections, were insufficient. So far, I am the only researcher who has endeavoured to compile the reports of sexually transmitted infections from various hospitals for the period that I was in Turkana.

⁹⁶ L.E. Whitehouse, Turkana District Annual Report, 1951.

⁹⁷ L.E. Whitehouse, Turkana District Annual Report, 1953.

⁹⁸ Provincial Commissioner, Northern Province Annual Report, 1959.

4:5:3 Healthcare resources

The provision of social amenities in this frontier district was (and has remained) slow paced. It was only by 1941 that the Lodwar and Lokitaung hospitals were functioning in some form or another. The unwillingness of the colonial government to prioritise the provision of healthcare services to the Turkana, as was done for other populations in the Kenyan colony, made the DC of southern Turkana wonder: "if the demand was so evident then, how much more so would it be at present time? Again these people have been paying tax since 1926 and it is difficult to name any clear benefit they have derived from their willing payments⁹⁹". The DC underscored the need for the provision of medical services and indicated that there was a strong justification for including this district in the national scheme of planning for the provision of services. In the same vein, the DC, H.G. Gregory-Smith, of 1942 also decried the lack of interest with regard to medical aid to the Turkana region from the medical headquarters in Nairobi. To make matters worse, during this time men and women were sharing the same venereal diseases' ward at Lodwar. The construction of the Lodwar District Hospital which began in 1957 was not finished until 1959. In the same year, a hospital was built at Lokitaung and was expanded to a 19 beds capacity, with five uniport roundavals for medical staff quarters.

By 1937, there were hospitals at Lodwar and Lokitaung (mainly for the Kenya Police, military personnel, and their families) and a dispensary at Kaputir. By 1938, there was a district medical officer posted in Turkana. In addition, a sub-assistant surgeon was posted at Lokitaung hospital, while a hospital assistant was in charge of Lodwar hospital. By 1944, Lodwar became a 19-bed hospital while Lokitaung had 12 beds. According to the statistics of 1944, the daily average number of inpatients at Lodwar and Lokitaung was 13.1 and 14.8 respectively, while the daily average number of outpatients at Lokitaung and Lodwar was 21 and 29.7 respectively. In 1945, the daily average number of inpatients at Lodwar and Lokitaung were 31 and 15.86 respectively, while the daily number of outpatients in Lodwar and Lokitaung were 31 and 17.1 respectively. As per the average monthly attendance figures of 1946, Lodwar had 28 inpatients and 513 outpatients while Lokitaung had 15 inpatients and 345 outpatients. The table below also indicates the inpatient and

⁹⁹ DC Southern Turkana, Southern Turkana District Annual Report 1929.

outpatient attendance at both the Lodwar and Lokitaung hospitals. There was evidence that the few sedentary Turkana were beginning to appreciate the efficacy of Western biomedicine. In fact, the medical officer in 1926¹⁰⁰ was astonished when he received a large numbers of Turkana natives demanding medical services.

Table 3: Attendants at Lodwar and Lokitaung Hospitals

Year	Lodwar		Lokitaung	
	In patients	Out patients	In patients	Out patients
1937	92	3010	137	2873
1938	111	2515	184	3679
1950	N/A	3750	378	9427
1951	698	4233	499	4726

Sources: Turkana District Annual Reports.

Despite the fact that Lodwar was relatively more populated and its hospital had more beds than the one at Lokitaung (see table below), the medical officer (the head of medical services for the whole district) and two assistant surgeons were posted at the Lokitaung hospital. This was because medical services were, for the most part, meant for the colonial officers. Lokitaung happened to be a very important frontier post manned by security officers from the KAR, the Kenya Police and the tribal police. The transfer was only done in 1959, when the doctor was posted at Lodwar and a hospital assistant took charge of the Lokitaung hospital. It was in November of the same year that a new hospital was built, partly by the Ministry of Public Works and partly with funds from the African Trust Fund, at Lodwar and began operations shortly thereafter.

Table 4: Number of beds and staff at Lodwar and Lokitaung Hospitals in 1958

Name of Facility	No. of Beds	Medical Officer	Assistant Surgeon	Hospital Assistant	Graded Dresser	Ungraded Dresser	Attendants
Lodwar	28	0	1	1	3	5	0
Lokitaung	12	1	2	4	4	7	0

¹⁰⁰ District Commissioner, Turkana District Annual Report, 1962.

Source: Northern Province Annual Report, 1958

One medical officer and two assistant surgeons provided services for the whole Turkana District. The number has remained the same ever since, with two doctors and one medical officer. The other cadres of medical health providers were few as they were meant to serve only those who attended the hospitals.

The Turkana of Today

5:1 Introduction

This chapter is a continuation of the discussion from the previous chapter, which enables us to understand some aspects of life of the Turkana today. Having looked at the Turkana of the past, it is fitting to discuss, at this juncture, the Turkana of the present. This chapter discusses some issues that directly relate to the theme of this thesis. I will therefore discuss some of the factors of the ecosystem namely, social organisation, ideology, settlement and occupation, socio-economic development, sedentarisation, famine and relief distribution, and health and disease.

5:2 Turkana social organisation

The Turkana's modes of economic production, that is, livestock herding, as well as the region's harsh environment, influence their way of life and social organisation. Their social organisation is flexible, with large social networks and bonds. Apart from the *awi*, Gulliver identifies three other groups of neighbourhoods formed by the Turkana: primary neighbourhoods (small groups of homesteads with personal contact); secondary neighbourhoods (five to twenty homesteads that share a common water point and pasture); and tertiary neighbourhoods (vague social and geographic regions that share rituals, feasts, and dances). The Turkana, as an ethnic group, are made up of nineteen loose 'territorial sections' called *ekitela* (plural, *ngitela*). These are geographically divided and are generally marked by differences in dialect, female clothing, and types of ornamentation. The most noticeable difference I observed is the make up of the married woman's back skirt, which is comprised of different coloured skins stitched together. For instance, Ngimatak women wear a skirt of which the upper part is black and the lower part brown, while the Ngisonyoka have the upper part black and the lower reddish brown. There are also two sections that are socially distinct in Turkana: the Ngibootok (settled agriculturist of the upper River Turkwell and Ngibocheros (the 'fishing people' on the

shores of Lake Turkana. There are no deliberate attempts to draw boundaries marking different sections. There is no centralised authority or leadership. The Turkana, therefore, display the decentralised and loose political organisation and egalitarianism that is characteristic of many pastoral people (Gulliver 1951; Goldschmidt 1971; Salzman 1981; McCabe 1983). Shelley suggests that the sections originated through patterns of movement and succeeding waves of migration, which brought different people within a region at different times. The fusion of groups resulting from population and livestock increases also likely contributed to the gradual development and differentiation of territorial groupings.

A Turkana at birth automatically becomes a member of his or her father's clan, *ateger or emachar*. While a man retains his membership for life, a woman takes the clan of her husband at marriage. There are, in total, twenty-eight exogamous clans in Turkana (Gulliver 1951). Clans know no section boundaries, as big clans could be spread all over the country in different sections. There are some taboos or restrictions, *etal*, connected with specific clans observed by wives in relation to their husband's clan. For instance, Ngimeturane, Ngiduiya, Ngkaleso, and Ngkarewok brides must wear a special type of front skirt, *ethia*, until they have borne their first child; Ngikadanya and Ngidoicha women do not shave their heads like other women; and one must not go to the homestead of a Ngikatap wife when she is menstruating. Turkana males belong to one of the two groupings: stones, *imuru*, and leopards, *erisait*. The age sets are called alternations since at birth every male automatically belongs to the one his father does not belong to. Thus, leopards' fathers are all stones and their sons will all be stones and so on. A leopard must wear at least one bracelet of silver-coloured metal; a stone wears a dark coloured metal among his bracelets. A wife's metal neck ring (the equivalent of a wedding finger ring) is the colour of her husband's alternation (i.e., silvery for leopards and dark for stones). This rule, I was told, can never be broken, and today, those who get married in the church must buy rings with corresponding colours. When the informant saw my gold-plated ring, I was classified as a stone

Today the Turkana are very vague about sections, and some confused sections and clans, or did not entirely know the sections or clans to which they belong.

The smallest social unit among the Turkana is the family, which is composed of a man, his wife (or wives), and other dependent children plus other individuals who may or may not be related to the man residing in the same *awi*, homestead. *Aw*i also refers to the herding unit. In some instances, poor herd-owners may join their few livestock and / or family members may join their herds with those of the wealthier man, combining labour resources with his (Gray 1992). Throughout Turkanaland, the general lines of the composition of a homestead are the same (Gulliver 1951). However, there are some differences in the composition of semi-nomadic and settled homesteads, as the latter are larger than the former. Homesteads are the focus of the family's social organisation as all cultural and ritual activities are performed under the direction of the family head that also controls family and herd movements.

The size and the internal composition of the *awi* changes in response to the prevailing rainfall patterns, existing social pressures, and the distances between available pasture and water (N. Dyson-Hudson 1991). That factors like famine and drought impact on the Turkana's social organisation was made clear by Dyson-Hudson and McCabe (1981) during their study of the Turkana household composition during the 1979-1981 drought, which resulted in one of the most extreme environmental stresses. Homesteads of semi-nomadic Turkana are not permanent, and families do not move in concert from one place to another in search of pasture and water. The plains and mountains differentiate the two Turkana homesteads. However, the highest number of homesteads Gulliver (1951) encountered was four. I encountered a primary teacher who had four homesteads, two in different towns (Lodwar and Kalokol), one near the primary school where he and his wife were both teachers, and one at his place of origin. This teacher had four wives and concubines. The plains are preferred as that is where the semi-permanent homesteads remain (the big or the chief homestead) and that is where the head of the family, the chief wife and the old remain with goats and sheep throughout the dry season, living with cattle only during the wet season. The wet season *awi* are large as people congregate together after the rains. During dry seasons, the young herders will move with the non-milking animals to dry season grazing areas. If they are married, their wives may or may not accompany them (Gulliver 1951; Dyson-Hudson and McCabe 1985). If the place is very

insecure¹⁰¹ as most of the dry season grazing areas are, they would go alone with occasional visits from the girls to take them food and cook for them. The dry season *awi* often engage in frequent and periodic movements (between five and ten per year) that are often less than 10 Km, but occasionally up to 50 Km (Dyson-Hudson and McCabe 1985; McCabe 1994, 2004). Among the Ngisonyoka Turkana of southern Turkana, livestock are congregated into single homesteads after the rains (May to July), but as the dry season approaches, the animals are divided: milking animals and donkeys remain in the main homestead, cattle taken to highland pastures, and camels and small stock to the small camps, 5 to 15 Km away (Dyson-Hudson and McCabe 1985:182-184). These semi and permanent homesteads are found in and around some of the permanent villages, administrative centres having mainly the chief's, and assistant chief's office. In addition, they are dotted with small shops and market stalls.

The subdivision of livestock into smaller species-specific units during dry seasons is an important herding strategy. The composition and the size of *awi*'s herd structure is fluid as it depends on the payments and receipt of bride-wealth, compensation, disease, and drought. The survival of the Turkana relies not only on the manipulation of the herd structures to be in line with the dictates of the environment, but also the availability of a large pool of labour resources. This requires the maximisation of the *awi* size and structures through marriage, polygyny, and widow inheritance so that one can have a sufficient labour pool. Marriage increases not only the labour but also the herds sizes through bride-wealth. The majority of the Turkana are polygamous, with men marrying at least two wives (Brainard 1981; Gray 1991). Even in towns, I found that most Turkana men had two homesteads: one in the town and the other in rural areas where livestock are herded. In the same vein, they also had more than one wife with some residing with them in the town while the rest were in the village looking after livestock. The marriage is only complete after the payment of bride-wealth¹⁰². A wife whose bride-wealth has not been paid in full is regarded as a concubine, who is recognised in Turkana homesteads. Most of the sedentary Turkana are in this kind of relationship. While men marry in their mid thirties

¹⁰¹ Cattle raiding / rustling and banditry is frequent in dry grazing areas, which are also located along the international boundaries.

¹⁰² The ideal number of stocks per wife is 25-30 cattle, 10 camels, 100 sheep and goat and 12 donkeys. However, on average, due to variation in herd size per family, the bride-wealth in some cases is less. It was made clear to me that I would not be able to afford to Turkana woman since I did not have cattle.

or 40s, women marry between 18 and 22 years of age. Many wealthy men even marry when they are old, only for their wives to be inherited by the son or brother when the old man dies. However, among sedentary populations in towns and settled villages, men may marry early¹⁰³, as they do not have to wait until they have inherited livestock.

The Turkana want as many children as they can produce (Gray 1992). A future labour pool depends on the number of children an *awi* can have. A rich man will therefore take as many wives as possible to provide him with enough labour for his large herd. Besides labour, female children are a good source of 'livestock' in the form of bride-wealth when they eventually marry. A wealthy herder will therefore have many wives and many children, who will not only look after his herd but also replenish it. The modern Turkana leaders are wealthy, with many wives. The Mayor of Lodwar Urban Council had in excess of ten wives, some of whom were in the herding homestead.

5:3 Turkana ideology¹⁰⁴

Gulliver (1951:229, 1955:169) in his analysis of Turkana ideology, states that magical and religious activities are meagre and vague. The Turkana are practical-minded and rarely manipulate magical procedures to influence survival and social relationships. He states:

"Turkana are no savages living in a demon-filled world, hemmed in on all sides by vaguely or explicitly deadly beings, forces, etc. They do not feel that much more than correct application of traditional techniques is necessary to prosper success. [There is]... almost a complete lack of ancestor cult. Spirits are known but on the whole they scarcely interfere with one's life. There is a high God but he can usually only be induced to act in human affairs by special sacrifice, and is by no means to be depended upon. One can go for weeks without hearing his name, or anything about him being mentioned in conversation. Perhaps most noticeable of all, there is no magic or special ritual attached to the techniques of animal husbandry, though there,

¹⁰³ Since most of them do have livestock for bride-wealth, the women they stay with are regarded as concubines.

¹⁰⁴ Ideology as used here denotes the manner of Turkana thinking; the system of thought that forms the basis of their existence. Young (1983a) defines ideology as types of theoretical and practical understandings that people utilise to comprehend and control their actions and conditions of life.

of all places, one might have expected to find it. The major crises or climaxes of social life are unattended by magic and religious practices... (1951:230)".

Best (1983), like Gulliver, also states that the Turkana are concerned with problems of survival and they seem to remember supernatural beings only when there is extreme suffering. However, a recent study by Barret (1998) challenges Gulliver's and Best's accounts. He points out that the Turkana refer to *Akuj* (High Being) in a manner similar to offering prayers, especially during illness, sickness, drought, and raids. According to Barret (1998), there is no single account undertaken by the Turkana without recognising *Akuj* either explicitly or implicitly. Barret points out that the Turkana also recognise the existence of evil and good spirits, which are considered to be "active in people's lives..." (1998:97). He contends that "spirits play a major part in the daily life of any Turkana... they explain the diseases in humans and animals, the presence of good or bad luck, drought, rain, raids, and other occurrences". Without the "spirit world", explanations of daily events are impossible (1998:98). While Barret (1998) stresses ideologies and meta-empirical practices, other authors (Best 1983; Ohta 1984; Gulliver 1955) indicate the predominance of empirical knowledge. Both accounts, though divergent, are useful in that they supplement each other. It is commonly accepted that humans hold both rational and non-rational information simultaneously, that is, empirical and meta-empirical knowledge and ideologies.

The religious system of the Turkana consists of a belief in the existence of a High God, *Akuj*, who is an embodiment of both good and evil (Gulliver 1955; Barret 1998). *Akuj* is both male and female. S/he sends rain and drought, life and death, reward and punishment, luck and misfortune, and health and sickness. He is normally requested to intervene in peoples' lives, that is, to stop or change the course of an event. *Akuj* may punish one for committing adultery, stealing, being selfish with meat, and disrespectful to the elders. He is the centre of ritual activity and sacrifices. It is the people that make *Akuj* angry and hot. Such acts like witchcraft, adultery, and stealing make *Akuj* hot, and he allows evil spirits to afflict such people with disease, sickness, and even death. *Akuj* moves away from people because of the breakdown in relationships. The Turkana also understand that bad and good ancestors and spirits live in the hills and mountains. Whereas good ancestors (*ngikiram*) and spirits provide children, wealth, wives, and

livestock; the bad (evil) spirits and ancestors are understood to cause fatal illnesses both for livestock and people (Barret 1998). Good spirits and ancestors only cause problems to remind people of some negligence on their part with respect to the dead. Sacrifices are offered for good ancestors and pilgrimages made to their graves in times of difficulty. It is understood that bad spirits can cause sandstorms to blow during the dry season and these bring about colds, flues, and general pain in the body.

The Turkana have various prophets (*emuron*) who divine through the reading of sandals, strings, the bark of trees, entrails, stones, and gourds to find out the reasons for illness and misfortune (Gulliver 1951; Barret 1998). Some prophets also divine through dreams. Prophecy, divination, and healing are interrelated (Barret 1998). The diviners, though, are fore-tellers of the future. They can also heal the sick, combat witchcraft and sorcery, make raids successful, produce rain, cure barrenness, purify age-sets, and so on. Prophets (*emuron*) also have knowledge of medicines and diagnoses, and can, in addition, perform anti-witchcraft and anti-sorcery rituals. The gift of prophecy can be acquired directly from *Akuj* or genealogically through one's father. Such a person is taken by *Akuj* to a strange far place for a period of time where he learns all the knowledge and techniques of divination. Some birds and animals are also seen as prophets (Gulliver 1955). The ordinary Turkana also divine through the throwing of sandals, but if this fails, an *emuron* is consulted. While Shelley (1985) states that an *emuron* is not a medical specialist, Van der Jagt (1989) and Lamphear (1976) contend that he is a diviner, a healer, a religious leader, a magician, and a witchdoctor combined into one. According to Shelley (1985), after divination, an *emuron* refers the sick to *akatwan*, a woman medical specialist who diagnoses and offers therapy for illnesses caused by a witch. Prophecy is not just about prediction or foretelling, but it is also concerned with cures for illnesses or irregular situations. Prophets predict and facilitate amelioration through *Akuj*. Prophecy indicates the cause of the problem and the therapy needed.

Barret (1998) tells us that in the Turkana world, objects, things, and beings are divided into two categories - 'hot' and 'cold'. While 'hot' is bad and inauspicious, 'cold' is benevolent and benign. While *Akuj* (High God) is 'cold', the *ekipe* (bad spirit) is 'hot'. In the same vein, a sick body is 'hot' while a healthy body is 'cold'. Mental or physical illness (or sickness) changes the body from being in a state of 'coolness' to that of 'hotness'. An

elaborate healing ritual / ceremony is performed to reverse the disorder so that 'hotness' can be replaced by 'coolness' (Barret 1998:119-120). The main celebrant in such a healing ceremony is usually a "widow of post-menopausal age" who has been a previous victim of that particular disease (Barret 1998:122). In Turkana, a woman who does not menstruate is 'cold' and is considered as an 'elder'. Barret claims that women are the main celebrants in rituals because it is they who suffer often from mental illnesses (diseases of the head, *ngidekesinei a akou*) and other diseases. Women are considered to be 'hot', with periodic flows of hot blood, while at the same time 'cold' like *Akuj* because they are the carriers of life. Since they are 'hot' they are capable of neutralising 'hotness' due to an illness. This is presumably why medical specialists, *akatwan*, are primarily women (Shelley 1985). Evidently gender permeability and mutability are at play in Turkana society (Broch-Due 1990; 1994) and are narrowly important in illness diagnosis (as some of the illnesses have either feminine or masculine overtones) (Barret 1998); and healing, since healers are women (Shelley 1985).

Though Barret (1998) states that the Turkana do not make a clear distinction between witchcraft (*akapilanut*) and sorcery (*ekasuban*), Gulliver (1955) claims that they do. Sorcerers cause pain through the manipulation of objects, while witches just look at their victims. The mystical power of witchcraft (*akapilanut*) is considered feminine and is associated with females. Those who have this power wander in peoples' homes at night. They are strange and make animals and people ill just by looking at them. Those who are considered as witches often have less property and fewer children than other Turkana. A bewitched person may visit a diviner (*emuron*) for diagnosis. Having found the cause of the problem, the diviner instructs the person to have an animal sacrificed very early in the morning so as to halt the spread of the disease. Sick and weak people are encouraged to smear themselves with chime. Some chime is mixed with water and is sprinkled on the animals, accompanied by prayer. The strips of skin of a sacrificed animal are tied around the necks of the endangered animals, remaining there until they fall off by themselves. The meat is consumed by the people, the cooking fire is extinguished to signify the demise of the disease, and the cooking utensils are left to cool until evening (to signify the heat of the disease being transformed into coolness) (Barret 1998). An elder indicated to me that witchcraft does not cause illness per se but makes the body susceptible to illnesses. Once

infected, one would die. The effect of the witchcraft would be felt in the whole homestead in the form of many illnesses and deaths of dwellers and livestock, until a healer or diviner is found to remove it from the home. I was informed that a witchdoctor could cause illnesses or even make wealth disappear. If a witchdoctor visits a home and later performs a ritual over small pieces of property taken from the home before returning to plant a witchcraft bundle, then the people in the home may become afflicted with various illnesses. Some people or livestock might die if a cure is not found. Illnesses such as TB, *loriwo*, and backache could result from witchcraft. If the witch doctor that put the witchcraft bundle in the home dies before it is removed, there would be no cure. Normally, the diviner of sandals or tobacco would determine where the bundle is kept.

The Turkana word *edeke* (pl. *ngidekesinei*) refers to 'sickness', 'disease', or 'illness' and also implies the cause of the affliction and its subsequent episode (Shelley 1985). The Turkana categorise both human and livestock illnesses into two aetiological classes, that is, those due to natural phenomena such as the mosquito, (*ngidekesinei ka Akuj*) and those caused by human intervention such as witchcraft and the evil eye (*ngidekesinei ka ekapilan*) (Ohta 1984; Shelly 1985; Harragin 1994). Most illnesses are put in the first category (natural) and are considered manageable by use of herbal medicines (*ekitoi*, pl. *ngikitoi*). Shelley (1985:6) claims that Turkana natural and social (personalistic) causation of harm are "intertwined - so closely, that to separate them even analytically risks distortion"¹⁰⁵. The categorisation of illnesses is not mutually exclusive, as they are able to reclassify illnesses, especially if a specific therapy fails (Ohta 1984; Shelley 1985). Diagnosis is guided by the nature of symptoms, events, social relations, and the changing course of the affliction. Ohta (1984) found that the Turkana diagnose livestock diseases by typical symptoms, the part of the body affected, abnormal behaviour, and post-mortem symptoms. While known diseases are considered natural, the unknown ones are attributed to *Akuj*. One elder told me that in the old days, before the missionaries came to Turkana, *Akuj* was believed to cause all illnesses. However, nowadays there is a belief that illnesses are caused by evil spirits, *ekipe*. *Ekipe* thrives everywhere: in the air and in the mountains.

¹⁰⁵ On the contrary, other anthropologists such as Baxter (1970), Ohta (1984), Arhem (1989), Hurskainen (1989), Olsson (1989), and Johnsen (1996) have indicated the predominance of physiologicistic and natural illness causation theories among pastoral communities.

The *ekipe* can infect livestock, as well. If *ekipe* infects a goat, even wild animals cannot feed on it.

In Turkana ideology, some illnesses are caused through *akirakar* (meaning 'to bewitch by means of the evil eye') by anonymous witches (*ekapilan*, pl. *ngikapilak*) (Shelley 1985). Witches make people ill, especially children, by simply looking at them or their food (Gulliver 1955). They can also cause death and drought (Van der Jagt 1989). A witch can only be exorcised using medicines from the territories of Karamojong and Dodoth (Gulliver 1955). Another way of causing illness is by means of *ekilam* (meaning 'to curse') which could emanate from a specific individual (Shelley 1985). A father can curse his son and this curse would follow for many generations to come, until a diviner could be found to alleviate the effect of the curse. Breaking social norms is also understood to endanger human health. Illness, when it occurs, threatens the social unit as well-being is predicated on interpersonal relationships. There are people that can make others ill by just looking at them, especially when they are eating or drinking. In such circumstances, food or water could get stuck on the throat. Illnesses caused in this manner are called *akisilikor*. Such illnesses are cured by female *akatwan* through a ritual called *atware*. The Turkana recognise that harm and injury can result from either potential dangers existing within the confines of the environment, or from human-initiated threats (i.e. witchcraft, friction, and conflicts inside individuals e.g., anger) within and beyond the immediate social setting (i.e., raids, droughts, pollution, wild animals) (Shelley 1985).

Prevention of illnesses is mainly done through the smearing of the body with offal from a sheep or a goat. At times, the *ariwo* ritual is performed through the slaughtering of a goat to drive away the illnesses before it affects the home. In normal circumstances, when a goat is slaughtered some illnesses can be revealed through the reading of the intestines. The sacrifice of a goat with the skin colour that conforms to the type of the illness diagnosed or the foreseen problems would then follow.

5:4 Settlement patterns and economic occupations

Presently the Turkana can be divided broadly into nomadic, semi-nomadic (semi-sedentary), and sedentary populations, with 70 percent of the population still entirely dependant on livestock production for most of their lives (Ecosystem 1985; Government of Kenya 1996a). In 1979, before the drought of 1979/80/81, it was estimated that in the Turkana District, 88 percent of the population were engaged in pastoralism, 6.7 percent in fishing, and 2.4 percent in farming (Ecosystem 1985). Broch-Due and Sanders (1999) have, however, divided the Turkana into three groups: permanent / nomadic pastoralists; a class of combined herders, cultivators, and fishers of the Lake Turkana and Turkwell river; and the Turkana group that make a living by gravitating between different means of production and therefore depends on the fragile and fluid aid-based economy, often moving from one failed project to another. To this classification, I add a fourth group, the Turkana who have become sedentary and do not harbour any *practical* hopes of ever returning to the pastoral economy. This number is estimated to be about 30 percent, and they have settled either in or around towns, on irrigation schemes, in mining areas, in refugee camps, etc (Government of Kenya 1996a).

The number of the settled population changes over time, influenced by drought and famine. During famine, impoverished populations settle so as to access relief food. After the drought, some people return to a pastoral mode of life, while others do not. In some cases, a section of the family remains in a relief distribution centre while the rest of the members travel to wet season grazing areas with surviving herds. Those who leave to herd their stock come back occasionally to pick up their famine relief rations from the family members remaining. Some also register with relief distribution officials, only to return every month for their rations. During my fieldwork, I visited one of the most remote parts of the country, Lokangae. The small village where we lived was littered with granaries packed with bags of relief maize. Occasionally, members of nomadic families would come with donkeys to pick up some sacks of maize and leave the rest to be picked up the following month.

The settled population exists within a continuum of social and economic capital with the majority being poor and making a living mainly out of petty trade, relief assistance, and

employment. Ironically, even though most of the NGOs, apart from the ones that focus primarily on refugees, are in Turkana for the development of the Turkana people, they rarely employ the locals. During this research project, there were constant skirmishes between the locals and the NGOs in Kakuma and Lokichoggio as they endeavoured to violently demand their rightful share of employment opportunities. In August 2002, a Cabinet Minister, Raila Odinga travelled to Lokichoggio to mediate disputes over employment between local people and the management of the International Committee of the Red Cross during which three people were shot dead the previous month¹⁰⁶. During those talks, it was agreed that local people would be given priority in jobs at the refugee centre and that they would get tenders to supply firewood. The minority of salaried Turkana are employed in service industries – by the government, church missions, or aid agencies. This group resides permanently in and around towns and urban centres. This is the principal group that forms the focus of the current project.

5:5 Social and economic development in Turkana

There are two phases of development in Turkana: during the colonial period and after independence. The postcolonial government inherited a wretched, poor, and famine-prone district from the colonial government. Just as the colonial government did very little to promote livestock production and forms of economic development in the district, the postcolonial government did not do much, either. In principle, this is still a frontier district that is still 'closed' to the benefits of economic and social advancement. In fact, after independence not much attention was paid to pastoral areas. The policies pursued by successive postcolonial governments has led to the marginalisation of the Turkana from mainstream national development. Policy makers envisage the gradual eradication of pastoralism.

Since independence, not much has been done in the Turkana District in terms of the advancement of their socio-economic status, let alone the mitigation of the effects of periodic droughts and famine. Pastoral areas have never attracted much development planning and the subsequent allocation of resources. Turkana is very remote and far-

¹⁰⁶ Barasa, L., 2002. 'Rainbow Alliance still going strong, Raila says' *Daily Nation*, [online] August 20, 2002. Available from: www.nationaudio.com/dailynews/ Accessed on: August 20, 2002.

removed from the Kenyan government. In view of this, it can be seen that the Kenyan government does not have much interest in developing the district. However, due to droughts and periodic famines since the 1970s, there has been a significant increase in donor activities in the region. These donors have had great influence in shaping decisions and channelling monetary aid. Such NGOs, like the Turkana Rehabilitation Project, supported largely by funds from the European Economic Community, the Norwegian Development Agency, the Kenyan government, the Catholic Church through the Lodwar Catholic Diocese, the Irish Kiltigan Fathers, the Medical Missionaries of Mary, the African Inland Church and other international NGOs and donors, have dominated the development scene in the Turkana District. No other district in Kenya surpasses the Turkana region in the presence of international development agencies¹⁰⁷. When I was in Turkana, I was always mesmerised by the many agencies cruising around in their powerful four-wheel drive vehicles in the name of development, not only Lodwar town, but also the entire district. The donor industry and the Catholic Church dominate the Turkana development scene. One of the international agencies that cannot go without mention due to its past efforts to alleviate the enormous development problem in Turkana is the Norwegian Development Agency (NORAD), whose momentous contribution is second only to that of the Lodwar Catholic Diocese headed by the indomitable former Bishop Mahon. Every Turkana in Lodwar could mention to me the good deeds of NORAD, and how, were it not for political reasons that led them to pull out of Kenya in 1992, the region could have advanced considerably. Nonetheless, their pull out resulted in the abandonment of many projects they had started, such as the new building complex for the district headquarters, ultramodern Lokitaung sub-district hospital, and the Turkana fishing processing plant. These projects have so far turned into white elephants, as the government does not have the funds for their completion.

Most of the development projects in the district that were implemented by the donor agencies and international NGOs have failed miserably to alleviate the problems of poverty and perennial famine. This is partly because most of these projects are implemented in line

¹⁰⁷ The list of these development agencies would read like a WHO is WHO in the world of international development: OXFAM, Save the Children Fund, UNICEF, World Vision, MSV Belgium, Mission International, the Lodwar Catholic Diocese (with its myriad internationally affiliated agencies), the Mama Mzungu Foundation, the Intermediate Technology Development Group, the Lutheran World Federation, CARE International, etc.

with the philosophies and values of the international donor agencies and NGOs, and also due to the fact that the unpredictable climate of the Turkana District is not always taken into consideration. Development planning and implementation continues to be top-down, ethnocentric, and technocratic in approach, with people treated as mere statistical variables. This is why the Turkana District is littered with unsuccessful projects. These projects were also more or less a reaction to the dictates of drought and famine. The long-term solution to food insecurity in Turkana depends on not being "reactive to drought-driven events" (Oba 1992b:21). The projects targeting the destitute or victims of famine and droughts just treat the symptoms, and do not tackle the ultimate causes of perennial famine and ever-increasing poverty. I could say without equivocation that these interventions that spiral during predictable recurrent periods of drought and famine have increased the Turkana's dependency on outside agencies and the national government without improving local sustainability in food production (see also Hogg 1987; Oba 1992b). Some projects like irrigation farming, though, might be of relevance to some destitute Turkana, primarily those who have settled down, those willing to settle down, or those who have the manpower to divide between herding and farming. However, the projects have not largely appealed to the Turkana population whose main interest is focused on livestock production. Hence, these projects are viewed with little esteem or are only useful in the short term, and more so if during the period of scarcity such ventures are accompanied by free posho and livestock, hence attracting people who are destitute and only have short-term aims – upon recovery they move back to pastoralism. The disinterest of the Turkana in such development projects brought to them by development agencies is often misinterpreted by the development planners and the Kenyan government as apathy and conservatism, hence perpetuating the myth of pastoral reluctance to change.

Development planners in the Kenyan government have never viewed pastoral livestock production as the centrepiece and cornerstone of development in Turkana. Instead, development has been aimed at projects that would be viable only if the Turkana were sedentary. However, development in Turkana should focus on livestock production and marketing in conjunction with other avenues of economic production like fish processing and marketing, and irrigation farming, not only along the river banks but also in the flood plain of Loringipi, which gets its waters from the Tarach River. That the future of the

Turkana District lies in livestock production and marketing was advanced as far back as 1929 by a senior commissioner¹⁰⁸, who noted that “the wealth of the District lies solely in stock, but there are no means of exploiting it, and until this potential wealth can be used, the district will remain poor”.

The emergence of settlements and development projects has led to diversification and differentiation in the pastoral economy. In addition, because of periodic droughts and changing economic conditions, it is not uncommon to find pastoral communities pursuing formal employment and business ventures. The Turkana are still primarily pastoralists, but they are also pragmatic and opportunistic about alternative livelihoods because of the severity and unpredictability of the environment. The Turkana, nevertheless, through diversifying their subsistence strategies, have conquered this unpredictable ecosystem. Though livestock products are their traditional source of nutrition, we find that the Turkana have traditionally cultivated small sorghum gardens on the alluvial pans and river flood plains following the rains and in irrigation schemes. In addition, they have caught fish in the River Turkwell and Lake Turkana, hunted a variety of wild animals, gathered numerous species of edible wild fruits and plants, and bought flour, sugar, tobacco, oil, etc, from the shops and itinerant traders. During times of drought and famine, they have received free yellow maize, oil, and peas. The Turkana economy that exists today is, therefore, very far removed from being a traditional one based exclusively on livestock products, and they display great flexibility and ingenuity in maximising the resources they encounter in the course of their struggle for survival. It is due to this pragmatism and opportunism that some Turkana have embraced new subsistence alternatives, such as irrigation farming, commercial fishing, and employment in towns, in government departments, in missions, and in non-governmental organisations (NGOs). Young men regularly leave the district to look for employment¹⁰⁹, with some joining the police force and the Kenyan army¹¹⁰. There are many Turkanas operating as independent traders of various magnitudes. Most of the

¹⁰⁸ R.G. Stone, The Turkana Province Annual Report, 1929.

¹⁰⁹ For example in 1979, 12,000 Turkana were resident in Trans Nzoia District

¹¹⁰ Many Turkana males have been recruited into the Kenyan army and the police force. As will be discussed later, this exodus of many young men, who later return in coffins, has had a bearing on the perception and incidence of HIV/AIDS in the district.

trading centres in the Turkana District are full of shops, hotels, alcohol kiosks¹¹¹, tea kiosks, market corners, etc., owned by the Turkana. Turkana women who migrate to urban centres eke out a living from selling charcoal, firewood, brewing illicit alcohol, and as commercial sex workers (see also Hogg 1997; Watson *et al.* 1998, Broch-Due 1990). While educated and well-salaried Turkana, such as politicians, civil servants, NGO employees etc. consider education to be the key, the poor hark back to the past with nostalgic memories as they become more and more enmeshed in the trap of poverty. Though nomadic pastoralism remains the most viable mode of production in this arid and semi-arid region, the overall goal of development in Turkana should be to nurture the diversification in production that already exists, including nomadic subsistence pastoralism. The goal of development should be to introduce new but flexible and viable economic options (Brainard 1992; Hogg 1996). As I witnessed, presently it is those who have diversified their exploitation of economic options that tend to be the wealthiest in stock, have a variety of personal possessions, send their children to school, and generally have increased access to social amenities. More importantly, they are the ones that remain unscathed by drought and famine.

Besides climate, one of the factors that hampers development in Turkana is insecurity. Insecurity in the form of banditry and raiding not only interferes with pastoral production, but also with development projects; insecurity hinders the movement of planners and even the implementation of development projects, and bars freedom of movement for the population. The most insecure parts in the Turkana District are those areas that are designated as dry season grazing areas, which are important for livestock production. As we discussed earlier, livestock raiding has a complex and long history in the region as it is a traditional means of replenishing herds lost due to periodic droughts, counter-raids, and livestock diseases. Raiding is closely intertwined with perceived threats to security, the availability of adequate grazing, and livestock diseases. Raiding has, however, been given new meaning and has developed beyond its traditional value in pastoral societies. In fact, it is alleged that raiders have graduated into bandits, with sophisticated weapons obtained

¹¹¹ Alcohol is sold in kiosks and houses in the bomas. It is the most common trade among settled Turkana women. In some villages I found that almost every household was involved in the traditional alcohol production. The Turkana are heavy drinkers. Alcohol is a problem in this district, especially among the settled Turkana populations.

from across the border in the neighbouring countries of Ethiopia, Somalia, Sudan, and Uganda that in the past and present have been rocked by civil wars. Some of the banditry organisations are similar to groups involved in organised crime, with highly rich people at the top (even in government) that gain from the spoils of the raids. In the Turkana District, there are also the *Ngoroko*, bandits that waylay travellers along the Kitale-Lodwar road. The district is so insecure that vehicles normally have to travel in convoys protected by Kenyan police officials between Kitale and Lodwar.

Pastoral development cannot be effectively discussed without digression to the debate on ecological destruction in pastoral lands (Owiti 1998). Some of the reasons given by development agencies, governments, and donors for settling the nomadic populations are to prevent further environmental degradation. Pastoral survival strategies, like opportunistic herd management, are seen as non-rational and as contributing to desertification. The impact of the vagaries of climate, like droughts and famine, are seen as self-induced tragedies that could easily be checked were the Turkana to settle and lead 'normal' lives managing livestock. This is why the next section will discuss the environment and ecology of Turkana so as to put the development issues and systems of economic productions into perspective.

5:6 Environment and ecology

The Turkana District is a semi-arid and arid region (ASAL). It is generally an inhospitable country with a highly variable physical environment punctuated with scarce and unpredictable rainfall. In a nutshell, as one researcher has succinctly put it: the district is "characterised by extreme heat, and aridity, intense solar radiation and wind, serious endemic diseases, scattered and patchy resources, and low unpredictable rainfall" (Shell-Duncan 1994:150). It is an "inhospitable environment where drought and famine" recur with regular frequency (McCabe and Ellis 1987:33). Temperatures normally range between 24°C and 38°C throughout the year (Gulliver 1955; Dyson-Hudson and McCabe 1985; Oba 1992). Turkana country has a persistent wind blowing from south to east. The hot and dry wind causes frequent red-dust storms. There is a joke in Lodwar that these frequent dust storms are the equivalent of Turkana rainfall.

Though the annual rainfall averages between 100-500 millimetres, it is highly variable, low, and unpredictable. In the years of adequate rainfall, the rainy season runs from April through to the end of June, and there may be a period of short rains during October to November (Gray 1992). In reality, however, it rarely happens in such a neat pattern and even if there is adequate rainfall, it is highly unpredictable and long rains might even occur in October and November instead of April through June. Ideally, as Gulliver notes, "Turkana say, with truth, that only about one year in four or five has a good season with rainfall well above the average paucity" (1955:23). The Turkana District is often frequented with periods of drought, which normally leads to stock loss and seasonal nutritional stress (Shell-Duncan n.d.; Dyson-Hudson and McCabe 1985; Galvin 1985; McCabe 1987a,b; McCabe 2004). The Turkana do remember the periods of 1960-61, 1979-81, 1984-85, and 1999-2001 as periods of drought that were followed by famine. I went to Turkana in the year 2000 when it had experienced rainfall shortages that resulted in acute famine, which led to deaths, starvation, and protein-calorie-malnutrition. However, the pattern of droughts described above seems to be rapidly changing, probably following global climatic changes, as Turkana and other areas of the Horn of Africa experience drought, famine, and hunger year in and year out.

While high temperature and dust storms cause respiratory infections and often leads to dehydration, from the environmental hygiene perspective, it sanitises the environment through the drying of human waste.

Turkana country has a flat terrain rising gently from the eastern shores of Lake Turkana, westward to the Rift Valley escarpment. The large stretch of plains in some locations enables one to see up to over 100 miles across the plain unbroken by mountains. For instance, the breathtaking Longitipi plains, with its black cotton soil, are unbroken for a distance of over 80 miles. Several broad mountains, some with tall peaks, and the recent lava-based ranges of hills and plateaus punctuate the flat terrain. The mountains vary in size and height between 4500 ft and 7000 ft. The most prominent mountain is the Loima in west-central Turkanaland, which is not only important for the Turkana as a dry season grazing area, but also internationally as a bio-diversity zone. There are also the Lorienatom, Pelekech and Thungut mountains in the north-east. Again, these mountains are very important to the Turkana as dry season grazing areas. Some parts of the district,

especially the central part where Lodwar is situated, have some flat surface desert pavements made up of gravel pebbles.

The scarcity of rainfall, the temperature, the rate of evaporation, and the topography and soils make vegetation patchy and sparse in the Turkana region. Two-thirds of the district supports only scattered trees and a quarter is devoid of trees (Norconsult 1990:48). The vegetation mainly consists of several species of *Acacia*, like *Acacia tortilis*, *Acacia mellifer*, *Acacia rubica* (epetet), *Acacia reficiens* (eregae), *Acacia seyal*, *Salvadora persica* (esekon or toothbrush) *Boscia coriacea*, *Commiphora africana* (ekadali) *Euphoria cuneata*, *Cordia sinesi* (edome), *Blانيتes sp.* (ebei, emalach); various types of desert trees; and a wide variety of short desert shrubs and grasses (Morgan 1971; Barrow 1989; Norconsult 1990). The seed-pods, *ngitit*, are utilised by both goats and humans as food. There are, in addition, *Hyphaene coriacea*, doum palm (*eengol*) trees, whose fruits are eaten by the Turkana; these are found mainly at the lake shore and river tributaries. The vegetation is also composed of perennial grasses, which quickly flourish in response to the infrequent rains that turn portions of the ordinarily sandy or rocky terrain into seasonal grassland. These grasslands turn brown after a short period of sunshine and drought. I experienced this magical characteristic of the Turkana vegetation. When I arrived in the district for my fieldwork, there were some places I visited that were sandy and rocky deserts. Then short rains occurred for a week. After two weeks the terrain was covered with green grass and acacia vegetation that transformed it into a savannah with green leaves. These plains are favourable places for temporary settlements and grazing because of the abundant variety of plants and grasses for browsing that flourish within a short time after rainfall. A good example is the Lokitipi plain in the northern part of the district, which is normally transformed into a flood plain by the Tarach River. After the river has poured its water into the plain, it is normally followed by the growth of a variety of grasses suitable for wet season pasture. River courses, especially the Turkwell and Kerio, have thick belts of riparian vegetation on either side with deep rooted *Acacia tortilis* (umbrella thorn, *ewol*) forming a canopy forest (Renfrew 1991).

There are many streams and rivers in Turkana. However, most of them only have water a few days or even hours of the year, especially after the short and long rains, that turn them into vast flood plains. The rivers that have some surface water nearly all the year

round are the Kerio and Turkwell, which depend on external sources for their water, such as the Kenya highlands and Mount Elgon. They are far removed from the favoured dry season grazing sites upon which many herding families depend. In addition, they are found in southern Turkana, leaving the northern part with no permanent river. River Turkwell flows partly through the district headquarters in Lodwar, which is the most arid part of the district. However, nowadays, the River Turkwell does not have water most of the year, especially down stream due to the construction of the Turkwell Gorge Dam for hydro-electric power generation. In the past, this river had water nearly all year round; now, it is more or less a man-made river as the management of the dam controls the water flow. The construction of the dam has consequently turned Turkwell from a natural river into an artificial river with disastrous consequences for the pastoral communities that depend on the river for their livelihoods and survival. Many of the Turkana of the Ngiketak territorial section living in the agricultural settlements of Katilu and Kaputir rely on the Turkwell River. And the Kerio River is a main artery for the gravity-fed watering system for the maize and sorghum gardens near Morulem and Lotobai (Shelley 1985). Without the floods and associated riverbank resources, all this production hangs in the balance.

The communities whose members I spoke to indicted to me that the river used to flow nearly all year round and they could use the water for irrigation and watering their animals. The control of the river flow has also led to muddy water containing a great deal of silt, which is harmful for the Turkana who have no access to other forms of water apart from the river. It also makes the river quite unpredictable for the communities whose livelihoods entirely depend on its waters, and hand dug wells in river beds. While in Turkana, I crossed the river nearly daily on my way to visit members of the communities in order to conduct interviews, and participate in discussions. On some occasion, I crossed the dry Turkwell River only to find it when I returned flowing with brownish muddy water with several children swimming and bathing in the water. The planners of the Turkwell Gorge did not take into consideration the fact that the river represents a lifeline for the nomadic and settled agricultural communities. An impact assessment on the Turkwell River, the vegetation and environment, and the communities should be carried out as none has been done so far. Other well-known seasonal rivers are the Tarach in the northwest that empties into the great Longitipi plains, and the Suguta River in the far southeast.

5:7 The sedentarisation of the Turkana

Governments in Africa envision that the provision of services will be made not only more economical, but also easier if pastoral communities were to settle down. This is why the Kenyan government and NGOs have always encouraged nomadic communities to settle down. The overt policies of the government and other agencies dictate the way that social services (notably education, health, and security) are provided. It is clear that service provision favours the sedentary lifestyle found in emerging settlement centres, farming irrigation schemes, relief centres, and security points (police posts), which are not mobile to target the nomadic population.

Writing in the 1950s, Rowlands (n.d.) predicted that the cultural changes that began in and around the administrative centre in Lokitaung in northern Turkana would be irrevocable. He saw the Turkana as heading towards the complexities of modern life, even though they still had a long way to catch up. Over the last few years, there has been a tremendous increase in voluntary settlement. In 1985, the Ecosystem Project Limited estimated that 30 percent of the Turkana were settled and that 70 percent were still nomadic (Ecosystem Ltd. 1985). The process of sedentarisation and modernisation that started in Turkana with the advent of colonialism has progressed unabated. This has, however, greatly increased over the last decade or so. Sedentarisation has been necessitated by poverty, famine, modernisation, political pressure, increasing opportunities for migrant labour, and the loss of stock due to drought and raids (Renfrew 1991). In addition, the emergence of towns in colonial administrative centres that were inherited by an independent Kenya as administrative centres, and the development of new trading centres along the Kitale – Lodwar - Sudan road continue to facilitate sedentarisation. Thus paving the road played a great role in not only opening up the district to the outside world, but also in accelerating change. The administrative centres of Lodwar, Kakuma, and Likichoggio are now bustling frontier towns. Settlement began in the colonial period, especially after the 1918 disaster that afterwards saw pastoralists congregating in centres like Lodwar, Lokitaung, and Ferguson's Gulf (Kalokol) for relief supplies from the colonial administration. Ever since, these centres have grown considerably. The first to settle in Turkana were those who were rendered destitute by famine, and hence had to remain in

permanent Pauper's camps in Ferguson's Gulf (Kalokol) and Lodwar. During famine situations, which are not infrequent in Turkana, their numbers swelled. The sedentary populations have continued to increase steadily in these former posts and administrative centres and their numbers have even led to the emergence of settled villages and an increase in population in the existing large sedentary villages. The sedentarisation of pastoralists is therefore not a means in itself, but has been mainly engineered by economic instability, changes in cultural values, and deterioration of the environment. There are several authors who have discussed the causes of pastoral instability in Turkana: Henriksen (1974) suggested that ecological imbalance and hunger became the basic premise for change in Turkana in the early 1970s, with the focus on the Lake Turkana Fisheries Project; Weinpahl (1985) and McCabe (1987b) surveyed the immense livestock losses due to drought in the early 1980s; Dyson-Hudson and McCabe (1982, 1985) reviewed the impact of raiding in southern Turkana by both Pokot and Turkana bandits; and Hogg (1982, 1986) discussed destitution, dependency, and development efforts in Turkana.

The world wars played a role in dislocating many Turkana, as some were conscripted into the army. After the Second World War, many hundreds of dislocated Turkana youths settled down at Lokitaung for wage labour. The labour of these Turkana was used for the construction of roads, and as donkey and camel boys during the war. Women were taken in as concubines. After the war, these people could not get a foothold in the pastoral economy and were therefore presented with little choice other than to settle and eke a living out of non-pastoral alternatives. Many of them settled in former military and administrative centres. These centres, like Lodwar and Lokitaung, attracted displaced populations from the pastoral system and destitute Turkana for wage employment, mainly in the police force, in KAR, and as menial labourers. Other Turkana were encouraged to settle outside the district, especially in Trans Nzoia and Kitale to work for the county council and on European settler farms. Some Turkana also migrated to Isiolo and Samburu. In 1955¹¹², famine forced many young Turkana and a considerable number of whole families to seek refuge in farms in the Laikipia district, with many not returning to Turkana.

¹¹² L.E. Whitehouse, 'The Turkana District Annual Report', 1955.

The entry of missions into the Turkana District also contributed to the settlement of many populations who were either in receipt of relief or were employed as labourers. The missions are distributed throughout the district and permanently settled populations normally surround them. Most centres started with mission posts, like Lokori (an African Inland Church Mission), Kakuma, Oropoi, Nakwanamoru, and Lorugum (Catholic Missions), and Lokichar (a Dutch Reformed Church), among others. Most of these settlements are found along the rivers. The Kitale-Sudan Road is also lined with trading centres, some still small, though the settlements along the road are growing rapidly. They provide marketing points for pastoral families who periodically wish to sell small stock to secure cash and in turn buy a range of cash goods, especially tobacco¹¹³, sugar, and oil. The sedentism of formerly nomadic populations is often followed by substantial or severe modification to patterns of life. Such people, pushed forcibly out of the traditional mode of production and way of life, are considered as destitute since the normal way of life among the Turkana is supposedly that of herding or owning livestock. This has led to the emergence of a new kind of pastoralism accompanied by economic diversification and differentiation (Hogg 1986).

Settling down is accompanied by an intensified use of resources, especially land around the towns and trading centres, and diversification in economic production. The emergence of settlements has led to a dichotomy in the population into those who belong to the town *vis-a-vis* the bush people. There is a marked contrast between nomadic and settled populations in and around permanent settlements in towns and irrigation farming schemes. With this also develops economic inequality, and political and economic hierarchy. The population that lives in towns has few or no livestock, as most who opted to settle are impoverished Turkana who lost their livestock due to the vagaries of weather, livestock raids (and banditry) and disease. The consequences of sedentarisation often include the transition from a sparse mobile population to high-density permanent villages and towns. It results in economic and ecological change, from herding to farming, employment, and trading. There are, in addition, new modes of production that leave a mark on the environment such as permanent development projects. Most of the town dwellers

¹¹³ The most prized commodity among the Turkana since the 1950s has been tobacco. Nearly every Turkana, man and woman, from a very early age chews tobacco. The sharing of tobacco is very common, and at times this extends to the removal of chewed tobacco from the mouth.

participate in the monetary economy, but most of them are in the margins as traders, charcoal burners and vendors, local brew vendors, commercial sex workers, domestic workers, tea sellers in small open kiosks, those who work in return for food, and child labourers, etc. Some of the Turkana, however, live in the mainstream of the monetary economy as civil servants, NGO workers, self-employed shopkeepers, vehicle owners, transportation agents, lorry owners, etc. Somalis and other non-Turkana from down country mainly own the shops in the Turkana trading centres. Other than shopkeepers, it is the kiosk owners and petty traders in markets in and around trading centres and in villages who participate in the margins of the monetary economy. Normally, they parcel out wares bought from the shops into smaller and smaller portions so as to make them affordable to the poor Turkana who are always short of cash. Such items as tobacco, salt, sugar, maize flour, soda ash, and cooking oil belong to this category. For instance, a kilogram of sugar costs eighty Kenya shillings (the equivalent to US\$ 1.20). The vendors would parcel out sugar to the extent that one could buy a portion for as little as ten shillings.

The nomadic populations do have a symbiotic relationship with the settled populations. Those who have settled often have relatives and close family members herd their livestock. Some of them do make occasional trips to check on how their livestock are doing. The nomadic population sells small stock and milk so as to participate in the monetary economy with the settled populations. For them, villages and trading centres offer opportunities to exchange the money they get from the sale of their stock for tobacco, medicines, maize meal, cloth sheets, cooking oil, cooking appliances, sugar, sandals fashioned from worn out vehicle tires, etc. They also come to these places to indulge in the luxuries the modern world has to offer like drinking *kaada*¹¹⁴ and prostitution for the young men with the young Turkana women that frequent these centres, providing sex in exchange for money. Many Turkana trek for long distances to these centres for this exchange. Small-scale traders also carry tobacco, sugar, beads, utensils, *posho* (corn

¹¹⁴ *Kaada* is the name for the locally brewed alcohol made from fermented maize or millet flour, then mixed with yeast. *Kaada* drinking is endemic among the settled Turkana population. In fact, alcohol is developing into a big problem in Lodwar where the young and the old are drunk by evening. Even the Turkana professionals like teachers, nurses, and administrators drink *kaada* into excess. Turkana never used to drink alcohol, and *kaada* is a recent invention especially as a consequence of sedentism and exposure to the non-Turkana worlds. The first report of alcohol brewing in Turkana was in the 1950s though in small quantities among the sedentary population in Lokitaung.

flour), and pieces of clothes, especially during food shortages, to distant mountains and plains.

The paving of the major roadway from Kitale to Sudan not only opened the district to the rest of the country, but also speeded up the process of sedentarisation. The road from Kitale passes through West Pokot country, and passes through trading centres such as Kainuk, Lokichar, and the district headquarters in Lodwar, all the way through to Kakuma and Lokichoggio to the north. A mix of modernising influences has diffused spatially along the road in these centres. Large lorries transporting goods for relief and for refugees and UN workers make their way from Mombasa and Nairobi along the roadway through the district as far as Sudan. These centres have shops, hotels, teahouses, lodges, and police posts. The centres serve thirsty travellers with refreshments and they are waiting points for convoys. Currently there are many Nissan vans plying the roads near Kitale and Lodwar everyday, amid insecurity. For most Turkana and a few non-Turkana, the only mode of affordable transport between these centres is lorries transporting relief and refugee goods. They pile onto the cargo areas with sacks of goods or when empty lorries make return journeys from either Lodwar or Lokichoggio. Many accidents do take place, killing people on such rides. Though the nomadic Turkana who live on the interior plains prefer to travel by foot when going to transact livestock in distant places like Lodwar, Kakuma, and Lokichoggio, some also travel by lorries.

The process of the sedentarisation of the Turkana has been slow, but irreversible. The change sweeping across pastoral populations that have consequently endeavoured to adapt to various environments and opportunities contradict the assertion that pastoralist are resistant to change. Fredrick Barth (1961) suggested three models of sedentarisation in response to his studies of South Persian nomads: a) environmental causes (drought, famine, degradation); b) political force (for example land policies (see Galaty 1994a, b); and c) failure by individual herders to build sustainable herds hence they drop out of the pastoral sector. Salzman, however, has stated that all these models imply that sedentarisation is an irreversible process, the result of an assumption that human societal change is unidirectional. He suggested that, instead, we should think of society as 'fluid and variable, loosely integrated, flexible and adaptable' (1980: 4). He proposed an alternative model entitled "adaptation and response", which regards sedentarisation as a

voluntary shift between available alternatives to changing pressures and opportunities (1980:12). This model seems appropriate for the many sedentary Turkana, who aim to rebuild their herds and return to nomadic movement. However, according to personal communications with those who have worked in Turkana for a long time¹¹⁵, few Turkana who have settled do manage to get a foothold in the nomadic economy. Other settled Turkana cannot return to pastoral production. About 80 percent of the 100 households sampled for the household survey indicated that they either decided to sedentarise permanently by choice or were forced to do so by circumstances, the main reason being loss of livestock due, principally, to banditry. There are, however, others who appear to have permanent residences in Lodwar township, but also have livestock in the remote villages. These livestock are herded by relatives with whom they keep in close contact, and even regularly make trips to oversee their pastoral production. Salzman's and Barth's models of sedentarisation are appropriate for the Turkana.

The Turkana will surely continue to practice multi-resource nomadism, which combines pastoralism, gathering, commerce, raiding, and fishing. Others will, however, continue to sedentarise, pursuing wage-employment, but sustaining pastoral production through the provision of remittances. We should not, though, lose sight of the majority who have irreversibly settled, and others who continue to do so because of destitution, and who will forever be trapped in poverty.

Table 5 below shows that many Turkana are continuing to settle down in emerging urban centres. In 1999, the recorded settled population in these main urban centres was 62,456 (7.2 percent) compared to the total Turkana population of 450,860. This number excludes the Turkana that have settled in other numerous relatively small centres like Kainuk, Nakwanamoru, Lokichar, Naposta, Gold-Mukutano, Kalemnyang, etc.

¹¹⁵ I had a discussion with a Catholic Priest based at Kakuma Catholic Mission.

Table 5: The 1999 census population of Lodwar township, and other main urban centres¹¹⁶ in Turkana

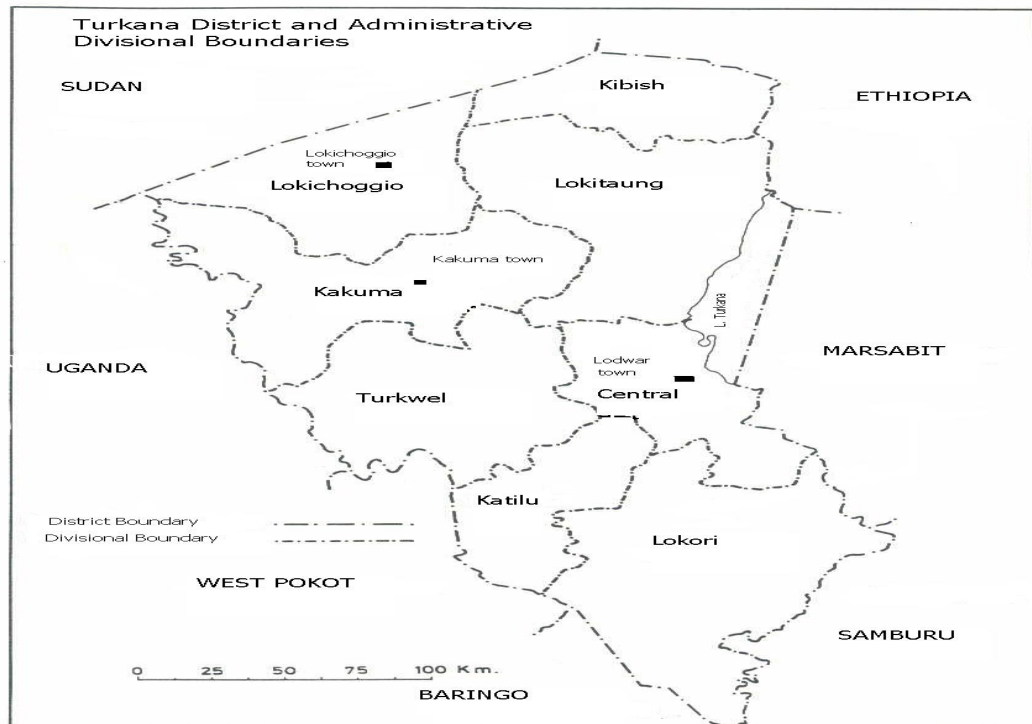
Town / Urban Centres	Male Population	Female Population	Total Population
Lodwar	16,363	18,541	34,904
Lokichoggio	7,279	6,449	13,728
Kakuma	4,476	4,631	9,107
Kalokol	1,082	1,061	2,143
Lokitaung	786	831	1,617
Katilu	210	196	406
Turkwell	198	194	329
Kapedo	20	26	46
Total Population	30,414	31,929	62,456

Source: The 1999 Population and Housing Census, Government of Kenya.

5:8 The administration of Turkana District

Turkana is not only the second largest administrative district in Kenya after Marsabit, but also the least populous. It covers 77, 000 sq. Km in the Rift Valley in the northwest of Kenya. The district borders Sudan and Ethiopia to the north; Uganda to the west; other Kenyan districts, Samburu, Baringo, and Pokot, to the south, and the Marsabit District and Lake Turkana to the east. Minorities of Turkanas live in other Kenyan districts: Trans-Nzoia, Isiolo, Laikipia, and Samburu.

¹¹⁶ Some urban centres with significant population are missing from the census report.



The Turkana District has a population of 450,860, according to the Population and Housing Census of 1999 (Government of Kenya 2001). Table 6 below indicates population growth since the 1969 census report, which indicates that the population, by then, was 165,225. The inter-census growth rates of Turkana in the periods 1969-1979, and 1979-1989 is -1.47 and 2.55 respectively. The negative growth rate in 1979, I suspect, could have been due to the large numbers of people that moved out of the district. The 1989 Population and Housing Census report was comprehensive enough to include the number of Turkana residing out of the district and the number of non-Turkana in the district. The number of Turkana living outside the district by 1989 totalled 108,195. In 1979 and 1989, there were a total of 5,434 and 10,128 non-Turkana people residing in Turkana, respectively.

The Turkana population both in and outside the district was 262,127 in 1989. In 1979 and 1989, there were a total of 5,434 and 10,128 non-Turkana people residing in Turkana, respectively. In the 1989 census, the non-Turkana population was mainly composed of Kikuyu, Somali, Kalenjin, Luo, Meru, Teso, and Kisii in descending numerical order. Though the 1999 Housing and Census report had no such breakdown, it is evident that the

population of non-Turkanas has increased tremendously over the last decade due to employment opportunities offered by the United Nations Humanitarian Council for Refugees (UNHCR) and other international agencies / charities offering services to refugees and executing development projects like famine relief programmes for the Turkana. The unprecedented growth of towns and settlements is, in addition, attracting many non-Turkana businesspersons from other parts of Kenya.

Table 6: Population of Turkana District from 1969 to 1999

Year	Male population	Female population	Total population	Number of households	Area in Sq. Km	Population density
1969	87,226	77,999	165,225	N/A	66,887	2
1979	72, 273	70,429	142,702	22,911	61,768	2
1989	88,190	95,870	184,060	37,053	69,146	3
1999	224,548	226,312	450,860	73,645	68,387.8	7

Source: 1969, 1979, 1989 & 1999 Population and Housing Census Reports, Government of Kenya, 1969, 1979, 1990, 2001.

The number of Turkana living outside the district, according to the 1989 census, totalled 108,195. This represents 19.4 percent of the total Turkana population in the whole country. Table 7 below indicates the breakdown of the population per district.

Nearly a half of the Turkana population were residing outside the district territory in 1989. Though the 1999 census report did not give the total number of Turkana residing in other districts, following the migration trends of 1989, it is probable that this number has increased significantly.

The census indicates that a significant number of Turkana may still be practising cattle herding in other districts such as western Marsabit, Samburu (both north-western near Baragoi and south-eastern, south of Archer's Post), West Pokot, Baringo, , and Isiolo (south of Archer's Post). The Turkana in districts such as Narok, Kajiado, Laikipia, Nakuru, Bungoma, Kericho, Nandi, Kakamega, Nyandarua, Meru, Kericho, and Uasin Gishu are likely employed on ranches and dairy farms to herd livestock and take care of farms. Most

on the Turkana in other districts like Nairobi, Kakamega, Kisumu, Siaya, South Nyanza, Nyeri, Mombasa, etc. are in salaried employment with the civil service, industries, and private individuals, mostly as watchmen and handymen.

Table 7: The population of Turkana living in other districts in Kenya in 1989.

District	Population	District	Population
Trans Nzoia	18,162	Bungoma	1,009
Samburu	16,332	Kericho	1,176
Uasin Gishu	8,755	Nandi	2,216
West Pokot	7,138	Meru	1,103
Isiolo	8,101	Nyeri	974
Marsabit	7,343	Narok	253
Laikipia	14,397	Kisumu	427
Nakuru	11,074	Tana River	251
Baringo	3,036	Mombasa	168
Nairobi	1,038	Machakos	257
Nyandarua	1,579	Kajiado and Narok	488
Kakamega	1,241	OTHERS	1809
Total Population		108,195	

Source: 1989 Population and Household Census Report, Government of Kenya, 1990.

The district is divided into administrative districts, which are further sub-divided into locations and sub-locations. The district is administered by a District Commissioner (DC); a division by a District Officer (DO), a location by a chief and a sub-location by an assistant chief. This system of provincial administration in Kenya was inherited from the British. During the colonial Period, DC or DO was a political officer whose task was to establish relations with the natives, to establish security, and to collect intelligence. In addition to the afore-mentioned duties, the present DO or DC are responsible for development planning

and co-ordination, project implementation, management of financial and other resources, overseeing the local procurement of goods and services, management of personnel, and provision of public information through the District Development Committee. The District Commissioner is the representative of the president in the district. The Turkana District has nine administrative divisions, namely: Lokori, Katilu, Turkwell, Kalokol, Kakuma, Lokichoggio, Lokitaung, Kibbish, and Lodwar (Central), manned by eighteen division officers. These divisional headquarters are also the main settlement areas in the district. There are also twenty-nine locations and fifty-four sub-locations in the entire district.

All the ministries have departmental heads at the district level. These are the officers responsible for the implementation of government policies through various ministries at the district and divisional levels through co-ordination with the DC. For instance, the Ministry of Health has a Medical Officer of Health (a medical doctor) as head of the district hospital. In addition, there are also other officers such as the District Public Health Officer, the District Health Education Officer, the Divisional Public Health Officers, Divisional Health Technicians, etc.

Politically, the Turkana District has three constituencies with elected representatives in parliament. The district headquarters, Lodwar, is located in the central constituency whose representative is the only Turkana in the cabinet as an assistant Minister for Labour and Human Resources. The Turkana District has eight secondary schools, 136 primary schools, several nursery schools, two Polytechnic Colleges, a Nursing College, a private University College, many church missions, refugee camp, etc.

5:9 *Akoro*¹¹⁷ and famine relief distribution¹¹⁸

As I discussed above, the Turkana people and famine are no strange bedfellows. This region is accustomed to recurring periodic famines, which, though predictable, normally leave mayhem. When I went to Turkana, I found the people undergoing a famine of cataclysmic proportions. The people were hungry. They were emaciated. Any observer could smell hunger and death everywhere. I witnessed a high level of helplessness among people who over the years have remained in a mass trap of cyclical starvation, death,

¹¹⁷ *Akoro* means hunger.

¹¹⁸ I will in future write an elaborate paper on 'Famine and the Politics of Relief Food in Turkana'.

deprivation, and poverty. One topic that dominated Turkana, especially in Lodwar, my base for the research, was *akoro*. *Akoro* stalked the region like a plague, leaving a trail of malnutrition, suffering, and death. Before I left for the field, I had been forewarned through press reports¹¹⁹ that the Turkana were experiencing famine like never before. Any Turkana I greeted, *nyai* (hello), the reply was always predictable, *akoro!* The duration and extent of famines in the modern era, combined with the harsh environment and apparent expansion of desertification, as well as the slow rate of recovery from livestock deaths and dislocations, have conspired to produce uncertainty and suffering among the Turkana.

The Office of the President in Kenya has two departments, the Arid Lands Resource Management Project (ALARM) and the Drought Preparedness Intervention and Recovery Programme that are charged with the duties of monitoring drought situations in arid and semi-arid regions. These departments are supposed to offer advice to the respective government departments concerning action to alleviate foreseen problems through quarterly bulletins¹²⁰. In essence, they are supposed to predict drought and famine predicaments before they set off alarms. When I went through the available reports from the first quarter of 1999, it was clear that the situation in Turkana was becoming worse due to prolonged drought, increases in livestock diseases, and mortality amongst the shoats. The report put the Turkana District on an alert / alarm phase. The malnutrition rate based on the MUAC (measurement of upper arm circumference) was 43.7 percent. During the third quarter, the drought situation continued to worsen. There were increased rates of malnutrition among children, and shoats continued to die. Some members of pastoralists households from the worst drought affected divisions of Lokitaung and Kaaleng continued to move to service / markets centres such as Kakuma, Lokichoggio, Lodwar, Kalokol, Lokori, and Lokichar to look for casual employment, relief food, and assistance from relatives and friends. By then, there was an urgent need for relief food for over 60 percent of the total population of the district. In the first quarter of the year 2000, the district remained under increasing drought stress, with dry weather conditions prevailing throughout the period. There was reduced livestock productivity, increased livestock

¹¹⁹ The online Daily Nation Newspaper often reported on famine in Turkana.

¹²⁰ Turkana District Drought Bulletin of 1st and 2nd Quarter 1999, and 1st Quarter 2000, Office of the President, ALARM Project.

mortality rates, and diminished pastoral purchasing power leading to increased food insecurity among the semi-nomadic populations.

By March 1999, it was clear that famine was already having a more devastating effect on the Turkana than the authorities were willing to admit. It also happened that the most affected areas were the remotest regions, far removed from the limelight. During the initial periods, the government responded to lack of food by giving out inadequate relief rations of between 600 and 700 bags of maize and 143 bags of beans every month to be distributed by the provincial administration. However, the rampant theft of relief food by government officials hampered this effort to save lives among the famine stricken population. Some administration officials (chiefs and even DOs), transporters, head teachers, and employees of the local National Produce and Cereals Board were colluding to steal food meant for famine victims. Such food would later be sold in wholesale shops around the towns or transported back to Kitale by lorries. For example, an assistant chief and a businessman were arrested and charged with diverting two hundred bags of relief maize, which were later recovered. During the same period, a district officer was charged then acquitted, but interdicted because of theft of relief food. Therefore, at the end of the day, this gesture by the government to respond to famine in a lukewarm manner was futile. Politicians of the ruling party were also using relief food as carrots to win votes. Relief food was distributed at political meetings so that the Turkana could very well understand that it was the government and the governing party with the current Turkana political leadership, not the opposition, that were feeding the people. Turkana leaders were capitalising on the ignorance, illiteracy, and poverty of their people¹²¹. This situation was exacerbated due to the fact that the Turkana had no access to alternative information other than what was conveyed to them by the leaders allied with the government. Their exposure to issues of governance related to the responsibility and accountability of the government was very limited. In short, Turkana votes and allegiance was being bought with relief food.

Following these thefts, there were mounting calls on the government to channel relief through established NGOs and churches. The appeal followed a claim that a politician from

¹²¹ During my personal discussions with non-Turkana working with either NGOs or the government, I was informed many times that the Turkana elite were the worst exploiters of their own people. Turkana leaders and the elite often take advantage of the poor people's vulnerability to famine and drought.

the area did not account for \$30,000 given by a UN agency for assisting the needy. There were also complaints that politicians monopolised the transportation of relief and were demanding 40 bags of maize per lorry, per trip besides normal charges. The abuse of relief food was so rife that 1996 was referred to as the year of *kaunda*¹²² suits; the chiefs sold so much relief food that they, in turn, bought *kaunda* suits. Relief food became big business. The sale of relief food also involved the then District Commissioner, some District Officers, and Councillors. Lodwar town is littered with big buildings built with money obtained from the sale of relief food. The following account is how relief food was being stolen: the district officer in charge of relief food distribution would sign a permit, give it to wealthy Somali businessmen, who would then go to the head of the National Produce and Cereals Board store. The store would then release the stated number of bags of maize. The maize would then be milled, transferred into new, neutral gunny bags, then loaded into a lorry and transported to the bush under the guise that it would be distributed to the hunger-stricken populations. Instead, the Turkana would be told to exchange the corn meal for their few remaining goats. The goats would be loaded into a lorry and then transported to Kitale. The sale of relief food even permeates the lower segments of the community, especially those who are sedentary in and around villages and urban centres. Some people sell their rations almost immediately after allocation. From my experience, the day after the distribution, Lodwar was always littered with those who were selling relief food. There were, in addition, many shops buying and selling relief food. I found that local politics was inseparable from relief food distribution. The wealthy Turkanas in Lodwar town who are also the elite, considered food transportation from the Lodwar stores to distribution centres to be big business. It was seen as a significant economic enterprise by the Turkana elite (politicians¹²³, government employees, and NGO bosses (who either bought new lorries or refurbished the old ones that were left by the NORAD) who became the major distributors of relief food from the central store at Lodwar to various distribution centres in the Turkana district. Many Turkana were also employed within the relief food 'industry' as loaders, food monitors, clerks, nutrition monitors, and guards. That is why politicians and provincial administration (chiefs) were so vexed when relief food distribution

¹²² *Kaunda* is a light suit with a short-sleeved jacket. It is very conducive to hot climates.

¹²³ The Turkana MP for Central Constituency had about four new lorries for the transportation of relief food.

was removed from their docket in December 1999¹²⁴, when the 'industry' even became more lucrative with the entry of the World Food Programme onto the scene.

It was not until November 1999¹²⁵, that John Munyes, a Northern Turkana Member of Parliament, challenged the government regarding the desperate situation of hunger afflicting the Turkana people, through a motion in parliament. He questioned the feeble and haphazard nature of the government's response to famine afflicting his people. The previous week, a television channel, Kenya Television Network, had relayed shocking pictures of famished, skinny, and emaciated Turkana adults and children to national and international audiences. Quoting from the Office of the President Report, the MP claimed that between 50 -100 people had died due to starvation in the Turkana district. The following week a daily newspaper, the *Daily Nation*¹²⁶, carried an exclusive and heartbreaking story on the agony of famine and death in the Turkana district. The reporters found people dying of starvation. Ironically, in the midst of starvation and deaths, the Turkana watched forlornly as the World Food Programme's and the International Committee of the Red Cross' heavy trucks carried food and other supplies destined for the refugee camps in Kakuma, or further to southern Sudan. In Kakuma, where the UNHCR operates a refugee camp, famine-stricken Turkana would work for wealthy refugees from Sudan, Ethiopia, and Somali in exchange for food. Most Turkanas were surviving on wild fruits and *doum* palm fruit. I was told that the situation was so desperate that in some areas women abandoned their children in churches. For the same reason, primary school enrolment shot up as starving people sent their children to schools to benefit from the schools' feeding programme.

Ironically, as famine was rocking the Turkana, their few remaining livestock were not safe from their neighbouring cattle raiders. Insecurity wrought by cattle rustling worsened following famine and the loss of livestock. I argued above that the history of punitive raids against the Turkana by the colonial administration and those by the Turkana's neighbours due to failure by the administration to protect them is a contributory factor to the recurrent famine in Turkana land. Just like the colonial administrators, the post-independence

¹²⁴ Personal discussion with Head of Catholic Diocese of Lodwar's Justice and Peace Commission, and Turkana Programme Manager, World Vision.

¹²⁵ Daily nation, November 17, 1999.

¹²⁶ Daily Nation, November 22, 1999; November 23, 1999.

governments have not protected the Turkana against raids from their neighbours. Over the years, cattle raiding have been transformed from a cultural practice with livelihood enhancing functions into a more predatory activity, which is extremely violent and is "sponsored by actors from outside the pastoral sector with criminal motives" (Hendrickson, *et al.* 1999: 186). The Turkana today are at a greater risk of dispossession of their livestock and able-bodied men. In one of these attacks in February 2000¹²⁷, nearly 100 Turkana were killed and more than 15,000 head of cattle and goats were taken by an estimated 800 Pokot raiders. Cattle rustling along the West Pokot and Turkana border interfered with relief food distribution in the Turkana south. This made it even harder to reach the starving people. In addition, lorries transporting food to Lodwar from Mombasa through the Kitale - Lodwar road were always prone to attacks. Cattle rustling and insecurity are principal factors in the occurrence of famine in this district. In 2001, I witnessed vulnerable women and children in Nanam village, some 20 km from Lokichoggio town, who survived a raid by the Toposa from Sudan that had left over 100 people dead and several herds of livestock driven away. Two weeks after my visit, a week of bloody battles ensued between the Turkana and Toposa, which claimed 18 lives and left many homeless and without livestock. It is without doubt that these raids, which are also frequent between the Turkana and the Pokot, Karamojong, Nyangatom, and Merille, not only exacerbates, but also causes, famine and poverty in most households.

When I arrived in October 2000, famine was under control. The drought persisted, but life was becoming bearable for the people, thanks to famine relief, mainly in the form of yellow maize and beans. Food provided by the World Food Programme was being distributed by independent agencies such World Vision (Kenya), OXFAM (GB), the Catholic Diocese of Lodwar, the National Council of Churches of Kenya, and the Christian Children's Fund, among others. The government, due to its negative history, was removed from relief distribution. By February 2001, food distribution was being undertaken in 205 centres in 18 divisions, with a total population of about 331,000 receiving relief food¹²⁸. With a total population of 450, 0860¹²⁹, this means that almost three-quarters of the

¹²⁷ Daily Nation, 22 February 2000.

¹²⁸ Personal communication with Turkana DC, Mr Peter Mooke, and World Vision Project Manager, Mr. Jack Asiyo.

¹²⁹ The 1999 Population and Housing Census Report, Government of Kenya.

Turkana were receiving free yellow maize and beans. Relief food distribution ended in June and thereafter a recovery period was to commence with a focus on long-term solutions to the recurrent famine. However, unfortunately this is not the last famine situation that Turkana will witness. Many NGOs, after defusing the famine disaster, decamp leaving the long-term solution to be offered by the government that has never prioritised the Turkana's problems. This is a recurring problem and it will not be long before many Turkana die of starvation and malnutrition again unless the structural causes (political, economic, and environmental) of famine are tackled.

5:10 Health and morbidity in Turkana

Table 8: Total morbidity statistics available from various health facilities in Turkana district

Types of Most Severe Morbidity	Presented Cases at various Health Facilities		
	1999	1998	1997
Malaria	41, 137	43,344	34,716
Diseases of the Respiratory System	25,862	20,94	20,717
Diarrhoeal diseases	10,225	9,834	9,386
Diseases of the skin	7,337	6,117	4,412
Eye infections	6,363	3,696	5,333
Accidents	2,380	2,212	2,052
Urinary Tract Infections	2,272	1,956	1,722
Ear infections	2,103	1,686	1,273
Pneumonia	1,951	1,709	1,491
Intestinal worms	1,703	1,556	2,030
Rheumatism, joint pains	1,499	N/A	N/A
Gonorrhoea	951	N/A	N/A
Malnutrition	905	N/A	N/A
Dental Disorders	759	N/A	N/A
Measles	675	N/A	N/A

Source: Lodwar District Hospital Information Systems, 2001

As indicated by the available statistics from the healthcare facilities (*table 8*), most of the infections associated with poor living conditions and high population densities are

magnified for the former pastoralists who are not adapted to living in overcrowded conditions of poverty.

Those who reside in and around urban settlements and other relatively big settlements form the basis for the statistical data. The sedentary Turkana are plagued by infectious diseases such as malaria, diseases of the respiratory system (including pneumonia), diarrhoeal diseases, disease of the skin, eye infections, and urinary tract infections (including gonorrhoea). These are largely disease of poverty and poor living conditions. The densely populated ecosystem, a function of sedentarisation driven by poverty, drought, famine, and government and NGO policies, creates conditions conducive to the breeding and spread of infectious diseases.

There is no doubt that the general health condition of the Turkana is poor, as are the general living conditions. Infant and child mortality, the crude indicator of the general health status of a population, is higher than the national average with 159 deaths per 1000 compared to 62 per 1000 nationally (Soper 1985; Brainard 1986; Government of Kenya 1996b). The Turkana also have a low life expectancy at birth. A study by Brainard (1992) found that the nomadic Turkana had a life expectancy of thirty-four years while the settled agricultural population had a life expectancy of forty-eight years. The sedentarisation of the Turkana results in poorer health status. The sedentary populations are often poor and faced with perennial hunger and protein-calorie-malnutrition.

Currently, sexually transmitted infections are very common in Turkana townships. As the present study will demonstrate, this is a rather silent epidemic that not many Turkana recognise as a problem. The available statistics that I managed to put together from the various medical facilities demonstrate a steady increase in the number of cases presented every year.

The status of the healthcare infrastructure in the Turkana district is insufficient. There has, however, been a leap forward in the provision of healthcare infrastructure. However, the state of the personnel is more or less still reminiscent of the past. For example, during the colonial period (in the early 1960s) the district was equipped with one medical officer and two assistant surgeons. The number has remained the same ever since, with three doctors, including the district's medical officer. One medical officer is, however, based at

Lokichoggio with the International Committee of the Red Cross's health facility, which mainly serves refugees and war victims from southern Sudan.

Currently, there are many cadres of healthcare providers in the district. They are concentrated in the district's government's and missions' health facilities. However, there is an enormous deficit in the number of medical personnel. The adverse geographical features, poor infrastructural network, and the lack of vehicles exacerbate this problem. The number and type of staff are enumerated below. The district hospital's information department provided the deficit figures.

Table 9: Staff establishment at government health facilities in Turkana district, 2001

Staff	Number Present	Deficit
Doctors	3	3
Clinical Officers	20	10
Pharmacy Technologists	20	0
Radiographers	1	3
Lab Technologists	6	4
Medical Lab Technicians	4	6
Physiotherapists	2	2
Occupational Therapists	1	1
Community Nutrition Assistants	2	3
Health Administrator	1	1
Oral health Officers	1	2
Dental Technologists	1	2
Medical Engineering Technicians	2	2
Nursing Officers	20	30
Registered Community Health Nurses	57	100
Public Health Officers	9	12
Public Health Technicians	27	137
Plaster Technicians	0	2

Source: Lodwar District Hospital Information and Statistics.

From my own testimonies, the numbers of medical personnel in this district are chronically deficient in relation to the vastness of the region. The chronic shortage of medical facilities is rivalled by the incessant shortage of medical personnel. Nursing

officers and the registered community health nurses are the backbone of healthcare delivery in Kenya. It is therefore of great concern that the Turkana district currently has 50 percent fewer than the required number in both categories of medical personnel. When it comes to public health technicians who play a great role in public health education, the monitoring of environmental hygiene, and the inspection of meat, abattoirs, butcheries and public eating places including markets, the shortage is astronomical. Table 9 above shows that there are three medical doctors, but in reality, there is normally only one medical doctor resident at the Lodwar District Hospital at a time, as the rest are seconded to the International Committee of the Red Cross health facility at Lokichoggio, with hefty allowances. At Lokichoggio, they are employed by the International Committee of the Red Cross (ICRC) offering emergency medical services to injured victims of civil war evacuated from southern Sudan. The local Turkana population do not access ICRC medical services. Many of the medical personnel are also non-Turkana who are in employment in this inhospitable district for the sake of pay cheques. It is hoped that with the opening of the nursing college in Lodwar, many more Turkana will be trained as nurses, and they will be determined to deliver health care services to their own people. In addition, they speak the same language as the healthcare service users. The shortage of staff, the despicable state of the Lodwar District Hospital that astounds visitors, and the lack of hospital equipment in comparison to equipment found in other districts in Kenya demonstrates the government's lack of commitment to the provision of resources in this district.

Presently, most of the health facilities are provided by the missions; the Government provides the rest. As late as 1970, the Lodwar District Hospital was the only hospital in Turkana. However, currently there are other government-run hospitals at the sub-district, Lokitaung, and three mission-run hospitals at Lokori, Kakuma, and Kalokol. There are also numerous health centres and dispensaries scattered throughout the district. Many of these are frequently rudimentary in nature and primarily serve local resettled populations where missions and development projects have been located over the past years. Health facilities mostly offer curative services to the settled populations. The number of nomadic populations attending these facilities is low especially due to distance and cost. Most of the health facilities are sparsely distributed in settlements and along the roads, often requiring

long treks from the bush on foot. As of 2001, (table 10 below), the district had sixty-nine operational health facilities and twelve private clinics.

Table 10: Number and types of health facilities in Turkana district, 2001.

Type of Facility	Operator / Proprietor of Health Facility		Total
	Government	Missions and other NGOs	
Hospital	2	3	5
Health Centre	1	7	8
Dispensary	23	33	56
Total	26	43	69

Source: Lodwar District Hospital Information and Statistics, 2001.

Some of these medical facilities have laboratories and surgical wards – like the Lodwar District Hospital and the Kakuma Mission Hospital. The International Red Cross Committee (ICRC) and the International Rescue Committee (IRC) have laboratories and surgical wards, but they are geared towards the care of war victims from Sudan and the refugees settled at the Kakuma Refugee Camp. The ICRC can only be accessed by the Turkana that need emergency medicine. Presently there are five hospitals, eight health centres, fifty-six dispensaries, and one medical training college for nursing. There are, in addition, various private clinics in towns – Lodwar, Kainuk, Kakuma, Lokichoggio, Lokitaung, and Kalokol, among others. Many of the health facilities are rudimentary in nature and serve primarily settled populations where missions and development projects have been located over the past years. These health facilities offer mostly curative services. The number of nomadic populations attending these facilities is low due to acceptability, distance, and cost. Most of the health facilities are sparsely distributed in settlements and along the roads, often requiring long treks from the bush on foot.

The Lodwar Catholic Diocese and the African Medical Research Foundation (AMREF) run Community Based Healthcare Programmes (CBHC) in distinct regions. In addition, there are mobile clinics operated by AMREF in the north, and Catholic Church in central Turkana. Most of the health facilities are linked through radio contact. Everyday at twelve o'clock (noon) and six o'clock (evening), the radio operators are normally in contact with one another. It is during these hours that medical reports and emergencies are discussed

among various healthcare institutions. In the Turkana District, the government manages only about 40 percent of the health facilities and services while the missions (Catholic Church, African Inland Church, and Dutch Reformed Church) and NGOs, like the International Committee of the Red Cross, and the International Rescue Committee manage the rest (Government of Kenya 1996a). For example, there is the 72-bed Kakuma Mission Hospital whose link with the African Medical Research Foundation (AMREF) and the Flying Doctors Service has made it one of the best health institutions in the Rift Valley Province. Lodwar District Hospital, the largest in the district, and though in a poor state, has five wards and a total capacity of 201 authorised beds and 72 cots. Adjacent to the hospital compound is the TB Manyatta that houses the TB patients from outside Lodwar town. A male ward at the hospital has been condemned due its risk for endangering lives. Ideally, any honest inspector would condemn many sections of the hospital. The female isolation block that houses the tuberculosis wards is situated in front of an ever-leaking water tank. One day while doing my round of discussion with the patients, I found some wards filled with water from this water tank, which was in dire need of replacement.

There are some hospitals that are under expansion in the district. However, these hospitals have turned into white elephants due to the lack of funds to complete the construction of new buildings and the rehabilitation of the old blocks. The rehabilitation of debilitated, and construction of new, buildings for the ultramodern Lokitaung District Hospital was estimated to be slightly over US\$ 100,000. The contract was terminated when the NORAD pulled out of the Turkana district over diplomatic and political differences with the government in 1992.

The chronic shortage of health facilities in the district means that many people trek for days to the nearest hospital. During these journeys, the sick are often transported on a donkey. It is no wonder that many patients die before reaching the hospital. There are no ambulances for either the Lodwar or the Lokitaung hospital. During the course of my fieldwork, I travelled to the north-western part of the district to a remote place called Lokangae on the expansive Longitipi Plains. I found an HIV/AIDS patient who was emaciated and in urgent need of medical attention, yet he was very far removed from the nearest hospital, which was nearly 200 Km away, a 3 days journey by foot or donkey.

The Research Location and the Introduction of the Research Project to the Turkana of Lodwar Township

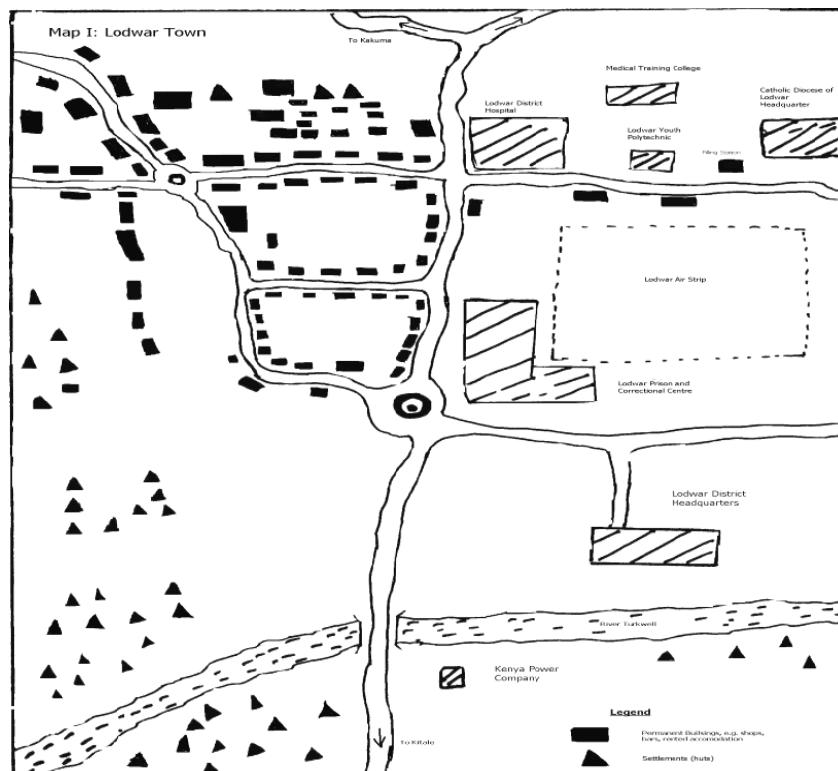
After a bird's eye view of the present day Turkana in the last chapter, we may now focus on the exact research location and how the research project was introduced to the people.

6:1 The research location: Lodwar township

The research was undertaken in Lodwar township. This section describes the conditions that the Turkana in Lodwar township live under. Five major aspects of the township are outlined in this section: (i) physical growth of Lodwar town; (ii) structure of Lodwar township's population; (iii) structure of the Lodwar township's socio-economy; (iii) social amenities in Lodwar township; and (iv) sanitation and hygiene.

6:1:1 Physical growth of Lodwar town

Lodwar town is the headquarters of the Turkana district, where socio-economic and security issues pertaining to the district are co-ordinated. The present Lodwar town began as a military post in the 1920s. Situated on a hill, there was little physical expansion of the town, which was composed of a few government offices, a small hospital, a police post cum-prison, and a small primary school. A few Asians and Somali traders served the small township population. In the 1940s the Turkana regarded the administration headquartered at Lodwar as alien (Gulliver 1951). It was invariably referred to as "Ngimoi a Lodwar" meaning the strangers (or enemies) at Lodwar".



After Lodwar was made a district headquarters in the early 1950s, it also became a permanent pauper's camp. In 1951, Cheverix Trench, the Turkana DC at the time, wrote the following about Lodwar:

"The district headquarters, Lodwar, seemed at first sight a dreadful place. The houses and offices are clustered on an outcrop of volcanic rock, which protrudes like a boil from a flat, dusty plain. For a few weeks the Turkwell River flows past Lodwar, but for most of the year the river bed is dry...On the rock and scattered over the surrounding desert, [are] bungalows, and guesthouses, a store, an office, a guardroom, a prison, a boarding school, [and] a hospital" (in Watkins 1996:159-10).

In the late 1940s and early 1950s, plans were executed to make Lodwar an important detention centre for Mau Mau detainees, including the first president of an independent Kenya, the late Mzee Jomo Kenyatta. There was construction of the buildings associated with the Lodwar prison and residential houses for government staff, and expansion of the hospital. However, even with this construction, Lodwar was, in 1959, a small administrative outpost encompassing a sizeable police quarter, a hospital, and a runway for light aircraft.

There were, in addition, administrative offices that formed the headquarters of the forces operating against the Italians in Ethiopia during the Second World War, and at the point where the then earth road from Kapenguria and Kitale entered Lodwar, there was a square of ramshackle shops, a petrol pump, and huts inhabited by few Asian families.

The construction of government buildings between 1957 and 1968 marked a major expansion of Lodwar. Virtually all the government establishments and residential quarters for government staff were expanded and Manyatta¹³⁰ quarters were replaced by either permanent stone/brick houses or huts. Lodwar prison, police lines, hospitals, and the administrative centre were expanded and buildings spread out further from administrative hill. Secondly, earlier significant growth of the town was due to the extensive famine relief program that followed the famine of 1959 - 1961. This resulted in the unprecedented settlement of Turkana in Manyattas in the areas surrounding the emerging town core. Many of those who have settled permanently in Lodwar today are those who first settled there because of the famine relief programmes and who either did not want to or were unable to return to the nomadic pastoral way of life. Whereas in 1957 there were virtually no Turkana Manyattas in the vicinity of the town, in 2000/2001 there were numerous scattered Manyattas in virtually all the areas surrounding the town. In response to the rise in the settled population, and construction of settlements leading to the expansion of the town, commercial activities in the town seem to have increased and a centre had clearly developed by 1968, in contrast to the ramshackle shops, which formed the town in 1957. Fifteen permanent shops and hotels had been built by 1968 and the busy California Market was already present in the town (Business and Economic Research Company 1984).

The last decade has seen the remarkable growth and development of Lodwar with the old administrative outpost being replaced by a small town with all the features associated with modern towns. By 1984, the area, which in 1957 had been virtually uninhabited, had some 16,000 persons and definite residential, commercial, and institutional zones had emerged (Business and Economic Research Company 1984). By 1984, the whole of the land lying between the Kawalathe and Turkwell Rivers had been settled and new densely populated villages (Nakwamekwi, Nairobi, and Napetet) have grown while to the south of the Turkwell, similar villages (Nabulon, Kanamkemer, Nawoitorong and Napuu) have

¹³⁰ Semi-permanent grass / leaves constructed buildings like the traditional Turkana huts.

emerged. The Turkana inhabits these villages. The non-Turkana populations dominate the residential cum business spaces in the thriving and growing commercial centre. The core commercial section of the Lodwar town consists of numerous single storey, cement-block, and wattle and daub shops, bars, and hotels. The Lodwar Catholic Parish is situated behind the shops adjacent to the sprawling California market. A large concrete block housing the District Commissioner is situated on a small hill about a quarter mile away from the commercial area. Located close by is the paved Landing Airstrip. Also in close proximity is a large, permanent encampment of the Kenya Police, a prison and the Ministry of Work's garage. On the northern part of Lodwar town is the Meteorological Department, stores of the Kenya Cereals and Produce Board, a Mosque, the Kenya Red Cross Society, and the Nadirkonyen Child Rehabilitation Centre. Further up on the hill, is the new Trans Africa University College, an affiliate of a university in the Philippines. Adjacent to the town to the west is the Lodwar District Hospital, next to it the Kenya Medical Training College, the Lodwar Youth Polytechnic, the Lodwar Catholic Diocese headquarters, and Lodwar High School. Further to the west is the densely populated Napatet village.

Similarly, schools and missions have either been established or the old ones have been greatly expanded. Apart from hosting the government's departments in the district, Lodwar also houses the headquarters of the Lodwar Catholic Diocese. There are several nursery schools both run by the government, the Catholic Church and individual investors. Lodwar township has two secondary schools, Lodwar Boys High School and St. Kevin Day Mixed Secondary School, both sponsored by the Catholic Church. The secondary schools, Lodwar Youth Polytechnic, the Trans Africa University College, and the Medical Training College, serve a much wider area than the study area alone, being some of the leading educational facilities in the whole of Turkana District. The town is surrounded by a host of densely populated villages that form Lodwar township.

The rapid growth of Lodwar has also been attributed to the construction of a tarmac road from Kitale via Kapenguria, Marich Pass to Lodwar and all the way to Kakuma¹³¹, Lokichoggio, and Sudan. This highway opened up the district to the rest of Kenya as it

¹³¹ The growth of Kakuma, which is a divisional headquarter, is attributed to the creation of a Refugee Camp that houses people from Sudan, Somali, Ethiopia, and the former Zaire. There is also a significant population of the UNHCR and other affiliated NGOs' employees.

made it easy for the people to travel, and it is lined with major settlements such as Kainuk, Lokichar, Lodwar, Lokore, Kakuma, Naposta and Lokichoggio. On the day I arrived at Lodwar, I was surprised that in the middle of such an arid region, there was a relatively big town, by Kenyan standards, bustling with life and activities that one would have encountered in other parts of Kenya.

6:1:2 The structure of Lodwar's population

The population of Lodwar town has steadily increased from its inception as an administrative outpost to the present. In 1969, Lodwar township and its environs had a population of 12,201 (Government of Kenya 1976). Indeed, by 1979 some 6,444 persons were enumerated in the 9 km² area within the township, excluding the surrounding villages that are inhabited by the Turkana.

Table 11: Population and housing census of Lodwar township, 1969-1999

Year	Sex		Total Population	Number of households	Km ²	Density
	Male	Female				
1969	6,605	5,596	12,201	N/A	N/A	N/A
1979	5,279	5,059	10,338	2,001	1747	5
1989	11,618	11,775	23,393	5,081	371	63
1999	16,872	19,047	35,919	7,457	799.6	45

Source: Population and Housing Census Reports, Government of Kenya 1970, 1979, 1989, 2001.

As indicated in *table 11* above, the population of Lodwar township has continued to rise. In the same vein, the number of households has also risen, followed by the expansion of the township in square kilometres. While it is the case that recurrent droughts and famines have been the main factors that have induced many Turkana to immigrate into Lodwar town, it is fairly evident that there have been other forces (like famine relief and employment opportunities provided by NGOs and the civil service), which have led to mushrooming villages in Lodwar township. Presently, a significant Turkana population has Lodwar as its permanent home.

According to the census carried out in Lodwar in 1984, Turkana and non-Turkana made up 76.4 percent and 23.6 percent of the total household population in Lodwar township

respectively (Business Economic Research Company 1984). The population of non-Turkana has continued to rise. Most of the non-Turkana are civil servants who are posted by the government, with a significant number also being brought in by church missions and international NGOs and aid agencies. Some people also move to Turkana as independent traders.

Table 12: The population growth projection of Lodwar township

Year		1984	1988	1998	2008	2014
Population Size	Town Core	13,446	15,545	22,356	32,143	39,981
	Environs	1,853	2,008	2,460	3,022	4,407
Percentage Rise	Town Core		16	66	139	197
	Environs		8	33	63	84
Population Density	Town Core	420	483	699	1,004	1,249
	Environs	124	134	164	201	227

Source: Business and Economic Research Company, 1984.

The above table indicates the projected growth of Lodwar town to be about 22,356 people in 1998, and 32,143 by year 2008 (Business and Economic Research Company 1984). For the environs, the estimates are 2,460 people by 1998, and 3,022 people by 2008. When combined, the growth of Lodwar township is expected to be 25,810 by 1998, 35,165 by the year 2008, and 44,388 by 2014. The above population projections are very realistic. True to projection, according to the *1999 Census and Household Survey*, Lodwar township had a population of 35,919 people. This is a population growth rate of nearly 66 percent, attributed to immigration. I envisage the population of the villages to swell more than the projected growth, due to both births and immigration as more Turkana adopt the sedentary life. The non-core population of Lodwar that resides in numerous villages surrounding the centre of the town fluctuates in size in response to weather conditions. The population swells during famine and droughts as more people are forced out of the pastoralist economy and gravitate to Lodwar township in search of employment and a better life. Some of these populations move back to subsistence herding during good years, while others permanently swell the number of the sedentary population. In contrast, the core town population will continue to be influence by growth in the immigration of mostly non-Turkana. Due to mass unemployment and the shrinkage of economic growth

in Kenya, Turkana continues to attract people from other communities who migrate into Turkana in search of unexploited opportunities, mostly in trade and commerce. This will, however, either further marginalise the Turkana, or provide them with the remnants from this economic growth.

The continued growth of Lodwar township shall strain existing meagre social amenities, which already do not have the scope to absorb the ever-increasing Turkana population. It is expected that continued poverty for the marginalised Turkana, who already constitute the majority of the population, will be common.

6:1:3 The structure of Lodwar's socio-economy

Lodwar's economy may be viewed as composed of two basic parts: a modern sector and a pastoralist sector. Perhaps the easiest approach to understanding the town's economy is through the occupational structure of heads of households as revealed through the 3,413 heads of households in the population census undertaken in 1984 (Business and Economic Research Company 1984).

The occupational structure suggests that Lodwar's economy is built upon wage-employment (38.8 percent) the rearing of livestock (15.6 percent), and trading (13.2 percent) (Business and Economic Research Company 1984). As would be expected, there are important differences between the occupational patterns of Turkana and non-Turkana heads of household. The census survey revealed that 41 percent of the Turkana heads of households reported being unemployed while 20 percent reared livestock, and 28 percent and 10 percent of Turkana household heads were in wage employment and trade respectively (Business and Economic Research Company Ltd. 1984). In contrast, only 6 percent of non-Turkana household heads reported being unemployed while 71 percent of such households were in wage employment and 23 percent in trading. Thus, a large proportion of the unemployed household heads come from the Turkana populations. It is interesting to note that the bulk of the non-Turkana household heads are in wage employment.

As this survey was conducted in the town core, it likely reflects the occupational structure of the non-Turkana immigrants who are in wage-employment and trading. My own survey of the Turkana in two non-core town villages, Kanamkemer and Napetet,

indicates that livestock rearing is very limited. Trading is found, in particular, in the commercial centre and the California market. Business enterprises in Lodwar range from establishments with permanent premises to the hawking of handicraft products, foodstuffs, and an assortment of all kinds of wares on the roadside or in the market. Ordinary Turkana are found hawking *mandazis*, *chapatis*, and fruits. Some are also found in the main market place (California Market) and other smaller markets in diverse villages surrounding the core town, selling household and food products portioned into small pieces. The pastoralists also bring in dairy products, goats, firewood, and charcoal, which are sold or bartered in return for corn meal, maize, medicine, tobacco, palm *doum* nuts, oil, sugar, etc. I was always astounded by the amount of charcoal and firewood originating from interior Turkana and sold in urban markets and roadsides, considering that this is an arid and semi-arid region. Many Turkana women transport both charcoal and firewood on their heads for long distances to the urban centres. The Kakuma refugee camp has emerged as the greatest consumer of firewood, and every day Lorries could be seen transporting firewood from the interior to be sold to the refugees. A significant number of Turkana women trade in fish. Fresh fish normally arrives in Lodwar from Kalokol by mid-day. Fishmongers buy fish, take them to their respective residential settings, wash and deep-fry them in oil, then sell them to consumers. It is very common to find ordinary Turkana buying such fried, ready-to-eat fish and eating the fish on the spot or on their way home. There are many Turkana women that operate traditional bars where they sell locally brewed alcohol called *kaada*. There are three categories of *kaada* selling places: i) open-air markets, especially California and other markets in the villages surrounding the core town; ii) kiosks located in shopping centres; and iii) private homes. Many households are involved in the brewing of *kaada*. In Napetet, a village of about 300 households, I found that there was *kaada* being sold in every other household. There is also another local brew, *changaa*¹³², which, unlike *kaada*, is found in all parts of Kenya. In the villages surrounding Lodwar Town (Kanamkemer, Nakwamekwi, Napuu, and Napetet) there are numerous butcheries that sell goat, camel, and even donkey meat. The public health technicians do not inspect such meats.

¹³² *Changaa* is whisky-like with nearly 100 percent concentration of alcohol, distilled from fermented *kaada*-like liquid mixed with treacle (molasses).

Since some of the Turkana that reside in Lodwar are opportunistic in the sense of endeavouring to take advantage of economic diversification, it was found that 16 percent of the total number of household heads reported rearing livestock. Some 42 percent of the total households in the study area reported owning livestock either at Lodwar or away from Lodwar. During my surveys, I found that most households had livestock reared in far away places by relatives. Those Turkana that are in wage employment, leave their wives and kin in herding homesteads to take care of their livestock. Sheep and goats dominate the livestock scene and are mainly held by the Turkana living in and around Lodwar township. These livestock subsist on the scanty grasses and shrubs found in the area, but few of them are sold in the market. Rather, they provide their owners with some sustenance, milk and blood. During my interviews, I could not fail to notice small enclosures for goats. Contrary to expectations, Lodwar does not have a thriving trade in livestock, although hides and skins are traded. The butcheries in Lodwar town sell only shoat meat. Contrary to my expectations, meat was sold at a relatively higher price than what one would normally pay in Kisumu or Nairobi. It was only goats that were traded in the Lodwar Livestock market.

Trading in Lodwar involves transactions in all kinds of wares ranging from household items (clothes, provisions, etc.) to foodstuffs, handicraft products, and livestock. Similarly, modes of trading in Lodwar are varied. Forty-one percent of those households reporting trading as their main source of income undertake their trades in permanent buildings, while 59 percent reportedly trade in markets, on roadsides, and through hawking. My experience indicated that the percentage of those who own shops, bars, lodgings, and kiosks as opposed to those who sell items in the market, road sides, and from place to place is similar to 1984. As mentioned earlier, the town core (the commercial centre) - where most of the business premises are constructed – had developed rapidly in the period after 1968. While between 1950 and 1968, there were eight licensed business establishments at Lodwar, by 1983, there were 101 (Business and Economic Research Company 1984). Evidently, the period before 1968 had very few businesses licensed annually. However, the period from 1978 to 1983 was marked by a remarkable increase in the number of new businesses licensed (Business and Economic Research Company 1984). The licensed business types were wholesale shops (n=7), retail shops (n=79), photographic studios

(n=4), tailoring shops (n=11), filling stations (n=2), restaurants (hotels) (n=6), bars, boarding and lodgings (n=5), butcheries (n=6), tobacco shops (n=1), and a bakery (n=1). The number of business establishments has definitely increased at Lodwar over the last decade. Though I do not have exact figures, when I was in Lodwar (2000/2001) there were, for instance, ten Bar and Lodging establishments in the core business area and many others in the villages. In addition, there were some new shops in the core business areas and the villages, and many still under construction. Contrary to expectations, Lodwar does not have a thriving trade in livestock, although hides and skins are traded.

Lodwar town has a large number of children¹³³ roaming about who neither go to school nor engage in hawking. Due to desperation and poverty, child labour is very common. I saw many children employed by women that sell fish as fish cleaners and fryers. Given that Lodwar is extremely hot during the day and fish is fried in the open in pans using firewood, these children are exploitatively employed to fry fish in return for food or small cash. Some of the children are also engaged in household chores like fetching water and cleaning houses. Almost every businessperson has a child as a house-girl / boy, a baby sitter, or a hawker. I found boys as young as 10-12-years-old engaged in the hazardous and oppressive job of emptying hotel and lodging sewage pits with buckets. Most child labourers are paid in kind in the form of food. The ones that are permanently employed earn between KShs 150 (US\$ 2) and KShs 300 (US\$ 4) per month for working between fifteen and eighteen hours per day. The hawking boys are paid according to the sale of commodities assigned to them at a 10 percent commission, at most, for hawking mainly doughnuts. The most disadvantaged group is the female children. The desperate, poor parents bargain with employers, and then collect the monthly salary at the end of every month. Whether the child is abused or overworked is none of their business. Most girls, therefore, engage in prostitution within the town, a trade in which they cannot be controlled by their parents.

¹³³ Most of the children are runaways from nomadic families, or the cast off children of unmarried women who have found their way into the township in search of food and a better, easier life. Even the colonial government found it very hard to cope with young Turkana who were streaming into local centres. Some of these children are also born by the poor inhabitants of Lodwar town.

A survey carried out by the Nadirkonyen Child Rehabilitation Project¹³⁴ indicated that drug addiction, prostitution, alcoholism, juvenile delinquency, and early marriage and pregnancies were common among girls in Lodwar, some of whom had run away from parents in far away remote places. Lodwar town is fast being overrun with street children. Many graduates from child labour later survive on alcohol brewing and prostitution. As expected, commercial sex work is a hot trade in Lodwar town and other major settlements like Kakuma, Lokitaung, and Lokichoggio. Prostitution originated with the emergence of settlements. It was noted that in 1984 in Lodwar, the male population was higher than the female population only in the commercial and administrative cores, whereas in the environs, the female population is larger than the male population (Business and Economic Research Company 1984). In the course my household surveys and subsequent household interviews, I found that most households were female-headed with women being involved in petty trade and alcohol brewing. Most of these women also engage in commercial sex work. Ever since the emergence of these settlement posts, single women have frequented them. In the 1950s, Rowlands (n.d.) reported that prostitution was common in Lokitaung among the settled women who were easily lured by the temptations of property and money in exchange for sex. Since then, the reputation of these female followers (single women) in both Lodwar and at Lokitaung was frowned upon by many Turkana. Commercial sex has increased over the last years in proportion to the increase in the population of mostly migrant male workers that come from other parts of Kenya (down country). In addition, the presence of international NGOs, with their higher wages, has increased the appeal of the male population for women who are after quick money. The male-dominated immigration and poverty has made commercial sex work a prosperous and lucrative business.

Lodwar town is located in a dry desert area with severely limited agricultural potential. Further, as is the case in much of the arid and semi-arid parts of Kenya, the area's resource base, natural as well as human, is similarly limited. These two considerations have delimited Lodwar's economic life along some fairly narrow paths. In addition, the remoteness of the town from Kenya's main centres of economic activities and the relatively

¹³⁴ This is the only child rehabilitation project in Turkana, sponsored by the Catholic Diocese of Lodwar, aimed at reforming children found in the Lodwar town centre and streets, especially at night, without proper shelter.

poor socio-economic infrastructure have meant that for much of the period ending in the late sixties, Lodwar grew slowly in the absence of viable economic motors. Government investments, bilateral agencies, and voluntary organisations have largely fuelled this growth. In addition, Lodwar's economy remains dependent on international aid agencies, missions, and government investments and activities. Lodwar, therefore, has a weak economic base largely dependent on official government services and a small private sector. Its hinterland has little potential for major economic growth, being dominated by expansive pastoral surrounding. This poverty is clearly illustrated by the fact that fully 33 percent of the town's heads of households reported no source of income in 1984 and were unemployed, a situation that has led to major social problems in terms of supporting such households through famine-relief. The bulk of the sedentary Turkana population are marginalised, with virtually no niche either in the modern economy or in the pastoral economy. Such people have access to few amenities: they have very low incomes if they have any at all, and have correspondingly very low standards of living. Unemployment and abject poverty is the lot of the majority who depend on famine relief, begging, and handouts.

6:1:4 Social amenities in Lodwar town

Important infrastructural facilities installed at Lodwar have not only opened up Lodwar, but have also converted it into an important communications and service town. Water supplies, though inadequate, have been developed at Lodwar and electricity, telephones, and postal services have been installed. Electricity is provided, most of the time, twenty-four hours a day by Kenya Power and Electricity Company through a diesel generator. The modern service sector is dominated by non-Turkana, who in turn enjoy higher standards of living based on relatively high wages, salary earnings, and income from trade. They enjoy better housing conditions, are relatively better educated, and have access to modern facilities like piped water and improved sanitation.

Lodwar has emerged as an important transit town. Trailers that ferry food and other equipment to the refugees in Kakuma and the ones to be transported to southern Sudan normally transit in Lodwar on their way to Kakuma and Lokichoggio. Since the agreement ending the Sudanese civil war, the trailers currently go up to Juba. Air transport is also

available from the Lodwar Airstrip. A scheduled Cessna aircraft flies out of Lodwar twice weekly to and from Nairobi. It is also frequented by chartered flights, mostly by NGO officials. There is also an airport at Lokichoggio, which mainly serves relatively large aircraft and cargo planes belonging to the United Nations and various international voluntary / charity organisations dealing with refugees. Lokichoggio airport also has scheduled flights with its main operation provided by Kenya Airways. The transport services and other facilities provided from Lodwar have surely turned it into an important town and a district headquarters, like any other, in Kenya.

Housing at Lodwar is poor for the vast majority of residents. Recent rapid growth has created a severe shortage of permanent and semi- permanent houses: a shortage that is bound to worsen as more and more civil servants settle in the town. This is already happening, as I found it hard to get a decent house with water and electricity. There are four classes of dwelling structures in Lodwar township: permanent houses include houses that have stone / brick walls, concrete floors, and iron sheet roofing; semi-permanent houses with wooden walls, iron sheet roofing and concrete floors; temporary houses made of mud walls, iron sheets or thatched roofing and earth floors; and manyattas with thatched walls and roofing, and earth floors. Evidently in 1984, Turkana manyatta housing accounted for the majority of the total number of dwellings lived in by the Lodwar population. Only a few households lived in permanent and semi-permanent houses and those were localised exclusively within the present town core, with a few in the surrounding villages. The number of dwellings in the permanent houses category has increased in Lodwar township. However, the level of growth of the township attributed to immigration has outstripped the development of such houses. The employed Turkana and those who operate businesses and / or are involved in various forms of trade live in better housing than the poor who reside in poorly constructed shelters, or *ekol*. They enjoy better housing conditions, are relatively better educated and have access to various modern facilities – piped water and improved sanitation- pit latrine. Well-off households have electricity, tap water, gas, and paraffin for cooking. The other households use firewood and charcoal. In the villages, the single-roomed Turkana manyatta with thatched roofs and walls, and earth floors predominate.

The villages also have sparsely located, but privately owned taps. Water is not received daily at the taps at Lodwar, especially during dry season. Most people get their water from rivers and buy water from the connected households. However, households that cannot afford to buy water must draw water from Turkwell River when it flows. As soon as the river dries up, these households get water through digging up the riverbed, which normally is deeper as the water table falls. Some wells, though few, are dug more than “two women” deep¹³⁵. Immigration and increases in population are overstretching the provision of water. The provision of water is normally characterised by the infrequency of the flow of water through the taps due to frequent pipe bursts because of old, worn-out pipes, frequent engine breakdowns, leaking pipes, lack of fuel for the water pumps, and the gradual fall in water tables. However, tap water is of questionable quality, with no mandatory annual water quality checks¹³⁶. A basic bacteriological testing / analysis, done with the assistance of the Joint US and East African Armed Forces on a training mission in the region, found that Lodwar District Hospital's exterior tap next to the emergency room tested positive for faecal coliform (310 colonies/100ml)¹³⁷. This indicates that the tap water utilised in Lodwar is not any safer than the water from the river or hand dug wells.

6:1:5 Sanitation and hygiene

Problems of sanitation and hygiene are also associated with crowded sedentary populations. This leads to the high prevalence of communicable illnesses like acute respiratory infections. Personal and environmental hygiene is very poor. The type of environment that people live in conditions their environmental and personal hygiene. Scarcities of water, abundant flies, and bare surfaces of sand and dirt make it hard for people to keep clean most of the time. Most Turkana cover their bodies with pieces of cloth or hide. In addition, they normally apply oil to the body surface, and the oil is in contact with the cloth or hide. As such, the cloth or hide becomes a magnet for dust, until the colour darkens. Such clothes or hides are normally dirty and emit a foul smell. Despite the dusty and sandy environment, daily activities take place on the ground, including food

¹³⁵ The local way of measuring the depth of water holes is by the number of women or girls who must stand inside to hand up the water by a human chain. A hole, one woman deep is therefore about six feet deep or less.

¹³⁶ Turkana District Public Health Office, Annual Report, 1999.

¹³⁷ Turkana District Public Health Office, Annual Report, 1998.

preparation, eating, and sleeping. Children often play and crawl in the dust and sand. Soap is always expensive; hence it is not frequently used in bathing and personal cleanliness. In Nakwanamoru, Brainard (1992) found that hand washing was relatively infrequent, and that dishes and utensils were cleaned by hand. It is apparent that the population of Turkana has developed a standard of personal hygiene commensurate with their pastoral modes of living. The methods of human waste disposal found in the villages surrounding the Lodwar towns core is inappropriate and hazardous, and needs to be modified to cope with the requirements of a modern, expanding town. The consequences of poor environmental and personal hygiene was demonstrated by the outbreaks of cholera epidemics in Kakuma and Lokichoggio in January 1998, and later in September in Kalokol, including numerous villages along the lake shore¹³⁸. These outbreaks also confirm that outbreaks of communicable diseases occur in epidemic proportions in densely populated villages.

The villages had pit latrines, but few were in use. The pit latrines were, however, often encircled with human excreta. Due to loose soil, the latrines are not deep, and become filled very fast. Such holes, though appropriate for thinly-peopled regions without permanent settlements, were inadequate for settled and densely populated environments. In addition, human waste was apparent found along frequently used paths and even behind dwellings. The same poor sanitation, especially poor human waste disposal, was also found in Nakwanamoru Village (Brainard 1992). In some parts of the villages, especially those far removed from the town core, few people had pit latrines near where they lived. Most of the households in the villages therefore use bush hideouts along the Turkwell Riverbeds. A number of toilets were constructed in Lodwar township, especially in villages with close proximity to the town core, with the aid of the Swedish International Development Agency (SIDA). Most of these toilets were, however not used and appeared abandoned. One informant indicated that the Turkana deliberately decline to use toilets because of the custom that one's faecal waste should not be in contact with someone else's. If the faeces of different individuals mix, it is an indication that their fate will be intertwined. For instance, they would die a similar death, or encounter a similar accident, or any eventuality in life. When the Turkana go to the bush to defecate, they make sure that

¹³⁸ Turkana District Public Health Office, Annual Report, 1998.

faecal matter from different individuals does not mix. In fact, it is even a preference to defecate on top of a rock or a stone. The provision of one pit latrine is the antithesis of this ideology. This is why toilets in the villages are littered with faecal waste. I was amazed that people would defecate on the toilet floor but not through the hole. In addition, according to the District Public Health Officer, some Turkana do not want to use the pit latrines lest they deprive the goats of their dry delicacy!

Pit latrines are a simple pit dug into the ground on which an enclosure is constructed. In the majority of cases, existing pit latrines are poorly maintained, unhealthy, and emit offensive smells. This is the typical case of shared pit latrines in Lodwar township. Some people who feared using the pit latrines were terrified that they could sink. Evidently, some toilets were either on the verge of sinking or leaning to one side. This is because the ground is made of loose sandy soil such that the foundations of pit latrines are not stable. Furthermore, this makes toilets expensive to construct. For instance, it costs around US\$ 250 (Kshs 20,000) to construct one toilet. Because of the loose soil, culverts worth US\$ 100 (Kshs. 7,000) must be put into the pit. There is little doubt that the existing facilities for the disposal of human waste at Lodwar are inadequate and unsatisfactory. The situation calls for radical improvement, especially in the more densely settled parts of the town. There is an urgent need for pit latrines for adequate disposal of human waste. Proper use, maintenance, and regular cleaning of the existing toilets must be ensured.

In the core town, every residential place, hotels, and bars and lodgings have toilets. These toilets are relatively clean, as their use is restricted to a limited number of people. Another group that has clean hygienic toilets are those who have them in houses, for instance, civil servants that live in government quarters. However, it is not uncommon to find paths, even those in the core town littered with human faeces. In addition, some filled pit latrines in residential blocks and villages were cursorily covered, with new ones constructed next to them. This is partly because it is cheaper to construct a new toilet than drain the existing one. In addition, there is no exhauster truck in Lodwar town to empty the filled latrines.

Most bars and lodgings had problems with waste water disposal. There is no sewage system in Lodwar town at the moment, and every residential and commercial premise

disposes of sewage water openly. Young boys are often engaged by the proprietors of bars, lodgings and hotels to drain their sewage pits with buckets in the open. The Lodwar District Hospital, which is supposed to be the archetype of hygiene, had problem with waste water disposal due to blocked drainage. Waste water from the hospital was always stagnant in the open sewage near the hospital entrance. The hospital's external toilet typically was not properly cleaned, either. The space between the hospital and the TB Manyatta was littered with human faeces.

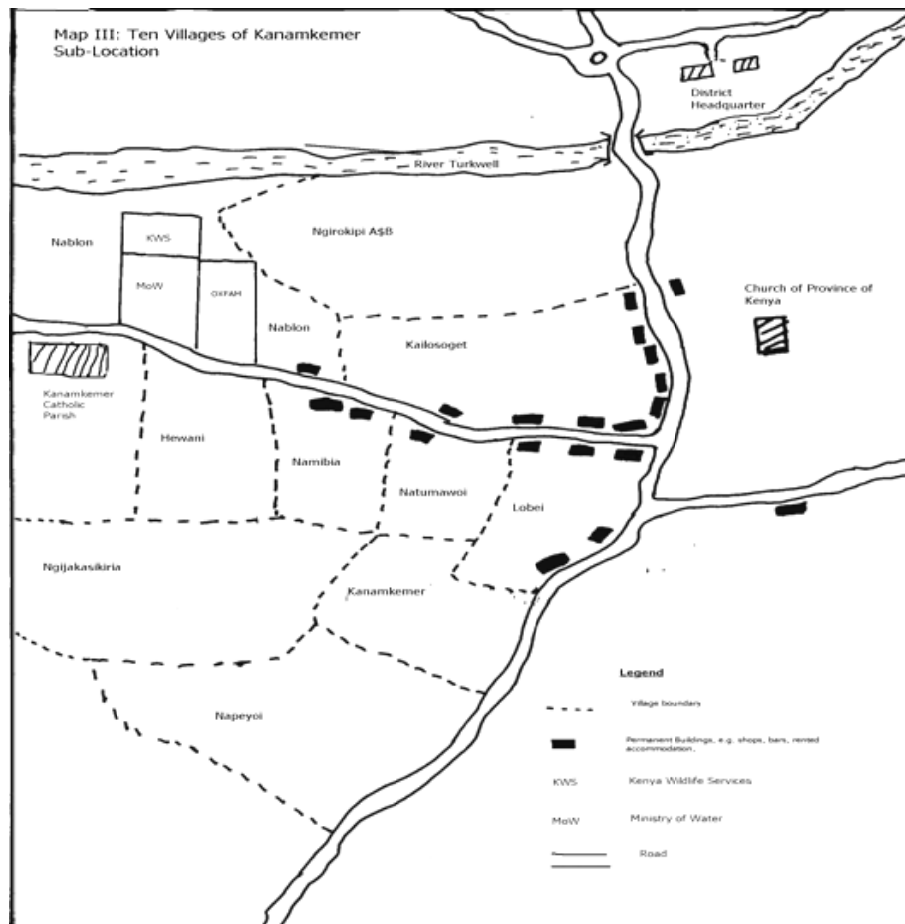
Heaps of garbage and rubbish are also found in most residential places in the town core and in heavily built-up, overcrowded villages.

6:2 Introducing research to the Turkana of Lodwar township: a household survey

The research was introduced to the local Lodwar township residents through a household survey. This section outlines the survey and its results.

6:2:1 The survey

The household survey sample consisted of one hundred households drawn from the Kanamkemer sub-location. The location was chosen because it is a near representative of Lodwar township as it includes households that are near to the town centre and those that are on the fringe of the township. Ten households were chosen from each of the ten villages. The households interviewed were chosen through random sampling. A commonsense approach to sampling, whereby every two households were skipped, while giving every household an equal chance of being selected, was adopted. In addition, the households of the ten village elders and their assistants were also included in the sample. One hundred household heads were interviewed.



Map: Ten Villages of the Kanamkemer sub-Location (not drawn to scale)

Before the household survey was carried out, I had a discussion with the Kanamkemer Sub-Location Assistant Chief. Afterwards, he arranged for me to meet with all ten village elders. In addition, he arranged for a meeting with the indigenous birth attendants and community health committee members from the Kanamkemer sub-location. I used these meetings to introduce myself to the community and also to explain the objectives of my research. In addition, I used my meeting with these groups to gain knowledge of health problems in the villages. The village elders agreed to spread the word in the villages about the project so that my research assistants would not be refused an audience with informants. The map below shows the location of the ten villages of the Kanamkemer sub-location.

One adult (man or woman) member found in each household was interviewed. In most cases, only women were found in households. Whenever possible, male household heads

were interviewed. To increase the chances of getting either a male or a female head of the household, most of the interviews were carried out in the morning or late in the evening.

6:2:2 The survey results

The results of 100 household interviews are discussed below under various headings: (i) economic status; (ii) water; (iii) personal hygiene and sanitation; (iv) nutrition; (v) healthcare resources and utilisation; (vi) morbidity types; (vii) the influence of ecosystem on infections; (viii) seasonal changes; and (ix) livestock.

6:2:2:1 Economic status

Most households engaged in multiple income generating activities as indicated in table 13 below. In a particular household, the wife sells vegetables and brews / sells *kaada*, the husband sells firewood, while another adult in the household sells vegetables in the local market. In another family, while the husband receives money for transporting goods using a handcart, the wife sells fish and vegetables. In one household, while the wife is weaving *makuti* and brooms, the husband is selling firewood while another female adult in the household is selling vegetables in the local market. In yet another household, the wife brews alcohol, and makes trays and mats, while the husband is a butcher. It is not just households that do not have salaried dwellers that engage in multiple income generating activities. In fact, households where one member is in salaried employment often supplemented the income by having the other partner, especially wives, engage in other income generating activities. In one such household headed by a policeman, the wife sold vegetables. They owned a radio, furniture, and a plot of land where they constructed a mud-walled, iron-roofed house. In another household headed by a teacher, the wife brews *kaada* and sells groceries. In another household, the husband works in Lokichoggio with an international NGO while the wife is a fishmonger in the California Market in Lodwar Town.

Table 13: Economic activities of sampled households of Kanamkemer Sub-Location

Type of economic activity	Number of Households
Retired policeman	2
Administration Policeman (AP)	4
Making brooms, trays, mats, and baskets	43
Watchman, Mason, Manual Labourer, Mandazi baker, hawker, butcher,	9
Transporting firewood (men)	3
Fetching and selling firewood (women)	5
Selling vegetables / groceries	6
<i>Fundi</i> , general technician	5
Making <i>makuti</i> , (thatch made from doum palm leaves)	4
Herder	4
Businesswoman and businessman	2
Brewing / selling <i>kaada</i>	10
Fishmonger	12
Driver	2
Pastor	2
NGO Employee	2
Civil servants	5
Teacher	5
Pulling handcart	2
Technician with Electricity Company	1
Kiosk Operator	1

Source: Results of Household Survey

Traditionally, the Turkana had no individual rights to land. The whole of the Turkana District has been held in trust for the entire Turkana population. However, land ownership has changed as towns mushroom in the district. Currently, some Turkana claim land rights in Lodwar township. In the household survey, 47 households claimed that they legally owned land on which their dwellings were constructed. The lands were either purchased or allocated by the government through the Municipal Council. Fifty-three households rented the dwellings in which they lived. Forty-one households had substantial pieces of furniture. Though Church pastors considered themselves to be poor and not in gainful employment, they were in a group of well off Turkana owning expensive pieces of furniture and electrical

goods, like radios. Only seventeen households had members that had migrated to other parts of the Turkana District for work. Two households had members working in Nanyuki. Fourteen households indicated that they receive money and material goods from salaried household members.

The main source of fuel for cooking is an important indicator of socio-economic status. The well off households would use the most expensive and efficient source of fuel while the poor would rely on the least efficient and the cheapest. Sixty-three households were using wood as a source of fuel, thirty-five households were using charcoal, and two households were using paraffin, while none was using electricity.

6:2:2:2 Water

The main sources of water in Lodwar township are rivers, boreholes, and taps. Piped water is added as a source of water in a variety of configurations: connections to household dwellings, connected households providing their non-connected neighbours with water, connections to residential plots serving several households, kiosks selling water to several consumers, and individually connected households selling water to neighbours. There is, therefore, considerable sharing and redistribution of water to non-connected households by connected consumers, significantly raising the proportion of the population indirectly reached by the Lodwar water supply. For poor households, the Kawalathe and Turkwell rivers are the main sources of water. Even if the river bed is dry, boreholes are dug by hand and continuously dug as the water table lowers. These boreholes can become more than 10 ft deep and 3 ft wide. The water from the river is also used for watering animals, some of which are kept outside the precincts of the Lodwar township boundary. The Lodwar water supply is mainly based on boreholes. There is a water pump maintained by the Ministry of Water and Supplies. This water is supposed to be treated, though at times it is not, due to the lack of chemicals, as tests demonstrated. The pipe used for water distribution is often marked with frequent bursts and leaks, which, in turn, often leads to infrequent water flows. It is only the hospitals and the District Headquarters that are guaranteed a water supply. Other areas would, occasionally, go without water for long periods, ranging from hours to days.

There is markedly uneven distribution of piped water in Lodwar township. More of the residents in the town centre depend on the well-supplied Lodwar Urban Water Supply for their daily water sources than in other villages. This dependence decreases with the increase in distance from the town centre.

In households' surveyed, the main source of water apparently was the tap¹³⁹. Fifty-nine percent of households (n=59) indicated that they get their water from the taps, 31 percent of households (n=31) from the river, and 10 percent of households (n=10) used boreholes. The distance from the water taps to the households ranged from one meter to 500 metres. Those who were not connected to tap water buy water from the nearest household with a tap. Those who could not afford to buy water, or were far from any working borehole, were the ones that fetched water from the river. They had to trek to the river, covering distances of up to five kilometres. Fifty-one percent of households (n=51) indicated that there was a difficulty in getting water, while the rest of the households felt that water was easily available.

Water was always stored in five to twenty-litres-capacity plastic containers. Since these containers cannot hold enough water, water was fetched regularly over the course of a day, ranging from one to three times. For instance, six households fetched water once; twenty-six households fetched water twice, and sixty-eight households thrice a day. The distance from the source of water influenced the number of times a household fetched water from the source. Households that fetched water from either the boreholes or rivers indicated that the availability of water was highly influenced by dry and wet seasons. On the other hand, either those who had personal taps, or who bought water from other taps, indicated that the availability of water was not influenced by seasonality.

Forty-four percent of households (n=44) treated water while 56 percent (n=56) did not. Water is only treated through boiling. Those who did not treat water cited the fact that tapped water is already treated at the source with chemicals by the Ministry of Water. There was only one woman that indicated that she boiled tapped water.

¹³⁹ These taps, leased from the Ministry of Water by individuals, are often located outside the house. Other village dwellers can buy water from these taps as often as they need to.

6:2:2:3 Personal hygiene and sanitation

The aim of the questions related to personal hygiene and sanitation were concerned with food preparation, consumption, and storage. Food is mainly stored in the cupboards, or on *epem*, raised ground, in containers such as *sufurias*, cooking metal pots, and guards. Dry foods are stored in boxes and sacks. I asked respondents whether they boil milk before consumption when it is available. Only ten households indicated that they boil milk while ninety households told me that they did not. It emerged from the survey that only three households do not warm food before eating it. This was, however, not always the case as on various occasions I witnessed children eating cold food cooked the previous night.

Sanitation is generally poor in Turkana households and villages. Only 63 percent (n=63) of households had toilets. The most common type of toilet facility was the pit latrine made from: concrete slabs and concrete walls; concrete slabs and mud walls; concrete slabs and wood walls; mud floors and wood walls; or mud slabs and mud walls. The most common type had thatched mud walls and a floor toilet. Those who did not have individual household or communal toilets defecated in the nearby bushes, especially those along the river or the open spaces between the houses. In Napeyoi and Lokitaung villages, most of the households indicated that they lack toilet facilities; they therefore defecated in the fields or the bushes. Paths were often littered with faecal matter. In Lokitaung village, a grouping of twenty households came together to build a group toilet. The respondents still admitted to me that not all the dwellers from the twenty households used the toilet. About six other households shared a communal pit latrine. Some households did not have access to pit latrines. They indicated that they used the nearby bush as their 'toilet'. Apparently, even those who had access to pit latrines did not use them all the time. It was usual to encounter scattered faecal matter on the village paths, in the bushes, along the riverbanks, and surprisingly around the pit latrines.

To gauge the level of knowledge of personal and environmental hygiene, I asked respondents a variety of questions. Ninety-eight indicated that they wash their hands after defecation, and the same number indicated that they did so before eating or feeding. Respondents indicated that they throw a child's faecal matter in the bush, inside the pit

latrine, or over the fence. Even though nomadic and semi-nomadic populations commonly let dogs lick faeces from infants, apparently the sedentary population do not indulge in this practice. In addition, dog ownership is not common in Lodwar township, as only seven households owned dogs.

6:2:2:4 Nutrition

During my fieldwork, Turkana was engulfed in one of their worst drought-driven famines in history. There was an acute shortage of food. The main source of food, therefore, was relief distribution of mainly maize and beans. The relief food was generally enough in terms of quantity. Nutritionally, it was grossly inadequate as it consists only of maize and beans. Besides maize and beans, many types of food were also available in Lodwar, and were often sold in the shops and the markets. However, very few households could afford to buy food from the shops and the markets to supplement their relief portions. Seventy percent of respondents (n=70) indicated that they had difficulty in getting food, while 30 percent of households (n=30) felt otherwise. To demonstrate the severity of the food shortages, 63 percent of households (n=63) indicated that they had previously gone without food for at least a day, while 27 percent of households (n=27) indicated that they had never gone without food. Fifty percent of households (n=50) had only one meal a day, 17 percent of households (n=17) twice a day, and 33 percent of households (n=33) thrice a day. Members of a few households told me that even though there was difficulty in getting food, they had never gone without food. Amazingly, even those who indicated that they were jobless said that they had three meals a day and they had hardly ever gone without food for a whole day.

Types of foods such as sugar, lentils, chapatti, sugar, fish, maize, beans, *ebei*, oil, meat, rice, and porridge (*nagaria* or *posho*) were sold in markets and shops. The two types of vegetables found commonly in markets were *kunde* and *sukuma wiki*. The affordability of food products was not uniform among the households. Some informants indicated that it was only maize and beans that were affordable. The Turkana have embraced beans and maize because they are commonly distributed as relief food. *Posho*, made through the milling of maize, was also popular and could be used in making *ugali*, thick porridge. Though some families indicated that they had three meals a day, it is instructive to note

that the types of food consumed were hardly nutritious and consumption was little more than a belly-filling exercise. For example, one household, whose head is a businessman, had strong tea (without milk) in the morning, *ugali* and *sukuma wiki* for lunch, and *githeri*, beans and maize (cooked together) during supper. This household indicated they did not have difficulty in obtaining food. One household, whose husband was a mechanic, could only afford two meals – that is *githeri* at lunchtime and *sukuma wiki* and *ugali* in the evening. This was the most popular combination of meals. A household where the husband was a probation officer with the Lodwar prisons, had three meals a day - *githeri*, *ugali* and fish, and *ugali* and *sukuma wiki*. The informant indicated that they had no difficulty in getting food. A household headed by a retired civil servant, currently practising as a *fundi*, had difficulty in getting food but indicated to me that they had never gone without food for a whole day. Most households tended to skip lunch and breakfast while providing only an evening meal (supper).

The economic status of the household influenced how many times they could have food in a day, and how often they would go hungry, without meals. One woman who sold *kaada* and had three children aged 1, 1.5, and 5-years old could only afford one meal a day and would go without food 2-3 days a week. One household with one source of income would go without food for two days, but when relief food was distributed, they had one meal a day. A household headed by teacher could afford three meals a day. One single woman who works at the district headquarters indicated that she could only offer food to her three children at night, as they could not sleep on empty stomachs. In extreme cases, the family who relied on relief food could go without proper meals for two to three days. One woman who made mats indicated that she totally relied on relief food and *engol* fruits. Another woman that also made mats, but whose husband was a retired administration policeman, indicated that she had eaten maize and *engol* the previous day, and she would go without food three times a week. While relatively better off families had meals, the poor families that often relied on meagre relief food survived on the verge of starvation. One such family that found it very hard to supplement their meagre amounts of relief food could not tell me exactly how often they had gone without food in a week as "sometimes we go without food for two days. Occasionally we could have adequate meals for one whole week. In another week, we could take only porridge for up to four days". Relief food never lasted for a long

time as it was little, and some households exchanged whatever they received for money so that they could buy other types of food from the shops or markets. Relief food was often sold cheaply, and there were many unscrupulous traders who would bank on the Turkana's desperation for money and later make huge profits after reselling the maize and beans in the open Turkana market, or transport them down country. In parallel to relief distribution, UNICEF was running a programme whereby families with severely malnourished children were provided with highly nutritious food, called *unimix*. The amount given to a household depended on the number of malnourished children. The local population could not, however, understand the criteria used by the food monitors and distributors to determine eligibility. To the ordinary Turkana, all children in Turkana were affected by drought and famine. The food given to the needy children had a minimal effect as it was often shared among households who did not qualify. The Turkana spirit of sharing overcame the 'discrimination' of food monitors and distributors.

The sources of foods, in some instances to supplement the relief foods, were varied for diverse households. Eighty-three households got their foods from the shops or the market, thirteen households were given it by friends and relatives, and forty-one households relied exclusively on emergency relief food. Most families that received relief food supplemented their rations with other types of foods purchased from the shops and markets. The most popular foodstuffs bought to supplement relief food were sugar and oil. No household indicated to me that they produced their own food, for example, through livestock production. The equivalence of their own food production was buying food from shops and markets. For example, a household whose head worked in the district headquarters as a subordinate staff relied, for the most part, on purchased food only. A household headed by a pastor, and a household headed by a policeman whose wife also sold vegetables purchased their entire food intake. A hawker whose wife brewed and sold *kaada* maintained their household of three children and another three adults through the purchase of food from the shops and market. They indicated that they had three meals a day and had no difficulty in obtaining food. The diets of such households with significant income who could afford to purchase food from the market and shops consisted of meat, rice, wheat flour, sugar, bread, oil, vegetables, beans, and maize.

6:2:2:5 Healthcare resources and utilisation

During household interviews, respondents indicated that their preferred source of healthcare resources was hospital medicine. In fact, 99 percent of respondents (n=99) indicated that they use hospital medicines and/or the medicines bought from the chemists. Only one male respondent indicated that indigenous medicine was his preferred healthcare resource. Respondents indicated that given a choice, they would prefer hospital medicine. The reasons for decisions were based on: efficacy; proper treatment and medications; affordability; highly professional care; proper diagnoses; clean hospital environment; and accurate dosage targeting a particular morbid state.

Ninety-three households indicated that their children were all immunised in the hospital. Only four households did not have immunised children as they moved to Lodwar with adult children. Mothers in thirty households delivered their children in the Lodwar hospital, thirty households at home alone, and forty-nine households delivered at home with assistance from indigenous birth attendants. It was obvious that giving birth at home was very popular. A few households alternated between hospital and home deliveries with or without traditional birth attendants. My initial engagement with indigenous birth attendants illuminated their importance in Lodwar township as they attended to most of the births.

The provision of medical services is not free to all. This is a very important factor in the accessibility of medical services. Ninety-seven percent of the households indicated that they pay for medical services. Theoretically, it is government policy that poor households should access medical services free of charge. However, it is the District Hospital Management Board that decides on who is poor enough to be exempted from paying hospital fees. In practice, many Turkana households could not access health care resources and service because they could not pay. Only three households indicated they have no difficulty in purchasing medical services. Ninety-seven percent of the household (n=97) indicated that it is economically burdensome to buy drugs. Most of the payments in the district hospital are for drugs and tests. Only 6 percent of households (n=6) indicated that they could afford to buy drugs. Therapeutic drugs were purchased from either the hospital or commercial pharmacies and shops in the town. A hospital chemist was supposed to sell drugs at subsidised prices. However, most of the time the hospital

pharmacy suffers from chronic drug shortages such that even those who are supposed to get free drugs, like infants, are forced to buy drugs and/or hypodermic needles from commercial pharmacies. It was alleged that subordinate staff at the Lodwar District Hospital were often stealing drugs for personal and family use or for sale on the black market.

Due to insurmountable costs in healthcare, many households postponed going to the hospital because of lack of money. This is, however, not applicable to children as they were entitled to free treatment. Nevertheless, in most cases, parents had to purchase drugs for their children because they were unavailable from the hospital's pharmacy. Most respondents indicated that if they could not afford drugs, they would just return home. As one mother stated, "I would just go home and look for money or wait until such a time that we could have money for drugs". Others indicated that they would go back home and borrow money. One woman said that she would go back home and pray to God to heal her. Families that could not afford to buy drugs often resorted to self-treatment with indigenous medicines. Self-treatment also involved going to the shop or pharmacy to buy drugs based on one's own diagnosis, founded on previous experience. Others who could not pay indicated that they would 'go home and die'. One woman informed us that if she did not have money, she would go home and look for herbs from the indigenous healers. Most often, indigenous medicines were widely known so one could just walk into the bush and pick up plants and herbs for concoctions. In addition, indigenous healers were viewed as charging less, about US\$ 0.80. Some people also resorted to village injectors or quacks that charged relatively less for their injections and drugs. In addition, subordinate staffs from the hospital were popular sources of drugs, which they took from the hospital. Private healthcare, provided by five clinics in Lodwar town, is often expensive. For instance, an assistant chief indicated that he paid US\$ 7 for therapy against malaria. Another person indicated that he paid US\$ 10 for 'chest problems', while another paid US\$ 11 for malaria treatment. These are huge amounts of money according to Kenyan standards.

Some respondents felt that hospital treatment was cheap and affordable. It is ironic that even though they could not afford to pay for drugs, they still felt that hospital treatment was affordable and better than indigenous medicines. This could be because diagnosis and prescription is divorced from the availability of free of drugs. In addition, whoever is

admitted into the hospital, a sign of serious and debilitating illness, often gets free drugs, if they are available, compared to out-patients who have to pay for drugs or hypodermic needles if a medicine to be administered through injection is prescribed. In most instances, the Turkana only go to the hospital when they were very sick and required in-patient admission, gaining access to free drugs in the hospital. In addition, children were only taken to the hospital when they were very ill. This is typical of poor communities that are often forced to 'gamble with life', hoping that one would get better without committing non-existent resources to care. The severity of the illnesses presented at hospitals is an indication that people often remain at home for long periods of time with their illness and/or pursue indigenous therapies until their conditions worsen.

Since nearly 92 percent of households (n=92) indicated that they had difficulty paying for medical services, I wanted to find out how popular indigenous medical services are. I was surprised to find that only seventeen households indicated that they occasionally use indigenous medical services. On further questioning on what type of medical service they would prefer to pay for, only five households preferred indigenous medicine. The rest preferred to pay for hospital / dispensary/ clinic treatment. As one respondent said, "in the hospital there is proper treatment than indigenous healers and medicines; in the hospital you get proper drugs". In addition, hospital treatment is preferred because it offers quality preventive and curative services based on proper diagnoses that involve carrying out a range of tests. 'Hospital is good because your illness is thoroughly examined', one informant noted. It emerged that the hospital is considered effective as it also involve technical therapy and surgeries. In addition, hospitals have a range of ready-made medicines capable of curing most illnesses. Serious diseases are cured straight away. As one respondent said 'everything impossible would be made possible in the hospital'. Some respondents admitted using both indigenous and hospital medicine because they all cure and at times they all fail. The main reason for using indigenous medicines was because they were free, and cost less than biomedicine. Many people might have denied the popularity of indigenous medicine to me because to the community, I was a benevolent, expected to deliver hospital medicines in the future. They wanted me to know how much they appreciate biomedicine, whose accessibility is constrained by poverty. In fact, one respondent told me that he prefers biomedicine, but poverty forces him to use indigenous

medicines. Even those whom I expected to use only biomedicine based on income, indicated that they use both, dictated by financial availability. As the wife of a primary teacher, who supplements her husband's income by selling groceries in the market indicated, "Quite often I cannot afford hospital medicine. So I come back home and I utilise indigenous medicine, which I simply pick up from the bush. I do however believe in the efficiency of hospital medicine, which surpasses indigenous medicine". Only one informant told me that she had no knowledge of indigenous medicines, and considered them to be extremely exorbitant in cost. One village elder denied ever using indigenous medicine. On the other hand, one told me that she preferred hospital medicines because there were insufficient indigenous medicines. In addition, it took time to search for and prepare indigenous medicines.

Of all the households, 40 percent (n=40) had never decided not to go to the hospital because of lack of money, while 46 percent (n=46) had postponed going to the hospital because they did not have money. In the last recent illness, while 89 percent of households (n=89) went to the hospital, 4 percent (n=4) visited the nearby Catholic mission clinic for medical services, 2 percent (n=2) visited an indigenous healer, 4 percent (n=4) resorted to self-medication, while only 1 percent (n=1) never sought therapy. Of all the respondents, 93 percent of households (n=93) indicated that the government provides sufficient health care services, while only 7 percent (n=7) felt that resources are insufficiently provided. This response might be a reflection of the perception of the Turkana that I was connected to the government in one way or another.

6:2:2:6 Morbidity types

Respondents were asked to name the most prevalent morbidity types in their respective households / villages. The table 14 below indicates the types of morbidity mentioned in order of prevalence. As the table indicates, malaria was mentioned as the most prevalent infectious illness in Lodwar township. This is followed by a cough and tuberculosis. However, respiratory infections would emerge as the most prevalent if tuberculosis, cough, chest pains, and pneumonia were combined. Only 9 percent of households (n=9) mentioned AIDS as a common illness, while other sexually transmitted diseases were not

cited. The responses mirror the prevalence of these infections as recorded by the district hospital.

Table 14: Morbidity statistics

Type of Morbidity	Number of households	Type of Morbidity	Number of households
Malaria	89	Amoebiasis	6
Cough	60	Dysentery	5
Tuberculosis	43	Head aches	5
Typhoid	33	Ear problems	5
Pneumonia	28	Stomach problems	4
Chest pains	25	Scabies	4
Eye problems	19	Joints	4
Common cold	12	Skin disease	4
Diarrhoea	9	Vomiting	3
AIDS	9	Backaches	2
Yellow fever	7	Ringworms	1
Measles	7	Wounds	1
Cholera	7	Gland infection	1
Boils	6		

Source: Household Survey

All the households had experienced diverse illnesses within the two months preceding the commencement of the research project. Of these households, ninety-five sought therapy while the rest did not. Of those who sought medical treatment, ninety went to the government hospital, one respondent visited a quack, and two went to the Catholic mission clinic, while two others bought medicines from the chemist. Eighty-eight percent of households (n=88) noted that they would seek medical treatment from the Lodwar District Hospital, 6 percent (n=6) would resort to self-medication, one would go to the chemist to purchase drugs, 1 percent (n=1) would visit a quack, and 4 percent (n=4) would go to the Catholic mission's dispensary in the event that any household member was ill. Ninety-seven percent of the households (n=97) considered government hospital services important. Some respondents expressed private concerns, however, that government health workers at the hospital steal drugs meant for the poor Turkana. Only 14 percent of households (n=14) considered hospital services remote from them.

6:2:2:7 Turkana perceptions of the influence of the ecosystem on infections

Ecology influences the prevalence and occurrence of particular infections. It was therefore pertinent to find out what the Turkana's perceptions of their ecology / environment were, and its influence on illness occurrences. The respondents were asked about the ecological / environmental features that exist in their immediate ecosystem that have impact on their lives. The respondents were able to identify some of the features of their physical / biological ecosystem, such as rivers, lakes, mountains, rocks, and trees.

The respondents were aware that some features influence the occurrence of particular illnesses. One informant indicated that illnesses could occur in any environment as God causes them. Rivers were seen as influencing the prevalence and occurrence of pneumonia and malaria due to coldness from the bushes along the riverbanks, and typhoid due to the amount of dirty water. At the same time, some respondents noted that the river is good for health as it provides water for drinking, cooking, and watering livestock. In addition, trees are used for shelter and edible fruits, while riverbanks are fertile for growing food crops. There was ambivalence concerning the importance of rivers: while they were deemed to be good for health, it was noted that the river environment was prone to malaria. A 66-year-old woman indicated that the riverine environment leads to coldness that causes pneumonia; the bushy riverine ecosystem breeds mosquitoes; and dirty water from the river causes typhoid. On the other hand, as another 55-year-old woman pointed out, the "riverine is the best ecosystem as it provides water, shelter, food and fruits, and a cool environment, which is a necessity in this arid and semi-arid region". As a 32-year-old male mat weaver added, the above are the essential ingredients for human health. An ideal place for good health is "slightly warm and not windy" as there are no "dirty *viini* (viruses/ germs) to be carried by wind", an informant indicated.

An ecosystem with shrubs and trees was thought to be good for health, as it does not facilitate the breeding of mosquitoes. In fact, I was repeatedly informed that mountains and rivers are good because they have trees, which provide fruits, materials for shelter and

fuel, and food for livestock. In addition, forested mountains produce a priceless cool breeze. Mountains were also thought to be good because they bring rainfall.

One informant noted that an ecosystem with dense bushes could cause tuberculosis, diarrhoea, and sexually transmitted illnesses. Such environments are likely to be densely populated, predisposing inhabitants to infections. An ecosystem without trees, shrubs, and grass was perceived as good as it stops the spread of tuberculosis and malaria.

Contrary to this, another informant noted that bushy or forested environments are good for health because they control the wind and dust that is responsible for the tuberculosis and malaria. Winds spread dust, which at times, contain *Tuberculosis bacilli* droplets. In addition, when winds blow, mosquitoes are spread from wet localities, like rivers and the lake, to other places, far and wide. Trees, I was told countless times, contain the spread of airborne diseases. Forests lead to less tuberculosis, pneumonia, and malaria as they modify the environment, break the wind, and prevent germs from spreading. In addition, trees, when planted in plenty, provide shade / shelter and fruits for consumption.

The Lake environment was not spared in my discussions with the Turkana. One informant indicated that the lake ecosystem (Lake Turkana) influences the occurrence of malaria and cholera. Cholera's prevalence was associated with fish, which causes diarrhoea. The conditions for the cause and spread of cholera are characterised by a high-density population along the lakeshore, and poor environmental hygiene in the villages in nearby Kalokol town, and others near the lake. However, there was also ambivalence in terms of knowledge production as one informant indicated that lake environment is good as it produces many fish, which are good for health.

Seventy-two percent of households (n=72) indicated that some locations in Turkana are notorious for harbouring some particular illnesses. The table above indicates the locations and corresponding types of illnesses, which they harbour, or are commonly associated with them.

Table 15: Locations where various illnesses are mainly prevalent

Location	Common illnesses
Lodwar township	AIDS, other sexually transmitted illnesses, typhoid, malaria, cholera, pneumonia, tuberculosis, malnutrition, and common cold
California market (in Lodwar town)	Diarrhoea, AIDS and vomiting
Lokichoggio	Typhoid, AIDS, other sexually transmitted illnesses, boils, ebola, cholera, diarrhoea, chest problems.
Kakuma	Skin diseases, tuberculosis, cholera, malaria, pneumonia, typhoid, AIDS, tuberculosis, other sexually transmitted illnesses like gonorrhoea.
Kalokol	Cholera, malaria, diarrhoea, tuberculosis, gonorrhoea, AIDS, typhoid.
Lokitaung	Typhoid, and malnutrition
Gold –Mukutano	Yellow-fever, meningitis, malaria, AIDS, tuberculosis, cholera, common cold, and pneumonia
Kerio	Eye problems, and yellow fever
Lorienatom	Obesity
Lorugum	Yellow fever, and foot and mouth
Turkwell	Scabies, and foot and mouth
Lokirama	Tuberculosis
Nachukui	Cholera
Katilu	Malaria and typhoid

Source: Household survey

It is instructive that most of the locations mentioned by informants as harbouring infectious illnesses are either towns or huge settlements with high population densities. AIDS and other sexually transmitted infections were mentioned as common in towns and settlements with high population densities. Most of these emerging urban centres, therefore, had problems with infectious communicable diseases, including those that are sexually transmitted. In fact, one informant told me that Kalokol, Lokichoggio, and Kalokol are notorious for AIDS and other sexually transmitted diseases. As we will see later, the statistics that I managed to compile on sexually transmitted infections, which show a high prevalence in urban centres, substantiates her information.

Population density as an ecosystem factor was seen as playing a significant role in the occurrence of disease. Densely populated environments are characterised by numerous infectious illnesses and poverty. As one informant noted, the Turkana's lifestyle and personal hygiene are suitable for a sparsely settled and nomadic way of life. When they adopt a sedentary life, they often inhabit densely populated villages, which, in addition to their maladaptation lead to the creation of ecosystemic conditions that efficiently breed and spread infections.

6:2:2:8 Seasonal changes

With the aim of gauging the Turkana's perception of seasons and their impact on health, respondents were asked whether they thought that seasonal changes could affect health and the availability of food. Seventy-nine respondents indicated that seasonal changes influence the occurrence of illnesses. Most respondents noted that most illnesses occur during the cold, rainy season. Only a few informants indicated that illnesses are prevalent during all seasons, meaning that Turkana is a land of perpetual poor health and an avalanche of illnesses. It was common knowledge that tuberculosis is prevalent in dry, hot seasons due to the prevalence of dusty winds. Other illnesses mentioned as prevalent during the dry, hot season are typhoid, diarrhoea, protein-calorie-malnutrition related diseases (marasmus, kwashiorkor), cholera, chest problems, vomiting, cough, malaria, pneumonia, yellow fever, eye infection, measles, and stomach discomfort.

Eighty-nine percent of respondents (n=89) noted that seasonal changes affect the availability of food. The foods that are available during the wet season encompass milk, *kunde*, millet, meat, and 'wild' fruits produced by drought-resistant trees such as the *egol* (*ekigo*), *esekon*, *ngakalelio*, *edapal*, *mukoma*, and *ekalale*. Dry season food types include old skins, fish, relief food (maize and beans), and fruits from the afore-mentioned drought resilient trees. Hunger is prevalent during the hot, dry season, which normally is characterised by drought and the death of livestock. Dry seasons are characterised by 'town foods'¹⁴⁰. When livestock are decimated, people buy food from the shops. In addition, seasonal changes affect the availability of water, with water being readily

¹⁴⁰ 'Town foods' here means those food types that do not originate from Turkana, but from the provision of food supplemented by those bought from the shops and markets.

available during wet, rainy seasons as compared to hot, dry seasons. It is the wet, rainy season that is perceived as conducive to good health.

6:2:2:9 Livestock

Generally, 55 percent of respondents (n=55) indicated that they have previously owned livestock. Only twenty-four households indicated that they still owned livestock. Sixty-two respondents stated categorically that they do not own livestock. The rest of the households stated that they have never owned livestock. Only fifty-five households indicated that they would still like to own livestock. Thirty-seven informants told me that they had lost numerous livestock to drought, while twenty-one had lost livestock to banditry prior to their settling in Lodwar. One household indicated that prior to their settlement; they had lost 200 goats, 50 heads of cattle, 12 camels, and 200 sheep to drought. One household had lost 150 sheep, 10 head of cattle, 20 donkeys, 10 camels, and 200 sheep. This was typical of many households that had previously owned livestock. In addition, the Pokots were also frequently mentioned as having taken livestock and killed family members.

Families that owned livestock had them herded by relatives in grazing locations far removed from Lodwar. The few families that had livestock with them had mainly goats, sheep, and donkeys. One informant who had only two goats claimed that she had lost 160 goats, 58 head of cattle, 16 donkeys, and 140 sheep to banditry in Lokitaung. Another household with five goats had lost 310 goats, 50 camels, 15 donkeys, 6 camels, and 60 sheep to the Pokot bandits in Turkwell. One family had one goat and two sheep. Such livestock are herded in the home, and mainly fed on maize, pods from the acacia trees, and at times taken to feed on the riverine bushes.

Most people with regular incomes had livestock herded outside Lodwar. One district hospital subordinate staff member had goats, sheep, and donkeys herded at Lokichar. He had, however, previously also lost 140 goats, 8 donkeys, and 160 sheep. An assistant chief had 50 goats and 15 sheep being herded at his home of origin. One retrenched civil servant had goats, sheep, and donkeys being herded in Kapua, Kalokol Division. On the other hand, a Pastor had goats, sheep, donkey, cattle, and camels being herded in Lokwanamor, a dry season grazing area in the Kakuma Division. He had just lost 500 goats, 100 cattle, 5 donkeys, and 250 sheep to drought, and 200 goats, 60 cattle, 2

donkeys, 5 camels, and 100 sheep to banditry. He had recorded all these details in his notebook. This salaried person had invested heavily in livestock production. Another informant who had invested in livestock was a hawker whose wife also sold vegetables in the market and brewed *kaada*. He told me that he had lost 200 goats, 100 cattle, 50 donkeys, and 200 sheep to drought, and 200 goats, 50 cattle, 3 donkeys, 40 camels, and 100 sheep to banditry.

It was clear that those who had settled still owned livestock in their places of origin, herded by other family members, children, or wives. For example, the assistant chief's senior wife was looking after his livestock in a village among the nomadic population, while the other two wives were with him in Lodwar town. These other wives were also engaged in petty economic activities – one was selling groceries while the other was a fishmonger. It is instructive to note that the assistant chief's surplus income was invested in livestock production. I encountered many Turkana civil servants, traders, and those employed by NGOs and the churches that had invested in livestock production. This is an emerging aspect of livestock production among the sedentary Turkana, who are pursuing multiple survival strategies.

6:3 Conclusion

The Turkana community is today divided along the multiple lines of the poor and the rich, and the sedentary and the semi-nomadic. These diverse groups of the Turkana population endeavour to eke out a living through diverse forms of economic production. Due to social dislocations because of recurrent droughts, famine, and banditry, the Turkana are settling in and around towns and market centres in large droves. This means that many Turkana, especially recent migrants from pastoral production to urban poverty, are faced with new problems and challenges.

Turkana has always posed a curious predicament. For a long time, millions of dollars in donor resources have been pouring into the district. There are many agencies that have busied themselves with all kinds of programmes in Turkana. In fact, Turkana receives more donor support in per capita terms than any other district in Kenya. It is amazing, then, that at the end of the day, there is so little to show for it. Despite all the attention, Turkana still

remains and will be for a long time, one of the poorest places in Kenya. It is important to stress that much attention comes from relief and donor agencies whose priorities and operations are such that permanent poverty eradication is not their brief. They come in droves to react to a crisis, distribute relief food with amazing efficiency that no doubt saves lives, after which they disappear like lightning, as if waiting for another crisis to unfold. Though some donor agencies like NORAD (before they disbanded), World Vision and OXFAM have endeavoured to initiate development projects, their overall impact has been very limited and often unsustainable. Famine is never caused by drought alone. Drought only takes advantage of a lack of preparedness. The last drought was forecast long before its devastating effects were felt in Turkana. The question is, what strategies did the government adopt for the district in order to curtail the unfolding disaster?

The story of Turkana calls for a recap of the neglect that it was subjected to by the colonial government. As was discussed above, the colonial government created the Turkana's vulnerability to incessant famine. They 'created' *akoro* in *eturkan* mainly due to misguided policies on and beliefs in development, on one hand, and pastoralism, on the other. This is because subsequent interventions by post-colonial governments, and development agencies and church missions "see the reduction of livestock and move towards sedentarisation, fishing and farming as 'progress' and as a means of enrichment, [while] pastoralists view such moves as the road to disaster, at the end of which is found the very epitome of poverty..." (Broch-Due and Sanders 1999: 4). This poverty is epitomised in overcrowded and unhygienic towns and villages that are ever-swelling with the sedentarised and poor Turkana. The government of today not only still perpetuates the neglect of the Turkana in subtle forms, but also exacerbates their vulnerability to poverty and famine. The reactive policies of the government and philanthropic organisations since the 1920s only led to the creation of a permanently poor town-dwelling and aid-dependent sedentary mass, dependent on fragile, fluid, and unpredictable aid, with others cyclically moving in and out of famine relief food dependency. The Turkana's isolation from the mainstream of the country will continue if this benign government neglect is not radically re-assessed. The government must also look into the insecurity posed by marauding bandits and cattle raiders. These not only rob the Turkana of their livestock, but also constrain development efforts, as projects cannot be implemented in such an atmosphere.

Insecurity has dogged the Turkana and Pokot Districts in a way that makes economic development in the area an up hill task. Typically, people are maimed, killed, or displaced by fighting. Potential investors cannot venture into the district for fear of their lives. Most resources allocated to the district for recurrent expenditures from the central government every financial year are expended on security and not 'development'¹⁴¹. As Broch-Due and Sanders (1999) conclude, ironically both the colonial and post-colonial interventions have succeeded in one aspect: reproducing poverty amongst sections of the populations when they had first sought to alleviate it, leaving Turkanaland vulnerable to infections and famine.

The Turkana region has great potential for livestock production. For instance, instead of middlemen ferrying livestock to other parts of Kenya, a meat processing plant could be built in Turkana instead. Turkana would have a ready market for their abundant cattle, goats, and sheep instead of letting them die during drought thus providing a great source of revenue. One Catholic priest who has worked in Turkana for a long time commented that, "the area has good soil but lacks the much needed infrastructure. If the fish, meat, handicraft and mining industries are tapped Turkana will be self-reliant. My vision is that one day the government will invest in infrastructure"¹⁴². Many of the people I had personal discussions with were in agreement that Turkana is getting worse and worse. The Turkana are currently more vulnerable to famine, drought, and insecurity than they were in previous decades. One of the ways out of this trap is economic diversification. Though arid and semi-arid, some parts of the district are considered as having a potential for large-scale food production¹⁴³. Another plausible economic activity that I unearthed is the production of *eminaï*, gum arabic through the planting of arid-resistant *ekonovit*, *Acacia senegal*. The Turkana could easily plant this drought resistant tree in small gardens.

The improvement of the socio-economic status of the Turkana would pave the way to better health status. However, with recurring famine, their health status will always remain

¹⁴¹ Personal discussion with Turkana District Commissioner, Mr. Peter Mooke.

¹⁴² Daily Nation, 20 December 1999.

¹⁴³ Personal discussion with Peter Kiama of the Justice and Peace Commission, Catholic Diocese of Lodwar and Charles Lopi of World Vision - ADP (Agricultural Development Programme). At Lokori, southern Turkana there is a Morulem Irrigation Scheme initiated through assistance from OXFAM (GB). During the famine of 1999-2001, they did not receive famine relief as they produced enough food, and even had a surplus.

poor, and their living conditions will always remain appalling. They will forever remain far removed from the few available social amenities, like schools and hospitals. When the Turkana refer to the rest of Kenya as 'down country', they are unconsciously admitting and surrendering to the neglect and isolation that the district has suffered, leading to backwardness and underdevelopment. When I visited the interior of Turkana, I relived the experience of the managing editor of the *Daily Nation* newspaper, which he captured in his remarks after his visit to Lodwar: "the impression one gets when visiting Turkana is that you are going back in history. There is little happening. Most of the people are walking half naked"¹⁴⁴. The people I met in these sojourns were emotionally and physically detached from the rest of Kenya. Herders were carrying sophisticated AK47 rifles, Kalashnikov, G3, and Epen guns. With the civil wars in Sudan, Somalia, Ethiopia, Eritrea and northern Uganda, the acquisition of these guns has been made easier as they cost between US\$ 140 (Kshs 10,000) and US\$ 280 (20,000) or livestock of equivalent value. This is a 'country' unto itself. Guns pervade the lives of the Turkana in these regions such that even *Emuron*, or healers, bless the guns, (such blessed guns are painted with a white substance) so that they will shoot without missing. I was, however, impressed with their resilience, and their ability to survive in arduous conditions. The level of resilience and innovation has been demonstrated by women who, in the face of frequent raids and bloody battles with the Toposa of Sudan, have improved the way they build huts by building them around burrows and pits since raiders shoot everyone at ground level before driving away herds of livestock.

With the increase in permanent settlement villages and urban centres, the fragile Turkana environment will be desiccated. As people settle, there is a need for firewood and building material, which means that trees are cut everyday. I was amazed by the amount of charcoal and firewood harvested and sold in urban centres and by the roadside. Many trees, which are valuable in this arid environment, are being wasted. In addition, there were Lorries loaded with firewood heading to the refugee camp. The poor Turkana have taken to selling firewood to refugees and the settled households. The impact of the 80,000-refugee population, and the construction of the Turkwell Gorge on the environment, is still

¹⁴⁴ Daily Nation, 7 February 2000.

unknown. It is, however, evident that environmental desiccation in the district has been set in motion.

Presently, this is the challenge that development planners must face to avoid another round of human catastrophe as many people shift from nomadism to perpetual poverty in sedentary lifestyles. The social dislocation of people into town centres is turning these places into breeding grounds for HIV/AIDS. This is the theme of this thesis, to unravel the Turkana's knowledge of, and local responses to, this newly emerging and devastating disease. When I went to Turkana, most of the local people were more concerned about their empty bellies than *lokwakei*, HIV/AIDS. However, as famine and the loss of stock drive people into towns, they are simply exchanging one danger for another, only the latter, is contracted and transmitted through sex. Currently, the Turkana region, characterised by the social living conditions and the prevalence of other background infections, is fertile for efficient contraction and transmission of HIV-1 and death from AIDS.

A Synopsis of HIV-1/AIDS in Kenya

In Kenya's recorded history, no illness or natural phenomenon has resulted in such devastation on the socio-economic landscape, as has HIV-1/AIDS. HIV-1/AIDS has led to cultural and socio-economic disintegration and is further compromising the socio-cultural structures and networks of communities. In this chapter, I discuss the prevalence of HIV/AIDS in Kenya and the government's response to the pandemic from 1984 to the present.

7:1 The prevalence and distribution of HIV variants in sub-Saharan Africa

An estimated 38.6 million people are living with HIV/AIDS worldwide (UNAIDS 2006). While approximately 4.1 million people were newly infected with HIV, 2.8 million people died of AIDS-related illnesses in 2005 (UNAIDS 2006). Sub-Saharan Africa still accounts for the largest share of the pandemic. However, HIV/AIDS is not evenly distributed in the region. Currently, eastern and southern Africa are still more severely affected than western and central Africa (Buve *et al.* 2002; UNAIDS 2004, 2005, 2006). Among the notable new trends are the recent declines in national HIV prevalence in Kenya, and Zimbabwe, with no evidence of a decline in South Africa, Swaziland, and Botswana (UNAIDS 2006).

The distribution of HIV reflects the diverse genetic variants that have already been identified. HIV is an umbrella term for two genetically distinct types of the virus: HIV-1 and HIV-2. HIV-1, the most common and virulent variant, embraces three genetically distinct groups: M, N, and O (Harvard AIDS Review 2001). The virus that causes the great majority of HIV-1 infections that are diagnosed and studied worldwide belongs to the M group, with eleven genetically distinct subtypes, identified with the letters A through to K, with A to H all found in Africa. The genetic analysis of HIV-2, the less virulent form of HIV, has yielded six subtypes, identified as A through to F (Harvard AIDS Review 2001). HIV-2 is common in Europe and the Asian continent. In sub-Saharan Africa, HIV-2 mainly occurs in West

Africa, with the highest prevalence found in Guinea Bissau and southern Senegal (Buve *et al.* 2002). In contrast to the increasing spread of HIV-1, the prevalence of HIV-2 has remained rather stable. This is due to the higher transmissibility. The likelihood of transmission of HIV-1 through heterosexual intercourse is estimated to be about three times higher per exposure than for HIV-2 (Buve *et al.* 2002). In addition, perinatal transmission rates of HIV-2 are significantly lower (less than 4 percent for HIV-2 compared with 25 to 35 percent for HIV-1). Since the impact of the HIV-1 variant is currently predominant in sub-Saharan Africa, in this thesis, I have focused on HIV-1 infection.

7:2 The current estimates of the HIV-1/AIDS prevalence in Kenya

There is no section of the Kenyan community that is presently safe from the menace of HIV-1 infection. Kenya's 29 million people are either infected or affected by HIV-1/AIDS. The first case of AIDS was identified in Kenya in 1984, a year after HIV-1/AIDS was unequivocally isolated as a new type of infection in the USA. However, indications are that HIV-1/AIDS was in Kenya by the late 1970s or so. Since 1984, the number of people infected with HIV-1 and those developing full-blown AIDS have increased steadily. Initially, the infection was limited to sections of the population with high-risk behaviour, including commercial sex workers, truck drivers, and migrant workers and/or poor inhabitants of urban centres. It was not until the disease began to spread rapidly among the general population that the virus gained national attention. However, due to stigma and ignorance, no HIV-1-infected person was willing to discuss HIV-1/AIDS openly. The first Kenyan to defy the stigma and go public about his HIV-1 status was Joe Muriuki in 1988.

The sero-prevalence level has risen from 2 percent in 1985 to over 14 percent by 2000 (NASCO 2001), and has declined to about 13 percent by 2005 (UNAIDS 2006). The sero-prevalence rate has further declined to 5.9 percent by 2007 (Wakabi 2007). Presently, it is estimated that about 164 people are newly infected with HIV-1 each day, translating to about 60,000 new infections annually (Wakabi 2007). Currently, it is estimated that one in every eight adults in Kenya is HIV-1 infected. In addition, Kenya has 1.3 million people living with AIDS (Wakabi 2007).

The first national policy statement on AIDS came with the Kenyan parliament's adoption of its Sessional Paper no. 4 in 1997, which made recommendations for program implementation. In November 1999, former President Moi declared HIV-1/AIDS a "national disaster". By then, an estimated one in every nine sexually active persons in the country was already infected. At about the same time, the government established an inter-ministerial National AIDS Control Council (NACC) to develop strategies for controlling the spread of the disease. Since then, it is estimated that over 2.2 million Kenyans are now living with the HIV-1 infection, but few know that they are infected or are showing outward symptoms of the disease.

Presently, HIV-1/AIDS has become the number one killer in Kenya. Over 1.5 million Kenyans have died of AIDS since the epidemic started. A visitor to the National AIDS/STDS Control Programme (NAS COP) headquarters in Nairobi is confronted by a sign that bears the ominous message: 'Three people die every five minutes in Kenya from AIDS'. Following a logical mathematical conclusion, this would mean that 36 Kenyans die every hour, 864 every week, 24,192 every month, 290,304 every year, and 1,452,520 every five years. It is estimated that the number of deaths due to AIDS among people between 15-34 years of age in Kenya during the period 1995-2000 might be three times greater than the number of deaths due to all diseases combined. Currently, death rates are estimated at about 150,000 per year (NAS COP 2005). This is expected to rise due to the large number of people who were infected in the 1980s and 1990s.

In Kenya, the main method used to estimate the HIV-1 prevalence among the general population is the annual sentinel surveillance survey. Other data are generated through: voluntary counselling and testing at National AIDS and STDs Control Programme (NAS COP) sites and many others located in Mission and NGO Hospitals; post-mortems; routine testing (e.g., for antenatal mothers, in-patients, STD patients, etc.); mandatory testing (i.e., screening of all blood donations); and diagnostic testing on patients. However, in 2003, important data was generated through the Kenya Health and Demographic Surveys. This was the fourth survey in the International Demographic Health Survey program to include HIV testing, and the first that anonymously linked HIV-1 results with key behavioural, social, and demographic variables.

7:2:1: Sentinel surveys

The national estimates of HIV-1 prevalence in countries with generalised epidemics are based on data collected by surveillance systems that focus on pregnant women who attend selected sentinel antenatal clinics, and national population-based surveys that encompass voluntary HIV-1 testing (WHO and UNAIDS 2003). Sentinel antenatal surveillance assumes that HIV-1 prevalence among pregnant women is a good approximation of the prevalence among the general adult¹⁴⁵ population aged 15-49 in both rural and urban areas. The national population-based surveys capture a wider representation of the general population than do antenatal clinic and yield information on HIV-1 and AIDS among men and non-pregnant women. Population-based survey data on HIV-1 infections and AIDS deaths are gleaned from hospital records, surveillance surveys in selected clinics among presenting antenatal women, the screening of donated blood, and statistics from the registrar of deaths. However, with many people masking the real cause of deaths due to stigma, ignorance, health insurance, and other reasons, the registrar account is unreliable. The only reliable estimate comes from the Sentinel Surveillance. While antenatal clinic-based surveillance data are useful for gauging HIV-1 trends, national surveys help fill out the general picture of the epidemic population-wide.

Since 1990, Kenya has been using the sentinel surveillance system that provides the basis for estimating the extent and trends of HIV-1 infections. The HIV-1 sentinel surveillance is conducted annually over a period of three months. In 1990, HIV-1 sentinel surveillance was started with 13 STD clinic sites located in urban centres. During the period from 1991 to 1998, the number of sites declined from 12 in 1991 to 5 in 1998 (Joeseof *et al.* 2003). In 2000, the number of sites increased to 11 and by 2001, the sentinel surveillance system was operating in 12 urban sites and 8 peri-urban rural sites around the country. By 2005, there were sentinel sites established at 44 health facilities throughout the country to include populations that are more rural (Ministry of Health 2005). These sites monitor HIV-1 infection among pregnant women who present at antenatal clinics (ANC) for routine testing for syphilis and anaemia as part of the national antenatal

¹⁴⁵ Adults are defined as women and men aged 15-49 years. This age range covers people in their most sexually active years, the vast majority of whom engage in risky sexual behaviour. This age group is used as the denominator for calculating adult HIV prevalence.

services. The leftover blood is anonymously tested for HIV-1. In addition, patients presenting with sexually transmitted infections are anonymously tested for HIV-1 during the three-month surveillance period, normally from May to August every year. When the National AIDS and STDs Control Programme (NASCOP) increased the number of surveillance sites in mid 2001, the Turkana district was fortunately considered to be one of the new sites. Following this, in June 2001 NASCOP conducted preliminary sentinel surveillance in the Turkana district at Lodwar District Hospital, Kakuma Mission Hospital, and the African Medical and Research Foundation's Loppiding Community Health Centre in Lokichoggio. These testing centres cover major settlement sites in Turkana. The results of that preliminary surveillance are discussed in detail in the proceeding chapters.

According to the table16 below, sentinel surveillance results from 1990 to 2004 indicate that levels of HIV-1 infection are alarmingly high in most parts of the country. In some sites like Busia, Kisumu, Thika, and Meru, more than 20 percent of the women presenting at antenatal clinics are HIV-1 positive. The data indicates a reduction in HIV-1 prevalence, generally, since the year 2000.

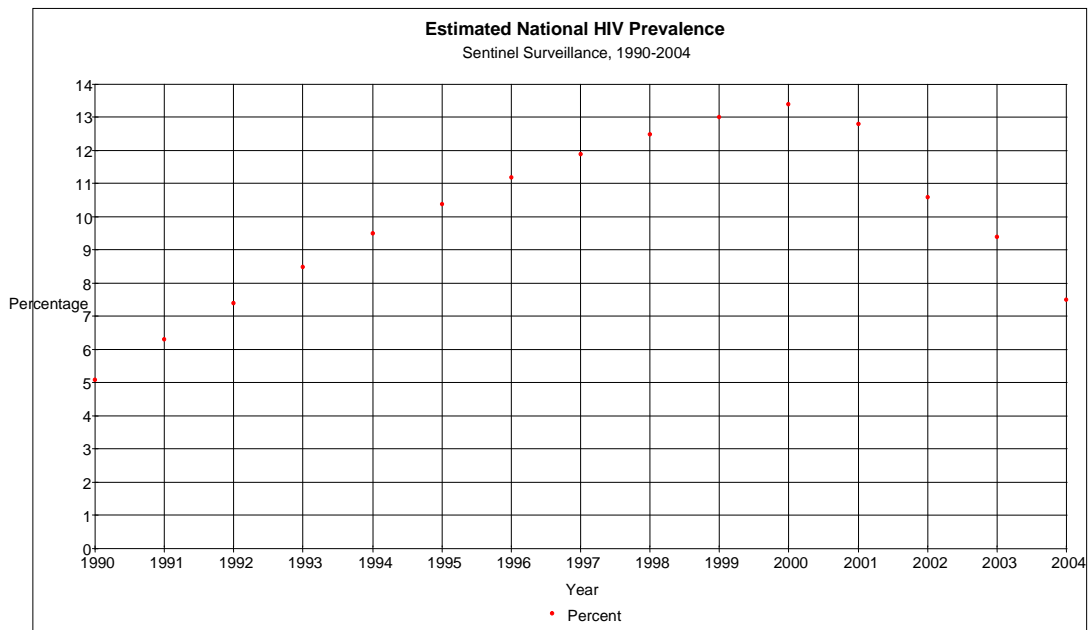
Table 16: Prevalence rates among antenatal women presenting at the sentinel sites, 1990-2004

Location of Surveillance Site	Total percentage of the number of HIV-1 sero-positive prevalence rates per year														
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bamba							1					9	5	1	1.6
Baringo												10	6	4	6
Busia	17	10	30	22	23	22	28	29	30	34	22	15	16	16	15.6
Chulaimbo						20	26		35	24	29	25	22	22	13.8
Fatima												22	8	10	6.7
Garissa	5	0	5	4	15	6	5	8	6	6		9	4	2	0.4
Kajiado*						6	7	10	8			8	5	4	2
Kakamega	5	13	15	9	14	12	10	10	16	12	12	11	14	13	9.1
Kagundo												14	7	4	4.9
Kaplong							3	5	4	4	2	9	6	3	3.1
Karurumo					1	9		26	10			6	4	7	3.4
Kilifi												10	5	8	4
Kisii	2	4	0	3	9	4	16	16	15	12	16	17	14	9	6.4
Kisumu	19	19	20	20	30	25	27	33	29	27	35	29	26	26	11.2
Kitale	3	6	21	8	11	10	12	13	10	18	17	13	16	11	6.9
Kitui	1	5	2	8	20	4	4	6	10	9	14	17	6	6	6
Lodwar												16	18	13	11.3
Maragua								10	5		8	8	8	5	6.3

Location of Surveillance Site	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Maralal												15	13	18	8.2
Mbale					11	10		15	10	11	23	11	11	8	9.8
Meru	3			2	11	9	16	14	21	28	23	10	5æ	8	3.3
Mombasa	10	1	11	17	11	16	12	17	16		12	14	15	16	10.3
Mosoriot					1	12		8	1	1	5	4	3	3	5
Mt Elgon												21	6	5	5
Mutomo												2	5	4	5.1
Nairobi**	5	12	13	17	15	16	16			17	17	14	13	11	10.9
Nakuru	10	13	13	23	59	27	11	25	25	27	25	9	12	10	7.0
Njambini								4	2		7	6	6	10	9.9
Nyeri	3	4	9	3	6	21	9	7	17		14	11	8	8	5.5
Sirikwa-Turbo												5	5	4	5
Suba												31	34	41	30
Tabaka												11	4	9	3.2
Teso													6		3.8
Thika	3	10	3	28	40		13	23	34	33	21	11	7	8	8.3
Tiwi					16	23			31	21	12	10	7	10	7.1
Wesu-Wundanyi												7	5	3	2.8
TOTAL	5.1	6.3	7.4	8.5	9.5	10.4	11.2	11.9	12.5	13	13.4	12.8	10.6	9.4	7.5

Source: Government of Kenya, 2001, 2005 (specific additional sources: *Kajiado: Kenya Belgium Cooperation Programme on the Control of Sexually Transmitted Diseases. **Nairobi: Additional data from University of Nairobi Strengthening STD/AIDS Control in Kenya Project. All other sites: NASCOP Sentinel Surveillance Database). æ It was reported in the press that Meru's prevalence had increased to be the highest in the country with 38 percent, overtaking Kisumu, which has been leading for a long time¹⁴⁶.

¹⁴⁶ Otieno, J., and Imathiu, I., 2002, Aids infection rate down by 1%. *Daily Nation*, 16th January 2002.



The variation in rates of HIV-1 seroprevalence in the sentinel centres could be due to under-reporting, which occurs due to a variety of factors: the fact that not many mothers present at government clinics that have the testing reagents and also double as surveillance sites; the propensity for mothers to visit mission or private hospitals and clinics for better care and better availability of healthcare resources, and these are not surveillance centres; variation in health-seeking behavioural patterns; dissimilarity in healthcare infrastructure and the availability of healthcare resources across the country; and the epidemic commenced late in some areas. Though the HIV-1 seroprevalence rates are not exact, they describe the extent of HIV-1 infection in some parts of urban and rural Kenya.

Of all the sentinel sites, Mombasa is representative of areas that have stable infection levels. While Meru has experienced rapid increases in the number of people infected, Kisumu is an example of where HIV-1 infection rates have been consistently high. Garissa and Kajiado are shown to be experiencing relatively low HIV-1 infection rates. However, this could be due to low levels of testing (and few mothers presenting at the antenatal clinic at the district hospital), and the scarcity of healthcare resources considering that these are enormous districts, which are sparsely populated by mainly pastoral communities. The Garissa sentinel surveillance site could be representative of other semi-arid and arid

regions of Kenya, such as the Turkana District. In the year 2000, Turkana was estimated to have an HIV-1 seroprevalence rate of 3.7 percent, while Garissa had a rate of 2.9 percent, Samburu, 4.7 percent, and West Pokot, 3.9 percent (Ministry of Health 2000). However, HIV-1 prevalence is higher in town centres, with Lodwar registering 16 percent in 2001, 18 percent in 2002, 13 percent in 2003 and 11.3 percent in 2004 (Ministry of Health 2004). From field evidence, I suggest that the HIV-1 seroprevalence of the Turkana District is grossly underestimated.

Rates of HIV-1 prevalence in pregnant women in Africa closely approximate the rates of HIV-1 infection in the general adult population of between the ages of 15-49. Therefore, sentinel surveillance in antenatal clinics has been used to estimate the HIV-1 seroprevalence, and trends of HIV-1 infection in the adult population as young women have generally tended to have higher rates of infection than older women¹⁴⁷. According to the estimates by NASCOP, the national adult HIV-1 prevalence peaked in 2000 with 13.5 percent (Ministry of Health 2001), having been 5.1 percent in 1990, decreasing to 7.5 percent by 2004, and further declining to 5.9 percent by 2007 (Ministry of Health 2004, 2005; Wakabi 2007). There is, however, variation in prevalence among urban and rural areas. In urban areas, the average prevalence is currently estimated to be 9.6 percent while in rural areas it is 4.6 percent (Wakabi 2007). HIV-1 seroprevalence among pregnant women from all four of Nairobi City's council clinics fluctuated between 15 and 16 percent from 1994 to 1997 (U.S. Census Bureau 2000). HIV-1 seroprevalence in Kenya remains highest in western Kenya. For instance, while in 1997 the urban areas of Nyanza Province had the highest prevalence at 35 percent among pregnant women (U.S. Census Bureau, 2000) it is currently still high at 13.0 percent (Ministry of Health 2005).

Though HIV-1/AIDS has, for a long time, been perceived to be an urban infection/disease, the seroprevalence in some rural communities in Kenya is quite high. In 1999, rural data from the sentinel surveillance system showed that Siaya and Kombewa, two rural based communities in Nyanza province, had HIV-1 seroprevalence of 40 percent and 29 percent respectively (U.S. Census Bureau 2000). While there are over 470,000 HIV-1 infected adults in urban areas, there are about 1.5 million HIV-1 infected adults living in rural areas. Even though it appears that the infection rate is higher in urban areas, the

¹⁴⁷ In Kenya, the HIV information among antenatal women has been variably available since mid 1980s.

absolute total number of people infected is larger in rural areas since 80 percent of the total Kenyan population reside in rural areas, while 72 percent of the infected adults live in rural areas. In 1997, the median HIV-1 prevalence rates among women presenting at antenatal clinic in and outside major urban areas was 15.2 percent and 12.7 percent respectively (UNAIDS 2000). For every eight adults in rural Kenya, one is infected, while in urban areas, nearly one out of every five adults is infected (Government of Kenya 2001).

Table 17: Rural-urban prevalence

Residence	Percentage of HIV+ prevalence		
	2000*	2003	2004
Rural	12.5	8.9	6.4
Urban / Peri-urban (exc. Nairobi)	18.1	11	8.2
Nairobi	☒	11.0	10.9

*Source: *NASCOP, June 2000; NASCOP (Ministry of Health). HIV-Sentinel Surveillance, 2004. ☒ - No data provided.*

According to 2004 sentinel surveillance indicators, it is estimated that 1.5 million people are currently infected, with a national adult (15-49) prevalence rate of 7.5 percent. Out of these, it is estimated by NASCOP (2005) that the number of people living with AIDS is 1.2 million comprising 1.1 million adults between the age of 15 and 49 years, 60,000 age 50 and over, and approximately 100,000 children.

According to data presented to NASCOP between 1986 and 2000, of 98,000 AIDS cases more than 75 percent occur in adults between the ages of 20-45, with the peak for males and females being at 30-34 and 25-29 respectively.

An estimated 180,000 people died of AIDS during the year 1999 (WHO and UNAIDS 2000). In the year 2001, it was estimated that about 700 people would die daily due to AIDS, which brings it to about 255,000 deaths a year. Currently, annual deaths are estimated at 150,000 per year (NASCOP 2005). However, the number of deaths due to HIV-1/AIDS will continue to increase because of the number of people with HIV-1 infections who develop full-blown AIDS each year. AIDS has already increased death rates in Kenya at all ages. It is projected that the impact will be more severe among young adults and children under five. The rapid increase in adult death has had serious consequences

for economic and social development and has led to a decline in life expectancy by almost 20 years, from about 65 years to about 46 years.

Table 18: People living with HIV-1/AIDS in Kenya,

Year	Adults and Children	Adults (15-49)	Adult rate (%)	Women (15-49)	Children (0-14)
1999*	2,100,000	2,000,000	13.95	1,100,000	780,000
2004**	1,200,000	1,100,000	6.7	☒	100,000

Sources: *UNAIDS, June 2000; **NASCOP, 2005; ☒ - No data provided.

The increase in the number of deaths due to AIDS has led to the phenomenal increase in the number of AIDS orphans¹⁴⁸. It is estimated that since the beginning of the epidemic to the end of 1999, Kenya has had a cumulative 730,000 orphans (UNAIDS 2000), while current living orphans were estimated to be 546,965 (UNAIDS/WHO 2000). On the other hand, NASCOP (2001) estimates that by the end of 2000 there were nearly 900,000 orphans in Kenya. This was projected to increase to 1.5 million by 2005. HIV-1/AIDS has also had a negative impact on the infant mortality rates. The estimated infant mortality rate for 2003 would have been 55/1000 for both sexes instead of 71/1000 due to AIDS, with Nyanza Province at 135/1000. In fact, all the gains made since independence in the arenas of health¹⁴⁹ and economic development are being reversed by the impact of HIV-1/AIDS.

The estimated HIV-1/AIDS prevalence and reported cases should just be considered as the tip of the iceberg. There is gross underreporting, misdiagnoses, and delays in reporting of cases to NASCOP (Ministry of Health 2005). In addition, intermittent electricity supply, poorly functioning fridges, and lack of laboratory technicians compromise testing of HIV-1. In addition, there is a lack of testing reagents and a scarcity of test centres. Furthermore, many cases of deaths due to AIDS take place at home, since after a long illness family members often prefer to seek alternative therapies within the socio-cultural and home

¹⁴⁸These are children under 15 years of age that have lost either the mother or both parents due to AIDS.

¹⁴⁹In terms of infant and adult mortality rates, and prevalence of infectious diseases like TB, malaria, pneumonia, and herpes zoster, which afflict most of the people who have immunosuppression. In most hospitals, over half of the beds are occupied by HIV/AIDS individuals afflicted with various opportunistic infections.

milieu. The stigma attached to AIDS also leads to the misreporting of the absolute cause of death. In the Turkana District Hospitals, most of the deaths due to AIDS related causes were either recorded as having occurred due to tuberculosis, malaria, and / or immunosuppression. As will be discussed later, some HIV-1 positive patients were discharged to die at home, ignorant of their HIV-1 status. There were no deaths directly attributed to HIV-1/AIDS. The estimate of the actual cases of deaths due to HIV-1/AIDS-related illnesses in Kenya might be three times what is reported, which represent only about 5 percent of all HIV-1 infections in the country (Forsythe and Rau 1996b).

7:2:2: Kenya Demographic Health Survey, 2003

As discussed above, rates of HIV-1/AIDS prevalence have been based on pregnant women attending antenatal clinics (ANCs). While these rates might be a reasonable proxy for the level of prevalence in the combined male and female adult population in a number of settings, there are several well recognised limitations in estimating the HIV-1 rate in the general adult population from data derived exclusively from pregnant women attending selected antenatal clinics. Rates of infection in pregnant women are not expected to be the same as the rates in all adult women, as pregnant women presenting at ANCs are young with a peak age of 20 to 24 years. In addition, many women, due to inaccessibility, and many older women with beliefs in indigenous birth attendants do not attend the ANCs. In any event, the ANCs that act as surveillance points are located mostly in district hospitals, which are often far removed from the rural population. In addition, the rates in pregnant women cannot represent rates of HIV-1 in adult men. For example, a WHO sponsored study of four cities in sub-Saharan Africa, including Kisumu, Kenya, demonstrated a higher risk overall in women compared to men (Buve *et al.* 2001). Pregnant women are also more at risk of HIV-1 infection than women who may be avoiding both HIV and pregnancy with condoms, and women who are less sexually active and are therefore less likely to become pregnant or expose themselves to HIV-1. In view of the inadequacy of the ANC surveillance system for monitoring HIV-1 trends, in 2003 the Kenya Demographic and Health Survey (KDHS) included testing for HIV infection for the first time in order to provide a better estimate in the general adult population of *men and women* and to provide the sentinel surveillance with a calibration factor to better estimate the trends of HIV

prevalence in the general reproductive adult population (KDHS 2003; NASCOP 2005). Results from the 2003 KDHS indicate that 7 percent of Kenyan adults are infected with HIV-1. The HIV-1 prevalence in women of age 15-49 is 9 percent, while for men of 15-49 years, it is 5 percent (Central Bureau of Statistics 2003). The female to male ratio of 1.9 to 1 is higher than that found in other population-based studies in Africa. The gender dimension of infection rates is very clear, and congruent with other estimates from around the world. As expected, young women are particularly vulnerable to HIV infection compared with young men. For instance, 3 percent of women age 15-19 are HIV-1 infected, compared with less than 0.5 percent of men age 15-19, while HIV prevalence among women 20-24 is over 4 times that of men in the same age group (9 percent vs. 2 percent). The peak prevalence among women is at age of 25-29 (13 percent), while the prevalence rises gradually with age among men to peak at age 40-44 (9 percent). Only in the 45-49-year age group is HIV prevalence among men (5 percent) higher than that among women (4 percent).

Urban residents were found to be at a significantly higher risk of HIV infection (10 percent) than rural residents (6 percent). The prevalence in urban women is 12 percent compared with less than 8 percent for rural women, for a 1.6 urban-rural relative risk of HIV infection. For men, the risk associated with urban residence is even greater; urban men are twice as likely to be infected as rural men (8 percent and 4 percent respectively). Since 80 percent of Kenya's population is categorised as rural, the greatest burden of the infection is on the rural population.

The data from 2003 KDHS indicated that marital status influence HIV-1 prevalence. Women and men in marital union have prevalence rates of 8 percent and 7 percent respectively. Women who are widowed, divorced, or separated have significantly higher rates (30 percent and 21 percent, respectively) than married women do (6 percent). Women in polygenous unions have a higher prevalence (11 percent) than those in non-polygenous unions (7 percent). Again, the rates for men are similar (12 percent in polygenous unions and 7 percent for non-polygenous unions).

Table 19: HIV Prevalence among adults tested, age 15-49 (in percentage), 2003

	Women	Men	Total	HIV infected (no)
Total	8.7	4.6	6.7	1,100,000
<i>Age</i>				
15-19	3.0	0.4	1.6	
20-24	9.0	2.4	6.0	
25-29	12.9	7.3	10.4	
30-34	11.7	6.6	9.4	
40-44	9.5	8.8	9.1	
45-49	3.9	5.2	4.4	
50-54	n.a	5.7	n.a	
<i>Residence</i>				
Urban	12.3	7.5	10.0	410,000
Rural	7.5	3.6	5.6	670,000
<i>Province</i>				
Nairobi	11.9	7.8	9.9	130,000
Central	7.6	2.0	4.9	100,000
Coast	6.6	4.8	5.6	110,000
Eastern	6.1	1.5	4.0	110,000
North eastern	<1.0	<1.0	<1.0	20,000
Nyanza	18.3	11.6	15.1	310,000
Rift valley	6.9	3.6	5.3	180,000
Western	5.8	3.8	4.9	110,000

Sources: Central Bureau of Statistics, Kenyan Demographic and Health Survey, 2003, and NASCOP, 2003.

The table 19 above shows the number of adults with HIV infections in Kenya, which is estimated using the population projections from the 1999 census and the general population prevalence rates from the KDHS (Ministry of Health 2005). Currently an estimated 1.1 million adults aged between 15 to 49 years are infected with HIV-1, with two-thirds being women. In addition, an estimated 60,000 adults aged 50 and over are infected. There are significant differences in regional prevalence, and those living in urban areas, those with greater wealth, and those in polygenous marriages are more likely to be infected. Trend information from the sentinel surveillance suggests that adult prevalence peaked at a level of 10 percent in adults in the late 1990s, and declined to 7 percent by 2003 (NASCOP 2005). It is indicated that new infections in adults have declined dramatically from over 200,000 to approximately 86,000, but deaths continued to increase to 150,000 per year (NASCOP 2005). As the declining statistics from about 14 percent in

1993 to 6.1 percent in 2005 (UNAIDS 2006) indicate, the declining prevalence rates have placed Kenya as the only country after Uganda to achieve a sustained decline in HIV-1 infection in sub-Saharan Africa.

The age and sex patterns of infection in Kenya are not divergent from those of other parts of the world. Infection rates are high among girls and young women, especially those in the age group of 20-24, while for men, the highest infection rate is found in the age group of 30-39. Kenyan youths are very much sexually active. An analysis of STD patients who participated in the HIV-1 sentinel surveillance from 1990 to 2001 indicated that the overall HIV-1 prevalence in women was higher than in men in all subcategories including age groups, separated, single, urban and rural residence, all levels of education, and the presence or absence of GUD (Joesoef *et al.* 2003). Since the median age at first intercourse is about 17 for women and 16 for men, and the age at first marriage is 20 for women and 25 for men (Kenya Demographic and Health Survey 1998), there is thus a significant period of sexual activity before marriage that exposes young people to the risk of infection. In 1990, the highest proportion of sexually active people having at least one sex partner other than a regular partner in the last twelve months were men of 20-24 years of age (56.5 percent compared to 17.7 percent of girls) followed by those aged between 15-19 years (41.3 percent compared to 83.3 percent of girls) (WHO and UNAIDS 2000). In Kisumu City, the HIV-1 seroprevalence for adult females was highest, 39 percent, for those in their 20s, and for adult males, the highest rate of 34 percent was found among those in their 30s (U.S. Census Bureau 2000). Young women in the age groups of 15-19 and 20-24 are more than twice as likely to be infected as males in the same age groups. By the end of 1999, it was estimated that the HIV-1 prevalence rate varied from 11.07 to 14.98 percent and from 4.26 to 8.52 percent among females (15-24) and males (15-24) respectively (UNAIDS 2000).

The greatest challenge facing Kenya today is the maturing of the epidemic, which means that we should expect many deaths from AIDS. In the presence of numerous infections and limited access to antiretroviral drugs, an estimated 2.5 million deaths are inevitable, even in the presence of a decline in HIV-1 prevalence rates.

7:3 Modes of HIV-1 transmission and contraction

HIV-1 is mainly transmitted and contracted in Kenya through heterosexual contact (Kenya Demographic and Health Survey 1998). Factors such as the prevalence of sexually transmitted infections and the multiplicity of sexual partners increase the exposure to the HIV-1 virus among adults in Kenya. Though transmission of HIV-1 through homosexual relations in Kenya is considered negligible, it is claimed that there is greater acknowledgement of homosexuality¹⁵⁰ in Mombasa on the Kenyan Coast. In Mombasa, men who are believed to have sex with men are despised, ridiculed, and sometimes beaten¹⁵¹. There is also peri-natal transmission of the virus during pregnancy, at the time of birth, or through breast-feeding. It is estimated that about 30-40 percent of babies of infected mothers are themselves infected. Currently about 100,000 children under the age of five are HIV-1 infected. The third mode of transmission is through blood transfusion, as not all blood is screened due to the lack of facilities. In addition, infection occurs through contact with infected blood or body fluids (especially by home caregivers, health workers, and traditional birth attendants), and the poor screening of blood (or by using a single test instead of two for verification, or by testing a donor who has just been infected but tests negative). In Turkana, I witnessed a young girl who was caring for her HIV-1 positive sick mother in the district hospital. She was often exposed to body fluids and was oblivious to the HIV-1 status of her mother who was anonymously tested. This mode of HIV-1 transmission will become common in places like Kenya where many of the people are anonymously tested without counselling and consent, and care is delegated to the relatives who are not told the HIV-1 status of the ill. In remote places, there is a danger of infection through the sharing of drug injecting needles. Even though the government encourages use of disposable needles, in the villages, needles are still likely to be shared among the poor, especially through the quacks. A recent development is the emergence of injecting

¹⁵⁰ Kenyan President Moi has on various occasions chided homosexuals in the way the Zimbabwean Robert Mugabe said that they are 'lower than dogs'. Mr Moi has stated previously that Kenya has no room for homosexuals and lesbians. To Moi, homosexuality is against African and religious norms and traditions. In some places like Mombasa, which due to influence of tourism, homosexuality has taken root, they (*washoga*, male prostitutes) are normally threatened with lynching on the beaches and streets. Kenya's first President the late Jomo Kenyatta, once claimed that there is no African word for homosexuality. This proves, he argued, that homosexuality is foreign to African culture and sexual liaisons.

¹⁵¹ *Daily Nation* 24th June 1998 accessed at www.nationaudio.com/news/DailyNation/Today/Features/.

drug use as a potential risk factor in the HIV-1 epidemics in Kenya (UNAIDS 2006). In addition, there are risks associated with the transmission of HIV-1 through body piercing, traditional tattooing, circumcision, incisions, and other traditional healing practices.

There is no cure or vaccine for AIDS, and HIV-1 infection is one hundred percent fatal. Due to poverty and the insurmountable cost of antiretroviral drugs, there is nothing that can intervene between the infected people and death. At the micro-socio-economic level, apart from death, AIDS has an impact on the infected individual and his or her family members financially, reproductively, and socially. AIDS affects the productivity of the individual in the household in terms of producing food and other forms of sustenance. At the macro-socio-economic level, AIDS affects the productivity and profitability of the civil service, the service sector, and the agricultural and industrial sectors. Progress made over the past three decades in economic and human development is already being compromised. The AIDS epidemic has a multi-sectoral impact and demands a multi-sectoral mitigation.

7:4 The government's response to HIV-1/AIDS

The Government of Kenya, like all African governments, has had a mixed reaction to the HIV-1/AIDS pandemic. In the 1980s, AIDS was perceived as a disease that primarily affected the gay population. Gay culture was then perceived to be not only foreign to Kenya, but also anti-African. HIV-1/AIDS was mainly a foreign disease entering Kenya due to the adoption of decadent foreign sexual practices in the form of bisexual intercourse. There was therefore a general assumption that if Africans remained true to the 'pure' (traditional) African culture and stayed away from 'morally flawed' foreign cultures, then its population would be immune to HIV-1 infection. Not long after, this view proved inadequate as HIV-1/AIDS became a problem in urban areas, and gradually penetrated traditional rural communities. From the onset of the epidemic in Kenya, AIDS was given a moral tag. It could only affect those who indulged in morally questionable sexual behaviour. HIV-1/AIDS therefore acquired a stigma. The HIV-1/AIDS problem was partly denied due to the moral implications attached to it, especially because it was mainly spread through sexual liaisons, a topic that is nearly a taboo in traditional Kenyan cultures. In addition, outright acknowledgement of AIDS as a problem could have a devastating

effect on the tourism industry, which, until the early 1990s, was Kenya's largest source of foreign exchange.

Since the emergence of the first AIDS case in Kenya in 1984, the government has gone in circles in response to HIV-1/AIDS. Initially the response was a denial, which then graduated into lukewarm acknowledgement of the problem. There was a general belief that the spread of HIV-1 infection could be contained. However, the response has not been commensurate with the scale of the problem. A serious concerted effort towards containing the spread of HIV-1 began in the 1990s, when the government realised that the disease was getting out of hand, and had devastating socio-economic and political consequences. Here, I discuss the government's policy response to the HIV-1/AIDS epidemic in five phases.

7:4:1 Phase I: From 1984 to 1987

The first indigenous case of AIDS was identified in Kenya in 1984. Although HIV-1 was already firmly established in the country by that time, the initial response greatly underestimated the possibility of a rapid transmission. It should be noted that during this period, there were many conspiracy theories about the origins of AIDS all over the world. The Western media and researchers often indicated that HIV-1/AIDS originated from Africa, and was later spread into the Western world by sex tourists who visited Africa, especially the warm sub-Saharan African beaches. On the other hand, some Africans thought that HIV-1/AIDS was a disease manufactured in a Western laboratory then medically spread to Africa so as to contain the population growth of the black race. This period also witnessed the emergence of debates about the efficacy of the condom, which was seen as having graduated from a tool of birth control to one of spreading HIV-1¹⁵². Even the political leadership endeavoured to externalise the HIV-1/AIDS problem as acknowledgement of it could have a downturn effect on the tourism industry if the beaches could no longer be perceived as safe for 'exotic sex tourism'. However, as the epidemic became obvious, mainly due to coverage in the foreign media, it became apparent that a conspiracy of silence could still negatively affect the tourism industry in any case. This denial dramatically shifted when it became apparent that the tourism sector was affected

¹⁵² As is discussed later, it is popular knowledge that condoms are laced with HIV-1.

as foreign tourists opted for the safer destinations. For instance, in 1987, the British Government banned its soldiers from taking leave in the famous tourist resort of Mombasa citing the threat of HIV-1/AIDS among mostly commercial sex workers.

In 1985, the Ministry of Health (1985) established the National AIDS Committee (NAC) to monitor the spread of this new disease, create awareness, and advise the government appropriately on matters pertaining to the prevention and control of the spread of HIV-1 infection in Kenya. To further strengthen the work of the committee, an AIDS Programme Secretariat (APS) was established to co-ordinate activities among various divisions of the Ministry of Health, donors, and NGOs who were already active in creating awareness about HIV-1/AIDS. Despite the lethargy of the government, bureaucrats, and politicians in recognising HIV-1/AIDS as a foreseeable epidemic, the NAC in liaison with other several NGOs, sought to increase public awareness among Kenyans about the nature of AIDS and its modes of transmission. In addition, the Ministry of Health sought to ensure a safe blood supply and, more importantly, lead sub-Saharan Africa in setting up the HIV-1 sero-prevalence sentinel surveillance system. However, these efforts were not enough as there was still a lack of political response to AIDS. I am sure that a unified effort to curb the spread of AIDS during this period, when the economy of Kenya was one of the strongest in sub-Saharan Africa, could have stemmed the epidemic earlier on.

In 1986, AIDS was entered into the Ministry of Health's list of reportable communicable diseases in Kenya (Ministry of Health 1986). From then on, the Ministry of Health might have monitored the number of reported cases of HIV-1/AIDS throughout the country. However, this proved not useful, as there were no HIV-1 testing reagents, personnel, or equipment in most hospitals. Most cases of HIV-1/AIDS across the country remained largely unreported. AIDS deaths were reported under other categories of causes of death. Initially, only urban-based hospitals had the capability to test for HIV-1/AIDS. These are the hospitals that provided most of the statistics, hence led to the creation of the impression that HIV-1/AIDS was an urban-based infection.

Following extensive consultations with interested donors, NGOs, and other institutions, it was noted that Kenya should adopt a more systematic approach to HIV-1/AIDS prevention. The government consequently invited the World Health Organisation, in 1986, to provide

technical assistance in developing a national control programme and mobilising financial resources to fund the same. As a result, later in 1987, the National AIDS Control Programme (NACP) was established and was specifically given a mandate to co-ordinate all activities related to HIV-1/AIDS prevention and care throughout the country. Consequently, NACP developed the first five-year medium term plan (1987-91) focused on developing a national public awareness campaign, strengthening laboratory services, ensuring a safe blood supply, setting up the sentinel surveillance, and training health care workers in the management of HIV-1/AIDS patients. During this period, the government managed to mobilise and co-ordinate the activities of NGOs, donors, and religious groups in the creation of HIV-1/AIDS awareness and prevention programmes both at national and community levels. In addition, NGOs played a great role in HIV-1/AIDS intervention by targeting high-risk groups through condom distribution, basic education and counselling, training for health care professionals, and training community-based workers.

7:4:2 Phase II: From 1988 to 1991

This was a period of more realistic appraisal of HIV-1/AIDS as a potentially dangerous health problem, though there was still widespread belief that AIDS was no more serious than other diseases. HIV-1/AIDS remained a myth for many people until the mid 1990s. To ordinary Kenyans, it was not recognised as a significant problem. In addition, very few people who were HIV-1 positive came out and spoke openly about their condition. There was also a lack of surveillance data on the prevalence of HIV-1/AIDS in Kenya. Furthermore, social stigma barred people whose family members had contracted HIV-1 or even died of AIDS-related infections from speaking out. In the period from 1984 to 1991, not many people were willing to talk about AIDS, as it was associated with sex. Due to the secrecy and silence surrounding sex in African communities, not even political and church leaders were willing to talk about sex in relation to any disease.

Both local and international NGOs continued to play a leading role in HIV-1 prevention. In 1990, a consortium of Kenyan AIDS NGOs and religious groups involved in HIV-1 prevention and care formed the Kenya AIDS NGO Consortium (KANCO). In the absence of a serious effort by the government to mount a significant campaign backed with resources to combat the ever-developing HIV-1/AIDS epidemic, the KANCO played a leading role in

sharing resources, developing and leading prevention programmes, and revising and printing HIV-1/AIDS educational and campaign booklets and leaflets. By 1997, the membership of KANCO had grown to over three hundred members at the national level, with an associated district-based network of branches. Towards the end of this phase, political leadership commenced giving HIV-1/AIDS more attention as a potential public health problem.

7:4:3 Phase III: From 1992 to 1995

This period is marked by significant changes in Kenya's policy environment due to the ferocity of the epidemic. For the first time ever, the data on HIV-1/AIDS were released. By 1993, it was estimated that 841,700 people were HIV-1 positive out of which 30,000 were children (Government of Kenya 1993). It was projected, by then, that there would be about 1.27 million people with HIV-1/AIDS by 1996, and AIDS-related deaths would rise from 20,000 in 1990 to about 86,000 in 1996. What is clear is that it became evident that HIV-1/AIDS was turning into a serious health and socio-economic problem. The government was already, in theory, aware that the HIV-1/AIDS epidemic would have a significant effect on the demographic composition of the Kenyan population as it would lead to an increase in infant and child mortality rates, a reduction in life expectancy, and the creation of a generation of orphans. In addition, it was projected that the cost of caring for AIDS-related illnesses would be equivalent to the entire 1993/1994 recurrent budget of the Ministry of Health by the year 2000. Since by then, HIV-1 sero-prevalence was high in urban areas among economically productive Kenyans, it was clear that the cumulative economic loss would be enormous for Kenya.

In its response to HIV-1/AIDS the government formed the National AIDS Control Programme (NACP), to co-ordinate the activities and programmes. However, these were still limited due to the lack of resources and political commitment, which affected the budgetary allocation. Even though the Ministry of Health declared HIV-1/AIDS a national crisis, its budgetary allocation remained the same. In addition, NASCOP had a limited infrastructure to provide national guidance on the fight against HIV-1/AIDS. NASCOP, however, had a vital role in the collection and presentation of surveillance data, especially for the policy making process. Through these surveillance data, it became known to the

public and policy makers that HIV-1/AIDS was a serious problem, spreading at an alarming rate, faster than had been previously anticipated. It also became clear that the government's response to the disease could not match the rate at which new cases of infections were emerging every year. When the first medium term plan was evaluated in 1992, it was noted that a multi-sectoral approach aimed at making HIV-1/AIDS a priority concern in all relevant sectors and facilitating a co-ordinated national response were lacking. The evaluation body recommended the formation of a National Intersectoral AIDS Board (NIAB) to be chaired by a person appointed by the Office of the President with a secretariat at the Ministry of Health and membership drawn from other government ministries, NGOs, and other private organisations.

The government released its first surveillance data and hosted its first National Conference on AIDS in April 1993. The Ministry of Health declared that HIV-1/AIDS had become a national crisis in the same year. During the preparation of the second five-year medium term plan (1992-1996), the government identified the promotion of behavioural change to stop the spread of the virus and the mitigation of the socio-economic consequences of HIV-1/AIDS at the individual, family and communal level as response measures to the epidemic. Though some of the petty issues surrounding HIV-1/AIDS had been buried by the horrid statistics and projections, there was still opposition from some quarters in Kenya on the use of condoms and sex education, considered as the major methods of prevention. The debate over condom and sex education, opposed by the Catholic Church and the Muslim community, still rages today. The resistance to the introduction of family life (sex) education for the youth and to the promotion of the use of condoms has since proved to be a major obstacle to the achievement of these goals¹⁵³.

The government's *District and National Development Plans for 1994-1996* had a whole chapter dedicated to HIV-1/AIDS and its potential impact on development (Government of Kenya 1993). The chapter, which sounded like a policy document on HIV-1/AIDS, listed three main areas in the fight against HIV-1/AIDS: prevention (of HIV-1 transmission through sex, blood transfusion, and perinatal); socio-economic support and social and

¹⁵³The Catholic Church and the Muslim Community strongly oppose the promotion of condoms and family life education as measures against the spread of HIV-1. I have discussed the Church's response to HIV/AIDS in Kenya in relation to condoms and family life education in detail in an unpublished paper.

clinical care for those who have been infected with HIV-1/AIDS; and mobilisation and unification of all efforts and resources geared towards the fight against HIV-1/AIDS. The development plan elaborately indicated how the government would tackle these specific areas in relation to HIV-1/AIDS mitigation. The government, in addition, proposed writing a compressive sessional paper on HIV-1/AIDS, setting up of a task force to look into laws relating to HIV-1/AIDS, and holding a National Leaders¹⁵⁴ conference to create national (and/or political) awareness on HIV-1/AIDS (Government of Kenya 1993a)¹⁵⁵. This indicated that AIDS advocates within central government, especially the Ministries of Health, and Planning and National Development, were finally strong enough to win over politicians and bureaucrats on the importance of devoting resources to combat HIV-1/AIDS. This subtle shift in power within government circles provided renewed impetus to the commitment to addressing HIV-1 prevention and care in Kenya. The only setback was that the government plan only listed priority areas without corresponding financial commitments. However, this deficiency could be understood as Kenya has perpetually relied on donor funds for its recurrent expenditure. In addition, since 1992, the World Bank's commitment to funding Kenya's development plans has been questionable, as it has failed countless times to provide promised funds, citing bad governance and corruption within the central government. In addition, the implementation of the SAPs, instituted by the International Monetary Fund, placed constraints on investment in social welfare programmes. The SAPS accompanied by the devaluation of the Kenyan currency, led to inflation, food shortages, and the introduction of user fees in hospitals. Corruption also took a cut from the national resources. As a result of lack of donor funding, severe economic stress, and the insufficient political influence of AIDS prevention advocates within the government, the budgetary line item for HIV-1/AIDS for the year 1994 was deleted (Rau 1997). According to policy analysts within the realm of international agencies involved in HIV-1/AIDS prevention, the work on HIV-1 prevention in Kenya was / is being hampered by lack of resources (Rau 1997). The funding levels are not keeping pace with the rise in levels of infections. The NACP was funded entirely by multi-lateral and bilateral donors

¹⁵⁴ National Leaders in Kenya are synonymous to political leaders.

¹⁵⁵ The government took a long time to implement some of these policy recommendations. The Sessional Paper was finally submitted to parliament in 1997, and the Leaders' conference comprising Members of Parliament was hosted in Mombasa in November 1999.

with low government budgetary allocation. Lack of adequate resources is compounded by lack of co-ordination between both internal and external organisations involved in AIDS activities in the country. Furthermore, WHO funding for Kenya for NACP, for instance, decreased from US\$ 2.5 million in 1987 to US\$ 800,000 in 1993. The government had difficulty in acquiring the financial commitments to effectively run programmes that could reach out to all parts of Kenya. Members of the donor community prefer to channel their resources through the allegedly corruption-free NGOs, whose responses to HIV-1/AIDS are normally small scale and uncoordinated. In addition, even though the *National Development Plan 1994-1996* mentioned the urgent need for resources to break the vicious circle of 'poverty-AIDS-poverty', which is a great impediment to the control of HIV-1/AIDS, it did not delve into how this momentous task would be achieved.

The serious approach of the political leadership to the HIV-1 epidemic was noted in 1995, when work begun on the drafting of the parliamentary sessional paper on HIV-1/AIDS. The proposal for a sessional paper that would succinctly spell out government policy was mentioned in the *National Development Plan, 1994-1996* (Government of Kenya 1993a). It was to be a culmination of consultation at the provincial, district, and community levels, countrywide. Since the sessional paper was to be multi-disciplinary in approach, committees were formed both within the Ministry of Health and outside government to deal with its drafting. To the NGO community, to whom the government had largely left the work on HIV-1/AIDS, this was an indication that finally the government was taking HIV-1/AIDS seriously as a national crisis.

In the first three phases, the work on HIV-1/AIDS was largely left to the local NGOs and international bodies like the USAID's funded Family Health International's AIDSCAP programme. For example, in 1993/1994, AIDSCAP identified the consortium of Kenyan NGOs involved in HIV-1 campaign, Kenya NGOS AIDS Consortium (KANCO), as a partner capable of organising and guiding policy work (Rau 1997). In the absence of any seriousness displayed by the government, KANCO became a guiding force for national public debate on various issues surrounding HIV-1/AIDS. Formation of KANCO led to the strengthening of several networks focused on HIV-1/AIDS prevention and care. In addition, through the involvement of, and nurturing by the Medical Assistance Programme (MAP) International, an international charity emerged, the Kenya Christian AIDS Network (Kenya-

CAN), which diversified into over twenty branches countrywide, with clergy and lay membership. Kenya-CAN represented the first faith-based response to the HIV-1/AIDS problem in Kenya. This was a very important achievement as the church has always presented a controversial and conservative perspective on the prevention of HIV-1/AIDS. In addition, that some churches agreed to present a united front against the epidemic was momentous as they have a wider constituency, Kenya being a predominantly Christian country. On another level, churches in Kenya provide over 40 percent of the medical services, and sponsor most of the primary and secondary schools, the outlets that are very pertinent in both HIV-1 control and the management of AIDS and its accompanying opportunistic infections. In the same period, the Kenya Ethical and Legal Issues Network (KELIN), a network dealing with legal and ethical issues related to HIV-1/AIDS, especially with the diffusion of the stigma and discrimination was formed to increase awareness and solidarity for legal reforms to address the epidemic. Generally, several local and international NGOs that endeavoured to covertly push the government into active participation in the HIV-1 prevention agenda.

7:4:4 Phase IV: From 1996 to 2000

During this period the government realised that AIDS was real and was having a devastating effect not only on population growth (in terms of mortality rates) but also on economic development. This led to queries concerning the accessibility of care for those who are affected and infected with HIV-1/AIDS and the impact of HIV-1/AIDS on economic growth and household production. Due to its wider impact on society, the government was compelled to push the HIV-1/AIDS issue into the centre of Kenya's policy environment. By early 1996, based on the realisation that a response to HIV-1/AIDS must also encompass control over the spread of other sexually transmitted infections, the government reformulated the National AIDS Control Programme into the National AIDS and STDs Control Programme (NASCOP). In the same period, NASCOP reported that an estimated 1.2 million Kenyans were HIV-1 positive. This data shocked the Kenyan community. In a summary of the book, *AIDS in Kenya: Socio-Economic Impact and Policy Implications (1996a)*, the editors wrote: "If an invading enemy entered Kenya and threatened its citizens, as has HIV-1/ADS, the national response would be immediate, determined and

vigorous. HIV-1/AIDS, however, is not like a conspicuous enemy. There are no tanks, fighter jets or occupying troops. Yet HIV-1/AIDS will cause far more casualties than almost any war Kenya is likely to fight and could have as great an impact on the national economy and social service infrastructure" (Forsythe and Rau 1996b). Still, the response of the government to the challenge of HIV-1/AIDS up to the mid-1990s was lukewarm, characterised by apathy and disinterest. In 1996, it was predicted that by the year 2000, unless there was a concerted effort to formulate and implement a comprehensive program, the number of HIV-1 infected persons would be 1.8 million. Actually, in the year 2000, the total number of HIV-1/AIDS cases was 2.3 million, way over the predicted figure of 1.8 million, thanks to the uncoordinated mitigation programs. By 1996, Kenya had about 1 million people living with HIV-1/AIDS. Therefore, the number of HIV-1 infected persons more than doubled within four years.

In early 1997, it was reported by NASCOP that about 1.5 million Kenyans were infected while an estimated 111 people died daily (or over 40,000 annually) of AIDS-related illnesses (Ministry of Health 1997). By this time, the illnesses, deaths, and impact of HIV-1/AIDS on individuals, communities, and families were widely recognised by the public and the government. Significantly, beginning in 1996, President Moi routinely mentioned HIV-1/AIDS in his public pronouncements, delving into the importance of prevention through sexual behavioural change, which stressed the immensity of the problem. In 1996, the publication of the USAID/AIDSCAP book: *AIDS in Kenya: Socio-Economic Impact and Policy Implications (1996a)* presented extensive data, analyses, and anecdotal evidence concerning the economic impact of AIDS, and its implications for various sectors and the Kenyan community at large. To underscore the political support needed for the war against HIV-1, the Vice-President of Kenya, in the presence of various key figures in the government, the diplomatic community, and the media, officially launched the book. This further contributed to the opening up of the debate on HIV-1/AIDS, and laid the foundation for the development of a comprehensive HIV-1/AIDS policy in Kenya.

The recognition of the devastation portended by HIV-1/AIDS could not have been politically communicated more effectively than through the publication of the final version of the *Sessional Paper No. 4 of 1997 on HIV-1/AIDS in Kenya*. It was the first time in Kenyan history that a sessional paper devoted entirely to a disease had been tabled in parliament.

The sessional paper was tabled as a response to the need for prevention activities. It provided the government policy on AIDS, providing broad guidelines on how best to address critical issues on AIDS in Kenya. In addition, it addressed the impact of AIDS on men, women, youth, and children. As was expected, the Ministry of Health, recognised that in order to overcome the challenges of AIDS *“a strong political commitment at the highest level, implementation of a multi-sectoral AIDS prevention and control strategy with priority focus on young people, mobilisation of resources for financing HIV-1 prevention, care and support, and establishment of National AIDS Council to provide leadership at the highest level possible are critical [emphasis in original]”* (Ministry of Health 1997). The sessional paper was therefore a challenge to the government to assume more overt and effective control and leadership in the fight against the HIV-1/AIDS epidemic. It recommended the broadening of the fight against HIV-1/AIDS, rather than seeing it narrowly, as a medical / health problem. This broadening allowed the problem to be seen as a developmental issue requiring a multi-sectoral approach both in response and in terms of bringing many diverse actors together. The government was, therefore, required to put in place an appropriate institutional framework for effective management and co-ordination of HIV-1/AIDS programme activities, hence the recommendation for the establishment of a National AIDS Control Council. It was felt that the National AIDS Control Programme set up in 1987 in the Ministry of Health lacked the capacity to marshal a multi-sectoral response to HIV-1 prevention and control, and could not facilitate the flow of funds for initiatives at the provincial, district, and community levels. The National AIDS Council would therefore expedite HIV-1 prevention and control activities through: the formulation of appropriate policies; the establishment of an appropriate institutional framework for a multi-sectoral AIDS control programme; the strengthening of the institutional capacity at all levels; the provision of leadership in resource mobilisation for AIDS control, including the care of people affected; and the co-ordination of all actors, which included government departments, non-governmental organisations, Community-Based Organisations, Religious Organisations, the private sector, and donors, among others. The sessional paper presented the following strategic plans: prevention of the sexual transmission of HIV-1; prevention of mother-to-child HIV-1 transmission; prevention of transmission through blood; prevention of HIV-1 transmission through invasive procedures; and the reduction of

the impact of AIDS on society at the national, district, and community levels. However, there was no mention of the mitigation of poverty and gender inequality as a means of prevention against the spread of HIV-1/AIDS. The sessional paper document was tabled, and unanimously passed in parliament, in June 1997.

By 1997, it was clear that HIV-1/AIDS was being incorporated into national development planning, and substantial financial and human resources were being committed to prevention activities. Several observers noted, early in 1997, that the foundation had been laid to permit an effective national response in the year ahead (Rau 1997). For instance, in 1997, the World Bank, through the International Development Association, advanced a loan of US\$ 40 million to the government for STI/HIV-1/AIDS prevention. These investments, in the form of a loan, made the dedication of Kenya's resources to STIs/HIV-1/AIDS prevention and care among the highest in the Third World (Rau 1997). The decision to mortgage the country to the rich international community for the sake of HIV-1/AIDS prevention was an important commitment by the Kenyan government. Importantly, through this IDA credit¹⁵⁶, the government decentralised the STIs/HIV-1/AIDS prevention plans to the district level. For the first time, districts were given line item budgets, which permitted them to plan and fund HIV-1/AIDS activities according to the uniqueness of each district through the Ministry of Health. When I was in Turkana (2000/2001), the last phase of IDA credit was nearing completion.

In 1998, it was indicated that over 90 percent of Kenyans were aware of HIV-1/AIDS and its modes of transmission, but only 46 percent believed that they were at risk of contracting the infection¹⁵⁷. It was already apparent that prevention campaigns and awareness would not be sufficient to change the behavioural risks for infection. The majority of Kenyans know that HIV-1/AIDS exists, but refuse to change risky sexual behaviours. At a media workshop, journalists raised concern that the government was contributing to the mystification of the disease due to the lacklustre manner in which the Ministry of Health

¹⁵⁶ IDA came in the form of drugs for STI management, condoms, and funds for various prevention activities. Every District was intended to have a four-wheel drive vehicle for HIV/AIDS educational campaigns. However, the Turkana District never had such a vehicle despite the expanse of the district and the rough terrain.

¹⁵⁷ The Futures Group International, the UK's HIV/AIDS Prevention and Care (HAPAC) Project's Media and HIV/AIDS Workshop for Journalists in the Hippobuck Hotel, Homabay, Kenya

personnel were handling HIV-1/AIDS differently from other serious infectious diseases¹⁵⁸. When Kenya held its second National AIDS Conference in October 1998, it was already clear from the statistics released by NASCOP¹⁵⁹ that HIV-1/AIDS was painting a frighteningly gloomy scenario. In fact, that 1.5 million Kenyans were already HIV-1 infected, dramatised the urgency that needed to be injected into the campaign in order to roll back the threat of a serious socio-economic challenge. Another seminar held at Limuru town unveiled statistics that pointed out that by the year 2000, 50 percent of bed occupancy in public hospitals would be taken up by AIDS patients, and by 2005, the epidemic would have claimed 3 million lives¹⁶⁰. It was clear that the private sector, especially through the NGOs supported by donor funds, were heightening their interests in sensitising policy makers and Kenyans at large to the dangers of HIV-1/AIDS, and the hazard that lurked in the inactivity of the political leadership.

Towards the end of this phase, 1999 to 2000, the epidemic was given the political backing for which it had yearned for years. HIV-1/AIDS was fully on the government's agenda. In June 1999, the Ministry of Health's NASCOP launched its third Strategic Plan for the National HIV-1/AIDS and STDS Control Programme for 1999-2004 (Ministry of Health 1999). The recurrent and investment cost for implementing the programme over the five-year period was estimated to be US\$ 33.24 million. The plan prioritised the promotion of behavioural change, the prevention of blood-borne infection, the reduction of STD prevalence, the prevention of mother to child transmission, and the mitigation of the socio-economic impact of AIDS, including care and support to the infected and affected. Despite having a grandiose plan, the government was short-circuited due to lack of funds. International donors¹⁶¹, except the World Bank, disburse most of their HIV-1/AIDS funds through NGOs and Community-Based Organisations (CBOs) due to the government's record of mismanagement of public funds.

¹⁵⁸ *Daily Nation*, 18th August 1999. Available from <http://www.nationaudio.com> Accessed on 5th June 2001.

¹⁵⁹ National AIDS/STIs Control Programme, 1998.

¹⁶⁰ *Daily Nation*, 28th October 1999. Accessed at <http://www.nationaudio.com> Accessed on 5th June 2001.

¹⁶¹ International donors include the United Kingdom's Department of International Development, USAID, WHO, UNICEF, UNDP, UNAIDS, the Belgian Government, the European Union, KfW-Germany, Denmark's DANIDA, the Government of the Netherlands, the Japanese International Corporation Agency and the Canadian International Development Agency.

In August 1999, the Ministry of Health¹⁶², while launching the five-year National Health Sector and AIDS Control Plan for 1999-2004, provided a specific budget for the fight against AIDS for the first time. Out of the total budget of KShs 8.4 billion (US\$ 1.2 million), KShs 2.3 billion was allocated to the HIV-1/AIDS control programme. The plan was broad enough to include six priority areas: malaria prevention and treatment, reproductive health, HIV-1/AIDS, tuberculosis prevention and management, the integrated management of childhood illnesses, immunisation, prevention and control of major environmental health-related diseases, and food safety. Indeed, many people who are HIV-1 positive die from these preventable illnesses, which, independent of HIV-1/AIDS, are also major killers in Kenya. During this period, there was, however, still a general feeling among HIV-1/AIDS researchers, activists, donors, and both local and international NGOs that the politicians were still not engaged in AIDS control programmes. Political momentum was still lacking, though the bureaucrats, who were like toothless bulldogs, were engaged in sound policy making and pronouncements, which end up not being implemented. On various occasions, the political leadership could give mixed signals indicating that they were beginning to take a leading role in the fight against the epidemic. This was evident when the then Vice-President, the Minister for Health, and top Ministry of Health bureaucrats opened a workshop on advocacy and communication on HIV-1/AIDS¹⁶³. Using available statistics, the VP painted a grim picture on the consequences of HIV-1/AIDS and its likely future impact, if action was not urgently taken to mitigate its spread. He indicated that by then, HIV-1/AIDS had become the biggest killer of Kenyans in the productive age group of 15 to 49 years. In addition, AIDS had already orphaned 700,000 children, and 1.9 million Kenyans were infected already, with indications that 14 out of every 100 Kenyans were infected.

November 1999 was a very momentous month in the history of HIV-1/AIDS in Kenya. The Public Health Minister indicated that the controversial family life education (also known as sex education) programme would be introduced in the primary and secondary schools' curriculum by the year 2000, so that children could commence learning about HIV-

¹⁶² Public Health Minister, Ministry of Health, *Daily Nation*, 18th August 1999.

¹⁶³ *Daily Nation*, 9th November 1999.

1/AIDS¹⁶⁴. There had been a running controversy surrounding Family Life Education, which was strongly opposed by the Catholic Church and the Muslim community. They contended that what they referred to as *sex education*, would promote immorality and casual sex among the vulnerable youth as opposed to positive behavioural change. Despite the controversy, surrounding this policy, the *Daily Nation's* editorial¹⁶⁵ hailed it as brave and "one of the best pieces of news to come from the health front after a long time". The policy proclamation meant, "that, at long last, someone [had] realised that the tactics of the ostrich previously employed by the authorities concerning [HIV-1/AIDS] have been foolish in the extreme, and it is time everyone spoke out about this affliction and how to deal with it". Family life education was seen as momentous in the fight of this deadly scourge that was already blazing a trail of devastation among the youth. Rather than the current and previous shallow prevention campaigns that endeavoured to preach the values of abstinence (as advocated by the Catholic Church and the Muslims) or safer sex to people, mainly adults who are transfixed in their own ways that had been an exercise in futility. The audience at such gatherings, apart from those convened by the Catholic Church and Muslims, listened, received condoms, and then quickly forgot the precautions and continued to indulge in promiscuous, careless, extra-marital sex with multiple partners. Instead, this new policy (family life education) was supposed to inculcate broad and comprehensive knowledge concerning HIV-1/AIDS into the minds of children, the most vulnerable group, from a very tender age. This policy was bound to, as it did, upset the hide-bound, old-fashioned interests that preferred death to breaching the articles of religious faith that forbid sexual congress of any sort outside holy matrimony.

On November 25 to 28, 1999, the Ministry of Health, the Parliamentary Committee on Health, Housing, Labour, and Social Welfare, and the National HIV-1/AIDS/STDs Control Programme organised a three-day symposium to create awareness among legislators on the HIV-1/AIDS scourge. This seminar was meant to enhance the capacity of MPs to offer political leadership in the fight against AIDS and also to politically spearhead the fight against the number one killer disease at the national and local level through the establishment of a multi-sectoral HIV-1/AIDS prevention and control strategy. In addition,

¹⁶⁴ *Daily Nation*, 18th November 1999.

¹⁶⁵ Editorial, *Daily Nation*, 20th November 1999.

since politicians address large gatherings, be it funerals and *harambee*¹⁶⁶ gatherings or large political rallies, they could be relied upon to spearhead the demystification of the pandemic. While opening the MPs' HIV-1/AIDS symposium, the then President of Kenya, Mr. Moi, declared HIV-1/AIDS a *national disaster*¹⁶⁷ and announced emergency measures to curb its spread. The President further noted that AIDS "is not just a serious threat to our social and economic development, it is a real threat to our very existence, and every effort must be made to bring the problem under control"¹⁶⁸. The President ordered the immediate constitution of the National HIV-1/AIDS Control Council (NACC) to co-ordinate the fight against the scourge¹⁶⁹. In addition, the chiefs and assistant chiefs were instructed to form committees of elders to propose solutions to cultural practices and beliefs that accelerate the spread of HIV-1. The President also noted that to prepare children for the threat of HIV-1/AIDS, special lessons¹⁷⁰ would begin in schools and colleges by the beginning of the year 2000. In another attempt to appease the religious community, the President stated that the government would not advocate for the use of condoms as a way of checking the spread of HIV-1¹⁷¹. He said it would be morally wrong for him or the government to encourage the use of condoms as such a decision would appear to give youth a passport to casual sex. He told MPs that those who are using condoms to protect themselves from HIV-1 had failed to live up to the behavioural standards expected of upright moral persons. Two days later, President Moi, while addressing youthful graduates at the University of Nairobi, noted that the threat of AIDS had reached alarming proportions and must not be

¹⁶⁶ *Harambee* is a Swahili term that means 'pull together', that is, a community comes together and donates money or labour towards a project, for example a school, a hospital, funeral costs, or payment of education fees. Such gatherings are very common in Kenya and politicians are normally the guests of honour.

¹⁶⁷ It took five years of intense negotiation between health officials, advocates, and the political leadership for the government to recognise HIV/AIDS as a national disaster. Politically, the declaration of HIV/AIDS as a national disaster was of great importance. Legally, the failure to make the declaration official through a Kenya gazette notice rendered it a lame-duck. If government proceeds to officially register that declaration, it could legally make use of emergency powers to bring in measures to mitigate the spread of HIV/AIDS.

¹⁶⁸ *Daily Nation*, 26th November 1999.

¹⁶⁹ The formation of the national HIV/AIDS Control Council was recommended by the *Sessional Paper No. 4 of 1997 on AIDS in Kenya* passed by Parliament in June 1997. So it took the government more than two years to implement the most consequential recommendation of that sessional paper.

¹⁷⁰ In order not to upset the religious community, the president opted to mention 'special lessons' on HIV/AIDS instead of Family Life Education. These 'special lessons' had not begun in Kenyan schools by the time I finished my fieldwork in 2001.

¹⁷¹ However, on the contrary, as I witnessed in Turkana District, the government has been promoting the usage of condoms among those who cannot abstain from sex or have multiple sex partners. The proper usage of condoms was always an important component of the HIV/AIDS seminar, which I co-facilitated with the Turkana District HIV/AIDS Programme Officer.

treated casually declaring that in *"today's world, condoms are a must"*. Although seemingly the president backtracked on his moral crusade agenda, he argued that he was previously misquoted on the issue of condoms. The proclamation grabbed the headlines of the local daily newspapers. It marked the government's, and by extension the political leadership's, resolve to cease sending mixed signals and to acknowledge the gravity of the HIV-1/AIDS pandemic.

At the end of the symposium, MPs resolved to support the President's declaration of AIDS as a national disaster. They, in addition, endorsed the formation of the National AIDS Control Council. By declaring HIV-1/AIDS a national disaster, it effectively gave the government powers to enact, invoke, and revoke emergency measures to curb the spread of the infection. The politicians resolved to mount national and local campaigns against the scourge to provide the political dimension that had been lacking in the government's response to the HIV-1/AIDS pandemic. In the spirit of openness, during the 1999 World AIDS Day, a Deputy Minister for Education told parliament that an alarming number of teachers were dying due to AIDS, especially in the Kisumu District, and that this was more than the government could replenish¹⁷². Speaking during World AIDS Day, the then American Ambassador to Kenya backed the introduction of family life education into schools as a measure against HIV-1 infection. He argued that Kenyans "desperately need practical, realistic information about how to protect themselves against [HIV-1/AIDS] now. This challenge that must be met if the next generation is to survive...[The] next debate about discussing sexuality, reproductive health or condom use by young people will stop the spread of the disease"¹⁷³.

The National AIDS Control Council (NACC)¹⁷⁴, proposed by the *Sessional Paper No 4 on HIV-1/AIDS*, was eventually established as a State Corporation vides Legal Notice No. 170 on the 26 November 1999 under the State Corporation Act under the auspices of the powerful Office of the President of the Republic of Kenya. Its general mandate was to co-ordinate multi-sectoral efforts in the prevention and control of HIV-1/AIDS in the country. It has a variety of functions, the most important of which was to develop policies, strategies,

¹⁷² *Daily Nation*, 2nd December 1999.

¹⁷³ *Daily Nation*, 2nd December 1999.

¹⁷⁴ The council was created in the context of the World Bank's multi-country AIDS programme for the Africa region, under which US\$ 500 million was devoted to sub-Saharan African countries.

and guidelines relevant to the prevention and control of HIV-1/AIDS in Kenya. In addition, it had the power to mobilise resources, government ministries and institutions, NGOs, Community-Based Organisations (CBOs), research bodies, the private sector, and universities to participate in HIV-1/AIDS control. It was to be the policy think tank, while its implementing agency would be the National AIDS and STDs Control Programme and other interested national and international NGOs. This was the first step towards the implementation of the sessional paper and more importantly, the formation of the multi-sectoral approach to HIV-1/AIDS that was lacking previously. To co-ordinate the multi-sectoral approach to the war against the HIV-1/AIDS pandemic, NACC aimed to establish and co-ordinate a decentralised institutional framework. With the decentralised structure, the NASCOP provided the much needed technical assistance for the district in the form of policy guidance and resource provision and mobilisation. On the other hand, NACC was intended to harmonise the operations of NASCOP and other NGOs, CBOs, and donors to avoid duplication of HIV-1/AIDS control and mitigation programmes.

Each Ministry established an AIDS Control Unit to implement the strategic AIDS plan in every sector, that is, in all projects and services they offered. The units were also responsible for the dissemination of HIV-1/AIDS education and information to all employees. The eight Provincial Intersectoral HIV-1/AIDS Control committees (PIACS) were the co-ordinating bodies of the strategic plan at the Provincial level. The committee membership included the government's departments, the civil society, and the private sector and persons living with AIDS. The District Intersectoral HIV-1/AIDS Control Committees (DIACCs) would co-ordinate the implementation at the district and community levels. The membership was to be drawn from the same spectrum as the PIACCs. The Constituency HIV-1/AIDS Control Committees (CACCs) would facilitate implementation of resolutions passed at the 1999 HIV-1/AIDS symposium for members of parliament, develop a people-centred set of activities and responses; and co-ordinate all HIV-1/AIDS activities in 210 constituencies around the country. The establishment of the CACCs was the unanimous resolution of the members of parliament during the HIV-1/ADS Symposium for MPs in November 1999. CACCs, headed by MPs, were supposed to mobilise communities to play an active role in HIV-1/AIDS prevention. In addition, CACCs were supposed to develop sustainable community care and support systems for the infected and

affected, including widows, widowers, and orphans, and ensure that community elders discussed local cultural influences on the spread of HIV-1/AIDS¹⁷⁵. In this policy institutional framework, the formation of CACCs was a very momentous policy decision in the fight against HIV-1/AIDS in Kenya. The membership of CACCs was supposed to be drawn from the local community where the impact of HIV-1/AIDS was directly and indirectly felt. More importantly, CACCs' membership was supposed to be sixteen in total, that is twelve appointed members (by the committee comprising the local MP, Public Health Officer, and District Officer)¹⁷⁶, and two ex-officio members seconded from the government. The committee members were composed of the constituency MP, the Divisional Public Health Officer (who would be the secretary of the CACC), women leader, youth leader, two religious leaders, a private sector representative, an educationist from the local community, a local herbalist, a civic leader (councillor), a leader of an active local NGO/CBO in the community, a respected elder (man or woman) and a representative of the provincial administration (normally a District Officer)¹⁷⁷. Though initially MPs were supposed to be chairpersons, later, due to controversies and conflicts of interests, they served as patrons. It was argued that parliamentarians are the watchdogs of public funds expenditure and their inclusion on such committees would create a conflict of interest, as they cannot be the implementers and auditors of projects.

During the years 2000 and 2001, there were press reports of MPs launching their CACCs in conjunction with the Minister in the Office of the President under whose docket the National AIDS Control Council was. However, by the end of the year 2001, there were still some CACCs that were not officially launched¹⁷⁸.

¹⁷⁵ Some of the terms of reference for CACCs worth noting here are: mobilise communities through education to participate in the prevention and control of HIV-1/AIDS/STDs; promote positive health seeking behaviours with emphasis on STDs management, and voluntary counselling and testing (VCT); and encourage the promotion and strengthening of income generating activities to accelerate poverty reduction among the youth, women and other vulnerable groups.

¹⁷⁶ There were numerous complaints in the Kenyan press that Members of Parliament were only appointing their cronies and relatives to the committees. This brought acrimony between the MPs and District Officers who were also interested in nominating their friends. There is, therefore, a danger of appointing disputable community members into committees. In Turkana, it was indicated to me that the local MP appointed only his political friends onto the Constituency AIDS Control Committee.

¹⁷⁷ Office of the President, National AIDS Control Council, Guidelines and terms of reference for Constituency AIDS Control Committees, 2000.

¹⁷⁸ At the end of my fieldwork in September 2001, the Turkana Central Constituency AIDS Control Committee was not yet launched even though it had been formed. Due to delays in releasing the funds from the World

With the transfer of HIV-1/AIDS control from the Ministry of Health to the Office of the President, the National AIDS Control Council developed another Kenya National HIV-1/AIDS Strategic Plan 2000-2005¹⁷⁹ for the Kenya National AIDS Control Programme, which was not very different from the one produced a year earlier by the Ministry of Health. While presiding over the first meeting of the Kenya National AIDS Control Council, the minister in charge of the programme in the Office of the President announced that AIDS activities would be decentralised to line ministries, NGOs, religious organisations, and community-based organisations with the Ministry of Health left to focus on the medical aspects of the epidemic, including the provision of biomedical care to the affected people¹⁸⁰.

That five year strategic plan was launched in October 2000. More importantly, this strategic plan has been linked to the Government's Poverty Reduction Strategy. The government considers the reduction of poverty and the enhancement of economic growth as portentous pillars in the fight against the HIV-1/AIDS¹⁸¹ epidemic. The five year plan would require a total of KShs 14.5 billion to be utilised in promoting behavioural change, preventing blood-borne infection, treating and controlling STDs, preventing mother-to-child HIV-1 transmission, providing treatment and social support, mitigating the socio-economic impacts, and initiating research, with significant amounts of money and resources being invested in districts, communities, and households. The World Bank was expected to provide a loan amounting to US\$ 50 million, with 68 percent of the money going to community-based initiatives, while US\$ 20 million would be channelled to line ministries for their AIDS control projects. The British's Department for International Development also pledged £26 million, while the United States, through USAID, pledged US\$ 11 million. By April 2000, the Minister in Charge of HIV-1/AIDS pointed out in parliament that a total of Kshs 7.6 billion had been pledged by international lenders for the fight against HIV-

Bank, which would be used to fund the AIDS Programme with a loan of US\$ 50 million. MPs were required to use their funds to launch the committees publicly, and later reclaim refunds from the NACC. Impeccable sources informed me that the local MP did not want to commit his money for the CACC.

¹⁷⁹ Office of the President, National AIDS Control Council, *The Kenya National HIV/AIDS Strategic Plan 2000-2005*, October 2000.

¹⁸⁰ *Daily Nation* 4th February 2000.

¹⁸¹ In theory this was a very momentous policy. In practice, implementation was a problem as the Poverty Reduction Strategy depended on funds from the World Bank, which were never forthcoming as they were tied to economic reforms and good governance, areas in which the government performs dismally. Generally the fight against HIV/AIDS in Kenya is constrained by poverty and the lack of funds.

1/AIDS¹⁸². The government's commitment to fight HIV-1/AIDS was evident when the Ministry of Finance allocated Kshs 146 million for HIV-1/AIDS campaigns and froze the import duty on condoms during the year 2001's budget¹⁸³. Most of the resources for implementing the ambitious strategic plan were expected to come from international donors, who were more interested in channelling their funds through local and international NGOs than through the central government. Therefore, the implementation of the strategic plan was farfetched. This questioned even the commitment of the international community to the fight of the HIV-1/AIDS epidemic, not only in Kenya, but also in sub-Saharan Africa. Substantial amounts of money were only made available in 2003, when Kenya received US\$ 179 million from the UN Global Fund for HIV-1/AIDS, Tuberculosis and Malaria with US\$ 129 million going to AIDS, US\$ 11.2 million to tuberculosis, and US\$ 33.6 million to malaria¹⁸⁴. In March 2004, it was announced by a Ministry of Health official that the government would receive US\$ 40 million over a five-year period for antiretroviral drugs from the US government¹⁸⁵. However, the life-prolonging ARV drugs would be bought from those multinational pharmaceutical companies approved by the US government. The drugs would then be distributed to 30 AIDS treatment centres country-wide.

The transfer of the HIV-1/AIDS prevention and control programme from the Ministry of Health to the bloated and corruption-prone Office of the President was not well received by the public and Members of Parliament. They argued that rather than the Office of the President, the Ministry of Health had the requisite technical expertise and competence to manage the highly specialised programme. It was claimed by one Member of Parliament that DCs (who directly report to the Office of the President) should be removed from District AIDS Control Committees as they had failed to spearhead awareness campaigns because they were overwhelmed by their responsibilities at the district level¹⁸⁶. On the other hand, there were some politicians (councillors) who argued that the CACCs should

¹⁸² *Daily Nation* 18/4/2001.

¹⁸³ Though the allocation of money is little in relation to the size of the HIV/AIDS epidemic in Kenya, it demonstrated a fresh resolve by the government to combat the epidemic. This allocation should also be viewed against the background of negative economic growth during that year. In 2000, Kenya recorded a GDP growth rate of 0.3.

¹⁸⁴ Mwaniki, M. 2003. Kenya gets \$179m for Aids' *Daily Nation*, 1st February 2003.

¹⁸⁵ Nation Correspondent, 2004. 'Huge cash boost for war on Aids' [online] Available from: www.nationmedia.com/dailynation. Accessed on: Marc, 17, 20004.

¹⁸⁶ East African Standard, 15th May 2001.

be disbanded because MPs were allegedly using them for political mileage and not to fight the epidemic¹⁸⁷. They further argued that MPs had appointed their stooges to the committees instead of competent individuals. There were instances where the MPs were even blamed for sabotaging the formation of committees. In some instances, rival politicians could scrap the committees their opponents had handpicked. Even some DCs felt uncomfortable with MPs heading the CACCs and claimed that they were funnelling party politics into the committees. The war against the committees continued into the year 2001. While attending an AIDS awareness seminar in Kisumu, the District Commissioners from Nyanza province recommended that the CACCs be scrapped¹⁸⁸. They noted that since the AIDS project was removed from the Ministry of Health to the Office of the President, there had been a growing tension between the two ministries making co-ordination of HIV-1/AIDS activities very difficult. A provincial commissioner even claimed that MPs wanted to squander money allocated for the HIV-1/AIDS epidemic¹⁸⁹. Even the President criticised MPs for appointing themselves the overseers of money meant for fighting the AIDS scourge. In fact he wanted the money to be channelled through *Maendeleo Ya Wanawake* (a national Women's Welfare Group)¹⁹⁰, an NGO affiliated with the then ruling party, KANU. The President claimed that MPs were awarding themselves a great deal of money (KShs 5,000 (US\$ 30)) as a sitting allowance. The MPs, however, saw the President as an obstacle to the campaign against HIV-1/AIDS by politicising the issue and insisting that they were getting KShs 5000 (US\$ 30) instead of 500 (US\$ 3) as the National Aids Control Council had recommended. The conflict between the provincial administration, that is used to control the masses, free flow of information and censoring political rallies, and on the other hand, politicians (Members of Parliament) that were interested in attracting the masses for political mileage, seemed to be in conflict over the control of resources meant for HIV-1/AIDS prevention programmes. In addition, giving politicians a free hand would mean that they would convene political rallies under the disguise of HIV-1/AIDS awareness campaigns. Since HIV-1/AIDS was supposed to attract a handsome credit from the World Bank and other donors, there was jealousy and conflict

¹⁸⁷ East African Standard, 15th May 2001.

¹⁸⁸ *Daily Nation* 11th May 2001.

¹⁸⁹ *Daily Nation* 11th October 2000.

¹⁹⁰ *Daily Nation* 28th October 2000.

regarding who would be accountable for these funds when they were released from the National HIV-1/AIDS Control Council (NACC).

The calls for the disbandment of the NACC because of its ineffectiveness, irrelevance, and lack of focus continued into 2002 and beyond¹⁹¹. Ironically, while politicians and AIDS activists questioned the NACC's location at the Office of the President, the World Bank, through its top echelons in Kenya, continued to argue that HIV-1/AIDS Control could be coordinated effectively at the Office of the President because of its multi-sectoral outlook¹⁹². When the new NARC government took over office, the NACC was eventually relocated to the Ministry of Health, after a protracted debate, to 'enable better coordination of programmes'¹⁹³. In fact, before the current government won power, it promised to move the 'cash cow' (epicentre of corruption) from the Office of the President to the Ministry of Health, where it naturally belongs, for public scrutiny.

The fight against HIV-1/AIDS gained momentum in the year 2000. Politicians and the general public took a more active role in the prevention and control of HIV-1/AIDS. In February 2000, members of parliament, through their Football Team, the Bunge Football Club, resolved to travel around the country for a series of matches against local teams to spread awareness about HIV-1/AIDS and promote behavioural change¹⁹⁴. Through this, they hoped to provide a consistent, non-partisan and common stand in articulating HIV-1/AIDS issues, using football as a vehicle for social mobilisation in creating knowledge concerning the spread HIV-1/AIDS. In September, the Federation of Kenyan Employers launched the code of conduct on HIV-1/AIDS in the work place to encourage employees to fight the culture of silence and denial as well as the discrimination and social exclusion of workers living with HIV-1/AIDS, to protect the human rights and dignity of HIV-1 infected persons, and to avoid discrimination in relation to the HIV-1 infected and people with AIDS. The multi-sectoral approach to HIV-1/AIDS was taking root in Kenya. Employers and the business community were encouraged to take a more active role in the prevention of HIV-1/AIDS, and to be sympathetic to the infected and affected people in the workplace.

¹⁹¹ Agutu, M. 2002, Disband Aids council, varsity don tells state' *Daily Nation*, September 4, 2002.

¹⁹² Nation reporter, 2003. 'National Aids council could remain at the OP' *Daily Nation*, February 20, 2003.

¹⁹³ Daily Nation, 2003., Ngilu wants Aids council moved' *Daily nation*, January, 29, 2003.

¹⁹⁴ *Daily Nation* 14th February 2000.

In September 2000, the Director of Medical Services announced at a workshop that the government would be taking a critical step in the campaign against HIV-1/AIDS by setting up counselling and testing (VCT) centres countrywide. This would also encourage people to go for tests, stem the prevalence of other STIs, and ultimately prevent the spread of HIV-1/AIDS. By the end of the year 2001, the government was still aiming to introduce at least five VCT sites in every district to bring the services closer to the people¹⁹⁵. That remained a tall order. For instance, even though the Turkana District had one testing centre at the district hospital and another one at the Catholic Mission Hospital in Kakuma, there were no trained counsellors. In addition, the testing centres focused on presenting prenatal mothers and chronic patients, who were often involuntarily and anonymously tested. The cost of setting up and equipping these VCT centres with equipment, trained laboratory technicians, and counsellors would be enormous.

7:4:5 Phase V: From 2001 to Present

In addition to building on the policy initiatives developed in the previous phase, this period witnessed the emergence of ferocious debate on access to drug therapy at the local, national, and international levels. Moreover, the change in political leadership resulted in slight changes in the management of the HIV-1/AIDS control programme.

The government introduced three important policy documents on antiretroviral therapy, HIV counselling and testing, and the National Condom Policy and Strategy. During this phase, we not only experienced a maturing epidemic, but also that of the debates on policies and the conspicuous presence of political leadership. In addition, the battleground shifted to the accessibility of antiretroviral drugs for HIV-1/AIDS.

The year 2001 was very significant in the fight against HIV-1/AIDS not only in Kenya but also in sub-Saharan Africa as a whole. This is the year that the government of Kenya enacted the Industrial Property Bill after a protracted campaign by a coalition of local and international NGOs. The Industrial Property Bill allowed for the parallel importation of generic drugs¹⁹⁶ for HIV-1/AIDS and other opportunistic infections. Before this bill was enacted, both the international NGOs and the pharmaceutical companies blamed the

¹⁹⁵ *Daily Nation* 22nd December 2001. Available from www.nationaudio.com. Accessed on 10th June 2002.

¹⁹⁶ I will discuss in great length the battle for anti-retroviral drugs in a separate chapter in the thesis.

government for the lack of a policy on the provisions of cheap drugs for HIV-1/AIDS and its accompanying opportunistic infections. In its strategic plan, the government did not set out a clear policy on the provision of antiretroviral drugs in Kenya in view of the prohibitive costs. What annoyed campaigners most was that due to the lack of clear legislation on the parallel importation of generic drugs, the government could not accept the offer of cheap generic drugs from Cipla, an Indian pharmaceutical company. In February 2001, two Indian drug companies manufacturing generics offered antiretroviral drugs at a lower price. Cipla Pharmaceuticals offered to supply the triple therapy AIDS cocktail to the Kenyan chapter of *Médecins Sans Frontières* (MSF) at US\$ 350 (KShs 28,000) a year per patient, which by then cost between US\$ 2,500 and US\$ 6,000 (an average of about KShs 750,000) per patient per year for drugs supplied by the pharmaceutical companies that hold the patents. Ranbaxy had offered the antiretroviral drugs for even less, at about KShs 24,000 (US\$ 295) for a year's triple therapy combination per person. However, because these drugs were under patent, the government needed to enact the relevant legal tools to allow for the importation of generic versions into the country.

Indeed, after two months the government published the Industrial Property Bill 2001. This was immediately after the April 19 when the 39 global pharmaceutical companies dropped a lawsuit against South Africa for seeking to import cheap generic versions of anti-retroviral drugs. In June, Parliament unanimously passed the bill that would allow the government to suspend patent rights in times of national emergencies, license companies to carry out the parallel importation of cheap anti-retroviral drugs, and compulsory licensing of local companies to manufacture generic drugs. The new act had the right provisions that would allow the country to import generic drugs even without the consent of the patent holder. As the situation stands in Kenya (and most of the countries in sub-Saharan Africa), since the passage of this bill, though prices of drugs have fallen, they are still not to a point where they are affordable by the common man and woman in the village. This suggests that it is the cost of drugs (generics or originals), poverty, and the lack of health infrastructure that hinders the provision of highly active retroviral drugs to poor countries like Kenya, rather than the legislation.

In August 2002, the government was accused of deleting a clause from the Industrial Property Bill that allowed for the importation of cheap AIDS drugs to allow one company,

Universal Pharmaceuticals, exclusive rights to locally manufacture antiretroviral (ARV) drugs¹⁹⁷. There was an emerging suspicion that the government was quick to enact and pass the Industrial Property Bill as a public relations exercise and due to pressure from the local and international non-governmental organisations that play significant role in the prevention of HIV-1 in Kenya. Having restored the clause, the President assented to the Industrial Property Bill allowing the parallel importation of generic AIDS drugs in September 2002¹⁹⁸. This foot dragging caused some to question the government's commitment to the provision of generic anti-retroviral drugs (ARVs). Has the government succumbed to the dictates of the powerful pharmaceutical drug companies that are strongly opposed to the importation of generic drugs? Already in Kenya, some pharmaceutical companies are closing shop and have threatened to shut down any production lines that might be severely affected by importation of generics. The confusion concerning the importation of cheap AIDS drugs continues. In June 2006, an international NGO Coordinator of Action Aid asked MPs to reject a miscellaneous bill proposing to ban imports of cheap AIDS drugs¹⁹⁹.

Despite the government having produced a policy guideline on ARV drugs, poor health infrastructure is hampering the introduction of an antiretroviral programme, and has made it difficult to have a co-ordinated approach to fight the HIV-1/AIDS pandemic. As a result, in December 2001, the Ministry of Health launched the National Clinical Guidelines on Antiretroviral (ARV), which marked the first step towards creating a "standardised" approach between the public and private sectors. The guidelines were released following a meeting held by various stakeholders to discuss the "realities" of administering ARV therapy in the country. Following the stipulated WHO guidelines on ARV drugs, monitoring was difficult because of limited resources in the country. Effective monitoring requires proper equipment and trained staff, to, among other things, accurately measure the viral loads of patients. In addition, counselling is also mandatory. Because of poverty and other structural factors, implementation of full-scale antiretroviral therapy in Kenya would be a challenge. The government has so far facilitated three Anti-retroviral Therapy Consultative Forums (the latest in July 2005) to analyse the challenges and chart out future directions in

¹⁹⁷ Oyuke, J., 2002. Bill to restore clause on HIV/AIDS' *East African Standard*, 7th August 2002.

¹⁹⁸ Otieno, J. 2002. 'Kenya to import cheaper Aids drugs' *Daily Nation, on the web*, Available at: www.nationaudio.com Accessed on: 11th September 2002.

¹⁹⁹ Daily Nation, 2006. MPs told to reject Aids drugs Bill, Daily Nation, 30th June 2006. Available from: www.nationaudio.com/dailynation/printpage.asp. Accessed on: 1st July 2006.

antiretroviral therapy and HIV care in Kenya. Currently, only about 70,000 of 2.2 million HIV-1 positive Kenyans receive ARVs, mostly from private clinics (Ministry of Health 2006). The wide scale use of antiretroviral drugs is yet to fully take off in the public health sector in Kenya. The government announced recently that it would waive the KShs 100 (US\$ 1.30) levy on AIDS drugs in public hospitals²⁰⁰.

In December 2001, the government launched two other HIV-1/AIDS prevention and management documents. *The National Guidelines for HIV-1/AIDS Voluntary, Counselling and Testing* (Ministry of Health 2001) and *National Condom Policy Strategy* (Ministry of Health 2001) are aimed at setting the direction the country would take in the implementation of prevention strategies. *The National Guidelines for HIV-1/AIDS Voluntary, Counselling and Testing* document addressed the issue of setting up voluntary counselling and testing services to enable many people to know their HIV-1 status. The government's ambitious plan to expand voluntary counselling and testing (VCT) services would ensure standardised, good-quality services at all sites. The success of the VCT program was reflected in the numbers of Kenyans who sought HIV-1/AIDS-related services between January 2001 and September 2002, who numbered more than 36,000 (USAID, 2003). More than 350,000 people were counselled and tested in the VCT sites in the year 2004 (Ministry of Health 2005). Condom policy and strategy aimed at regulating access and providing high quality condoms at affordable prices through effective and responsive service delivery systems. So far, the government of Kenya has put in place a formidable policy structure as far as the mitigation of the HIV-1/AIDS epidemic is concerned. However, the foremost challenge is to implement the said policies fully.

During World AIDS Day in 2003, the government demonstrated a commitment to fighting HIV-1/AIDS by announcing a Kshs. 180 million bounty to offer free AIDS drugs to those living with the virus²⁰¹. Though that marked the first major step in the fight against HIV-1/AIDS by the new government that came into power in December 2002, it would only target about 140,000 of the about 280,000 HIV-1-infected that need them, and the programme would particularly target pregnant women in order to halt mother-to-child

²⁰⁰ Barasa, L. and Munene, M. 2006. Aids drugs to be free as pensioners get pay rise, *Daily Nation*, 2nd July 2006. Available from: www.nationaudio.com/dailynation/printpage.asp. Accessed on: 2nd July 2006.

²⁰¹ Editorial, 2003. Timely moves on Aids war' *Daily Nation*, 2nd December 2003. Available from www.nationaudio.com/News/DailyNation Accessed on December 6, 2003.

transmission. In addition, it was announced by President Mr Kibaki that the number of deaths associated with AIDS had more than halved: from 700 people a day to around 300 a day; and the rate of prevalence had gone down from 13.1 percent in 2001 to 10.2 percent in 2003²⁰². This announcement came as members of parliament concluded their two-day conference where they resolved to form a parliamentary select committee to address AIDS as a national disaster. The committee would further legalise measures, supervise, and spearhead the national fight against HIV-1/AIDS, and re-launch and revitalise the moribund constituency AIDS control committees (CACCs). In September 2003, in a drastic move, the government dissolved District AIDS Committees, and froze their operations, saying they would be de-gazetted and reconstituted afresh pending a re-launch by President Kibaki the following month²⁰³. In re-launching the CACCs dubbed, *'Total War Against HIV-1/AIDS at Constituency Level'*, the President noted that for "the programme to succeed, the beneficiaries must own it. For this reason, constituency committees must comprise all sectors of society, including government departments, cultural and community groups, people living with Aids and non-governmental organisations"²⁰⁴. The MPs recycled their previous recommendations and pledged to advocate for the establishment of at least two voluntary counselling and testing (VCT) centres, and promote easy access to ARV drugs in every constituency by 2004. During the conference, a row erupted between the MPs and officials of the National AIDS Control Council over money to launch Constituency AIDS Control Committees. The MPs questioned NACC's seriousness in the fight against the scourge when they had not reimbursed the money (Kshs. 25,000) they had used to launch the Constituency AIDS Control Committees during the previous years²⁰⁵. The main contention has been over the use of funds, as MPs alleged that the NACC gives grants to 'fake' community-based organisations that are not accountable to the people. It emerged that the NACC asked MPs to spend up to Kshs. 25,000 during the launch of the committees, but some MPs later claimed to have spent between Kshs. 200,000 to 350,000. It is likely that the fight over

²⁰² Otieno, J., and Mwaniki, M. 2003. KShs 180m free drugs boost to fight AIDS' *Daily Nation*, 2nd December 2003. [Available from: www.nationaudio.com/News/DailyNation] Accessed on December 6, 2003.

²⁰³ Nation Correspondent, 2003. 'All district committees dissolved', *Daily Nation*, 27th September 2003.

²⁰⁴ Otieno, J., and Mwaniki, M. 2003. KShs 180m free drugs boost to fight Aids' *Daily Nation*, 2nd December 2003. [Available from: www.nationaudio.com/News/DailyNation] Accessed on December 6, 2003.

²⁰⁵ Kithi, N. 2003. 'Tempers flare at HIV conference over funds' *Sunday Nation*, 30th November 2003. [Available from: www.nationaudio.com/News/dailyNation] Accessed on: 6th December 2003.

resources meant for the mitigation of HIV-1/AIDS will continue for years to come. NACC is perceived by politicians, NGOs, and community-based organisations as a milk cow. It remains to be seen whether the revived DACCs and CACCs will be effective.

When Ethiopian-born Debrework Zewde, the World Bank's ACT Africa (AIDS Campaign Team for Africa) manager visited Kenya in 1998, Catholic and Muslims religious leaders were burning condoms. She was perturbed that the government kept quiet when people were in the streets burning condoms. She went back to Washington, hoping the government would at least neutralise the overzealous clergy; unfortunately, another condom burning ritual took place. Her concerns were supported by the World Bank's concern that governments must take the drivers' seat in confronting AIDS because only governments can put AIDS at the centre of development agenda. Only governments can give AIDS a high profile, speak openly about it, make it publicly acceptable to discuss, and ensure it is addressed in every sector. Four years later, in March 2003, President Mwai Kibaki announced he was in the driver's seat. As President Kibaki, said, "To demonstrate the seriousness with which the government attaches to the fight against this disease, a Cabinet committee on HIV-1/Aids is to be established and I will chair it myself"²⁰⁶. In addition, he had religious leaders of the Seventh Day Adventists, Catholics, the African Inland Church, Anglicans, Pentecostals, Baptists, Presbyterians, Muslims and the Hindu Council of Kenya by his side, all ostensibly committed to fighting the spread of the epidemic. The launch of the campaign, dubbed *Total War on HIV-1/AIDS* and spearheaded by the Ministry of Health, started off with five days of conferences that included the religious organisations mentioned above. President Kibaki, it appears, has taken the fight to where it should have been twenty years ago. Though Kenya has made strides, it can still be seen as a newcomer compared to Uganda where President Yoweri Museveni had a head start. He acknowledged the problem soon after coming into power in 1986 and set up a national committee for AIDS prevention that same year. This has had a tremendous impact in reducing the prevalence in Uganda. It is hoped that this renewed political focus on HIV-1/AIDS will bring a sea of change in the official response to the scourge. It is hoped that the political leadership will be broadened to include the

²⁰⁶ Njeru, M. 2003. 'Kibaki launches war on Aids' *Daily Nation* March 24, 2003. [Available from: www.nationaudio.com/DailyNation/]. Accessed on: March 25, 2003.

reactivated members of parliament. Due to factional and partisan politics, preoccupation with national party politics, and realignments towards the 2007 general elections, it is likely that HIV-1/AIDS will not be the MPs' priority, even though they are retained as the patrons of the CACCs. What is certain, however, is that Kenya is one of the African countries hard hit by HIV-1/AIDS that has scored high marks, more than 80 percent, for political support, policy formulation, and programme development as measured by the UNAIDS 2003 AIDS Programme Effort Index (UNAIDS 2003).

7:5 Conclusion

This chapter has reviewed the emergence and gradual development of the government's policy on HIV-1/AIDS for nearly twenty years – since the official (recorded) emergence of the disease. The response by the government has been lethargic and slow. In Kenya, HIV-1/AIDS was not a reality for many people until the mid 1990s. It was simply not recognised as a major problem. Very few people who were HIV-1 positive spoke publicly about their conditions, and families and doctors often disguised the causes of their deaths. There was no proper surveillance of HIV-1/AIDS prevalence. HIV-1/AIDS was highly stigmatised. As local people perceived HIV-1/AIDS as a disease of foreigners that was slowly creeping into the urban centres, the political leadership externalised the HIV-1/AIDS problem. In addition, numerous other development and political issues occupied Kenyan policy makers throughout the 1990s. This was a period of ethnic clashes, debate and activism surrounding multi-party democracy, the first plural elections, and the suspension of donor funds, which culminated in an economic recession. In short, the national leadership was preoccupied with what they considered as priorities. More immediate and politically sensitive considerations determined policy reactions rather than the possible effects of the unchecked spread of HIV-1/AIDS suggested by long-term projections.

It was only from the mid-1990s that the government began to give HIV-1/AIDS the attention it deserved. However, there was still conflict between the bureaucrats at the Ministry of Health and the political leadership. While the Ministry of Health officials were concerned about HIV-1/AIDS and even produced policy documents, this was never matched with any funding from the treasury, as the allocation of resources is politically

influenced. Most of the HIV-1/AIDS prevention activities were left to the international and local NGOs. In addition, there were donor-sponsored projects, which were accomplished through local and international NGOs. Donor funds continue to play a great role in HIV-1/AIDS prevention and care projects in Kenya. It was not until 1997 that HIV-1/AIDS was incorporated into national development planning and substantial financial and human resources were committed to prevention activities.

The most significant step made by the government to demonstrate that it was finally viewing HIV-1/AIDS as not only a health condition, but also as a developmental issue, was in 1999 when it declared HIV-1/AIDS a *national disaster*. Since then the government has produced serious policy documents aimed at arresting the seroprevalence of the HIV-1 pandemic, which is currently at about 5.9 percent. The government has also adopted a multi-sectoral policy and strategy that aims to increase participation in HIV-1/AIDS prevention and mitigation from all sectors of the society. It has established National AIDS Control Council, which is supposed to co-ordinate all HIV-1/AIDS activities through its technical arm, the National STIs and HIV-1/AIDS Control Programme. Through the institution of the Provincial Intersectoral HIV-1/AIDS Committees, District Intersectoral HIV-1/AIDS Committees, and Constituency HIV-1/AIDS Committees, the government has not only decentralised the control of HIV-1/AIDS, but has also brought political leadership and the local community in to play an active role in the HIV-1/AIDS prevention campaigns. The decentralisation of HIV-1/AIDS control programmes will make the exercise more sustainable and people-driven. In fact, the UNAIDS county advisor credits Kenya's constituency-based strategy as one of its own on the continent, arguing that it has the potential to short-circuit or circumvent the usual government bureaucracy. There is already a growing degree of political commitment as HIV-1/AIDS has been declared a national disaster. Sustained political leadership will be very vital in the fight against HIV-1/AIDS. Kenya should learn from Uganda, where the continued support and commitment from top political leadership ensured that HIV-1/AIDS was given priority in programmes that produced results. These programmes led to the reduction of the HIV-1 prevalence rate, which was 31 percent in 1990 to 8.7 percent in 2001.

In 2001, as we marked the twentieth anniversary of the discovery of this formidable and veracious epidemic, the government finally put in place legal structures that would allow for

the parallel importation of antiretroviral generic drugs that would prolong the lives of the many HIV-1 positive Kenyans. This applies, also, to the announcement in September 2000 that the government would take the most critical step in the campaign against HIV-1/AIDS through the establishment of voluntary counselling and testing centres countrywide. This was followed by the production of a policy document on *Guidelines for HIV-1/AIDS Voluntary Counselling and Testing* in 2001. Practically, the establishment of these centres is very far from being rolled-out countrywide. In the Turkana district, there was not even a single counsellor, and prenatal mothers presenting at the Lodwar District Hospital and a Catholic Mission Hospital were tested involuntarily and their sero-statuses was never disclosed to them, their spouses, or relatives. The government must work towards the alleviation of these and other infrastructural, moral, and social bottlenecks in the battle against HIV-1/AIDS (i.e., stigma and discrimination that still stifles the free discussion and acceptance of HIV-1/AIDS in the communities). This could be attained through vigorous education, the provision of counsellors, the availability of VCT centres, and if possible, the training of community HIV-1/AIDS counsellors. It is only recently that the government published its *HIV-1 and AIDS Prevention and Control Bill, 2003*, that aims to protect infected people by criminalising discrimination against AIDS sufferers and their rights to access medicines, quality care, and confidentiality²⁰⁷.

The Kenyan government has put in place a formidable policy response to the epidemic. Currently, there are additional documents aimed at setting the direction the country will take in the implementation of HIV-1/AIDS prevention and care, such as *Clinical Guidelines on Anti-retroviral Therapy*, *National Condom Policy and Strategy*, and *AIDS in Kenya* (sixth edition), all released at the end of the year, 2001. However, what is likely curtailing the government's practical response to HIV-1/AIDS is the lack of funds to implement most of the programs mentioned in policy documents. For example, even though the government allowed for the parallel importation of drugs, these drugs remain out of reach of the majority of Kenyans. In fact, even in situations where the government has developed the policy framework, it has been barely translated into action. Little, if any has been achieved by the momentous declaration of AIDS as a *national disaster*. The politicisation of HIV-

²⁰⁷ Nation Reporter, and PPS, 2003. 'State moves to outlaw Aids discrimination' *Daily Nation*, September 24, 2003. [online] Available from: www.nationaudio.com/dailynews/. Accessed on: September 25, 2003.

1/AIDS through the inclusion of political leadership in the fight against HIV-1/AIDS has not produced results. At present, politicians are more engulfed in the pending general elections and political succession debates and manoeuvres than in health or economic issues. The government has yet to put forth a concerted effort to tackle HIV-1/AIDS in Kenya beyond policy frameworks. The government's agenda, however, would depend on the availability of resources, and it is evident that not much can be achieved in Kenya in the war against HIV-1/AIDS due to the lack of funds, the general level of poverty, and the deplorable living conditions. Though HIV-1/AIDS is increasing the level of poverty in Kenya, lowering life expectancy, increasing child and infant mortality rates, stifling economic and social production, poverty is curtailing the response to it. An attack on HIV-1/AIDS must incorporate an attack on poverty. Government policy documents and programmes must also incorporate the mitigation of poverty and the improvement of the social conditions of living. Though most government policy documents mention poverty as one of the factors that needs tackling, intervention programs focus only on education and prevention, namely sexual behavioural change and the promotion of condom use.

Local Knowledge of HIV-1/AIDS, and other Sexually Transmitted Infections

8:1 Introduction

The main objective of the current research project is to discover the local knowledge of, and response to, HIV-1/AIDS among the Turkana of Lodwar township. Knowledge of illnesses take two forms: knowledge of the illness along with methods of transmission, contraction, prevention, and treatment; and local knowledge surrounding the illness incorporating knowledge of its origin and aetiology, risk²⁰⁸ perception, and attitudes towards those who are infected. This chapter analyses local knowledge of HIV-1/AIDS, and other sexually transmitted infections (STIs), their methods of representation through fear and stigma, responses to HIV/AIDS, and the nexus between STIs and HIV-1/AIDS. This analysis not only teases out new knowledge, but is also crucial for the formulation of empirical / evidence-based responses to HIV-1/AIDS in Turkana.

To gather comprehensive knowledge of HIV-1/AIDS, interviews were conducted among the Turkana healers, village elders, and the general population, encompassing both men and women. More knowledge of HIV-1/AIDS was gathered through interviews and focus group discussions on other sexually transmitted infections. In addition, men and women that were previously infected with STIs and those who presented with STIs in the Lodwar District Hospital's STD clinic were interviewed. More knowledge was gathered through three seminars with bar and lodging managers, Turkana leaders, and Turkana women group leaders in Lodwar. The three seminars focused on perceptions of HIV-1/AIDS and other sexually transmitted infections, methods of intervention, and responses to HIV-1/AIDS. The study of sexually transmitted infections is pertinent because they share similar causes and responses with HIV-1/AIDS. In addition, the control of other STIs impacts positively on the control of HIV-1/AIDS and vice versa. It is also known that some

²⁰⁸ Risk is the probability that one may contract HIV-1 infection.

STIs facilitate the efficient transmission and contraction of HIV-1. We cannot, therefore, control the spread of HIV-1/AIDS while oblivious of other STIs.

This chapter forms the core of this thesis, for it endeavours to answer the key research questions. The local knowledge of STIs and HIV-1/AIDS reflects the views expressed by a cross section of the Turkana population. The study however focused on the sedentary Turkana of Lodwar township. To gain a gender sensitive knowledge of HIV-1/AIDS and other sexually transmitted diseases in Lodwar township, a total of 40 women and 40 men of various ages were interviewed. In addition, a total of twenty village elders composed of ten men and ten women were interviewed. A total of eight healers of equal gender and of diverse types comprising *akatwan*, herbalists, and diviners were interviewed. Supplementary knowledge was gained while conducting a total of twenty interviews to gauge knowledge of the link between HIV-1/AIDS and tuberculosis. Ten of the interviews were carried out in California village, in the township sub-location, and a similar number in Kanamkemer, in the Kanamkemer sub-location. Additional knowledge was obtained through interviews with commercial sex workers, and focus group discussions with Turkana nursing students, California community healthcare workers, Kanamkemer community healthcare workers, and indigenous birth attendants.

The chapter is divided into six sub-sections comprising various headings and sub-headings. The first section is discussed under: (i) the problem of HIV-1/AIDS; (ii) HIV-1 surveillance surveys: Antenatal HIV-1 surveillance in Lodwar District Hospital; HIV-1 surveillance survey in Kakuma Mission Hospital; Lokichoggio Surveillance Survey; Nakwanamoru Mission Hospital HIV-1/AIDS records; and (iii) knowledge of sex and sexuality. The second section headed, Local knowledge of HIV-1/AIDS, is presented with the following sub-headings: (i) popular discourse on HIV-1/AIDS; (ii) HIV-1/AIDS prevention; (iii) perceptions of risk; (iv) perceptions of risk of contracting HIV-1; (v) transmission and contraction of HIV-1/AIDS; (vi) symptoms and signs of HIV-1/AIDS; (vii) stigma of HIV-1/AIDS; (ix) HIV-1/AIDS treatment; (x) known people with HIV-1/AIDS; and (xi) effect of HIV-1/AIDS. The third section titled, 'Local knowledge of other STIs', encompasses the following themes: (i) types of sexually transmitted infections; (ii) the factors of the ecosystem that influence the contraction and transmission of sexually transmitted infections; (iii) the stigma on STIs; (iv) the perception of risk of contracting

sexually transmitted infections; (v) the influence of gender on the risk of contracting STIs; (vii) prevention of STIs; (viii) the treatment of STIs; and (ix) knowledge of the prevalence of STIs in Lodwar township. The fourth section concerns 'The experiential knowledge of STIs among those who had been infected previously', encompassing: the perceived causality; treatment; the response from partners; and the nexus between HIV-1 and other STIs. The fifth section covers local knowledge of sexually transmitted infections among those who presented with sexually transmitted infections at the STD clinic, Lodwar District Hospital covering engagement in sexual intercourse while still ill, condom use, and the consequences of the illnesses. The sixth section covers interviews with two people who were infected with gonorrhoea. The seventh section includes the conclusions and summary.

8:2 The prevalence of HIV-1/AIDS in Turkana

The impact of HIV-1/AIDS in Kenya is enormous, pervading all sectors and regions of the nation. Despite this, HIV-1/AIDS was initially, and still is, perceived as an urban disease. However, over the last decade, it has indiscriminately spread to every corner of the country. Currently, indications are that HIV-1 has gained ground in remote parts of the country like the Turkana District hitherto considered free from infection. In fact, in 2004, HIV-1/AIDS prevalence in Lodwar was 11.3 percent, against the national average of 7.5 percent (Ministry of Health 2005). Despite this, arid and semi-arid regions and nomadic communities have been ignored in the allocation of resources to fight the pandemic, with the perception being that HIV-1/AIDS is not problem in these regions. Once considered some of the safest grounds in Kenya, pastoralist areas are now bearing the brunt of the AIDS epidemic. In 1999, the then Medical Officer for the Turkana District announced, in a seminar, that 87 of the 387 people screened in 1998 were HIV-1-infected. However, this was not an accurate picture as tests were only obtained from blood screened for transfusion²⁰⁹. In Isiolo, another pastoralist district, the prevalence rate is estimated at between 20 and 30 percent²¹⁰. The data gathered from Turkana supports my assertion that

²⁰⁹ Nation Correspondent, 1999. '87 tested HIV-1 positive in Turkana, says officer' *Daily Nation*, January 15, 1999 [online] Available from: <http://www.nationaudio.com/News/DailyNation/Today/News/News3.html>. Accessed on: January 15, 1999.

²¹⁰ Obonyo, O. 1998, 'Safe areas fall to Aids' *East African Standard*, November 17, 1998.

HIV-1/AIDS is a problem in all sections of Kenya and that the least populated nomadic communities risk being wiped out by this 'silent' epidemic already in their midst, if no urgent intervention is executed. Ignoring such regions as Turkana, in both research and intervention, will impact negatively on the efforts geared towards control of HIV-1/AIDS in other parts of Kenya. At the time of this research, the National AIDS and STI Control Programme (NAS COP) had realised that the prevalence of HIV-1 was steadily rising in Turkana, following the national trends, and therefore instituted the Turkana District as one of the sentinel centres in Kenya. Since that time, the incidence of HIV-1/AIDS steadily increased among the nomadic Turkana.

The statistical data on HIV-1/AIDS in Turkana were gathered from hospital records at the Lodwar District Hospital, and the Kakuma Mission Hospital. However, information provided by the Lodwar District Health Information System is largely incomplete as they lacked demographic indicators. There is little appreciation of the meaning or methods of data analysis. In the absence of reliable statistics, the prevalence of HIV-1/AIDS in Turkana has also been teased out through qualitative interviews. The perception of the local population concerning the prevalence of HIV-1/AIDS was considered as important in determining the effect and prevalence of HIV-1/AIDS in the district.

The officer in charge of the District AIDS and STDs Control Programme (DAS COP) indicated that in January 2001, out of twenty-four admissions in the 24-bed female ward, only two were not HIV-1 positive. In most cases, the patients had experienced frequent readmissions. Such patients are normally discharged, stay at home for a little while, and sooner or later, are readmitted with various opportunistic infections, the most common being tuberculosis, malaria, and diarrhoea. During a women's group workshop, the District AIDS and STDs Control Coordinator (DAS CC) indicated that out of 100 patients admitted at the Lodwar District Hospital wards, 30 were HIV-1 positive, a prevalence rate of 30 percent. The high prevalence of HIV-1/AIDS in Turkana was frequently mentioned by important personalities involved in low-key control programmes, such as the Lodwar Catholic Diocese's Youth Coordinator, the District Public Health Officer, the District Health Education Officer, the Divisional Public Health Officer, and the District Commissioner.

In 2001, the Turkana District Commissioner (DC) indicated that HIV-1 infected persons occupy a large percentage of the beds in the Lodwar District Hospitals and other mission hospitals in the district. He indicated that he had lost a number of administration police officers, civil servants, teachers and even clinicians to HIV-1/AIDS. In addition, many soldiers originating from Turkana who went to Bosnia as part of the Kenyan Battalion for peacekeeping duties had died. In Kakuma, he noted that many NGO employees of all ethnic groups get sick leave and never return to work.

In Lodwar township, the focal points of HIV-1 infection are Soweto, adjacent to the town centre, and sprawling Kanamkemer, Nakwamekwi, and Napetet villages. Other localities, such as the settlements along the Kitale-Lokichoggio road including Kainuk, Lokichar, Lokore, Kakuma, Naposta, and Lokichoggio, and the Lokitaung urban centre in the northern part of the district, are equally affected. According to the District Public Health Officer (DPHO), there is a continued rise in the number of STIs and HIV-1 cases in towns due to migrant workers employed by NGOs, refugees settled in Kakuma and Lokichoggio, and truck drivers, who transport wares all the way from Mombasa to Kakuma and Lokichoggio. In addition, the incidence of HIV-1/AIDS could be high in Kalokol due to the growing fishing community.

The DPHO indicated that HIV-1/AIDS would be among the top ten infections in Turkana if statistics were accurate. He partly blamed the broad diagnostic category that, in the absence of test kits, classifies all emaciated patients broadly under immunosuppression. However, immunosuppression could be due to protein-calorie malnutrition, infections such as tuberculosis and malaria, or HIV-1/AIDS. In most cases, those who are HIV-1 positive are often entered into the official register as suffering from overt opportunistic infection, the most common being tuberculosis. According to indigenous birth attendants, HIV-1/AIDS followed by tuberculosis are the most common infections in Lodwar township. In fact, they were under constant fear that they would contract HIV-1/AIDS, as they did not have protective devices like gloves while assisting in deliveries.

Most civil servants and politicians decried the lack of reliable statistics on HIV-1/AIDS, as it is better and more effective to educate local people while using local statistics rather than relying on national prevalence rates. Even the District Medical Officer indicated that

the available statistics underrepresented the true picture of HIV-1/AIDS in the district²¹¹. He indicated that HIV-1 testing is mainly hampered by the lack of re-agents and proper record keeping.

The District Health Education Officer indicated that cases of HIV-1/AIDS are very high in Turkana. Many people die at home, as the lack of health facilities force many people to rely on indigenous healers. These cases are never recorded. A case in point is that of a man who died at home after being 'discharged' from the hospital. His death was never recorded anywhere as due to HIV-1/AIDS. Such cases place a question mark over the statistics of HIV-1/AIDS in Turkana. Furthermore, it calls into question the perception of the Turkana leaders and government officials in Nairobi that HIV-1/AIDS is limited in Turkana. The statistics recorded in the hospitals are but the tip of the iceberg.

Some of the deaths due to HIV-1/AIDS were known by the local people. For instance, a Turkana elder who indicated that HIV-1/AIDS is prevalent in urban Turkana, knew some people that he thought died from HIV-1/AIDS, but people always said that they had died from tuberculosis. In addition, one informant said that there was a house in California village that anybody that rented it died of HIV-1/AIDS within a few days of doing so. In a focus group meeting with California community health workers, it was noted that HIV-1/AIDS had killed many women in California. In addition, it was indicated that at Nakwamekwi, so many households disappeared due to HIV-1/AIDS. In fact, Nakwamekwi is home to many of the soldiers returning to Turkana in caskets. With the help of my research assistants, we counted about thirty graves of soldiers that had been buried in Lodwar township, having died in military barracks in other parts of Kenya. Nakwamekwi was a location that was widely known to have buried more people who died from HIV-1/AIDS than any other place in Turkana. My research assistant and I were able to identify ten cases: a male driver – 1994; two male teachers – 1994; a female teacher – 1994; a male army officer –1997; a male army officer –1998; a former MP – 1995; a male administration policeman – 1996; a male patient attendant –2001; and a female army officer-1999.

²¹¹ Nation Correspondent, 1999. '87 tested HIV-1 positive in Turkana, says officer' *Daily Nation*, January 15, 1999. [online] Available from: www.nationaudio.com/News/DailyNation/Today/News/News3.html. Accessed on: January 15, 1999.

During my research, I collected data on eight people who were suspected to be HIV-1 seropositive in Lodwar township. They included: a businesswoman in California with two children, whose husband (former Administration Police) died in 1995; a woman in Nawoitorong whose husband died in 2000; an Administration Policeman whose wife died in California in 2001; a female civil servant, whose former civil servant spouse died in 1989 in California; a male civil servant who worked with the Turkana Rehabilitation Project and whose two wives died in 1994 and 1998; and a man whose two wives died in 1997 and 1998 from TB.

The first HIV-1/AIDS case was diagnosed in Turkana in 1985. Throughout the years, the prevalence increased dramatically. According to available data, Lodwar had a HIV-1 prevalence rate among antenatal mothers of 12 percent in 1998, and 11.9 percent in 1999. In the year 2003, it was reported by the DASCOP coordinator that Lodwar township had the second highest rate of infection countrywide. With a rate of 18.7 percent, Lodwar township was second only to Kisumu City in western Kenya, with a rate of 25.5 percent²¹². The latest recorded prevalence rate in Lodwar is 11.3 percent (Ministry of Health 2005).

Table 20: HIV-1/AIDS prevalence in Kakuma Mission Hospital, 1997-2000

Year	Number Tested	Number HIV-1+	Percentage of Number Positive
1997	198	57	28.9
1998	345	75	21.7
1999	242	57	23.6
2000	360	81	22.5
2001 January to March	90	20	22.2

Sources: Data collected from medical records at the Hospital.

The above data demonstrates that the prevalence of HIV-1 among antenatal mothers, blood donors, prenatal mothers, in-patients, outpatients, donors, and self-requests (those who requested tests) that presented at the mission hospital has been consistently high.

²¹² Daily Nation, 2003. 'Lodwar and Kisumu top Aids cases' *Daily Nation*, March 14, 2003.

According to the 1997 statistics from the Kakuma Mission Hospital, the HIV-1/AIDS prevalence was 28.9 percent. This is the only data that I managed to break down by gender and occupation. Of the total HIV-1 infections, 22 were women and 35 were men. By occupation, there were thirteen herdsmen (22.8 percent) and five refugees (8.8 percent). I was reliably informed that most of these herdsmen were from the nomadic populations. This suggests that HIV-1/AIDS is spreading among both nomadic and semi-nomadic communities. Other professional categories included *manamba* (matatu touts / conductors), three businessmen, housewives, prison guards, nurse, one secondary school teacher, one primary school teacher, four policemen, and one Chief. In 2000, of the 50 in-patients tested at the Kakuma Mission Hospital, twenty-three were HIV-1 positive, (46 percent). Out of 12 secondary school student blood donors, only one was HIV-1 positive. All the nine self-requests for tests were from individuals at the Kakuma refugee camp and only one was HIV-1 positive. In addition, out of 69 blood donors, five were HIV-1 positive, a percentage of 7.2 percent. During the first three months of 2001, of the 20 HIV-1/AIDS recorded infections, only 15 percent (n=3) were non-Turkana. This does not portend well for this emerging urban town, which is also adjacent to the refugee camp to which it owes its rapid expansion.

The Table 21 below represents the demographic characteristics of HIV/AIDS infected patients admitted to the Kakuma Mission Hospital between 1997 and 2000. The data reveals that HIV-1/AIDS strikes those aged between 25-29 years, and affects mostly men. This fact demonstrates that prevalence rates based on mothers presenting for antenatal clinics are inconclusive, and underrates the true prevalence.

Over the four-year period, the breakdown of non-Turkana who had tested positive was as follows: Luhya – 6; Meru- 6; Kikuyu- 4; Nandi – 2; Luo – 2; and Kisii- 3. This demonstrates that the majority of the infected are Turkana, and that HIV-1/AIDS is not a foreigners' (non –Turkana) infection as is widely perceived by the Turkana.

Table 21: The demographic characteristics of HIV-1/AIDS infected patients in Kakuma Mission Hospital, 1997-2000

Age Group	1997		1998		1999		2000	
Sex	Male	Female	Male	Female	Male	Female	Male	Female
0-4	5	3	0	3	3	3	1	2
5-9	1	0	0	0	0	0	0	0
10-14	0	0	0	0	0	0	0	0
15-19	1	0	0	0	0	2	1	1
20-24	2	3	3	2	4	7	7	3
25-29	9	6	12	23	10	8	13	17
30-34	6	3	6	7	7	3	14	5
35-39	3	4	8	3	2	1	6	1
40-44	3	2	4	1	3	1	2	1
45-49	0	0	2	0	0	0	0	1
50-54	0	1	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	1	1
Adults*	3	2	3	0	1	2	1	3
TOTAL	33	24	38	37	30	27	46	35
Grand Total	57		75		57		81	

*Sources: Data collected from medical records at the Hospital. *No specific age recorded.*

As indicated in table 22 below, nearly 8.8 percent of deaths were due to HIV-1/AIDS. This puts HIV-1/AIDS as the fourth most common cause of mortality in the Kakuma Mission Hospital. However, this is an underestimation as other illnesses such as malaria, pneumonia, anaemia, and tuberculosis could be opportunistic infections due to AIDS, hence a secondary cause of death. For instance, during the month of December 2001, the prevalence of HIV/ADS amongst in-patients was 33.3 percent.

The Lodwar District Hospital had a worst record-keeping background compared to the Kakuma Mission Hospital. Most of the demographic information was missing from their patient records and, in addition, some of the vital records were missing. The findings should, therefore, be interpreted with caution.

Table 22: Top ten causes of mortality in Kakuma Mission Hospital, 2000

Type of Morbidity	Number of Mortality
Malaria	30
Pneumonia	18
Gastroenteritis	12
HIV-1/AIDS	9
Anaemia	8
Hepatitis	7
Malnutrition	6
Tuberculosis	5
Typhoid	4
Kalazaar	3

Sources: Data collected from medical records at the Hospital.

Table 23 below indicates the number of HIV-1/AIDS reported cases in Turkana District.

Table 23: HIV-1/AIDS cases reported in Turkana District, 1989 to 2000

Year	Total number of people positive
1989	5
1990	42
1991	52
1992	59
1993	58
1994	67
1995	74
1996	82
1997	68
1998	129
1999	185
2000	102

Sources: Data collected from medical records at the Turkana District Hospital.

The statistics show that there has been a steady rise in the number of HIV-1 infections over the last ten years. The statistics gathered indicate that the prevalence of HIV-1 in Turkana was 18.2 percent and 16.8 percent in 1999 and 2000 respectively.

Table 24: HIV-1/AIDS cases reported at the Lodwar District Hospital, 1989- January 2001

Year	Total number tested	Total number HIV-1+	Percentage HIV-1+
1989	91	5	5.49
1996	335	98	29.2
1999	350	70	20
2000	572	102	17.8
January to May 2001	144	30	20.8

Sources: Data collected from medical records at the Turkana District Hospital.

The above data was comprised of tests of prenatal mothers, in-patients, out-patients, blood donors, and those who self-requested HIV-1 tests.

Table 25: Gender category of HIV-1-infected people in 1996

Year	Total screened	Total positive	Females positive	Males positive	Turkana	Non-Turkana
1996	335	98	48	50	70	20

The majority of the HIV-1 positive cases were Turkana. Of the non-Turkana who tested positive, a significant number were from Nyanza province. Gender was not a significant variable in the prevalence of HIV-1/AIDS. From the data, there were eighty-nine adults, five children below the age of five, and three between the ages of eleven and seventeen, indicating that the majority of those infected are breadwinners and married people with children.

Table 26: Occupational class of HIV-1 infected adults in 1996

Teachers	Soldiers	Businessman	Students	Housewives	Civil servants	Herders	Not known
6	6	9	5	13	10	15	35

It is significant that 16 percent (n=15) of the HIV-1 infected people were herders. It is possible that the thirty-five people (35 percent) whose occupations were unknown could also be herders. In addition, ten civil servants, six teachers, and six soldiers were recorded as infected with HIV-1/AIDS.

Table 27: HIV-1 infected adults classed according to marital status

Married	Single	Divorced	Widows	Not known
43	27	2	5	21

The majority of those infected (43 percent) were married, indicating that their partners, who could be more than one due to prevalence of polygamy, were likely HIV-1-infected. There were five widows indicating that their spouses could have died of HIV-1/AIDS as well.

Table 28: HIV-1 related mortality in the Lodwar District Hospital, 1999-2000, and January to May 2000

Year	Number of deaths	HIV-1 related Deaths	Percentage
1999	294	30	10.2
2000	308	37	12.0

Over 10 percent of all the deaths in the Lodwar District Hospital were HIV-1 related. In addition, 20-30 percent of the bed occupancy in the Lodwar District Hospital was attributed to HIV-1/AIDS-related morbidity (personal communication with Turkana District HIV-1/AIDS/STD Coordinator).

8:3 HIV-1 surveillance surveys in Turkana District

8:3:1 Antenatal HIV-1 surveillance in 1999 and 2001 - Lodwar District Hospital

In 1999, a surveillance survey by NASCOP was carried out in the Lodwar District Hospital and the Kakuma Mission Hospital for three months (June, July and August). In the Lodwar District Hospital, out of the 117 tests among prenatal mothers, 14 were HIV-1 positive, indicating a prevalence of 12 percent. During the whole year, out of the total 622 people tested, 113 were HIV-1 positive, indicating a prevalence of 18.2 percent. In addition, between January-November 2000, out of the 322 tested, 54 were HIV-1 positive indicating a prevalence of 16.8 percent.

Table 29: Demographic characteristics of HIV-1-infected prenatal mothers, Lodwar District Hospital, 2001

Age	Marital Status	Education	Origin	Residence
A	Married	0	Turkana	Soweto
20	Married	Primary	Turkana	Kanamkemer
A	Married	0	Turkana	Nabulon
21	Married	Primary	Turkana	Nakwamekwi
28	Married	0	Turkana	Napetet
26	Married	Primary	Turkana	California
30	Married	0	Turkana	Kanamkemer
A	Married	Primary	Turkana	Lodwar town
21	Divorced	Primary	Turkana	Nadapal
26	Married	Secondary	Meru	California
23	Married	Primary	Bungoma	Lodwar town

A (adult) - No Specific age recorded

In 2001 a similar surveillance was carried out, again from January to March. Out of a total of ninety-three prenatal mothers, eleven were HIV-1 positive, representing a prevalence rate of 11.8 percent. Only two women originated from Meru and Bungoma. The Table 29 above shows the demographic characteristics of the data.

Over the same period, those who presented at the Lodwar District STD clinic were tested. Out of 40 people who presented at the clinic, eleven were HIV-1 positive, representing a prevalence of 27.5 percent. Out of the eleven HIV-1 infected mothers, three tested positive for VDRL, indicating a prevalence of 27.3 percent. For the HIV-1 positive, only three were non-Turkana. There were four women and seven men, while two women were widowed, two men were single. The table 30 below shows the demographic characteristics of the individuals tested. The data indicates that HIV/AIDS could be more prevalent in men than women, or it could be just because more men than women attend the STD Clinic.

Table 30: Demographic characteristics of HIV-1 positive adults who presented at the Lodwar District STD Clinic, 2001

Age	Sex	Marital status	Education	Origin	Residence	VDRL
32	Male	Married	Primary	Turkana	Town	Ve+
25	Male	Single	Secondary	Turkana	Town	Ve+
A	male	Married	Not recorded	Turkana	Napetet	Ve+
6	Male	Single	Not recorded	Kiambu	Town	-ve
A	Male	Single	Secondary	Turkana	Kalokol	-ve
A	Male	Married	Secondary	Rachwonyo	Town	-ve
48	Male	Married	Primary	Turkana	Lowaringak	-ve
36	Female	Widowed	Secondary	Maragwa	Town	-ve
30	Female	Married	Primary	Turkana	Napetet	-ve
A	Female	Married	Not recorded	Turkana	Nakwamekwi	-ve
A	Female	Widowed	College	Turkana	Hospital quarters	-ve

In December 2001, in-patients from Lodwar District Hospital were subjected to anonymous HIV-1 routine testing in the District Laboratory for HIV-1. The results are indicated in the table below.

Table 31: HIV-1 Prevalence among in-patients in Lodwar District Hospital, 2001

Department	Number of clients	HIV-1-	HIV-1+	Percentage HIV-1+
Male ward	21	13	8	38
Female ward	22	14	8	36.3
Paediatric Ward	35	28	7	20
Isolation (Male and Female TB Wards)	12	5	7	58.3
Total	90	60	30	33.3

The table indicates that in the month of December, 2001, 38 percent and 36.3 percent of the patients tested among in-patients in the male and female wards were HIV-1 infected, respectively. There was a significantly high prevalence of double infection with HIV-1 among the TB patients in the isolation wards, with the highest prevalence being 58.3 percent.

8:3:2 Sentinel HIV-1 surveillance in 1999 and 2001 – Kakuma Mission Hospital

In 1999, a three-month (June, July, and August) surveillance was carried out in the Kakuma Mission Hospital by NASCOP. Out of 115 prenatal mothers tested, 11 were HIV-1 positive, indicating a prevalence of 10 percent. All tests were done using immunocomb reagent. Another HIV-1/AIDS surveillance survey was carried out in the Kakuma Mission Hospital over a period of three months, January to March 2001, among prenatal mothers. Of all the eighty antenatal mothers tested, eight were HIV-1 positive, indicating a prevalence of 10 percent. All of the mothers were married, comprising of one Luo and seven Turkana.

Table 32: The demographic characteristics of HIV-1 positive prenatal mothers: surveillance survey, March 2001

Age	Occupation	Education	Residence
29	Bar attendant	Form IV	Kakuma town
24	Housewife	0	Emeyen
18	Housewife	0	Kayeni
29	Housewife	0	Nadapal
18	Housewife	Class 8	Nadapal
25	AID Worker	Class 8	Kakuma town
22	Housewife	0	Emayen
24	Housewife	0	Kakuma town

The table 32 above indicates the demographic characteristic of the HIV-1 positive prenatal women. The data shows that majority of the women were housewives with no formal education. It is significant to note that all of the HIV-1 infected women were resident in some of the permanent settlements in Turkana.

8:3:3 HIV-1/AIDS surveillance in Lokichoggio

Lokichoggio is a town on the north-western tip of Turkana. Due to the war in Sudan, many NGOs and businessmen have flocked to the town, leading to its tremendous growth thus changing the socio-economic dynamics. It has emerged as the most cosmopolitan town in the Turkana District with significant numbers of non-Turkana nationals. Lokichoggio will, in future, become the foci of HIV-1/AIDS in Turkana, among other urban centres like Kakuma and Lodwar with similar socio-demographic dynamics. The presence of foreigners in this town has influenced socio-cultural changes in local knowledge, practices, and ways of life. Refugees, principally located in Kakuma, also work in Lokichoggio with humanitarian organisations operating in southern Sudan. The population of non-Turkana in Lokichoggio is about 40 percent (personal communication with AMREF). There is also another type of mobile / transient population composed of truck drivers, loaders, *matatu* drivers, traders, and job seekers.

A surveillance survey was carried out in Lokichoggio, at the African Medical Research Foundation's (AMREF) Lopidding Health Centre between March 1 and September 30,

1999. The tests were done on samples collected for other investigations, mostly widal tests and VDRL. The Immunocomb II connect HIV-1 I and II bi-spot test kits were used to test for the subtypes of HIV-1 I and II IgG antibodies in human serum or plasma. However, no additional confirmatory tests were done as should be the standard procedure. Of a total of 347 samples tested, 61 were HIV-1 positive for HIV-1 1 IgG antibodies. Of the sample, only 166 were Turkana. Of the 61 HIV-1 positive cases, 44 percent (n=27) were Turkana. Of the HIV-1 infected Turkana, 13 were males and 14 were females.

Table 33: Demographic characteristics of HIV-1 positive, Loppiding Health Centre, 1999

	Turkana	Non-Turkana	Males	Females	Total	% Prevalence
Total tested	166	208	-	-	374	-
Total HIV-1 Positive	27	34	-	-	61	16.3
Positive Turkana by sex	-	-	13	14	27	16.2
Positive non-Turkana by sex	-	-	22	12	34	16.3

A number of conclusions can be arrived at from the above table. The overall prevalence of HIV-1, according to this data gathered in 1999, is 16.3 percent. Though the prevalence among Turkana and non-Turkana is nearly the same at 44.2 percent and 55.8 percent respectively, the data still confirm the belief that 'foreigners' play a great role in bringing HIV/AIDS to Turkana.

For the non-Turkana, the number of men with HIV-1 is twice that of women. This is attributed to the fact that the majority of non-Turkana are male migrants most of whom have left their spouses at their rural homes. This is true of other towns like Kakuma and Lodwar where non-Turkana civil servants and NGO employees live, who often leave their spouses and children in their villages of origin. While this partially follows the trend in other parts of Kenya and the world where poverty conditions force male economic migrants to leave their families in rural homes, the Turkana situation is also fuelled by insecurity, harsh

climatic conditions, and the lack of better social amenities like schools and hospitals. This is why places like Lodwar, Lokichoggio, and Kakuma are inhabited by many Turkana male migrants without their families. This could lead to the formation of multiple sexual relationships with both the relatively few female migrants and the settled women. The Turkana themselves also follow the same trend, whereby there are male migrants in these towns who have left their families (spouses and children) in the nomadic pastoralist production system.

The insignificant gender-based differential incidence of HIV-1 infections is an indication of the equal spread of HIV-1 among the Turkana. Due to the fact that there are increasing numbers of Turkana moving to towns in search of other alternatives for survival, we expect the number of infections to increase. The infection will further spread among the nomadic population when infected migrants travel back to their villages. Since most Turkana men are polygamous, the infection rate will further be accelerated as the infection of each man could lead to the infection of three or more women.

8:3:4 HIV/AIDS surveillance in Nakwanamoru Health Centre

The Catholic Church's sponsored Nakwanamoru Health Centre indicates the extent to which HIV-1/AIDS has penetrated the Turkana semi-nomadic and nomadic communities. While Lodwar and Kakuma represent urban populations, Nakwanamoru is representative of the rural community. The HIV-1/AIDS cases at the health centre were from other villages such as Kainuk, Katilu, Lokichar, Kaputir, Juluk, etc. Unlike the rest of Turkana, the Nakwanamoru Health Centre had a social worker who took care of HIV-1 patients and sent reports to the district hospital every month. Over a period of nine months, from October 2000 to May 2001, there were a total of 20 people with HIV-1/AIDS. It was reported that eight died over the same period.

The HIV-1-infected patients presented themselves at the Health Centre with various illnesses. The statistics presented in the table 34 below could be broken down as follows: three presented with gonorrhoea, four with tuberculosis, eight with severe diarrhoea, and two with typhoid. This demonstrates that HIV-1/AIDS has penetrated the Turkana villages, with many orphans being left in its path. Most of the orphans are HIV-1 positive (personal communication with the Nakwanamoru social worker). Most of the married men and

women were in polygamous unions, widening the circle of the spread of HIV-1. In addition, the data indicate that Nakwanamoru has experienced an increase of tuberculosis cases because of HIV-1/AIDS. Most of the infected were from the settled population subsisting on farming. There were only three herders out of the eleven infected male adults, one male boy and seven women.

Table 34: HIV-1-infected persons recorded at Nakwanamoru Health Centre, 2001

Sex	Age	Marital status	Occupation	Origin
Male	30	Married	Farmer	Kaputir
Male	40	Married	Farmer	Nakwanamoru
Female	23	Married	Housewife	Lokichar
Male	25	Single	Herder	Katilu
Male	27	Married	Farmer	Lopur
Male	29	Single	Businessman	Lokichar
Male	5	-	-	Nakwanamoru
Female	27	Married	Housewife	Kapelibok
Male	30	Married	Matatu tout	Kalemngorok
Male	32	Married	Herder	Kakongu
Male	43	Married	Adult teacher	Lochwa
Female	29	Married	Housewife	Kakongu
Male	35	Married	Businessman	Juluk
Female	30	Single mother	Not known	Lokichar
Male	19	Single	Herder	Lorokon
Female	28	Married	Housewife	Kainuk
Male	45	Married	Selling charcoal	Kainuk
Female	38	Widowed by HIV-1/AIDS	Farmer	Juluk
Female	28	Married	Farmer	Kapelibok

8:4 The prevalence of sexually transmitted infections

The collection of statistics on other sexually transmitted infections is inaccurate in the Turkana District. The head of the STD clinic, the clinical officer responsible for syndromic management and prevention activities is also responsible for the collection of data from all

the clinics and health centres that provide curative services for sexually transmitted infections. In addition, there are various health centres and hospitals run by NGOs and Church Missions that get their free drugs for STIs from the District STI Clinic in the Lodwar Hospital. In addition, they are required to submit returns accounting for the drugs, and their STI statistics to the STI clinic. However, due to lethargy, the remoteness of some health centres, and the lack of adequate means of communication, these statistics were hardly ever submitted, or if they were, it was done after a year or so. It was with these constraints that I managed to piece some data together, but there were many gaps. I therefore urge the reader to treat these statistics as incomplete and possibly inaccurate. Very likely, there are considerably more cases than reported here. The table 35 below indicates the number of people that attended health centres and clinics in Turkana in 1999 and 2000.

Table 35: STI Cases that presented at various health facilities in the Turkana District

Type of STI	PID	GUD	VAG	Urethritis	Cervicitis	ON	Total
1999	100	389	98	445	188	25	1245
2000	234	876	231	1265	408	29	3042

KEY: GUD- genital ulcer disease; PID- pelvic inflammatory disease; ON-Ophthalmic neonatum

Source: Data gathered from the Medical Statistics Division, Turkana District Hospital

As part of the project, five private clinics operating in Lodwar Town and the two government clinics were requested to record the number of people presenting with sexually transmitted infections for a period of four months. The recorded data showed that more people access the private clinics than the government's STD clinic. This also questions the wisdom of not decentralising the free treatment of sexually transmitted infections to private clinics as well.

Table 36: STI cases that presented (first visit) at seven clinics in Lodwar Town, January to April 2001

Type of health facility	Sex		Total Number of cases
	Male	Female	
Lodwar District Hospital STD Clinic	66	80	146
Prison Clinic	27	21	48
Tumaini Medical Services	22	20	42
Turkana Medical Clinic	19	3	22
Akicha Medical Clinic	7	5	12
Loima Medical Clinic	35	19	54
Afya Bora Medical Clinic	42	23	65

The table 36 above shows the number of people who presented at various healthcare facilities in Lodwar Town. One hundred and forty-six presented with sexually transmitted infections at the Lodwar District Hospital. Of those, 80 were female. Forty-eight people presented at the Lodwar Government prison clinic. One pertinent point is clear from the statistics. They indicate that the number of people presenting at the Government STD Clinic is but a tip of the iceberg as an almost equal number of patients present at private clinics in Lodwar township. This is why the statistics presented by the STD Clinic are spurious. Most of the people that present in these clinics are salaried Turkana. For example, in one medical clinic, the attendees were professionals such as barmaids, tailors, hawkers, civil servants, teachers, businessmen, policemen, drivers, touts, and, of course, housewives.

The table 37 below presents the patients who presented at the STD Clinic at the Lodwar District Hospital from January to April 2001. The table shows that sexually transmitted infections were prevalent among 15 to 49-year old males and 15 to 44-year old females. The statistics from Lodwar prisons indicated that 203 and 74 men and women respectively were infected with sexually transmitted infections. This mirrors the fact that the male population in the prisons is higher than that of females.

Table 37: Demographic representation of patients presenting with STIs at the Lodwar District Hospital's STD Clinic, January to April 2001

Age Group	Male	Female
10-14	0	5
15-19	45	59
20-24	109	140
25-29	106	114
30-34	73	54
35-39	52	39
40-44	32	21
45-49	15	3
50-54	9	3
55-59	8	2
60-64	6	1
Adults	16	16

The table below presents the demographic characteristics of patients who presented with sexually transmitted infections at two private clinics in Lodwar township. The trend is the same as that of the national average, as most infections occur between the ages of 20 to 34. However, there is no statistically significant difference in rates of infection between men and women. Gonorrhoea is the most common type of sexually transmitted infection.

Table 38: Demographic characteristics of patients presenting with sexually transmitted infections at two private clinics, Lodwar Township, January to April, 2001

Age Group	Male	Female	Total
15-19	1	1	2
20-24	6	12	18
25-29	13	8	21
30-34	14	14	28
35-39	9	2	11
40-44	11	3	14
45-49	2	0	2
Adults	2	0	2
Total	58	40	98

One private clinician indicated that most of the STIs that presented at the clinics were chronic as people took longer before they eventually sought treatment at the clinics. In addition, many people delayed seeking therapy in order to look for sources of money rather than use the free government services, due to the stigma attached to the conspicuous STD clinic at the Lodwar District Hospital. On the other hand, private clinics guaranteed confidentiality. In addition, those who were re-infected did not want to go back to the government hospitals for fear of a reprimand by the medical professionals. Such patients were either re-infected, or did not adhere to the treatment plan.

8:5 Knowledge of and attitudes towards sex and sexuality

Wading into the subject of sex and sexuality requires tact, for it belongs to the private domain. Despite this difficulty, I managed to gather knowledge of sex, sexuality, and the related subject of HIV-1/AIDS and other STIs. The subject of sex and sexuality is taboo in most African communities. While peers might discuss sex and sexuality amongst themselves, adults rarely engage in such discussions with their children. In some communities, like the Luo, with whom I am well aware, only grandparents had the onus of imparting knowledge of sex and sexuality to their grandchildren. The same applies to the Turkana. Children do not talk to their parents about sex, but instead with aunts and grandparents. The topics covered would range from menstruation, marriage, personal hygiene, experiences of physiological changes, and STIs. However, with the change of culture, the grandparents' role has been eroded. The youth therefore rely on their peers and experiential knowledge of sexuality and sexual practices. However, the youth normally discuss their experiences amongst themselves, though at times with a lot of grandeur. Among the Turkana, sex is the pillar of marriage, and refusal is a good ground for divorce.

Men are perceived as having a strong sex drive and 'need a lot of sex' and a variety of sexual partners. Just as men practice sanctioned polygamy, they can also have multiple sexual partners. Women know that men will always have extramarital sexual partners. This is similar to views expressed by the Kikuyu women in the Mathare slums in Nairobi (Nelson 1997). Women are also believed to have strong sexual drives. However, women's

sexual activities must be curbed and this is why women who talk of using family planning devices or condoms are perceived as endeavouring to cover their sexual tracks. Women feel that they have a right to sex and they are willing to take the risk of having sex outside marriage, especially if the husband has not been around for a long time or cannot perform sexual intercourse adequately due to either old age or diminished virility. This is why the Turkana viewed arranged marriages between young women and old men as increasing the risk of contracting HIV-1/AIDS, as young women are likely to seek sexual gratification outside of marriage.

There are regulations governing sexual relations, for example, who one can or cannot have sexual relationship with. Adultery is not entertained and there are a number of beliefs concerning the consequences of adultery. It is believed that if a woman commits adultery, all the livestock would bleed to death if cleansing rituals are not carried out immediately. In addition, a man who goes hunting after committing adultery would not kill any animals. If a woman who had committed adultery passes near a skinned animal, it would resurrect. If an animal is to be killed through spearing, and a woman who has committed adultery is standing nearby, the animal would not die. In some cases, it is believed that the woman and the man could also die instantly. To prevent death, the man must bring a bull in front of the elders, spear it, and pour the stomach contents all over his body while confessing that he committed adultery. The man would then proceed to smear the woman with the stomach contents as well. The elders would then bless the livestock and the man and woman by sprinkling water on them.

Sex among the youth is not normally sanctioned before marriage amongst many African communities. Sexual intercourse is revered and designed solely for procreation. Sexual intercourse is supposed to bring deeper love, and peace and prosperity between the couple, in the household and among the community. The act of sexual intercourse goes beyond the individual, and pervades the community. The Turkana frown upon premarital sex. It is believed that a girl who commences sexual intercourse at an earlier age is at risk of barrenness. Too much sex leads to infertility. Likewise, a man who has engaged in premarital sexual intercourse several times risks being infertile because of having 'wasted' all the 'strong seeds' (virile semen). This knowledge is similar to that of men in the Mumbai slum in India, who believe that the excessive loss of semen through frequent intercourse

and masturbation cause sexual health problems by compromising the longevity or quality of sexual activity (Verma *et al.* 2003). In Turkana, if such a man marries, he would not be able to produce semen strong enough for fertilisation. In fact, a man or a boy is not even supposed to touch *arach*, a girl's indigenous pant, often made from a hide. To touch it is synonymous with having sexual intercourse with her. If the same happens, some animals must be paid as a form of compensation.

The Turkana's knowledge of sex and sexuality has changed as informants confirmed that premarital sex is currently common, involving married people having sex with unmarried boys and girls and non-married men (boys) having sex with non-married women (girls). Disco and video halls and wedding ceremonies are associated with premarital sex. Just like in Uganda, poverty plays a role in premarital sex as young girls use sex as a means of acquiring things they cannot afford (Kipp *et al.* 2000). A lack of school fees forces girls to mortgage their bodies for money. Premarital sex is also common in urban centres because of the widespread delay in marriage. In addition, Turkana youth, both boys and girls, in the urban centres drink the local brew. This contributes not only to premarital sex, but also to the spread of HIV-1 and tuberculosis. In addition, migration into urban centres has led to an increase in the number of females in towns. Though in normative terms, the Turkana do not sanction sex before marriage, in practice they, just like the Ariaal pastoralists, sanction a culturally approved full sexual relationship while discouraging procreation at the same time (Roth *et al.* 2001).

The prevalence of premarital sex is demonstrated through the prevalence of non-marital births in Turkana. Often such children belong to the maternal grandmother. Men only acquire reproductive rights through marriage and full payment of bride-wealth. Any man who wants to claim paternity must pay *ekichul*, a form of fine, which consists of thirty livestock (20 shoats and ten cows or camels) for the first child and eleven animals (ten small stock and one cow or camel) for each subsequent child. As I indicated above, even though premarital sex is discouraged, there is no stigma associated with premarital births. The number of non-marital births is particularly high in Turkana as it increases the value of the woman in terms of bride-wealth since such a woman has proven her fertility. Parents apparently covertly encourage daughters to give birth before marriage, and the children are given to their grandparents. There is no value attached to virginity until marriage. This

is similar to the Pitjantjatjara Aborigines who do not fear non-marital pregnancy even in casual relationships, as children are highly valued; hence, there are only few sanctions against men entering into multiple concurrent sexual relationships (Willis 2003). In Turkana, nearly 40 percent of births are non-marital, with most births fostered to the mothers' patrilineage (Shell-Duncan 1994).

During *ngeropese* in Turkana, adolescent boys and girls become particularly close and interact quite often in ceremonies and regular dances. It was indicated that this is the age that boys make an impression on girls. When adolescent boys go for *edonga* dances, traditionally they did not have sexual contact with girls they danced with. However, it was indicated that currently, *edonga* results in premarital sexual intercourse in the bush. Though premarital sex is never overtly mentioned, its utility is based on the knowledge that regular sexual intercourse would 'repair' any abnormalities with the sexual organs such as frigidity, the narrowness of the vaginal tract, the discharge of too little or excessive vaginal fluids during sexual intercourse, and 'cold vagina' (Muyinda *et al*/2001:357). Premarital sex is therefore tolerated among the girls as it leads to perfection of the sexual act and the organ. In the same way, boys saw sex as a means of testing the virility and 'sweetness' of the women, possibly the future bride. As one man noted, why buy food that you have never eaten or tasted. Ironically, at times, most experienced women are frowned upon as having performed too many sexual acts and hence are no longer 'sweet'. On the other hand, girls like experienced men. It was indicated that extramarital affairs are common in urban settlements and rural settlements, though it is done in secrecy.

To gauge Turkana knowledge of sexuality and their attitudes towards sex, respondents were asked whether they would discuss sex with their partners. While 67 percent of female respondents (n=27) said they would, only 45 percent of men (n=18) indicated they would do the same. Women were more willing to discuss sex with their partners than men. The reasons why men would discuss sex with their partners varied. A carpenter with two wives indicated that he would discuss sex with his wives so that they could trust and value him, and not allow any other man to have sex with them. On the other hand, a 27-year-old married man with two wives and two mistresses indicated that he would discuss sex with his partners to educate himself on how to remain safe, and also how to take care of his regular partners. The other popular reason for discussing sex with a partner was to reduce

the chances of contracting HIV-1/AIDS and other STIs by creating awareness. A single woman indicated that she would discuss sex with her partner so that he would only have sex with her. For one village elder, discussing sex with his wives focused on how to educate their children about dangerous diseases like HIV-1/AIDS and the means through which they could avoid contracting sex-related infections. A married woman indicated that the only time she would discuss sex is when a man wants to have sex with her. Her discussion would revolve around the man's health status.

In Kenya, most of the preventive work on HIV-1/AIDS has been based on the slogan of faithfulness, abstinence, or protection during sex through the use of a condom. It was therefore instructive to gauge the peoples' understanding of this popular slogan in HIV-1/AIDS prevention. The meanings of *safe sex* were as diverse as was the population interviewed. Discussion of safe sex was, however, inhibited by the fear of discussing sex and sexuality openly. One male informant indicated that *safe sex* means using devices for protection against infection. Safe sex was generally understood to mean having sex with only one partner. As one 24-year old married butcher with two mistresses indicated, safe sex means not having sex with many 'commercial sex workers', and other casual partners. For one male, safe sex means viewing sex as a tool for procreation, and not for satisfying human sexual desires. Another informant indicated that safe sex means having sex with only one partner. Even some village elders who were polygamous and had extra partners indicated that safe sex means 'having only one trusted partner'.

Women were more forthcoming with answers on the meaning of safe sex. Many female respondents told me that safer sex means protecting oneself through the use of condoms and pills against pregnancy and the contraction of sexually transmitted infections. In addition, it means having 'controlled sex'. In fact, one female teacher indicated that safer sex means having sex while protecting oneself against sexually transmitted disease using a condom. In addition, according to a 19-year-old single woman, safer sex means using condoms with men. She indicated that she would have sex with countless men provided they give her money. During the time of the interview, she had three male partners. She was, however, knowledgeable about HIV-1 including 'how it attacks the white blood cells leading to the break-down of the immune system thus causing AIDS'. Her knowledge of safe sex was overridden by concern about cash. However, a 28-year-old married woman

indicated that safe sex means trusting your partner, and making sure that you stick to one partner as using a condom means that you do not trust each other. It was unanimous that safe sex means having only one faithful partner, preferably a Christian. Some informants indicated that a Christian is likely to be a faithful, trusted, and devoted partner guided by the Christian principles regarding morality. That was why one male informant indicated that safe sex means avoiding immoral practices that may expose one to HIV-1. Having one devoted partner would not lead one to have sex *hovyo hovyo*²¹³, which would contradict the principles of safe sex. As there is a popular perception that sexually transmitted diseases, including HIV-1, are mainly transmitted by commercial sex workers, a significant number of female respondents indicated that safe sex also means not having sex with commercial sex workers and other extramarital partners (mistresses). Commercial sex workers were widely blamed for contributing to unsafe sexual practices.

Lodwar township, being an urban environment, exhibits an urban style culture and urban practices surrounding sexuality, such as extramarital sexual relations, single-female headed households, commercial sex workers, and multiple sexual relationships. I assumed that the urban culture would replace traditional notions and practices on sexuality. Multi-sexual relationships would be in abundance. That is why I was not surprised when six married females indicated that they had other irregular partners beside their husbands. None of the married males, however, indicated that they had irregular partners. While 30 percent of female respondents (n=12) indicated that they had previously used a family planning method, 32.5 percent (n=13) were currently using a family planning method. Of these, 61.5 percent (n=8) were using pills, 15.4 percent (n=2) were using condoms, and 23 percent (n=3) were using a natural family planning method. Fifty eight percent of men (n=23) indicated that their spouses had never used a family planning method, while 52.5 percent (N=21) were currently using various family planning methods. About 10 percent (n=2) were using pills, 80.9 percent (n=17) were using a natural family planning method, while 19 percent (n=4) were using condoms.

"Condom" is nearly a taboo word in Lodwar township, while it is anathema in the rural areas. The people's knowledge of the use of condoms as a protective device against the contraction of sexually transmitted infections is very limited. On various occasions,

²¹³ Hovyo hovyo means carelessness in Swahili. Here it means having sexual intercourse carelessly.

respondents would frown at the mention of a condom. The use of a condom is associated with the acknowledgement that sexual intercourse is casual, and thus immoral. The use of condoms therefore goes against the grain of 'African morality' structured in the African culture, which considers casual sex immoral as opposed to 'Western immorality' that celebrates sexual intercourse and encourages multiple-partnerships as long as condoms are used for protection. I was informed that this immorality is evidently displayed and acted out in the Western pornographic films and print media. In Kenya, 91 percent of women and 96 percent of men have knowledge about condoms, and 49 percent of men know that condoms offer protection against HIV-1 infection. However this is not translated into action as only 1.5 percent of women and 15.9 percent of men use condoms (Gathenya and Asang n.d: 17). In addition, men in extramarital relationships and those who have many sexual partners often do not use condoms with regular partners, but only with casual partners and commercial sex workers to protect themselves. Generally, men do not use condoms while having sex with young girls as they are perceived to be safe. Only six females out of fifty had ever used a condom, compared to eight men²¹⁴ out of fifty. For both males and females, the main reason for using a condom was to prevent the contraction of STIs, including HIV-1/AIDS, and to prevent pregnancy. A married 42-year-old man with one wife and a mistress told me that he does not use a condom because he does not practice sex with many partners. He indicated that condoms are not freely available in Turkana township. The reasons for not using a condom were diverse. Twenty-three percent of women indicated that their partners would not trust them if they used a condom, while 9 percent of men noted that condoms are not 'natural for sex'. Women associate condoms with sexual promiscuity. If women ask men to use condoms, men think that they are not being trusted or that the woman might be infected because she had sexual intercourse with other men. In addition, the Turkana, like the Aborigines of Pitjantjatjara of Australia, discourage the use of condoms because the sexual exchange of fluids between the partners during sexual intercourse is the core of the sexual act (Willis 2003).

²¹⁴ There is no female condom in Turkana. It is the male partners that had initiated the use of a condom with these women.

Knowledge of the use of condoms is very limited in Turkana. Since the Turkana generally do not want to use condoms, and perceive them as dirty objects, they have little motivation to learn how to use them. Two respondents (a man and a woman) indicated that they would not use a condom because they did not know how to use them. Condoms are an inconvenience and are impractical as sex is usually performed in the dark. The woman is not supposed to see the nature of the erect penis and men do not play with their penises in front of women. This is maintained despite the fact that in rural communities, men have limited clothing, and often exposes their penises unwittingly. The process of wearing a condom is tantamount to playing with genitalia in front of your partner²¹⁵. It was also indicated that condoms might remain in the uterus and/or vaginal cavity.

It is noted also that condoms are rejected because they encourage immorality. A Turkana preacher explained to me that the poster advertising the TRUST brand of condoms shows a caption of a man and woman closely holding one another, with the words 'lets talk' in between. Most of the participants in the leader's workshop indicated that this encourages immorality. In addition, condoms are perceived as filled with contraceptives and / or laced with HIV-1. The lubricating fluid inside the condom sustains this form of knowledge. It is claimed that some condoms have deliberate pores, while some break very easily. It is noted that the free condoms distributed by the Ministry of Health are the ones that are particularly unsafe. Moreover condoms have the dubious distinction of having an association with birth control programmes.

As part of this research, 100 respondents, including equal numbers of men (n=50) and women (n=50) were asked to give the reasons why they would not use condoms. The responses are indicated in table 39 below.

²¹⁵ Among the Aborigines of Pitjantjatjara of Australia men cannot use a condom because the penis is highly involved in men's rituals, which are kept from women. This goes against condom use, which requires men to handle the penis in front of women. In addition, the shape of the erect, sub-incised penis means that conventional condoms are not only difficult but also uncomfortable to put on, leading to the perception among them that condoms are meant for uninitiated boys who are not sanctioned to have sexual intercourse (Willis 2003).

Table 39: Summary of reasons for non-use of condoms

Reasons for not using a condom	Females (n=50)	Males (n=50)	Total percentage (n=100)
Condoms not available	0	3	3
Condoms too expensive	0	5	5
Partner objected	4	7	11
Do not like condoms	26	10	36
Partner would not trust me	26	8	34
Condoms are not natural for sex	23	12	35
No need to use a condom because trusts partner	24	13	37

Respondents were asked to respond to more than one option, which were read out to them by the interviewer. As the responses indicate, many people, men and women, do not use condoms because of questions of trust. In addition, condoms are generally disliked and are not considered natural for sex.

Women did not consider the availability and cost of condoms as a factor in condom usage because they do not buy condoms. Women therefore do not have control over the use of condoms. Due to male control over sex, either in marriage or in casual partnership, women would not even dare suggest the use of condoms. In fact, a significant number of female respondents indicated that suggesting the use of a condom would be a sign that they did not trust their partners. They do not have the right or the power to tell their partner to use a condom. Such a suggestion could result in serious abuse or an altercation.

To determine the level of risks to respondents of contracting any sexually transmitted infection, respondents were asked about ideal lifestyles in relation to sexuality and sexual relationships at the time of the interview. The table below summarises the responses.

Table 40: The ideal sexual lifestyles

Lifestyle	Females (n=50)	Males (n=50)	Total percentage (n=100)
Prefer to have no sexual intercourse	4	15	19
No regular partners but casual sex with partners when I feel like having sex	3	3	6
Have sexual intercourse with few regular partners	3	12	15
Have sexual intercourse with one regular partner but not living together	2	12	14
Married but have some other sex partner	1	6	7
Married with no other sex partner	31	29	60
Have no ideal lifestyle / do not know	5	3	8

The overwhelming ideal lifestyle among men and women in relation to sexuality and sexual relationship is being faithfully married with no other sexual partner. More men than women indicated that they would have sexual intercourse with either a few regular partners or one regular partner, but not while living together. That also indicates that women are more inclined to seek single partnerships than men and hence are at a lower risk of contracting HIV-1.

8:6 Local Knowledge of HIV-1/AIDS

8:6:1 Popular discourse on HIV-1/AIDS

In Turkana, AIDS is called *edjae*, *lokoyoo*, or *lokwakel*. The word *lokwakel* is divided into, *lokwa* – white, and *kel* - teeth. Therefore, *lokwakel* means white teeth. HIV-1/AIDS is called *lokwakel* because it turns brown teeth to white and white teeth become even whiter and more conspicuous. One of the frequently mentioned HIV-1/AIDS symptoms relates to the appearance of 'white teeth' in the HIV-1-infected.

A 40-year-old retired civil servant noted that AIDS has always been there. He noted that in the past, AIDS was called *lokoyoo*, an illness of the bones. This is because the infected person would become so thin that their bones would conspicuously protrude from the body. The symptoms were similar to those of present day HIV-1/AIDS, even though *lokoyoo* was associated with a curse.

All of the 100 respondents indicated that they have heard of AIDS. This is consistent with the Kenya Demographic and Health Survey (CBS 2003) results, which found that HIV-1/AIDS awareness was universal among men and women within the age of reproduction. In another survey in the pastoralist districts of Wajir, Marsabit, and Kajiado, the awareness rate was 79.5 percent (ITD-G 2005). The respondents in Turkana appeared well informed about HIV-1/AIDS. Information about HIV-1/AIDS was first heard in Lodwar in 1985, while some respondents first heard about the pandemic in 1998. There was no difference in the level of knowledge by age, marital status, level of education, and gender. It was clear that the respondents were exposed to information on HIV-1 by virtue of being urban dwellers. Detailed knowledge of the specifics of the syndrome was lacking. There was no distinction made between HIV-1 and AIDS, neither was there a general awareness of the kinds of illnesses associated with HIV-1/AIDS, besides tuberculosis.

The following poem in Swahili, recited during a leader's workshop in Lodwar, epitomises the perception of the ubiquitous nature of HIV-1/AIDS in Turkana:

Chorus: *Ukimwi ni adui* (AIDS is an enemy)

Ukimwi uwawa (AIDS kill)

Wake kwa ume (women and men)

Sote tutakufa (we will all die)

Wote tutangamia (All of us will sink (face it)

Masikini na matajiri (The poor and the rich)

Mtu ako mgonjwa, wanasema ni Ukimwi, (If one is ill, they say it is AIDS)

Mtu anakoa, wanasema ni ukimwi (If one has a cough, they say it AIDS)

Mtu akikufa, wanasema ni ukimwi (If one dies, they say it is AIDS)

Makasisi wanafariki (Priests are dying)

Wanasiasa wanakufa (Politicians are dying)

Wanafunzi wameaga (Pupils / students have died)

Mashule tupe (Schools are empty)

Table 41: Sources of information about HIV-1/AIDS

Source of information	Females (n=50)	Males (n=50)	Total percentage (n=100)
Radio	29	32	61
Newspaper	29	15	44
Other people (friends and acquaintances)	43	30	73
School	11	3	14
Health workers	33	39	72
Politicians	13	9	22
Government employees	29	12	41

The table 41 above indicates the sources of information on HIV-1/AIDS as mentioned by the respondents. In addition to those sources, one respondent cited personal experience through contacts with infected person and religious leaders as sources of information on HIV-1/AIDS. The most popular source of information about HIV-1/AIDS was friends (acquaintances) and healthcare workers. Women relied more on other people (especially

fellow women) for information on HIV-1/AIDS than men. Though radio was cited by 61 percent of respondents, there is low ownership of radios in the community and no radio programmes in the local language. In addition, the transmission is very poor due to limited geographical coverage of radio frequencies.

Respondents had diverse knowledge of HIV-1/AIDS, most of which they had gathered from the above sources. People had heard that HIV-1/AIDS is a dangerous killer disease. It kills people worldwide, even *mzungu* (the white man), every single minute. By killing many people, it has produced many orphans and widows in its path. It was mentioned that AIDS does not have a cure. A village elder indicated that HIV-1/AIDS could be contracted by anyone who engages in casual sex, and the 'illness could hide in the body'. Casual sex is often epitomised by commercial sex workers who display uncontrolled and open sexuality, the providers of sex for all and sundry. Commercial sex workers are seen as responsible for the rapid spread of HIV-1.

Among the Turkana, human beings are portrayed as helpless and powerless to stop the transmission and contraction of HIV-1/AIDS. This leads to a fatalistic attitude towards the main mode of HIV-1 prevention, that is, behavioural change. Some people believed that they might be HIV-1 infected already, hence there was no point in changing their sexual behaviour. Powerful imagery, metaphors, and euphemisms for HIV-1/AIDS drew associations between HIV-1/AIDS and socially perceived immorality, illness, death, denial, innocence, and guilt.

There were diverse accounts of the origins of HIV-1/AIDS, some with racial undertones. In the same way that the Western world blamed Africa for being responsible for the origin and spread of HIV-1/AIDS, the Turkana blamed the *Mzungu* (white man) for having brought HIV-1 after having had sexual intercourse with a monkey. This is contrary to what has been said by the Western journalistic press and by racialised knowledge. These sources have constructed HIV-1/AIDS, wherein African culture "has been designated as the source of AIDS, exotic customs have been held responsible for passage of the virus from monkeys to humans, and the sexuality of the Africans has been characterised as promiscuous, permissive, and different from that of other people elsewhere" (Schoepf 1992a:265). Two male Turkana informants indicated that they believed that the Western

world brought HIV-1/AIDS to Africa as a means of controlling the population growth so that Africans would not overtake the *Mzungu* in the future²¹⁶.

Another version in Turkana claimed that AIDS resulted from an apocalyptic war between men and supernatural powers. After winning the war, the supernatural powers have brought HIV-1/AIDS to mankind as a show of superiority. Some Turkana elders also noted that AIDS had been delivered by Akuj, a supernatural power, as a punishment for the Turkana for turning their backs on him and joining modern forces, including Christianity - the new religion. In this regard, HIV-1/AIDS is comparable to the ferocious cyclical droughts and famines that inflict pestilence, hunger, and malnutrition on the Turkana. The Pentecostal Church leaders indicated that AIDS has been brought by God to punish the wicked ways of mankind, especially obsession with sexual intercourse manifested by wanton promiscuity, permissiveness, and moral decadence. This is similar to the apocalyptic beliefs in Papua New Guinea, which see AIDS as a punishment from God: a sign of the 'End of Times' (Eves 2003). As one women's group leader indicated, *lokwakel* is a punishment from God.

Modern life, brought by the White man, is seen as responsible for the appearance of HIV-1/AIDS. Moreover, AIDS has followed the material objects of modern life and the moral values they bring, like the sexually explicit films shown in video halls, tinned foods sold in the shops, and free condoms packed with the virus. The notion that foreign things bring illnesses to Turkana is popular. Though the Turkana depend on foreign donations, they are sceptical about the genuineness of donors. This is why, during an immunisation campaign, local people were very sceptical as to why they were being given Unimix²¹⁷ only after their children were immunised. They noted that Unimix was meant to kill their children after immunisation. In fact in one station, Turkana nurses had to be brought in to immunise children after parents raised objections to the white MSF Belgium doctors and nurses. A Women's Group leader noted that the prevalence of illnesses in Turkana is a recent phenomenon that has followed the appearance of 'new things'. In addition, she was specific that condoms facilitate the spread of *lokwakel*.

²¹⁶ Farmer (1992) has described similar beliefs in Haiti where AIDS is constructed as America's grand plan to enslave Haiti.

²¹⁷ Unimix is a highly nutritious food in the form of flour often donated by UNICEF for malnourished children.

AIDS is seen as an urban illness, contracted through exposure to modern life in urban settings. In Lokangae and in other rural settings, it was noted that AIDS is an illness of town (Kakuma, Lodwar and Lokichoggio) people. That is why one respondent noted that it is okay to have many sexual partners in the villages because *rahia*, rural dwellers, are far removed from the epicentre of *lokwakei*. In essence, the *rahia* are seen as free from HIV-1/AIDS. But an elder noted that HIV-1/AIDS cases are increasing in Turkana because so many people, especially the young, migrate outside the district, or move from villages to urban centres for employment. Often they spread the infection when they go back to their villages. Therefore, HIV-1/AIDS spreads in Turkana country through the migration and immigration of Turkana and non-Turkana, especially those in professions that are associated with a high prevalence of HIV-1, such as soldiers, teachers, and policemen. In addition, there are many Turkana domestic servants, watchmen, and farm workers who migrated down country to look for employment, who transmit HIV-1 when they come back. There are numerous non-Turkana who immigrate into Turkana to search for lucrative employment opportunities provided by the United Nations agencies and other international and local NGOs that provide services to the refugees. Therefore, STIs, including HIV-1, come from down country. The Turkana indicated that they could be cushioned from the infection as long as they do not venture into towns, or engage with, or marry town people.

8:6:2 HIV-1/AIDS prevention

Respondents indicated that HIV-1/AIDS is preventable. Most respondents indicated that the only effective preventive measure is to stop having casual sex with many partners and commercial sex workers. Even though AIDS compromises the body's defence mechanisms and weakens the immune system, it was indicated that under normal circumstances the infected person would live long without frustration or depression. In addition, the infected person needs to abstain from sexual intercourse. Moreover, those infected need to have proper nutrition. A 24-year-old woman indicated that once you have HIV-1/AIDS, you should stop worrying and stop having sexual intercourse if you want to live longer. More sex makes one stressed, thus facilitating rapid death. On one occasion, I was an unobtrusive observer in a discussion between two Matatu touts about HIV-1 transmission. One, a 30-year-old man, noted that if one is HIV-1 infected, it is better if he

engages in sexual intercourse quite often to offload the virus. Through regular offloading of the virus, one reduces the viral load in the body. He rationalised that this could limit the development of AIDS characterised by numerous opportunistic infections. The other colleague contradicted him by indicating that further engagement in sexual intercourse would only speed up one's death, as one would lose energy and blood, which would compromise the immune system.

One man indicated that HIV-1/AIDS would be preventable if all cultures practised monogamy. As AIDS kills indiscriminately, as one man noted, it is imperative that married couples avoid extramarital sexual liaisons. An unemployed 39-year-old man with two regular partners indicated that HIV-1/AIDS is a dangerous disease, which kills, and the only way to be safe is to have sex with a few trusted, faithful partners.

I asked male (n=50) and female (n=50) respondents whether knowing about HIV-1/AIDS had produced changes in their sexual lifestyles and / or their decisions regarding sex given concerns about contracting HIV-1. As indicated in *Table 23*, all respondents were presented with a variety of answers from which they could choose applicable sexual lifestyle(s). The most popular change in sexual lifestyle was the adoption of monogamous sexual relationship that is, 'sticking to one partner' followed by 'finding more about a partner before having sex'. Seventy-five percent of women (n=35) and 90 percent of men (n=45) indicated that knowing about HIV-1/AIDS had influenced changes in their lifestyles. Some informants had changed their sexual lifestyles, indicative of a gap between knowledge and behavioural change. For instance, a married man told me that he would only change his lifestyle once he has married additional wives. As a 26-year-old man indicated, "the more you worry about HIV-1/AIDS, the more you might contract it". In essence, it is not worth worrying about changing your lifestyle in the face of HIV-1/AIDS. A 30-year-old lorry driver indicated that he does not engage in sexual intercourse with women while on a journey since he heard about HIV-1/AIDS. The table below indicates changes in sexual lifestyles since knowing about HIV-1/AIDS.

Table 42: Change in sexual lifestyles after knowing about HIV-1/AIDS

Change in sexual lifestyles	Female (n=50)	Male (n=50)	Total percentage (n=100)
Having fewer partners	5	5	10
Finding more about a partner before having sex	27	15	42
Using a condom	11	19	30
Not having sex	0	4	4
Sticking to one partner	34	33	67
No sexual intercourse with commercial sex workers	N/A	17	17

Only 12 percent of male respondents (n=6) indicated that they had had a blood test that involved testing for HIV-1. They were tested as potential blood donors. On the other hand only 30 percent of female respondents (n=15) had had their blood tested for HIV-1. However, I think some had been tested without their knowledge, especially those who had previously attended prenatal clinics at the Lodwar District Hospital. One female respondent indicated that she would not go for a HIV-1 test, as she is not HIV-1 infected. Many people, who do not want to know their HIV-1 status, hold this view. In fact, 88 percent of male respondents (n=44) indicated that if they had an opportunity, they would accept to be tested for HIV-1. One commercial sex worker told me that if she had HIV-1 or any other STI, she would not tell anyone, as she does not want to die alone. On the other hand, one informant said that she would go for an HIV-1 test since it is free, and because whoever has AIDS would be treated.

Only 22 percent of female (n=11) and 8 percent of male (n=4) respondents indicated that it is good to have many sexual partners. A total of 70 percent of male (n=35) and 74 percent of female (n=37) respondents noted that having many sexual partners would lead to one contracting HIV-1. Generally, multiple sexual partnerships were regarded as high-risk behaviours that could lead to the contraction and transmission of HIV-1.

The use and / or reuse of hypodermic needles are one of the routes of transmission of HIV-1 in Africa, especially in places where people have to buy their own needles for

injections, and in places where village injectors²¹⁸ are popular. These village injectors are often the only sources of biomedical therapy. They offer biomedical services, especially antibiotic injections, which are always popular. Eighteen percent of women (n=9) and 16 percent of male (n=8) respondents indicated that they have been injected with prescribed drugs in hospitals in the past twelve months. The question stated, 'have you ever injected yourself or has someone else injected you with drugs or any other substances, medical or otherwise?' However, few respondents were likely to have received medical attention from biomedical practitioners in the Lodwar District Hospital and private clinics, or from quacks. Injections might not be popular because of the prohibitive cost of prescribed drugs, especially those that can be injected. Injections, as opposed to tablets and capsules, incur an additional cost as the sick must also buy hypodermic needles and later hire the services of a quack or registered biomedical practitioner. It is therefore not only a convenience, but also cheaper to self-administer oral drugs.

8:6:3 Perceptions of risk

Perceptions of risk are vital to consider when designing preventive programmes. The perception of one's chance of being infected is an indicator of how people understand the causality involved in the contraction of an illness. In order to gauge people's perception of their risk of contracting HIV-1, respondents were asked if they thought their chances of contracting HIV-1 were great, moderate, small, none, or if they did not know.

While 38 percent of males (n=19) considered themselves at risk of contracting HIV-1, only 30 percent (n=15) considered themselves not at risk, and another 32 percent (n=16) did not know. All twenty village elders considered themselves not at risk of contracting HIV-1. Generally, 38 percent of all the respondents did not know their level of risk for contracting HIV-1. The perceptions of risk are presented in table 43 below.

²¹⁸ The village injectors are not formally trained medical personnel. Of late, even some traditional healers have adopted the role of injecting the sick with medications (especially antibiotics) bought from the chemists, shops, bus stops, or market places. They often charge less than what private clinics would charge.

a) Perceived risk of contracting HIV-1:

Table 43: Perceived risk of contracting HIV-1

Perceived risk	Female (n=50)	Male (n=50)	Total (n=100)
Greatly at risk	5	4	9
Moderately at risk	2	15	17
Not at all at risk	22	15	37
Do not know	21	16	37

While a large proportion of female respondents (44 percent) considered themselves as not at risk of contracting HIV-1, 28 percent of male respondents viewed themselves as moderately at risk. Only 10 percent of women (n=5) and 8 percent of men (n=4) perceived themselves as greatly at risk of contracting HIV-1. In general, more men rate their risk as moderate than women do, 30 percent vs. 4 percent. In addition, majority of respondents, either 'do not know' their level of risk, or consider themselves as 'not at all at risk' of contracting HIV-1. Three times as many males as females perceive themselves to be greatly or moderately at risk.

b) Perceived chances of contracting HIV-1:

While nearly half of both male and female respondents (42 percent) indicated that they had no chance of contracting HIV-1, nearly 39 percent indicated that they did not know their chances in the present circumstances. None of the respondents thought that they could already be infected with HIV-1. Almost twice as many males as females saw themselves having a moderate or a good chance of contracting HIV-1. The responses are presented in table 44 below.

Table 44: Perceived chances of contracting HIV-1

Chances	Female (n=50)	Male (n=50)	Total (n=100)
No chance	22	20	42
Moderate chance	5	12	17
Good chance	2	0	2
Already have HIV-1	0	0	0
Do not know	21	18	39

c) Reasons for perceived lack of risk for contracting HIV-1:

All the 37 respondents (22 females and 15 males) who indicated that they were 'not at all at risk' were asked why they thought that they did not have a risk of contracting HIV-1. The respondents were presented with a range of options, from which they could choose as many reasons as they thought were applicable to themselves. The responses are presented in table 45 below.

Table 45: The reasons for the perceived lack of risk of contracting HIV-1

Reasons for lack of chance of contracting HIV-1	Female (n=22)	Male (n=15)	Total
No sexual intercourse	3	1	4
No sex with commercial sex workers	N/A	7	7
No homosexual contact	7	3	10
Has sex with only one partner	14	7	21
My sex partner(s) is / are faithful	14	8	22
Use condoms all the time	3	3	6
No injections other than in hospitals	15	7	22
Insist on tested blood for transfusion	7	4	11

Forty-seven percent of men noted that as long as they do not engage in sexual intercourse with commercial sex workers, they could not contract HIV-1. Many men also considered themselves as having sex with only one faithful partner. On the other hand, 63.6 percent of women indicated that they considered themselves safe because of having only one faithful partner, presumably their husbands. Only 16.2 percent of the respondents (equal numbers of men and women) indicated that they use condoms all the time to reduce their chances of contracting HIV-1.

d) Reasons why respondents thought they had a chance of contracting

HIV-1:

All the 19 respondents (7 females and 12 males) who indicated that they had a good or moderate chance of contracting HIV-1 were asked the reasons why this was so. They were presented with a variety of answers from which they could indicate diverse reasons and

indicate as many as they perceived applicable. The responses are presented in table 46 below.

Table 46: Reasons for moderate chance of contracting HIV-1

Reasons for moderate or good chance of contracting HIV-1	Female (N=7)	Male (N=12)	Total
Had multiple partners	1	3	4
Have multiple sexual partner	1	2	3
Has had sex for money/ had sex with a commercial sex workers	1	1	2
Spouse has had multiple sexual partners	2	1	3
My partner is unfaithful	1	2	3
Do not use condoms with spouse	3	6	9
Do not use condoms with irregular partners	1	1	2

It is interesting that 47.4 percent of both male and female respondents thought that they had a chance of contracting HIV-1 because they did not use condoms with their spouses. Twenty-five percent of men indicated that having had multiple sexual partners in the past increased their risk of contracting HIV-1. Seventeen percent of the male respondents had multiple sexual partners compared to 14.2 percent of women. Twenty-nine percent of female respondents blamed men for increasing their chances of contracting HIV-1 through their large sexual networks. These women were aware that their spouses either had multiple sexual partners in the past or sexual intercourse with commercial sex workers. Multiple sexual partnerships are a very important medium of HIV-1 transmission. The majority of men were aware that they had engaged in risky sexual behaviours like having multiple sexual partners. In addition, there is widespread non-use of condoms. Nearly half of the respondents (42.8 percent of the females and 50 percent of the males) indicated that not using condoms with spouses had increased their chances of contracting HIV-1. From their responses, it appears that neither gender blamed the other for the lack of condom use.

e) Risk of contracting HIV-1 according to gender

There is perception among the Turkana of Lodwar township that gender determines the risk of contracting HIV-1. Forty-six percent (n=23) of female respondents indicated that men are at a much higher risk of contracting HIV-1 than women, while 34 percent (n=17) felt that women are the ones who are at higher risk. On the other hand, while 20 percent (n=10) of men noted that men are at a higher risk of contracting HIV-1 than women, 42 percent (n=21) indicated that women were at higher risk than men. Two male respondents indicated that both men and women are at risk, especially the young, as long as they engage in unchecked sexual intercourse. It seems that the perception of which sex is more at risk is subject to gender-bias as each sex perceived the *other* to be more at risk of contracting HIV-1. Various reasons were given in support of the vulnerability of both sexes. The summary of the findings are presented in table 47 below.

Table 47: The sex/gender based perception of risk of contracting HIV-1

Males' perception of gender at most risk of contracting HIV-1		Females' perception of gender at most risk of contracting HIV-1	
Females	Males	Females	Males
<p>They are easy to convince by the traders and salaried men for sexual intercourse.</p> <p>-They have many asymptomatic sexually transmitted diseases.</p> <p>-They can have sexual intercourse with many men within a short span of time</p> <p>-They use their bodies and love as shops (sell their bodies so as to get money for subsistence; use sex as mode of survival)</p> <p>-Females are the ones who practice commercial sex working</p> <p>-More women roam in towns than men</p> <p>-Girls are emotionally weak therefore always on the lookout for men - for both emotional and sexual satisfaction.</p> <p>-They use sex as a source of income, like running a business / or employment.</p> <p>-Women are the ones admired by men (men all want the beautiful women)</p> <p>-They are easy to manipulate</p> <p>-They advertise themselves to attract men (lure men)</p>	<p>-They seduce girls very easily</p> <p>-They have insatiable desire to have more than one wife.</p> <p>-They have 'high rate of heat' (libido), therefore can have sexual intercourse anytime they feel like.</p> <p>-Rapists are always male and they can forcefully have sexual intercourse with women,</p> <p>-They are the ones who look for and pay commercial sex workers, or other categories of women for sexual intercourse.</p> <p>-Many men are polygamous and are hardly faithful to all the wives.</p> <p>-they possess the power of seduction.</p>	<p>-They roam from place to place – they cannot settle down with one partner.</p> <p>-They are not able to judge the health status of their prospective lovers.</p> <p>-They like sexual intercourse more than men do.</p> <p>-They easily divorce and remarry.</p> <p>-They have a lot of <i>tamaa</i> (desire), easily recognisable in their eyes.</p> <p>-Are asymptomatic to most sexually transmitted infections including HIV-1</p> <p>-Women are bad at heart (vengeful) and would not reveal if they are HIV-1 infected (they want to die with everybody).</p> <p>-Women stay longer than men with AIDS hence spread the virus</p> <p>-Women are not stable with their partners (this was noted by a 24-year old second wife with co-partners)</p> <p>-Women are easily cheated by men for sexual intercourse.</p> <p>-Women are strong HIV-1 carriers.</p> <p>-Woman are great <i>ngamalae</i> (harlots)</p> <p>-Many women are great commercial sex workers.</p> <p>-There are many Turkana women who sell their bodies (sexual intercourse) for money and material possessions for a variety of reasons.</p> <p>-women go to market places and contract HIV-1.</p>	<p>-Males would never accept that they are HIV-1-infected</p> <p>-Males have a lot of <i>tamaa</i> and always have sex with many women</p> <p>-Since it is the custom to have many wives, males tend to have many partners even if they are not legally married to them.</p> <p>-Males pretend to know much about sex</p> <p>-Men always have multiple sexual partners either through marriage or extramarital relationships (Men are naturally philanderers)</p> <p>-Men dominate women</p> <p>-Men generally tend to have more partners compared to women</p> <p>-Men like having sexual intercourse all the time</p> <p>-Men will spread the virus faster as sperm contain a higher concentration of viral load than other body fluids</p> <p>-Males are likely not to be stable in their marital status (will always have extra partners)</p> <p>-Males will try by all means to seduce women, even if women do not want them</p> <p>-Males always pretend that they have economic power, which they use to lure women for sexual intercourse.</p> <p>-They can have sexual intercourse at once with many women</p> <p>-Men have 'big eyes' towards women (men like women very much)</p> <p>-Males use money to buy sex</p>

8:6:4 Other factors of the ecosystem that influence the risk of contracting HIV-1

There are groups of people that are perceived to be at risk of contracting HIV-1 and association with these people could lead to one contracting HIV-1. A forty-two-year-old married man, in addition to having one lover, indicated that somebody who engages in sex with commercial sex workers is at risk of contracting HIV-1. Engagement in sex outside of marriage by an 'irresponsible spouse or lover', particularly with commercial sex workers, is seen as a high-risk sexual behaviour. Even lovers (partners) who are not married but engage in sexual intercourse aimlessly are considered to be at a high risk of contracting HIV-1.

Those who engage in sex for commercial purposes, that is, commercial sex workers (*ngamale*), part-time commercial sex workers, and opportunistic sex workers, are at risk of contracting HIV-1. There is a strong perception that these are the people that men should be wary of, if they want to remain free of HIV-1. Generally, women are wary of men because they are the ones that are likely to have sexual intercourse with commercial sex workers or other categories of women that exchange sex for money.

Young girls²¹⁹ in particular were mentioned as being at higher risk of contracting HIV-1. Old men, the sugar daddies, are known to pursue the young girls, showering them with gifts. Other groups of people that are perceived as being at greater risk of transmitting HIV-1 are the drivers of lorries, trailers, and Matatus. These groups are at risk because they travel long distances without their spouses. Included in this category are loaders and bus / matatu conductors.

Those who are not married are considered high risk because they are assumed to engage in indiscriminate sex as they do not stick with one partner. Generally, adolescents, both boys and girls, are considered a high-risk group as they are likely to have multiple partners since they are not married. They roam about in the towns or in bars and lodgings at night looking for sexual partners. Young men are perceived to be hungry for sex and love. As one women group leader put it, young people "*wana lala hovyo*

²¹⁹Young girls are often targeted by men for sex because there is an assumption that they are safe and pure.

*hovy*²²⁰. She further noted that young men "*wana nguvu ya kutafuta wanawake*"²²¹. In their search for an appropriate lover, young people do engage in multi-sexual relationships. A young man with many girls is considered popular and viewed as a hero.

Most respondents considered rapists as being at particularly high risk for contracting or transmitting HIV-1. Rape was frequently mentioned as common in Turkana township. Rape has diverse forms including: women lured by men then forced into sex; commercial sex workers or women who engage in sex for money are lured by men who do not pay them after sex; young Turkana girls roaming the townships are forced into sexual intercourse by men; and bandits rape women during cattle raids. Rape is frowned upon and is comparable to murder. A man who rapes must be cleansed through the *amoko* ritual. An animal is killed, and eaten only by the elders as part of the cleansing process. The parents of the man would also pay a fine as compensation to the girl's parents. If a married man rapes, he would be required to pay a fine from his own livestock, and his entire stock would be in danger of being taken away. However, rape is not expensive if the rapists cannot be found as in cases of rape carried out by raiders or bandits. This is why rape is common in the townships, as men cannot be held accountable for their acts. Rape victims are stigmatised, as the raped women would not dare accuse a man in public. Instead, it is they, the rape victims that would be laughed at. Women are seen as bringing rape upon themselves through their sexually provocative behaviours. In any event, it is widely believed that women rarely consent to sex, and that some degree of force beyond coaxing is acceptable. In addition, unless the provincial administration is involved and charges are brought in a court of law, the accused man would simply walk free. Of the cases of rape I heard of in Lodwar township, none was brought to the justice system.

There are some people that are considered to have an insatiable lust for sex. It is assumed that men of such character continuously have sex with either commercial sex workers or other sexual partners. Women, likewise, may have sex with multiple men even if they are married, not because they want material gain, but for sexual gratification.

²²⁰ Swahili phrase meaning 'having sex with many women indiscriminately'.

²²¹ Swahili phrase meaning 'have the energy and resources to look for women'.

Alcoholics are also mentioned as being at greater risk of contracting HIV-1. Alcoholic drinks such as *kaada*, *changaa* and commercial beer are likely to lead to temporary impairment of judgement, hence putting those who are drunk and alcoholics at risk of acquiring HIV-1. The most at risk are the unmarried alcoholics. Alcohol is heavily used among the Turkana. The brewing and selling of *Kaada* is one of the most popular business ventures among Turkana women. In small markets scattered in Lodwar township, including the main California market, *kaada* is brewed and sold. Some households in the villages also brew and sell *kaada*. As one women group leader said, "as long as there is *kaada*, *lokwake* will never be finished".

Polygamy, a time-honoured marriage practice among not only the Turkana, but also most communities in sub-Saharan Africa, is perceived as pushing both men and women into heightened risk of contracting HIV-1. Both female and male respondents indicated that the practice puts all partners at risk as faithfulness is particularly compromised, especially in situations where old men marry young wives, and in situations where men still engage in sexual liaisons under the cover of courting more potential wives. In fact, one female village elder expressed fears that her chances of contracting HIV-1 are high because her husband had two more wives, and they were not using any protective device during sexual intercourse.

An infected person who does not know, or who knows but cannot expose his or her status due to the social stigma associated with sexually transmitted infections, are mentioned as at risk of transmitting the infection to other non-suspecting sexual partners. In addition, many respondents expressed the notion that having sexually transmitted infections increases the risk of contracting HIV-1.

8:6:5 The transmission and contraction of HIV-1/AIDS

People had diverse knowledge of the transmission and contraction of HIV-1. Table 49 below indicates the diversity of the local knowledge of the transmission of HIV-1 in Lodwar township as reported by both men and women.

The mode of transmission seen to be the most common is through exposure to contaminated and non-sterilised hypodermic needles (99 percent), followed closely by vertical transmission by way of mother-to-child (97 percent), and sexual intercourse with infected partners (96 percent). Respondents across the

gender divide were well aware of the child-to-mother transmission route during pregnancy. They indicated that HIV-1/AIDS differs from other sexually transmitted infections because it can infect infants in the womb as well. This level of local knowledge is very pertinent as one of the government policies – National HIV/AIDS Strategic Plan 2000-2004 (Ministry of Health 2000) and National Prevention of Mother-to-Child Transmission Strategic Plan (Ministry of Health 1999) - is to improve the health of the HIV-infected mother and reduce the rate of transmission to their children during pregnancy, during delivery, and during the post-delivery period, through breastfeeding. This is, however, far-fetched in a place where HIV-1 infected mothers do not know their sero-status, and where there is no access to antiretroviral drugs.

Table 49: Local knowledge of routes of contraction and transmission of HIV-1

Routes of contraction and transmission of HIV-1	Females (N=50)	Males (N=50)	Total (N=100)
Sexual intercourse with infected partner	47	49	96
Contaminated and non-sterilised needles, and other skin piercing instruments	49	50	99
By mosquito bites	2	5	7
By transfusion of infected blood	38	37	75
By curse / witchcraft	1	1	2
By breaking taboo	1	1	2
By infected mother to her unborn child	49	48	97
By sharing utensils with an infected person	2	3	5
By sharing toilets with an infected person	0	2	2
By kissing an infected person	44	22	66

Though very few respondents (n=7) indicated that HIV-1 could be transmitted and contracted through mosquito bites, it is significant because this idea was repeated by two female primary school teachers. Contraction and transmission of HIV-1 was also thought to be facilitated through deep kissing, and the sharing of razors and hypodermic needles. A few respondents, in addition, mentioned that HIV-1 could be transmitted through the sharing of tooth-brushes and chewed tobacco. As many Turkana chew tobacco, the sharing of such chewed tobacco from the mouth is a very common practice among the Turkana. There are

several procedures involving the use and sharing of blades to make incisions on the body, which were mentioned as being routes to transmission and contraction of HIV-1. Such procedures are: *akige*, body decorations (tattooing) during initiation ceremonies using one blade; *akilem*, removing baby teeth from babies due to the belief that they cause diarrhoea; *akilok*, the extraction of teeth from adults; and *akidung*, incisions made on the body, especially during healing rituals. Quacks are responsible for transmitting HIV-1 through their unhygienic medical practices such as the re-use of needles and blades. The awareness that HIV-1 can be transmitted or contracted through the transfusion of infected blood was found in 75 percent of respondents. This is why it was also indicated that HIV-1 could be contracted or transmitted through vehicle accidents, which leads to contact with other people's blood.

One thing was very clearly unanimous: it is careless sex that is at the centre of the transmission and contraction of HIV-1/AIDS. HIV-1/AIDS does not spare anybody, even priests, as long as the individual has uncontrolled sex. In fact, countless women indicated that commercial sex workers are the major routes of HIV-1 transmission. Married women viewed commercial sex workers both as sources of the illness and as love rivals. One woman indicated that HIV-1/AIDS is a punishment from God for those who have sex with commercial sex workers. One influential Turkana evangelical preacher suggested that HIV-1 is transmitted and contracted through the use of condoms. He was adamant that condoms are not only evil, but are also laced with HIV-1. Though not statistically significant, there was a notion that HIV-1/AIDS could be contracted from eating baboons, and that the same baboons (and monkey or dog soup) could be used to cure the disease.

It is significant that naturalistic explanations of the causes of HIV-1/AIDS predominate among the Turkana. Only two percent (n=2) of respondents indicated that HIV-1 could be transmitted or contracted through a curse, witchcraft, or a taboo, alluding to supernatural causes.

8:6:6 Symptoms and signs of HIV-1/AIDS

Local knowledge of an illness encompasses symptoms and signs with which it is associated and recognised. Symptoms and signs, therefore, form the core of knowledge of illness. Respondents were asked about the symptoms and signs of HIV-1/AIDS.

It is clear that respondents were well aware of the symptoms of AIDS. Most of the symptoms and signs are associated with the opportunistic infections. In fact, it was indicated that one who has AIDS would experience recurring illnesses such as malaria, typhoid, tuberculosis, resistant chronic diarrhoea, persistent cough, headache, the common cold, and throat and chest pain. These illnesses abound, it was explained to me, because AIDS reduces the body's immunity and 'strength', causing 'general body weaknesses or 'poor health'. A HIV-1 infected person would often experience frequent 'high body temperature' (pyrexia) and prolonged fever of unknown origin, especially at night. This is often accompanied by persistent sweating and nausea at night.

Loss of weight leading to an emaciated skeleton-like body characterised by protruding bones (enteropathy wasting), red lips, sore mouth, yellowish (thin) hair, and white bulging eyes and teeth, were constantly mentioned as a sign of AIDS. As one informant explained, *kikamitik*²²², this slimming ('the body becomes like a needle' and 'dry like a dry wood') and muscle wasting is often preceded by a rapid gain in weight over a short period. This 'skeleton man or woman' would have a clear shrill or sharp voice. Initially, one who has been infected with HIV-1 would have an insatiable appetite, followed soon by loss of appetite.

The dehydrated body of an AIDS victim would be characterised by changes in skin colour to pale. Once the AIDS victim has become very thin, the hair would start to fall out. AIDS victims are also at risk of anaemia or thrombocytemia, severe leucopenia, rapid breathing, and diarrhoea showing blood.

A number of respondents indicated that those who have AIDS have a distinctive smell. In addition, they have conspicuous swollen lymph nodes under the armpits and around the neck. The feet, limbs, and joints would also be swollen. There are wounds on the lips, where they would eventually turn red and dry. In most cases, wounds would appear on the whole body.

It was indicated that AIDS causes the skin to 'burn' (possibly herpes zoster). Such burns in the form of rushes commonly appear on the back, shoulder, and on the stomach. In addition, it was mentioned that AIDS causes a high prevalence of skin diseases, such as ringworms and rashes.

²²² A Turkana word for severe loss of body weight.

In addition to affecting physical health, the respondents noted that AIDS alters one's mental state, leading to an obvious lack of manners, which manifests itself in the way the infected would communicate with others. This is characterised by displays of impoliteness and a low threshold for violence and aggression. It was also indicated that those who have AIDS often display a sad face, *asinyit*. In addition, depression could be severe, leading to an acute confusional mental state, resulting in severe neurological complications, if not the experience of psychotic episodes.

8:6:7 Stigma concerning HIV-1/AIDS

Stigma stems from fear about HIV-1/AIDS, generally brought about by ignorance. Since HIV/AIDS is dreaded and not well understood, we expected it to be highly stigmatised in Turkana. HIV-1/AIDS is an illness like no other. Local knowledge of HIV-1/AIDS indicates the extent of the stigma and the discrimination towards the infected. All respondents, both male and female, indicated that there is stigma attached to HIV-1/AIDS. Those who are infected feel ashamed and disgraced. They hide, always conscious that people they know talk about them. In the midst of isolation and depression, the infected sometimes contemplate suicide. There were notions to the effect that the infected could become mad and even die due to worry and stigma. In a region where there is chronic protein-calorie-malnutrition, evidenced by thin emaciated bodies, exacerbated by the natural thin physiology of the Turkana, those who exhibit these features to the extreme are perceived to be HIV-1 infected. In fact, emaciated adults were always thought to have HIV-1/AIDS, more so if they were TB infected.

HIV-1/AIDS not only depresses the individual, but also the whole family. All family members, especially the couple and their children, worry about their HIV-1 status. Accusations and counter accusations in the family lead to fights and even divorce. Two informants indicated that they knew of two families that broke apart after it was realised that they were infected with HIV-1/AIDS. However, in both cases it was the woman that bore the brunt, as they were the ones accused of bringing HIV-1/AIDS into the family.

In addition, HIV-1/AIDS has no cure, while other STDs can be cured, and is therefore seen as a long-term ailment. HIV-1/AIDS affects the whole body, while the effect of STIs is limited to the reproductive system. As a 64-year-old village elder noted, HIV-1/AIDS 'makes the body weak'.

8:6:8 HIV-1/AIDS prevention

This study indicates that knowledge of prevention methods is widespread, although there are differences between men and women. In congruence with the Kenya Demographic and Health Survey (CBS 2003), over 98 percent (n=49) and 88 percent (n=44) of women and men respectively indicated that HIV-1/AIDS could be prevented. A female village elder indicated that "HIV-1/AIDS cannot be prevented because its symptoms are hidden; you might think that your partner is free of infections, while she/he is infected". During a focus group discussion with the California Community Health Workers Committee members, one man noted that it is very hard to stop the spread of HIV-1 because of poverty and hunger. Members noted that unless you eradicate poverty, you cannot eradicate *lokwake!* As one elder noted: "This world is upside down. Even senior/old women have sex with young men and boys because they have a lot of blood". Another twenty-five-year-old man, with a secondary school level of education, indicated that he did not think that HIV-1 could be prevented since there are so many young girls who are poor and adventurers. Since they are constrained by poverty, they would frequently engage in sexual intercourse for money.

The most common mode of preventing the contraction and transmission of HIV-1/AIDS, indicated by an overwhelming majority of men and women is limiting sexual intercourse to one faithful partner (90 percent), and not having sexual liaisons with casual partners (83 percent). As indicated from table 50 below, 96 percent of women (n=48) strongly indicated that abstaining from sex until marriage is one of the best ways of protection against HIV-1/AIDS, compared to 68 percent of men (n=34).

Some other methods of prevention include: not engaging in commercial sex work, and not sharing personal effects like towels, soaps, and bath or wash basins. Specifically, sharing basins in institutions like hospitals, and secondary and primary boarding schools is seen as increasing the risk of the contraction and transmission of HIV-1 among pupils and students. Being alert and vigilant all the time so that infected persons do not lure one into sexual intercourse, and abstaining from casual sex, were frequently mentioned as methods of prevention.

Table 50: Methods of HIV-1/AIDS prevention

Modes of prevention	Females (n=50)	Males (n=50)	Total percentage
Do not have casual sex	40	43	83
Do not have sex until you get married	48	34	82
Have sex with one faithful partner	45	45	90
Seek protection from traditional healers	4	3	7
Use a condom	23	29	52
Avoid sharing needles, razor blades, piercing instruments	46	33	79
Do not have sex with commercial sex workers	38	28	68
Insist on tested blood for transfusion	37	30	67
By eating good diet	9	1	10
Avoid injections, except in recognised health centres	37	18	55

Though the condom was mentioned as a means of preventing HIV-1/AIDS, people indicated that they do not know how to use condoms. Misconceptions about condoms were widespread (i.e., inhibiting enjoyment, could readily break, and could remain in the uterus). Condoms are perceived as encouraging premarital sex, especially among urban population who are perceived to be more promiscuous as evidenced by having sexual intercourse with commercial sex workers. During a women's group seminar, condoms were distributed to all participants as was done during the Turkana Leaders' Seminar. During the seminar, using a model penis, I demonstrated to the audience the proper condom handling and use. The Turkana women shied away from touching or holding a condom, especially when removed from the pack. Condoms are perceived as dirty. In fact, after holding a condom all of the women rushed to wash their hands. This indicated that they would not dare use or touch a condom. Even though they were instructed that they could receive free condoms from family planning clinics, STD clinics, and at bar and lodgings, this message fell on deaf ears. They were more interested in education as a means of changing sexual behaviour than in the use of condoms. Even though 46 percent of women (n=23) and 58 percent of men (n=29) indicated that the condoms could be used to prevent the transmission and contraction of HIV-1/AIDS, it was more or less in

reference to 'others' rather than the 'self'. A 35-year-old widow from California, eking out a living through brewing alcohol, observed that condoms should be promoted, especially in places that sell alcohol. The low rating given to condom use can be taken as an indicator that awareness, accessibility, availability, acceptance, and the use of condoms among the Turkana is low. It is possible that the influence of the dominant Catholic Church has a hand in the strong rejection of condoms since the church is one of the main providers of healthcare and education.

Since wife inheritance is common among the Turkana, it was indicated that one of the modes of prevention is the avoidance of this practice, especially if the cause of husband's death was suspected to be HIV-1/AIDS. Avoiding 'frequent divorce and remarriage' - serial monogamy or polygamy – could reduce the risk of transmitting and contracting HIV-1/AIDS. Two respondents even indicated that wife inheritance should be banned altogether.

Due to the limited nature of health education on HIV-1/AIDS in this sparse district, and even in urban settings like Lodwar, it was remarked that one of the ways that the risk could be reduced is through the adequate health education of the masses on the dangers of the illness. It was mentioned that the Ministry of Health should lead the way in enlightening the masses. Such campaigns should also be carried out through churches and the provincial administration, through barazas, and through workshops organised by Chiefs, DOs, and the DC. Schools were also considered as good sources for obtaining information on the prevention of HIV-1/AIDS. It was noted that all children in school should be educated about HIV-1/AIDS.

As HIV-1/AIDS is perceived to be a 'foreigner's illness' brought into Turkana by immigrants from other parts of Kenya and refugees, it was indicated that one could prevent the illness through avoidance of sexual intercourse with those who originate from outside Turkana. These non-Turkana, working or just residing in the Turkana District, are mostly found in urban centres like Lodwar, Kakuma, and Lokichoggio. This is why urban environments are perceived as dangerous places by the Turkana. The disco and video halls, considered to be the sources of the promiscuous culture, are popular in urban centres. That is why Turkana leaders suggested during a workshop that these premises should be banned. In fact, those who reside in the remote villages remarked that they were safe from HIV-1/AIDS as they did not have sexual partners in towns. In addition, they would marry from within the villages and shun urban women.

Since commercial sex workers are considered as the sources of HIV-/AIDS, 76 percent of female and 56 percent of male respondents indicated that not having sex with commercial sex workers would prevent the contraction of HIV-/AIDS. A 27-year-old woman employed by World Vision suggested that all commercial sex workers should be arrested.

During the research period there was a raging debate on the accessibility of antiretroviral drugs. Therefore, some respondents remarked that the availability of drugs could reduce the spread of HIV-1/AIDS. Two primary teachers and few other respondents mentioned that there were drugs for HIV-1/AIDS. Respondents who did not believe that there were already drugs for AIDS noted that the 'rich world' should endeavour to discover effective drugs to eliminate AIDS.

As alcohol increases the risk of engaging in sexual practices that, in turn, increases the vulnerability to contracting HIV-1/AIDS, it was recommended during workshops, seminars and focus group discussions that limiting the amount of alcohol that people drink and even banning *kaada* would be one effective method of preventing the epidemic.

Seventy-nine percent of all the respondents pointed out that not sharing hypodermic needles, blades, razors, and piercing instruments could prevent the transmission of HIV-/AIDS. In addition, complying with the universal principles of infection prevention like not touching infected wounds or coming into contact with body fluids could be effective in the prevention of transmission and contraction of HIV-1/AIDS. This also encompasses use safe medical facilities and practices, and more importantly, not sharing toothbrush and chewed tobacco, both common practices among the Turkana.

It was suggested that one of the most effective ways of preventing HIV-1/AIDS would be to uplift the socio-economic standards of the Turkana. For instance, commercial sex workers and the Turkana populations that have settled in towns ought to be financed to start income generating ventures. Women are mostly lured into multiple sexual partnerships due to poverty. "They want to survive by being sweet to men", as one female respondent suggested. In addition, it was noted that HIV-1/AIDS could be prevented through avoidance of *taama*. *Taama*. This term has two meanings: a desire for material goods and money leads females to engage in sexual intercourse; and sexual *taama* leads to a high prevalence of casual sexual intercourse.

One Turkana church leader indicated that what is needed in HIV-1/AIDS prevention is behavioural change that incorporates ending such practices as polygamy and serial polyandry. According to the church leader, this means 'turning to God and behaving according to the rules of God'. That is why during focus group discussions it was remarked that marrying only one partner; preferably a Christian, would be a good way to prevent HIV-1/AIDS. It was observed that one of the ways of preventing the illness is by not marrying a person who is already married. And even if one has to marry, they should marry a person with whom they are well acquainted. It was also suggested by a 27-year-old married female primary school teacher that the youth should go for a HIV-1 test before marriage. This would reduce the spread of HIV-1/AIDS.

8:6:9 HIV-1/AIDS treatment

Informants stated that HIV-1/AIDS is curable with the use of herbal medicines. During the research period, there were no antiretroviral drugs in the district hospital, but informants had only limited knowledge about the availability of these drugs. Nonetheless, a range of therapeutic interventions were available for the HIV-1 infected in the community. Of the one hundred respondents, 12 percent noted that indigenous healers could treat HIV-1/AIDS, 16 percent mentioned hospitals, and 24 percent did not know if there was an existing treatment. The breakdown of responses according to gender shows that while 16 percent of women (n=8) indicated that indigenous healers could treat HIV-1/AIDS, only 4 percent of men (n=2) thought that they could.

During the research, some people in the community known to be HIV-1 infected were being treated at home with the use of indigenous medicines. It is common knowledge that a few healers have succeeded in treating HIV-1/AIDS using the soup of boiled chimpanzees. This soup is mixed with bitter herbs harvested from *amoja*, *epong* and *echorokong* trees. It was indicated that this mixture must be imbibed by the HIV-1 infected over a period of three to five years before the virus disappears from the blood. A healer in Lokangae²²³ indicated that *lokwake* is treated with a concoction made through boiling a dog, then mixing the dog soup with grounded *epong* leaves. The healer indicated that there might be many people suffering from the illness who do not present themselves to indigenous healers.

²²³ Lokangae is a remote village in northwest Turkana, across River Tarach, comprising many sparse settlements of between 200 to 6000 people.

One community healthcare worker suggested that all Turkana people should be tested, and those found to be HIV-1 positive given dog meat to eat. I was informed that dogs became very expensive in 1994 in Lodwar township due to the fact that those who had HIV-1/AIDS were eating them. In Gold Settlement²²⁴, near Kakuma, a chief who was HIV-1 positive was said to have eaten all his dogs and many monkeys. Eventually, he had to send somebody to kill any dog that could be found in the village and beyond. However, the boy he sent was caught in the act while stealing a dog. Following that, a *baraza* was convened so that the boy could be tried by the very same chief. The boy, however, revealed that the chief sent him to hunt for the dogs. The chief compensated the dog owner with one sheep valued at nearly KShs 2000 (US\$ 3). The chief died several months later.

In the hospital, those who had HIV-1/AIDS were often diagnosed without their knowledge and then discharged from the hospital. AIDS patients are generally not given the same services because the medical staff know that they would die sooner or later.

8:6:10 Knowledge about people with HIV-1/AIDS

One of the ways of gauging people's knowledge about the prevalence of HIV-1 in the community is to ask them if they know anyone who is HIV-1 infected, or has died of HIV-1/AIDS. Forty-four female and 39 male respondents indicated that they either knew people who had died or were reported to have of HIV-1/AIDS. All twenty village elders knew at least one person who was or was reported to be HIV-1 positive. While eighteen female respondents indicated that they know people who are or were reported to be HIV-1 positive, only seven men at the time of research knew somebody who is or was reported to be HIV-1 positive. One female respondent said that she knew three women whose husbands had died of HIV-1/AIDS. One man was being nursed by his wife and mother. Another HIV-1-infected woman was being nursed by her aunt as other relatives did not want her. One informant knew more than twenty people with HIV-1/AIDS. Another informant noted that she knew about five HIV-1 infected people who were being treated at home for opportunistic infections like malaria and tuberculosis. One man with three wives was known to have died the previous year due to HIV-1/AIDS. When a husband dies, it is likely that the wives are also infected. The

²²⁴ As the name indicates, this settlement is constructed around a place where a small quantity of gold is locally prospected.

wives were still alive. Four students and one woman who were alleged to be HIV-1 infected were being nursed in the village. One female informant indicated that she had heard of about fifty HIV-1-infected people in Lodwar township. In total, ninety people were reported to have HIV-1/AIDS, including two men with three wives each who were all reported to have died of HIV-1/AIDS. Considering that wife inheritance is popular in Turkana, and the likelihood that widowed women would remarry separately, or engage in sex with other men, especially for monetary gains due to poverty, it is probable that the chain of infection would spread far and wide.

In the rural areas, there were people that were known to health officials as having HIV-1/AIDS. In Lokangae, there was a man who was infected with HIV-1. The chief indicated that his brother, married to five wives, had died of AIDS. Three of his wives died after him, while two are still alive in Loppiding, Lokichoggio. The chief pointed out that they drank dog soup until they recovered. It was reported that the chief of another location died together with his wife as a result of HIV-1/AIDS (personal communication with the Turkana District Health Education Officer). Chiefs normally have many wives and concubines, potentially leading to a large chain of infection.

Though HIV-1/AIDS is perceived to be an urban illness, it is fast spreading in the rural areas. Some of the people in rural areas travel to towns like Lodwar, Kakuma, and Lokichoggio to sell livestock or to visit NGOs, and during holidays they go home and intermingle with their wives or local women, some of whom are potential wives. A healer in Lokangae indicated that people contract STIs, including *lokwakei*, when they go to town where they have sexual intercourse with commercial sex workers. They later take these illnesses back to the remote communities, transmitting them to their partners and wives. This is how nomadic and semi nomadic populations are interwoven with the settled and migrant populations in the rural and urban centres, socially, economically, and politically. In addition, there are hawkers and traders in donkeys that buy goods like sugar, soap, cooking oil, etc. from the urban centres and later divide them into small portions and hawk them from village to village, hence further perpetuating the social network that might also include sexual intercourse.

Life history: a case of HIV-1 infection

Nakuju was a 36-year-old widow with four children. She was a nurse in the Lodwar District Hospital. Her husband died in 2000, allegedly from HIV-1/AIDS. Her two co-wives were not symptomatically ill with HIV-1/AIDS. She was the second wife. Her husband, a civil servant, suspected that she was having extramarital relationships. She separated briefly from her husband due to violence and abuse in 1998, and reunited in 1999. During the one-year separation, she acquired an abode at the district hospital staff quarters.

It was reported that they only reunited after he knew that he was infected with HIV-1/AIDS. By the time they reconciled, it seems that all of his three wives were infected with HIV-1. When the husband died, he was buried at the homestead of the first wife.

It was reported that her late husband infected a young girl at the local secondary school with HIV-1/AIDS, and that the girl suffered from vision impairment due to the infection.

It was alleged that when Nakuju realised that she was HIV-1 positive, she went to Nairobi so that she could be transfused with new blood. Another nurse reliably informed me that she received antiretroviral drugs from a friend heading an international NGO, based in Nairobi. During that episode of admission, it was reported that she was waiting for antiretroviral drugs from Nairobi.

I could not interview her directly as her seropositive status remained anonymous like all previous patients under her care. Though she was counselled about the possibility of being tested openly, she declined.

She was admitted to the ward with complaints of fever, pyrexia, and a severe cough, later confirmed to be tuberculosis. She was emaciated and weak, complaining of chest congestion. She was on anti-TB drugs and a general analgesia.

The above life history demonstrates how HIV-1/AIDS can spread within a polygamous family. If one of the partners is infected, the infection could spread to all the remaining members. In addition, if the remaining three widows are inherited by other men, who might also be in polygamous unions, the network of infection

could spread further, engulfing the whole community. In addition, separation from a partner increases the vulnerability to the contraction and transmission of HIV-1.

8:6:11 The impact of HIV-1/AIDS

Local knowledge of the effects of HIV-1/AIDS was diverse. Some of the consequences were socio-economic, psychological, and cultural.

It was remarked that HIV-1/AIDS leads to increased poor health and mortality, leading to a reduction in population growth. Increased morbidity leads to diversion of the meagre resources for the treatment of opportunistic infections. AIDS increases the number of people using healthcare services, increases healthcare cost, as a large percentage of the Ministry of Health's expenditure is expended on HIV-1/AIDS related illnesses. This depletes human resources, including trained and skilled healthcare personnel.

It was indicated that AIDS causes the deaths of many *skilled* Turkana workers at an alarming rate. The respondents indicated that many teachers and army personnel have died due to AIDS. In addition, many Turkana professionals are often sent back from Nairobi in caskets.

When adults succumb to AIDS, the children and other remaining adults must assume the socio-economic responsibilities leading to an increased burden on the remaining members of the household. When a breadwinner is ill, there is a loss of income.

Respondents also mentioned that AIDS victims often suffer from psychological stress, and it was suggested that AIDS victims could be abandoned due to the stigma attached to the disease. In addition, relatives might isolate the infected person due to the perceived risk of contraction of HIV-1 from the infected.

It was remarked that there is already evidence that the number of orphans, *ngidirkonye*, due to AIDS related deaths are on the increase. This was evidenced by the increase in children living on the streets in Lodwar township. However, no research has been carried out to measure this.

8:7 The local Knowledge of other sexually transmitted infections

8:7:1 Introduction

As I mentioned at the beginning, the rationale for gathering local knowledge of sexually transmitted infections was to expand our understandings of sexual health, and particularly of HIV-1/AIDS. All respondents had heard of the existence of other STIs. The local population know that sexually transmitted infections (STIs) are spread through sexual intercourse with an infected partner. Sexually transmitted infections are regarded as short-term illnesses while HIV-1/AIDS is a long-term illness. While other STIs are seen as less dangerous and curable, AIDS is non-curable. In addition, STIs affect the genital organs and the reproductive system while HIV-1/AIDS affects the whole body.

Questionnaires concerning local knowledge of sexually transmitted infections were administered to forty male and forty female respondents. In addition, ten indigenous healers were interviewed. While 22.5 percent of women (n=8) reported that they had attended a sexually transmitted disease clinic, a total of 57.5 percent of men (n=23) had done so. Of these, two women and four men did so within the last year; six women and eight men between five and six years ago, while one woman and ten men visited a clinic more than five years ago. All female respondents indicated that they knew other people that had previously been infected with STIs. Twenty-seven women indicated that they knew between one and five people, two knew between five and ten, while three knew more than ten. On the other hand, twenty-nine males knew of people who had STIs: eleven knew between one and five, five knew between five and ten, and ten knew more than ten. Healers indicated that sexually transmitted infections are very common in Lodwar township. The average number of patients seen by each healer ranged from two to five a week. Healers mentioned a variety of STIs as being common in their villages, namely *elepoti*, *etogo*, *eus*, and *echakari*. In addition, *lokwakel* was mentioned as becoming very common. All eighty respondents noted that they acquired knowledge of sexually transmitted infections from a variety of sources, as indicated in *table 51* below. Friends and family members were the most common sources of information on sexually transmitted infections. This was closely followed by health workers, as the second most common source of knowledge of sexually transmitted infections.

Table 51: Sources of knowledge about sexually transmitted infections

Source of information	Females (n=40)	Males (n=40)	Total percentage
Radio	26	12	47.5
Newspaper	26	4	37.5
Other people (friends, family members)	37	23	75
School	13	5	22.5
Health workers	31	24	68.75
Politicians	8	2	12.5
Other Government employees e.g. chiefs	20	3	28.75

8:7:2 Types of sexually transmitted infections

The respondents in Turkana township mentioned various sexually transmitted infections. Some were, however, more common than others. Gonorrhoea was the most commonly mentioned, by 39 female and 40 male respondents. Syphilis was mentioned by 35 and 23 men and women respondents, respectively, while herpes zoster was mentioned by 4 women and 3 men. Only one woman mentioned that Ebola is a sexually transmitted infection. One male village elder and one healer mentioned *eus* as a type of sexually transmitted infection. Some indigenous healers interviewed mentioned other STIs like *engech*, *atapun*, *akilala*, *echakarui*, and *lonywe*, which were not mentioned by ordinary Turkana. These sexually transmitted infections are further discussed below.

I: *Elepot*, gonorrhoea

All healers mentioned that gonorrhoea is prevalent in Turkana township. One female informant indicated that gonorrhoea was shot with a gun from Uganda into Turkana country. In addition, gonorrhoea is also thought to be caused through sexual intercourse with baboons and monkeys. There is, in addition, a general belief that females are asymptomatic to most sexually transmitted infections, including gonorrhoea.

There are numerous symptoms and signs of gonorrhoea that were mentioned by the respondents. Most of the symptoms and signs are directly related to the genitalia of the infected. In essence, unless a person is able to examine the genitals, he or she would not be able to tell that one is infected. The other symptoms are, however, related to obvious changes in behaviour.

It was indicated that *elopot* would cause the genitalia to swell, leading to the experience of a painful burning sensation. This burning sensation is mostly experienced when one passes out 'hot, brown, and bitter urine', which has a distinctive bad odour. In addition, the urine would be stained with blood. It was remarked that there would be a discharge of pus when passing urine in the morning. *Ngabulon*, pus, would be visible around the vagina and penis, and blood and pus could be visible through stained clothes. The person infected with *elopot* would therefore show signs of poor personal hygiene.

The most noticeable signs and symptoms that one is infected with *elopot* include discomfort during sleep, wounds all over the body, high body temperature (pyrexia), severe headache, and restlessness. Restlessness is especially conspicuous when one is feeling the urge to pass urine. It was remarked that the infected actually wail and shout when they are urinating. In addition, the infected have difficulty in opening their bowels. Due to the weakness of muscles, the infected would also have difficulty in walking, often having unstable gait and posture.

It was indicated that if a pregnant woman is infected with *elopot*, she would give birth to a blind child. Therefore, every child who is born blind is a sign that the mother was infected with *elopot*. It was alleged that a man who has been infected with *elopot* for a long time would eventually witness his 'penis cutting off'. It was remarked that those who were infected with gonorrhoea would often refuse to drink tea with milk. In addition, they would not eat foods cooked with oil.

(II) Ebola

The female informant who mentioned Ebola did not know its signs and symptoms. She indicated that she had only heard that it is a sexually transmitted infection.

(III) *Etogo (edengo)*, syphilis

Six indigenous healers indicated that syphilis is prevalent in Turkana. The healers and respondents indicated that the symptoms and signs are the same as those for *elopot*. There were, however, some additional symptoms and signs not associated with *elopot*. For instance, loss of hair, enlarged lymph glands, and a 'dry' body were signs that one is infected. The infected would often lie on their backs while sleeping. In addition, they would often sit in the upright position. It was remarked that one who is infected would be depressed all the time.

Syphilis could lead to infections of the uterus. It was indicated that this infection also causes barrenness and blindness among the children born to infected mothers. Most often, the infected person would not wear clothes because of the itching, and the fact that pus and blood would stain the clothes. In addition, houseflies would hover around the infected person.

(IV) *Engech*

Engech was mentioned by only one male healer. None of the eighty respondents mentioned it as a sexually transmitted infection. The healer indicated that the symptoms are characterised by wounds and blisters found all over the body.

(V) *Atapun*

Atapun was only mentioned by one female healer. The symptoms and signs encompass fingers falling off by themselves and the appearance of wounds all over the body.

(VI) *Akilala*

Akilala was mentioned by one female healer as having the symptoms and signs of a swollen (distended) stomach, diarrhoea, and vomiting.

(VII) *Eus*

Four male healers mentioned *Eus*. *Eus* is believed to have started in the northern part of Kenya (Kibbishi) and Ethiopia. Therapy is only available in Ethiopia. The symptoms and signs include the emission of sticky

white pus while urinating. This would be accompanied by difficulty in passing urine. Such a person would always be restless. The condition is exacerbated by the constant itching in and around the genitalia. Wounds would develop on the head of the penis, which might fall off, eventually. The entire body would become 'dry and whitish'. It was remarked that the infected person would always be shy, always sitting behind people to hide from the public gaze. In some cases, the infected person would look healthy, but with long episodes of pain all over the body.

(VIII) Echakari

One healer mentioned a sexually transmitted infection called *echakari*. It affects both women and men. It leads to the discharge of pus through the vagina and penis. Other symptoms and signs include itching of the genitalia and the inability of the infected to sit in an upright position.

(IX) Lonywe

This sexually transmitted infection was mentioned by one female healer. The symptoms and signs of *lonywe* include itching of the body and appearance of boils all over the body.

(X) 'Burns on the body'

One healer mentioned a sexually transmitted illness characterised by the appearance of wounds all over the body, the shrinkage of the body, and the discharge of pus. This could be a herpes zoster.

(XI) 'Big Boils'

This sexually transmitted infection was mentioned by one male healer. The symptoms and signs include restlessness, lack of sleep, difficulty in walking, and the inability to sit in an upright position. At an advanced stage 'pus would flow like water' through the genitalia. In addition, the infected would have wounds on the genitalia.

8:7:3 Factors of the ecosystem that influence the transmission and contraction of sexually transmitted infections

In this project, the meaning of transmission and contraction should be considered as synonymous with “to spread” and “to become infected”. Finding exactly similar terms in the local dialect was not possible. In a near translation, the question posed to the Turkana could have been interpreted thus: what do you think brings/causes/spreads STIs? Wherever I asked people how STIs are caused, the reasons I was given were those that pertain to its spread, and the means through which one could become exposed to an infection. Generally, people thought that all STIs are spread through sex, that is contagions (e.g., through contact with the fluids of, or the items used by, the infected), and anthropoids (flies).

Sexually transmitted infections could be contracted or transmitted through the sharing of personal effects like basins, soap, clothes (especially pants), bedding, and towels with the infected. It was indicated that whoever sits on a chair, a stool, a bed, or the ground where an infected person had sat on would contract the illness. The logic is that such a person would be exposed to the body fluids emitted by the infected. In addition, it was indicated that STIs could be transmitted and contracted through the use of non-sterilised needles and unsafe blood for transfusion.

Anthropoids, mostly flies, *lochuch* / *ngichuch*, were implicated in the transmission of STIs. It was indicated that the transmission happens through a process whereby the flies eat from the infected vagina or penis, or a wound on the body. The flies could then infect another person by biting his or her vagina or penis. The infection would be active after several days. One healer indicated that this is the way young children are infected with *elepót*.

The most common mode of contraction of STIs is thought to be through sexual intercourse. It was indicated that STIs could also be contracted through sexual intercourse with tourists and ‘foreigners’ (the non-Turkana population in Lodwar township). It was also stressed that the act of sexual intercourse must be very *active*, “hard” enough to cause the efficient transmission of bacteria. In addition, contact with blood

from the infected was viewed as just as dangerous as touching or being in contact with the wounds of the infected.

Ninety-seven percent of women (n=39) and 92 percent of men (n=37) noted that having many sexual partners would lead to the contraction of STIs. In addition, 'reckless sexual behaviour' characterised by having sexual intercourse with commercial sex workers, teenagers, and other people's wives would lead to the transmission and contraction of STIs. It was indicated that engaging in promiscuous sexual intercourse - 'non-controlled sexual intercourse' - with unfaithful, infected partners would lead to the transmission and contraction of STIs. In addition, it was remarked that homosexuality causes sexually transmitted infections. However, the three male respondents could not provide an explanation of how this happens.

One hundred percent of men (n=40) indicated that poor personal hygiene, especially of the genitalia, for instance not washing the sexual organs properly, not only causes sexually transmitted infections but also leads to the efficient transmission and contraction of the same. All men mentioned this as a significant cause of STIs.

Poverty is perceived as a very influential factor that facilitates the contraction and transmission of sexually transmitted infections. For instance, a commercial sex worker knew that she was greatly at risk of contracting STIs, including HIV-1/AIDS, because of having multiple partners. However, there was nothing she could do as she needed the money. She would not tell a new partner if she had STIs because she needed the resources that she would acquire from commercial sex work.

It was noted that communal gatherings like *edonga* and *emerete abolia*, traditional night dances that are often include various types of ceremonies or burial dances, are avenues for sexual encounters. Additional avenues cited were annual school music competitions, youth meetings, and conferences. Single young men and women often frequent these gatherings.

It was indicated that places where beer is served in the villages facilitate the contraction and transmission of sexually transmitted infections. In these locations, people often drink too much alcohol, which in turn impairs their judgement and perception of risk.

The practice of forced marriage, whereby a girl is forced by her parents to marry a rich man who is often old and has many wives, increases the vulnerability to the contraction of STIs. Such a woman, I was told, would engage in extramarital sexual relationships in search of 'satisfaction' that would not be forthcoming from the husband. Cross-generational relationships are not only common among the Turkana, but in sub-Saharan Africa as a whole (PSI 2003). A study in Kenya found that among men over the age of 30 who reported non-marital partners, 25 percent had a partner who was at least ten years younger (PSI 2003). In the 2003 Kenya Demographic and Health Survey (CBS 2003), the results show that about 4 percent of women aged 15 to 19 who had sex in the twelve months preceding the survey had non-marital sex with a man 10 years or more older than themselves. While the Turkana girls might put themselves at risk because of family pressure to obtain wealth for the family, in other settings, the relationships occur because of personal financial gain.

Informants indicated that the sharing of blades, for instance, during body decorations, shaving, initiations, and healing rituals leads to transmission of STIs. Blades, such as those used in healing rituals and body decorations, are often shared.

Men frequently mentioned multiple partnerships as a means through which women spread STIs. It is indicated that women tend to have loose marriages or partnerships with men. That is why it was not advisable to marry a divorcee. It was remarked that a curse by elders placed upon a man that has taken another man's wife could lead to the contraction of sexually transmitted infections.

Migration was cited as increasing the vulnerability of contracting sexually transmitted infections. Those who have migrated to and or settled in the townships for trade or to seek a better life often have sex with 'town people' who might be infected with STIs. The townships, though at times seen as sources of invaluable income, are also dangerous places where illnesses lurk. These townships, especially Kakuma, are home to refugees who are often cited as sources of STIs. It was remarked that because of their economic power, refugees are able to 'buy' sex from the poor local people, even though in the process they might not only be offering a source of food and rent to the poor women, but also deadly sexually transmitted infections. In addition, nomadism was cited as one of the factors that influences the contraction and transmission of STIs because of the manner in which men leave wives behind while they migrate with

livestock in search of pastures and water. In these long sojourns they often encounter other women for sex, and women left behind succumb to the sexual demands of other men.

It is common practice to find small groups of women who share one dwelling place brewing and selling *kaada*. It was remarked that these dwellings often turn into brothels at night, especially when both patrons and sellers are intoxicated. Therefore, the running of a *kaada* brewing and selling business by a group of females, especially single mothers, was said to facilitate the contraction and transmission of STIs.

Informants indicated that rape often contributes to the contraction and transmission of sexually transmitted infections. Rape is common during cattle raids and banditry. In addition, it was remarked that rape, perpetrated by refugees, is common in Kakuma town.

The practice of *akurum*, sharing one man or woman, was condemned as encouraging the spread of sexually transmitted infections. Having sex with multiple partners was therefore considered a risk to contracting HIV-1. However, one informant who had previously been infected with gonorrhoea indicated that it is not bad to have sex with prostitutes as long as you agree to pay them. He argued that even girlfriends expect expensive gifts from their lovers. He rationalised that at times having sex with prostitutes is an escape from the expensive access to sex with girlfriends.

8:7:4 Stigma concerning sexually transmitted infections

There is stigma attached to all sexually transmitted infections. However, this varies with the age group and whether one is presently infected or had been infected previously. For the young in Lodwar, having had a STI is considered a badge of honour that sexually active youth must acquire to prove their sexual potency. On the other hand, for the married, having an STI is stigmatised. In addition, those who are infected are highly secretive. The stigmatisation is however also gender biased. While women suffer negative consequences for becoming infected with STIs, men do not. This is why all forty female respondents indicated that there was stigma attached to STIs, while only thirteen males indicated so. The contraction of STIs further erodes the trust between the partners as it breeds misunderstanding that could lead to the break up of a marriage.

There is, in addition, intense fear that people will leave the infected. Even if one were cured, people would always recall that he or she had been infected previously. This is why the infected prefer to suffer in silence rather than come out openly and be hounded with shame. STIs are feared because they cause poverty in the family as available resources are diverted into treating the illnesses.

8:7:5 Perceptions of the risk of contracting sexually transmitted infections

The respondents had varied perceptions of the risk of contracting any type of STI. Some groups in the population were considered to be at higher risk of contracting STIs than others. When respondents were asked which groups of people were at risk of contracting sexually transmitted infections, they overwhelmingly mentioned young men and women (adolescents). The reason for the heightened risk is that they are still experimenting with sex, hence they are more likely to engage in multiple sexual relationships. In addition, they are 'hungry for sex and love'. It was also pointed out that it is the young people that frequent discos, *edonga* dances, and video halls that are at a greater risk of contracting STIs.

Other categories of people that are at risk of contracting sexually transmitted infections are: *watu wa tama*²²⁵; commercial sex workers; alcoholics; widows; bus and matatu conductors (touts); lorry and trailer drivers and loaders; the unmarried (single people); and unfaithful partners.

8:7:6 The influence of gender on the risk of contracting sexually transmitted infections

The perception of risk of contracting STIs was varied among the respondents. I wanted specifically to find out whether gender is linked to the perception of the risk of contracting STIs and whether a certain gender could be blamed for the spread of STIs in Lodwar township. Forty-four percent of female respondents (n=22) indicated that men were at the highest risk of contracting and transmitting STIs, while 36 percent (n=18) rated women as being at a higher risk. On the other hand, 38 percent (n=19) of men indicated that women were at higher risk, while 22 percent (n=11) of the men thought that men were the

²²⁵ People with an insatiable desire for sex.

ones who are at highest risk of contracting and transmitting STIs. Both male and female healers, however, indicated that both sexes were at risk of contracting STIs. Some of the reasons that were given by both males and females as to why they thought that either of the sex was at a higher risk of contracting and transmitting STIs in Lodwar township are given below.

(I) Males:

Men are particularly at risk because they are the ones that are able to seduce women because of their economic power. The masculine culture entitles them to seduce women and not vice versa. The women they seduce for sex could be infected or the men themselves could be infected, thus creating a situation for either the contraction or transmission of STIs. They, in addition, have insatiable *tamaa*, or the lust for sex all the time. Men always want to have sexual intercourse with all the beautiful women they see or meet on the road and in social places. Moreover, men are the ones that are involved in occupations, such as lorry and trailer driving, matatu touts and loaders, which predispose them to having sex with commercial sex workers in towns like Lodwar, Kakuma, and Lokichoggio. Men are also at higher risk because when they go out to bars and *kaada* drinking places, places of heightened risk, they are likely to engage in sexual intercourse with other women as *kaada* impairs judgement. In addition, men often attend social gatherings like discos and *edonga* dances where they are likely to encounter women who might infect them, or whom they might infect.

There was an argument advanced by men that the lack of circumcision by Turkana men contributes to poor hygiene of the genitalia, thus increasing the risk of contracting sexually transmitted infections. In addition, men do not as a matter of routine wash their genitals properly by pulling up the foreskin, which harbours infections. Male polygamists were seen as being at higher risk of a contracting STI from one of their unfaithful young wives. In addition, the man himself might engage in extramarital sexual intercourse, thus contracting an illness that could be transmitted to all other wives.

Women noted that most men are at a higher risk because they like (to have sex with) women and are able to 'buy women (for sexual intercourse) like clothes or food in the market place or shop'. In addition, women accuse men of treating the infections less seriously and as something that they are not worried

about. Sexually transmitted infections are perceived as curable, and, even if contracted, can easily be treated. It is therefore not worth avoiding sex because of a perceived minor setback.

Female respondents indicated that men easily contract STIs because they lack protective fluid in their penis, which women do have in their vaginal cavities. This is why many women are not infected with syphilis or gonorrhoea since the bacteria causing them are easily killed by the fluid in the vaginal cavity, leaving only a negligible amount that can be transmitted to the man. The man will, however, become infected and develop symptoms and signs because of their lack of a protective mechanism - the protective fluid in the penis. Informants indicated that men would develop the symptoms and signs faster and become even more infectious. On the other hand, women only become infected after repeated exposure²²⁶, have longer incubation periods, and quite often are asymptomatic. Due to this, they unwittingly spread the infection.

(II) Women:

Non-inherited widows have a higher chance of contracting STIs, as they are likely to have sexual intercourse with many men for money and sexual gratification, a 28-year-old male carpenter indicated. Women are at higher risk because they use sex as an economic activity – they sell their bodies like goods in shops or markets, or treat sexual intercourse as a salaried job. Women use sex as the mode of survival. In the process of doing this, they have sex with numerous foreigners (non-Turkana and refugees) who might be infected with STIs. It is common knowledge in Lodwar township that some women have short and long-term sexual relationships with multiple partners concurrently.

Adolescent women are at a significant risk, because all the men are after them. They are seen as young, tender, and unpolluted by too much sexual activity. They are perceived as not only safe from STIs, but also 'fresh and sweet'. In addition, young girls are also seen as 'hungry for sex as they have just found out how sweet it is'. Poverty and the lack of resources put them at a particularly high risk, as they need the money to buy personal items like perfumes, lotions, and clothes so as to make their bodies more beautiful. Young women will therefore have sexual intercourse with anybody, and in most cases turn their bodies into purchasable commodities. In fact, I was told that women like advertising themselves by wearing sweet

²²⁶ Informants indicated that having sexual intercourse repeatedly with infected men, would lead to the accumulation of bacteria in the vagina, thus facilitating the contraction of STIs.

perfumes and revealing dresses so as to attract men. This is why some women noted that women, even if they are married, are still naturally philanderers. Many female respondents indicated that 'women are great prostitutes by nature'. Moreover, women are perceived to be at greater risk because they cannot settle down with one man. In addition, they get married to men whom they do not know well, and they think that whoever is seducing them will eventually marry them.

Women indicated that they are at a greater risk of contracting STIs because they are mostly asymptomatic, while in men, symptoms appear within two to three days of infection. It is instructive that no man indicated that men could be at risk of contracting STIs because they could be asymptomatic to most STIs.

8:7:7 The prevention of sexually transmitted infections

Local knowledge of preventing STIs was supplemented with important information gathered from eighteen informants who had been previously infected with STIs and twenty respondents who presented with STIs at the Lodwar District Hospital's STD Clinic. Generally, sexually transmitted infections are preventable. However, 80 percent of women (n=32) and 82 percent of men (n=33) indicated that sexually transmitted infections are unavoidable, unless one consciously uses a protective mechanism or engages in safe sexual practices. A number of ways mentioned through which people could protect themselves from contacting STIs is adherence to one partner, and, preferably, marrying only one wife. A 20-year-old man with a wife and four extramarital partners ironically considered faithfulness to one partner as an important mode of STI prevention. In addition, a 27-year-old man with two wives and three mistresses indicated that abstinence is one of the effective ways of preventing STIs. Another 26-year-old single man infected with syphilis noted that the avoidance of sex with irregular partners, commercial sex workers, and those with 'unknown sexual behaviour' was an effective way of preventing STIs. One of the ways of preventing contact with such people is to avoid meeting friends in social places like bars and environments that serve *kaada*, where greater vulnerability exists. In addition to avoiding these social places, women were also advised 'to investigate the background of the man they admire' before engaging in sexual intercourse with him. Generally, in order to

reduce one's risk of contracting STIs, it was recommended that one should marry one partner, preferably a Christian.

It was indicated that it is vital that people do not share pants with infected victims. In addition, it was remarked that people should avoid the use of non-sterilised needles, and any blood for transfusion must be tested.

Another commonly mentioned method of STI prevention was douching, preferably washing the genitalia with water immediately after sexual intercourse. Some women indicated that it is a good practice to maintain an effective personal hygiene involving keeping the genitals clean through daily washing with water. I was informed that in addition to using soap, there is a herbal concoction that is normally used for douching, although I was unable to confirm this.

It was also suggested that condoms and diaphragms could be used to prevent the transmission and contraction of sexually transmitted infections. In addition, people were advised to avoid sharing tobacco and deep kissing.

8:7:8 Treatment of sexually transmitted infections

Knowledge of the treatment of STIs in Turkana was mostly gathered from indigenous healers. In addition, those who have been infected previously with any STI provided invaluable experiential knowledge of the management of STIs. This is practical knowledge gained through experience, especially pertaining to the actions individuals took concerning their illnesses. Seventy-eight percent (n=39) of women and 92 percent (n=46) of men indicated that STIs are curable. It is noteworthy that only a negligible number indicated that 'some' STIs are incurable. Those who had sexually transmitted infections sought therapy from a variety of sources as indicated in the table below.

Table 52: Sources of consultation of therapy / treatment for STIs

Mode of treatment	Females (n=50)	Males (n=50)	Total percentage
No medication / treatment	1	0	1
Indigenous healers	36	17	53
Government hospital	50	47	97
Mission hospital	35	32	67
Chemist	25	22	47
Private clinic	33	33	66

An overwhelming majority of respondents (97 percent) indicated that they would present at government hospitals and dispensaries would if they were infected with sexually transmitted infections. Nevertheless, 72 percent of female respondents (n=36) and 34 percent of male respondents (n=17) indicated that indigenous healers are capable of treating STIs. While 67 percent of all the respondents preferred mission hospitals, a further 66 percent gave priority to private clinics. However, the fact that a significant 72 percent of the female respondents preferred indigenous therapy compared to only 34 percent of the men is worrying indeed. Seventy-eight percent (n=39) of men and 44 percent (n=22) women indicated that they would accept to be tested for STIs if they were presented with an opportunity. The actual therapies for particular types of STIs are discussed below.

(I) Gonorrhoea:

There are a variety of ways of treating *elepót*. Therefore, different healers and those who have had the experience of treating themselves mentioned several medicines. Some of the herbs were public knowledge and the infected would easily prepare a concoction from them.

Various trees such as *emus*, *Hyphaene coriacea* (*eengol*), *Cordia sinensis* (*edome*), *Acacia albida* (*edurukoit*), *Grewia villosa* (*epong*), *Acacia tortilis* (*etir*), *Acacia eliator* (*esanyanait*), and *Boscia coriacea* (*erdung*) were mentioned as sources for herbal concoctions. Either roots or leaves, or both, were used in making herbal concoctions. One healer indicated that a patient would have to drink herbal medicine for nearly one month. Another healer indicated that different herbs are used one at a time until an individual is

cured. Most of these trees, like *emus*, *echorokong*, and *etir* produce a milky soup that is used in therapy as well. One example of a herbal concoction is prepared by roasting the *emus*, and then boiling it in water. The liquid is mixed with milk, soups, and strong tea. Another herbal drink is made from fresh *eengol* roots and leaves, which are crushed with a mortar and a pestle, then soaked in water for over seven hours. In another, dry *eengol* roots are crushed then soaked in water for over three hours. Fresh or sour milk is added to the mixture and left to soak for about four hours after which the ill person drinks it. Since all of these herbs are bitter, two to three handfuls of sugar or milk is added to the concoction to neutralise the bitter taste. *Eengol*, *epong*, and *emus* are emetics, facilitating frequent urination, diarrhoea, and causing vomiting of foam-like fluids. It is local knowledge that the bacteria causing gonorrhoea is discharged with these body fluids. In addition, they 'weaken the body' so as to neutralise the effects of gonorrhoea. As a side effect, these herbs cause itching all over the body.

Another mode of treatment that is frequently mentioned is drinking tea without milk. In addition, those who are infected should not eat food cooked with oil. Biomedical treatment was also mentioned as a source of therapy by both the healers and the local populations who had been infected. The sources of biomedical treatment were the Lodwar District Hospital, private clinics, and self-treatment using drugs from the pharmacy and shops or other sources, especially from the district hospital's subordinate staff. As will be discussed later, many of those who had had previous infections used many sources of treatment, one after another.

(2) Echakari:

Treatment is the same as that described above. The most common herbal concoctions, however, are *emus*, *epong*, and *eengol*, which are drunk for one month before they are deemed effective.

(3) Syphilis:

Bitter herbal concoction from *etir* fruit, *emus*, *eengol*, and *epong* are used. The mode of treatment is similar to that of gonorrhoea. Healers also mentioned that injections (administered in the hospitals and private clinics) are forms of effective therapy.

(4) Big Boils:

These are treated with bitter herbs (leaves and roots) from such medicinal trees as *epong*, *etesiro* and *elim*.

(5) Engech:

The illness is to be treated with bitter herbs and/or clinic and hospital medicine.

(6) Eus:

As *eus* originated from outside Turkana, its treatment is not available in Turkana. The patient has to be taken to a hospital in Ethiopia where he or she would be injected at the back of the neck with medicine. After the injection, the patient would fall down and lie unconscious for some minutes. In addition, bitter herbs are used from the *emus* and *eengol* trees. Another form of indigenous treatment involved drinking soup made by cooking donkey meat mixed with *epong* and *emus* herbs. Other sources of soups include dog, baboon, and monkey.

(7) Lonywe:

Indigenous therapy is generally administered through the use of herbal concoctions made from roots and barks from trees such as *emus*, *eegol*, *epong*, and *elim*. Treatment takes about four days for the wounds and boils to disappear.

(8) Akilala:

Treatment involves drinking bitter herbs such as *epong*, *esanyanait*, and *elim*. Black spotted heads emanate from the skin after treatment, which have to be pinched out one by one.

8:7:9 Perceptions of the prevalence of sexually transmitted infections in Lodwar township

I was interested in finding out the perceptions that the residents of Lodwar township had regarding the prevalence of STIs. I specifically wanted to know whether they thought that the number of people infected with STIs had gone up, gone down, or remained constant over the past few years. Sixty-six percent of women (n=33) and 58 percent of men (n=29) indicated that the number of people suffering from STIs had definitely gone up in Lodwar township. Twenty percent of women (n=20) and 14 percent of men (n=7) did not know.

It is known that STIs facilitate the efficient transmission and contraction of HIV-1. It is pertinent to know whether the local population knows this fact, and whether this knowledge could influence the transmission of STIs, including HIV-1. Fifty-four percent of women (n=27) and 40 percent of men (n=20) indicated that having a background infection with STIs would make one more vulnerable to HIV-1 infection. Fourteen percent of men (n=7) indicated that they would be less vulnerable, while 2 percent (n=1) indicated there would be no effect, and 14 percent (n=7) did not know. On the other hand, 4 percent of women (n=2) indicated that there would be no effect, while 28 percent (n=14) did not know.

Only twenty-two percent of men (n=11) and sixteen percent of women (n=8) agreed that they would tell a new partner if they were infected with a STI. In addition, only 4 percent of men (n=2) believed that someone with an STI would use a condom every time they had sex, 36 percent (n=18) said no, while 28 percent (n=14) did not know. It is instructive that none of the female respondents believed that men would use a condom if they had a STI to prevent the transmission of the infection to a female partner. Fifty-five percent of the women (n=25) indicated that they would not insist that a prospective partner use a condom if they (the women) were infected, while 26 percent (n=13) did not know.

Respondents were asked whether they thought most people would behave in a particular way. Twenty-eight percent of men (n=14) and 76 percent of the women (n=38) thought that most people would ask a new partner if he or she was infected with a STI. Only twenty percent of the women (n=10) and 24 percent of

men (n=12) thought that most people would tell a new sexual partner if they were infected with STIs. On the other hand 44 percent of men (n=22) and 2 percent of women (n=1) thought that most people would use a condom every time they had sex with a new sex partner. Sixty percent of female respondents (n=30) indicated that *men* would not use condoms every time they had sex with a new partner. There is a general feeling that most people would not take the necessary precautions to reduce the contraction and transmission of STIs.

8:8 Experiential knowledge of sexually transmitted infections among those who have been previously infected

8:8:1 Introduction

A total of eighteen men and women of equal number who had been previously infected with STIs were interviewed in Napetet Village, Lodwar township. Seven of the women were never married. Of the nine men, two were married. A research assistant who resided in Napetet Village conducted the interviews. Most of the interviewees were his contemporaries. He knew all of them at a personal level. In addition, my research assistant was one of the village elders of good standing in the village, as he also doubled as one of the village representatives to the local Relief Food Distribution and Monitoring Committee.

The respondents had only been infected with two types of infections, that is, syphilis and gonorrhoea. Twelve respondents were previously infected with gonorrhoea and six with syphilis. Six females and six males had been infected with gonorrhoea, and four males and two females had been infected with syphilis. Gonorrhoea emerged as the most common form of STIs suffered by men and women. This conforms to the general belief that it is the most prevalent type of STI.

Informants were infected between 1990 and 2000. More than a half of the infections occurred between 1998 and 2000. On an average, respondents had been ill for four weeks. In a continuum, one respondent had been ill for a week, while another was ill for five months. In terms of gender, male respondents had signs and symptoms for an average duration of three weeks, while women had the infection for five weeks

before they were cured. A 21-year-old single woman had been previously ill with gonorrhoea for five months. This is consistent with popular understanding among the Turkana that women have a longer incubation period than men.

8:8:2 The perceived causality of sexually transmitted infections

Respondents proposed diverse reasons concerning the causality of their infections. There was a general unanimity that infections are caused through sexual intercourse. However, the perceived sources of the infections varied with the respondents. Fifteen respondents indicated that their sexually transmitted infections were contracted through sexual intercourse with non-regular partners. Two single men contracted syphilis and gonorrhoea through sexual intercourse with commercial sex workers, while two other married women indicated that they contracted the infection from their husbands.

Using various reasons, respondents endeavoured to justify their claims regarding the sources of the infection. Many respondents claimed that they only began to feel unwell after having sexual intercourse with specific partners. As one respondent who was previously infected with gonorrhoea indicated, "before I had sexual intercourse with one commercial sex worker I was well. Nevertheless, immediately after I had sexual intercourse with this lady, I noticed some changes in my private part, that is, not urinating well and feeling a sensation before urination. I bought the disease for KShs 20 (US\$ 0.26), the amount I paid for one shot only". Some accusations were evidently unfounded and probably targeted the wrong people. Most people claimed that they started feeling intense pain a day after having sex, indicating that they could have been infected earlier than they thought. For example, one informant said: "I started experiencing pain after having sex with this lady. When I went for a short call, I experienced pain in my penis. I could also see pus discharge from my penis before I passed urine". Another female respondent noted: "I did not have any sexual intercourse with any other man apart from my regular partner. However, after sexual intercourse, I started experiencing different symptoms and signs like difficulty in urinating, painful abdomen, backache and painful stomach". Another married female explained: 'I had sex with one irregular partner; however, I did not experience any symptoms immediately as though I had been infected. After one month, I had sexual intercourse with another irregular partner from up-country. I started having unusual feelings after four days.

Therefore, I took it that it was the up-country man that passed on the infection to me. I also had sex with my husband who I consequently infected'. One man claimed that he experienced a swollen penis three days after engaging in sexual intercourse with one of his regular partners. Most of the information collected indicated that people did not know the sources of their infections for certain, apart from two women who claimed to have been infected by their husbands.

It seems that many people had sexual intercourse with the alleged sources of infections when they were already infected. The last sexual act was associated with the onset of pain and seen as the origin of the infections. It is not feasible for one to have advanced symptoms less than three days after the actual sexual intercourse. Accusations regarding the source of illness, such as the one by a single man who experienced a swollen and itching penis three days after having sexual intercourse with a regular partner, and a single male who previously had syphilis who experienced a swollen penis, pain while urinating, the discharge of pus, and difficulty in walking only a few days after having sex with a regular partner, were not practically possible. Although the source of infection is perceived to be the latest sexual partner before symptoms appear, the actual infection must have occurred earlier.

8:8:3 The treatment of sexually transmitted infections

There were various sources of therapy for the infected. Many people used more than one type of therapy, varying between self-treatment and standard medical treatment. Self-treatment regimes typically included drugs bought from pharmacies and shops, drugs obtained by borrowing pills from friends, and drugs bought from or given by the subordinate staff of the Lodwar District Hospital. Conventional treatment options included attending either private clinics or the Lodwar District Hospital's STD Clinic. Indigenous medicines dispensed by healers were also used. Antibiotics obtained from the Hospital were distributed through existing social networks, though along gender lines. While a few respondents opted for biomedical treatment directly, some people followed diverse sources of therapy commencing with self-treatment, and seeking professional help later, either through indigenous healers or biomedical practitioners. Only two informants listed the Lodwar District Hospital as their first contact for treatment, while three sought

treatment from private clinics. The following case study of a married 25-year-old male informant infected with syphilis illustrates the pathways to various modes of therapy that many respondents followed:

“After I noticed the symptoms and signs I travelled to West Pokot to consult a renowned healer. He gave me some herbs, which I crushed, mixed with water and drank. I did not recover. The second course of action was taken after I received many pieces of advice from previously infected friends. I bought some capsules²²⁷; I think they were penicillin, from the local pharmacy. I also went to the bush and collected some herbs, some of which I gave to my wife. I cheated her that the herbs were for appetite and the stomach pains that she had complained about previously, as she wanted to know why we were taking the same medicines. My wife was cured, but I was not. In my third course of action I went to Lodwar District Hospital's Sexually Transmitted Disease Clinic. I was sent to the Laboratory for a test, which confirmed that I was infected with syphilis. My wife and I were duly treated at the Clinic”.

In addition, the following story of one of the informants also illustrates pathways to care:

A 31-year-old male who had gonorrhoea for three weeks, informed his brother about the infection. Following his brother's advice, he went to the pharmacy and bought tetracycline capsules as many as he could afford. He, in addition, used to drink a very strong black tea, which is a good therapy for gonorrhoea. He also avoided drinking local alcohol, *kaada*. As the prognosis of the illness was still getting worse, his brother advised him to use *emus* and *etete* herbs. He crushed the bark of *etete* and mixed it with water and then drank it. There was only a slight positive change in the prognosis of the illness. The last pathway to treatment he took was hospital therapy. He went to the Lodwar District Hospital's STD Clinic where he was tested and given the capsules and injections. His illness 'disappeared' afterwards.

Most of the respondents sought advice about their illnesses from friends. Some of them had been previously infected with STIs as well. Friends, therefore, played a huge role in influencing the choice of therapy. The following case study of a 34-year-old single male illustrates the importance of friends in seeking therapy for STIs:

²²⁷ In Turkana, as in other parts of Kenya, 'capsule' is synonymous with penicillin.

"After I started experiencing the symptoms and signs on my penis, I commenced enquiring from friends about the nature of the illness that I could be having and I generally enquired about how long it takes for the signs and symptoms to appear after contracting a sexually transmitted illness. As first line of treatment, guided by the pieces of advice that I received, I prepared herbal concoction from *emus* and *eengol* trees. Following another line of advice, I went to the pharmacy and bought capsules called amoxyl. Despite taking the capsules for one week, my condition remained unchanged. As a third resort, I went to Lodwar District Hospital. While there I had blood and urine test, after which I was given treatment accordingly and I got well after two weeks".

Another male respondent with gonorrhoea indicated:

"I sought advice from my friends. As the prognosis of the illness worsened I contacted more friends. Some friends advised me to go for self-treatment. Therefore, I went to the bush and brought *emus*, *ngapeto* and *etir* herbs. I started with *emus*, which I roasted like meat, boiled it for few minutes, then I poured the liquid in a container. I used the concoction to make porridge, which I drank. Secondly, I boiled the fresh barks of *ngapeto* and drank the concoction. As a third course of treatment, I crushed the leaves and roots of *etir* tree, mixed them with water, then drunk the bitter concoction. The infection only got more serious. Following the advice of some friends, I bought capsules from the chemist. I got better after taking the capsules. After some time, I bought more drugs (sixty chlorophenical tablets)".

The Turkana are similar to the Mumbai slum dwellers that cherish ayurvedic over hospital medicines, and seek the best healer through friends to ensure confidentiality and anonymity (Verma *et al.* 2003). In addition, much like the Turkana, they also sought therapy from a variety of healers, and often many people would share one prescription, further perpetuating anonymity.

A 33-year-old female who sought advice from a few friends, described her course of action:

"I went to the bush to ponder over the infection. At home I washed my vagina regularly with warm water. I also took capsules and panadol. I later contacted a private clinic in Lodwar when my illness got worse. I was screened and later given adequate therapy and became better".

The washing of genitals is a very popular form of self-treatment for sexually transmitted infections in Africa. In fact, the Turkana, both men and women, indicated that poor personal hygiene that is, not washing genitalia regularly is one of the causes of sexual infections.

Above, I mentioned a wife who was duped by her husband into accepting an indigenous treatment for a sexually transmitted infection. Later, they went to the hospital together for treatment. We do not know, however, how she reacted after she discovered that her husband acted the way he did because he had transmitted an infection to her. This is a situation that confronts many disempowered African women who are infected by their philandering husbands. However, the Turkana presented one unique case in which a 33-year-old woman who was infected with syphilis by her husband walked out of the marriage. As she pointed out:

“After I realised that I had been infected due to the appearance of symptoms and signs, I kept quiet over it for about two weeks. In the fourth week, I asked my husband, whether he thought that he might have transmitted a sexual infection to me. He had just returned from work, far away from Lodwar. He used to travel back home after about every two months. He infected me during one of his journeys back home after staying in Lokichoggio for about two and half months. I was very bitter and shouted at him with anger. He tried to coax me but I retorted, ‘you go away, you have destroyed my life, dog’. That night I slept on a separate bed from him. He came slowly to me at night, and asked me what the problem was. I told him how he had transmitted a sexual infection to me. I told him that I would leave the following morning and go to my parents. I left the following morning. While at my parents I went to the clinic and I received therapy. I used a total of sixty capsules of tetracycline and ten injections of gentamycin. I got better. I came back to my husband after he promised that he would be faithful to me, and would never infect me with an STI”.

This case shows how STIs create upheaval in a household even leading to the break-up of the marriage. However, due to gender imbalances in Africa, these kinds of cases are unique. This is not to deny that marital break-ups happen, though, and that they are a direct result of the fact that contracting a STI outside the marriage is a sign of unfaithfulness.

It is clear that in their search for appropriate therapy, some respondents used antibiotics without prescriptions, which led to the misuse of drugs. For instance, one female respondent bought fifty capsules from the chemist, which she took but did not experience any change. In fact, the use of penicillin²²⁸ without prescription is a very popular therapy for sexually transmitted infections in most parts of sub-Saharan Africa. People resort to buying half dosages from the shops and pharmacies because even though they recognise the efficacy of biomedical drugs, they cannot seek treatment due to the costs involved and the accessibility of the treatment. In Turkana, one informant indicated that he got antibiotics from one of his friends working in the District Hospital as a member of the subordinate staff. One man used a cocktail of drugs as he borrowed antibiotic capsules from a friend, and later bought some capsules from the shop before eventually presenting at the District Hospital for treatment. One male informant bought flagyl, piriton, septrin, and capsules before eventually presenting at a private clinic for treatment for his gonorrhoea. The belief in the potency of capsules and injections in curing STIs was very strong among the informants. A married female with syphilis sought advice from friends, and then bought sixty tetracycline capsules from the chemist. She also bought a bottle of penicillin syrup and hypodermic needles. In addition, a friend who was a nurse injected her every day for one week. Another 33-year-old single female with gonorrhoea regularly washed her genitals with warm water. In addition, she took tetracycline capsules and panadol tablets. She later went to a private clinic when the symptoms worsened. The clinic screened her urinal discharge and pus, and she was given effective medication. The most frequently used drugs were tetracycline and penicillin capsules. Other drugs mentioned were panadol, amoxyl, penicillin injections, gentamycin injections, and chlorophenical tablets.

As can be seen, informants went to a variety of therapists for a cure. At the end of each ineffective therapy, all informants went to either the clinic or the hospital. In the course of the interview, only two informants said they made sure that their partners were cured as well. One single woman, who experienced syphilis for five months, the longest period so far, went with her regular male partner to the Lodwar District Hospital's STD Clinic where they were tested and given effective capsules and injections. A single female went to the hospital with her partner where they were prescribed and dispensed capsules and injections.

²²⁸ I was told that teenage girls often rush to buy penicillin and tetracycline capsules, and injections from the chemist then assume that they are protected against sexually transmitted illnesses.

The majority of the clients received their effective therapy from the Lodwar District Hospital's STD Clinic. One female used only medicine bought from the pharmacy for self-treatment. Only two people went to the Lodwar District Hospital as their first line treatment. Another person went to the private clinic as a first line treatment. Two informants went directly to the pharmacy to purchase drugs as first line of treatment. In general, most men treated symptomatic STIs by taking a broad spectrum of antibiotics that were often bought from the pharmacies without a prescription. The table below indicates various sources of therapy.

Table 53: Differential use of various sources of therapy

Type of Therapy	Total number of users
Private Clinic	9
Hospital	7
Pharmacy	9
Herbs	10
Mobile clinic	1
Took drugs from friends	1
Bought drugs from Lodwar District Hospital's subordinate staff	2

Those who tried more than one therapy did so because their symptoms were not alleviated immediately. The search for an effective pathway to a cure only stop when one is cured.

Though respondents pursued many types of therapies, there was general agreement that eventually they were cured. The most effective therapy, as indicated by the responses, was biomedical therapy either received from the Lodwar District Hospital's STD Clinic or the private clinics operating in Lodwar Town. Despite acknowledging that STIs are curable, there is general agreement that STIs take longer to treat in women than in men. A 23-year-old single female infected with gonorrhoea argued that STIs take longer to treat fully in women, and rarely are cured completely. In normal circumstances, the Turkana believe that sexual infections are not cured completely but hibernate, waiting to reappear after some months or even years. According to this knowledge, one might assume that a re-infection is just an incarnation of the previous infection, which was purportedly treated. That is why, I was told, women unknowingly spread the

infection. It is common knowledge among the Turkana that women are asymptomatic to many STIs; even if the symptoms and signs appear, they do so when the infection becomes worse. This knowledge has strong implications for the cure and prevention of STIs in Turkana township. The knowledge that STIs are not curable fully among women might lead to laxity in searching for effective cures, hence perpetuating the transmission of infections.

8:8:4 Experienced symptoms and signs

As opposed to perceived symptoms and signs, the familiarity with symptoms and signs are based on individual experiences. As opposed to knowledge that has been acquired from schools, peers, or the community, this kind of knowledge is personalised and is based on past experience with a similar condition. I therefore asked respondents to tell me their personal experience with STIs. There were only two STIs, gonorrhoea and syphilis that were experienced by the respondents. Rather than report here each individual experience, I will tease out salient symptoms and signs, leaving out the repetitions. Even though some informants mentioned that their infection had been acquired just a few weeks earlier, the kinds of symptoms they claimed to have experienced indicated advanced sexually transmitted illness. This means that they might have ignored their illness for some time before finally making a self-diagnosis.

Most of the infections were very serious in terms of prognosis. This further demonstrates that the respondents had their infections for long periods without adequate therapy. This has additional implications for the spread of infections as only 50 percent (n=9) of the respondents indicated that they did not engage in sexual intercourse after realising that they were infected. But since most of the respondents probably were infected earlier than they thought, they must have participated in the transmission and spread of their infections inadvertently. The seriousness of their infections, as indicated by the symptoms and signs that were experienced indicated more mature infections than were thought by the respondents. In fact, a 34-year-old male, despite indicating that he had been ill with gonorrhoea for only one month indicated that the illness was very serious with swollen testicles, a painful penis, difficulty in walking, and the discharge of pus. Thus, he must have been infected with gonorrhoea for more than one month before his diagnosis. A 24-year-old male respondent infected with gonorrhoea believed that he was infected through sexual

intercourse two days prior to the onset of symptoms, but attributed the exacerbation of his condition to *kaada*, foods containing too much oil, and drinking tea with milk. The difficulty in pointing to the exact source and the period of infection was further demonstrated by one man whose syphilis was severe three days after sexual intercourse with the suspected source. As indicated in the table below, the signs and symptoms experienced by the respondents indicated the severity of their infections.

Though respondents were infected with either gonorrhoea or syphilis, the symptoms and signs are similar because there is confusion between the two infections. That there is no clear-cut distinction between the two illnesses was demonstrated by the use of the same types of therapies. As demonstrated by a 24-year-old male infected with gonorrhoea, "if you stay with gonorrhoea for a long time, wounds develop on the head of the penis. Gonorrhoea develops into syphilis".

The *table 54* below presents a summary of gender-based local knowledge of the experienced signs and symptoms of the most commonly mentioned STIs, that is, gonorrhoea and syphilis.

Table 54: Gender-based local knowledge of experienced signs and symptoms of gonorrhoea and syphilis

Male		Female	
Gonorrhoea	Syphilis	Gonorrhoea	Syphilis
<ul style="list-style-type: none"> • Intense pain during hot periods • Difficulty in urinating • Wounds on the head of the penis • Difficulty in walking • Discomfort while sleeping • Discharge of pus • Painful testicles • A male with the illness after a month had swollen testicles and discharged pus while urinating • Swelling of the prepuce • Intense pain at night • Dryness of the body • Itching penis 	<ul style="list-style-type: none"> • Intense pain on the head of the penis • Wounds on the head of the penis • Constriction of the urethral duct in the morning • Difficulty in walking • Difficulty in urinating • Bad smell • Itching penis • Swollen testicles 	<ul style="list-style-type: none"> • Discharge of pus • Swelling in the genitalia • Wounds in the vagina • Difficulty in walking / locomotion/ mobilising • Pus seen on the clothes • Bad smell, leading to one being followed by houseflies • Difficulty in urine discharge • Discharge of hot urine • Dry lips • Dry skin • Swollen labia majora 	<ul style="list-style-type: none"> • Painful back • Wounds in the vagina • Discharge of pus before and after urinating • Swollen vagina • Difficulty in walking • Loss of appetite • Restlessness • Bad smell • Bad smell, leading to one being followed by houseflies • Dryness of the body

8:8:5 The consequences of sexually transmitted infections

It emerged from the interviews that people preferred to confine discussions of their illnesses to a retinue of friends and close associates. It was only close friends that they relied upon for advice on how to manage their infections. Sexually transmitted illnesses had varied effect on the infected. Most of the respondents indicated that their infections were severe and were accompanied by excruciating pains, causing a good deal of discomfort. Most respondents reported that being sick had a negative effect on the performance of daily activities.

The infections also had socio-economic effects on the respondents. Economically, informants felt that the cost of treating their STI was a drain on their family or personal resources. Many men could not work as they did before they were infected. One male respondent infected with gonorrhoea for one month indicated that the illness weakened his muscles until he could no longer work. A gonorrhoeal infection that had persisted for two months compromised one male respondent's ability to perform his daily duties as he had to take continuous breaks to rest. Informants diverted resources to the treatment of their infection by buying drugs from shops and pharmacies. One used a great deal of money for indigenous healers and a private clinic before eventually going to the government hospital. One married male who previously had syphilis indicated how expensive it was to treat himself and his wife, before they eventually went to the Lodwar District Hospital's STD Clinic. Nevertheless, even at the STD clinics, only drugs and prescription medications are donor-funded, as patients are required to subsidise the cost of laboratory tests.

Sexually transmitted infections forced people to make unpopular dietary choices. One of the methods thought to prevent or cure STIs is the avoidance of milk, *kaada*, and oil or fat. One respondent confirmed this when he indicated that his gonorrhoeal infection became severe after a few days only because he drank *kaada* and strong tea²²⁹, and ate food cooked with oil. All three, though valued foods and fluids, are thought to exacerbate sexually transmitted infections.

²²⁹ Tea without milk.

Some respondents indicated that being infected constrained their social networks. Those with infections would not want to be seen in public places with flies hovering around them. This would be tantamount to announcing to the public that one is infected with a stigmatising STI. Some respondents felt some degree of isolation from family members and friends. One single female infected with gonorrhoea indicated that the whole village had talked about her sexual infection, and some men abused her. Thus illness, in addition, forced her to cut back on her social circles. She sought complete privacy while going to use the toilet. This is contrary to normal practice where women accompany one another while going to the 'toilet'. One male indicated that the infection led to depression, dejection, and isolation. He could not socialise in the village as he used to before the infection. One woman who was infected by her husband was very ashamed and isolated herself from her friends. The infection pushed her into a temporary separation from her husband.

8:8:6 Engagement in sexual intercourse while still ill

Sexual infections are mainly transmitted through sexual intercourse. It is therefore very pertinent to find out whether respondents engaged in sexual intercourse after they started experiencing signs and symptoms. However, even those who did not engage in sex after experiencing signs and symptoms could have done so before, not knowing that they were already infected. In addition, thirteen respondents out of eighteen were never married making it probable that they had multiple partners. This implies that the infections could have been spread far and wide among their casual sex partners. In response to the questionnaire, nine respondents (three men and six women) indicated they had sex while still experiencing STI symptoms. Of these, three women and two men were single, and engaged in sexual intercourse with multiple partners. One man and three women were married.

8:8:7 Responses from partners

The responses from the spouses, and the irregular or regular partners of those who were infected varied. One single male with syphilis indicated that one of his partners complained that he had infected her, indicated that she knew the source of her infection. The man, however, had had sex with so many partners that he could not narrow the

source of infection down to one particular partner. A married man, who knew that his partner must be infected as well, deceived her into taking herbs to treat the infection by telling her the herbs were for her appetite. However, both later went to the hospital.

One woman had a regular partner who was very angry with her and warned her not to get infected again and to keep quiet about the current infection as his reputation was at stake. However, the partner of one female respondent told other villagers about her infection.

8:8:8 The nexus between HIV-1/AIDS and other sexually transmitted infections

The respondents were asked whether they thought that having an STI predisposes someone to contracting HIV-1. They were unanimous that a background STI infection increases the chances of contracting HIV-1/AIDS.

Behaviourally, one who becomes infected with any STI has nearly an equal chance of contracting HIV-1, since the mode of transmission and contraction is similar. Biologically, it has been shown that having a background STI facilitates the efficient contraction and transmission of HIV-1.

8:9 Local perspectives on sexually transmitted infections among those who presented with sexually transmitted infections at STD Clinic, Lodwar District Hospital

8:9:1 Introduction

Interviews were conducted with twenty patients that included an equal number of males and females who presented with sexually transmitted infections at the Lodwar District Hospital's STD Clinic. The Clinician responsible for the clinic conducted the interviews. Interviewees were randomly selected so that every patient who attended the clinic over a

period of two weeks had an equal chance of being interviewed. An additional two interviews (with a man and a woman) were carried out in Napetet Village by my research assistant who had prior knowledge that each had a STI. They had, however, not gone to the STD Clinic for therapy. Due to social stigma attached to sexually transmitted infections, I feared that if I were to carry out the interviews, patients presenting with STDs would refuse to answer questions honestly. The main aim was to determine what knowledge of STDs was based on the current state of infection. I assumed that the symptoms reported by the respondents would be based on the current state of infection and not on previous experiences or on the general knowledge amongst the population. The collected knowledge from these interviews was of great importance as it showed the sexual behaviour of those who are already infected. This has implications for the prevention and control of STIs.

Patients indicated that they had experienced their illnesses for varied periods before presenting themselves at the STI clinic. The duration ranged from one week to two years. The mean length of time before treatment was sought was two months for women. On the other hand, there was a huge variation in the number of days or months that men took before going to the clinic. It is particularly instructive to note that two single men with genital ulcer diseases (GUD) took one year each before seeking therapy in the Lodwar District Hospitals' STD Clinic. Another married man had urethritis for two years before attending the STD Clinic. The reasons why men took longer before going to the clinic are unknown. One explanation could be that men used an avalanche of ineffective therapies before finally going to the clinic and some of these therapies masked the infections. On the other hand, most of the single women presented at the STD Clinic after a shorter period. They were able to seek therapy earlier since they did not have to hide their illnesses because they were answerable to no one, and some of these women had sources of incomes independent of men.

8:9:2 Engagement in sexual intercourse while still ill with a sexually transmitted infection

All women had sexual intercourse while still ill. On the other hand, only seven men had sexual intercourse while ill with STIs. Most of these people were ill for relatively longer periods of time before they reported to the clinic, ranging from periods of two months to two years. Only two men who engaged in sexual intercourse while experiencing the symptoms before they presented to the hospitals had used a condom. Of all the remaining five men, four were ill for longer periods of time, ranging from six months to two years.

Only two women, a single 31-year-old barmaid and a 25-year-old female, insisted on the using a condom. These two women, it seems, insisted that their partners use condoms as a matter of routine rather than to protect themselves from acquiring the sexually transmitted infections. While the barmaid doubled as a commercial sex worker, the other single woman may have been practising sex for economic gain in the township. In all likelihood, they were aware of their infections since they had experienced the symptoms for one month, and the use of condoms was probably a protection against other sexually transmitted infections, especially HIV-1. This suggestion is supported by the fact that condom use is particularly low in Turkana.

8:9:3 Condom use

Six men and five women indicated that they had previously used a preventive device for protection against the possibility of contracting STIs while having sex. While four of the men that previously used a condom were married, all the females that insisted that their partners use a protective device were single. This demonstrates that single women have greater power over their sexuality than married women.

A total of six male respondents who had used a preventive device or method had used a condom. Of these, four were married men while two were single. Various reasons were given for the non-use of condoms, such as the partner refused, condoms not easily available, condoms are inconvenient during sex, the man had never used a condom before and lacked knowledge of condom use, and availability. On the other hand, six women had

insisted on the use of condoms with their male partners as a preventive device. One woman indicated that she did not know of any preventive device that she could use to protect herself against sexually transmitted infections.

Three of the married women indicated that they trusted their partners and therefore did not see any reason why they should use a preventive device while having sex. Other reasons advanced by women for not using a condom were that they 'did not want to annoy their partner', their 'husband refused to use condoms', their 'partner never suggested the use of condoms', their 'partner refused to use a condom', and they had 'no knowledge of any protective device'. One married woman did not use a protective device because, as she explained, 'the man is my husband. Why should I use a condom with my husband?' Another married woman did not use a condom because she did not know that her husband was infected. The majority of women expressed fear that most of their male partners would not accept the use of a condom.

The reasons given for not using condoms by males were varied. A 19-year-old single male indicated that even if he was willing to use a condom, he could not get hold of any. A 40-year-old married man indicated that he trusted his partner; therefore, he saw no need to use a condom. As one man indicated, "one who trusts and knows that the partner is safe from all sexually transmitted illnesses needs no condoms". One male secondary school student indicated that his female partner declined to use a condom. A forty-year-old and a 26-year-old married herdsman from Gold – Mukutano both indicated that they had never used a condom and did not know how to use them. In addition, they stated that they did not wish to use condoms.

8:9:4 The consequences of the sexually transmitted infections

Having a sexually transmitted illness caused social instability and personal embarrassment and discomfort. Informants indicated that the costs of treating the STIs were expensive. The infected were perceived as a source of embarrassment to their partners. Another male student also indicated that sexually transmitted infections caused him personal embarrassment and exposure to other illnesses. One married woman found it both expensive and embarrassing. One barmaid indicated that she reduced her sexual activity. She could not, therefore, make much money from sex.

Having a sexually transmitted disease often led to quarrelling at home due to misunderstandings about the origins of the infection. A 40-year-old married herdsman who presented with urethritis after six months indicated that he bought different types of drugs from the pharmacy. His wife, who felt offended and betrayed by his behaviour, argued with him at home about the source of the infection when the symptoms appeared. Having the infection caused similar wrangling and intense psychological torture to the family of another 26-year-old married herdsman as well.

All respondents indicated that having been infected with sexually transmitted diseases increased their chances of contracting HIV-1.

8:9:5 Prevention of sexually transmitted infections

Respondents were asked about the best means of preventing the contraction of sexually transmitted infections, including HIV-1/AIDS. The respondents mentioned methods such as abstinence from casual sex; having sex with one faithful partner, and using a condom during all sexual activities. While most married women mentioned having no casual sex as a method of prevention, those who were single were more likely to mention either the use of a condom or having sex with only one faithful partner. Those who mentioned the use of condoms during sexual activities were two married males and two single male students. One of the married men was a teacher and the other was a businessman – people who could afford to buy condoms.

In addition, the respondents were asked about the methods that they would use in future to protect themselves against the contraction of sexually transmitted infections. Generally, there was an agreement that sexually transmitted infections can be prevented through the avoidance of casual sex, having sex with only one faithful partner, and through the use of a condom.

8:9:6 Interviews with people (n=2) who were infected with gonorrhoea in Napetet village

An interview was carried out in Napetet village, Lodwar township with a man and a woman, both married, who were infected with gonorrhoea. These two individuals were suffering in silence in the village. Their cases are particularly interesting because even though they knew that they were infected, and could even self-diagnose the type of sexually transmitted infections they had, they did not seek treatment from the Lodwar District Hospital's STD Clinic. Though I managed to interview only two people in order to supplement knowledge gathered from those who presented at the hospital, their cases are typical of the majority of Turkana who often do not seek biomedical treatment for their sexual infections or, if they do, do so after a considerable period of time.

While the 32-year-old married man indicated that he had had symptoms for three months, the 28-year-old married woman did not know how long she had had the illness. The man was infected after sexual intercourse with an extramarital partner in the village, while the woman claimed that she contracted the illness from her husband. The man had borrowed drugs from a friend, and bought drugs from the pharmacy. The woman, on the other hand, received medicines from her husband. While both of them had sex while still experiencing the symptoms, neither of them used a protective device.

The man said that he did not know how to use a protective device. On the other hand, the woman trusted her husband and did not know that she could contract a sexually transmitted infection from him. Both of them had never used any preventive device against the contraction or transmission of sexually transmitted infections, including HIV-1.

The illness had great consequences for the man. It made him feel isolated from his friends and restricted him from having some types of food and alcohol. His wife also became 'rude' toward him, though she did not dare ask him about the illness. The woman could not carry out her daily tasks, isolated herself from others, and felt depressed. Her partner was ashamed and remorseful for having brought the infection into the household. While the man indicated that having sexually transmitted infections could increase the chances of contracting HIV-1, the woman did not know.

The two informants indicated that there are various ways of preventing the contraction of sexually transmitted infections, including HIV-1: avoid casual sex; have sex with only one faithful partner; avoid sex with commercial sex workers; avoid sharing needles, blades, and piercing objects; and avoid injections in unrecognised health centres.

Since the respondents had been infected with sexually transmitted infections, it was important to find out what kind of protective devices or sexual practices they would actually use to make sure that they are not infected again. The man indicated that he would avoid having sex with extramarital partners and would try, instead, to be faithful to his wife. The female respondent, on the other hand, indicated that she would keep a close eye on her husband and make sure that he did not engage in casual sexual intercourse. If he did and she found out, she would refuse to have sex with him.

The male respondent did not go to the hospital because his wife refused to go with him. On the other hand, the female respondent did not go to the hospital because she believed that she was 'naturally' cured. Initially, when the husband knew that he was infected, he did not want her to know that she had been infected with gonorrhoea. Instead, he bought antibiotic capsules and told her to take them for the chest pain she had. She therefore unwittingly used the drug to treat her chest pain without knowing that she was in effect also treating a sexually transmitted infection.

8:10 Conclusion

HIV-1/AIDS is a problem in Lodwar township. Though it might not be on a scale comparable to the rate of prevalence in some other parts of Kenya, it is an emerging and growing health and development problem. The potential for growth is there. In the absence of steps taken to mitigate the problem, it will grow, as it has in many communities in Kenya. Health officials in Turkana indicate that HIV-1/AIDS is among the top ten illnesses affecting the Turkana.

The recorded demographic statistics indicate that HIV-1/AIDS has pervaded the whole of the Turkana community. All segments of the community are infected including *manamba*, businessmen, herders, housewives, teachers, infants, school-aged children, secondary students, soldiers, policemen, prison guards, refugees, and chiefs. The

statistics indicate that most of the infected in Lokichoggio, Kakuma, and Lodwar are of Turkana origin. Nomadic, semi-nomadic, and settled populations are all infected and affected. HIV-1/AIDS, it appears, is trickling down from the urban centres through spatial diffusion into remote places inhabited by the nomadic populations.

In the year 2000, HIV-1/AIDS was the most common cause of mortality at the Kakuma Mission Hospital. At the Lodwar District Hospital, over 12 percent of deaths were HIV-1 related over the same period. In addition, at the Lodwar District Hospital, 20-30 percent of bed occupancy was by those who had HIV-1-related illnesses. Despite poor statistics, there are indications that there has been a steady rise in the prevalence of HIV-1/AIDS.

Surveillance surveys among antenatal mothers in 1999 indicated that there was a 12 percent and 10 percent HIV-1 prevalence in Lodwar and Kakuma respectively. In the same period, there was 16 percent prevalence in Lokichoggio. Surveillance carried out in 2001 among the general population involving those who presented at the Kakuma Mission Hospital and the Lodwar District Hospital indicate a prevalence of 8 percent and 11.8 percent respectively. Currently, HIV prevalence in Lodwar township is 13.8 percent compared to the national average of 7.5 percent (Ministry of Health 2005). During the same surveillance, a 27 percent HIV-1 prevalence among those who presented at the STD clinic was recorded. Of the HIV-1 infected women (mothers) 27.3 percent were positive for VDRL. Of the eleven people who presented at the STD clinic with HIV-1, four had a primary school education, four had a secondary education, one had a college education, and the education levels of three were not recorded. This indicates that HIV-1/AIDS strikes even among the educated sections of the community. Of the in-patients at the Lodwar District Hospital, HIV-1/AIDS was the most prevalent among the TB infected, indicating a 58 percent prevalence rate. This indicates that among the Turkana, tuberculosis is the most common opportunistic infection.

Circular migration will increasingly lead to the spread of HIV-1 among the nomadic population. Already herders are infected. It appears that polygamy, still the dominant form of marriage, will further accelerate the spread of HIV-1 among the Turkana.

STI prevalence has been steadily rising in Lodwar township. STIs are prevalent among 15 to 49-year-old men and 15 to 44-year-old women. The most common STI is

gonorrhoea. Data collected for four months at private clinics indicated that a larger proportion of the population sought services of the Lodwar District Hospitals' STD Clinic. This has implications for the control of STIs. Due to this, it is pertinent that the government joins hands with the private sector to treat and control STIs by either providing free drugs or subsidising the cost of drugs and tests. Private clinics are popular due to the privacy and anonymity of the diagnosis.

The Turkana do not sanction adultery. The Turkana believe strongly that adultery could lead to the death of both partners and of livestock. Even though women are seen to have as strong a sex drive as men, it is believed that this drive has to be tamed. This means that men can have multiple partnerships, but not women. However, sex is regarded as the pillar of marriage. It is believed that too much sex leads to infertility. These set of beliefs could be used in sex education to promote sex within marriage.

Though the Turkana frown upon premarital sex, it still takes place under the cover of darkness. Premarital sex is common, with married people having sex with unmarried boys and girls, and non-married boys having sex with non-married girls. In normative terms, sexual intercourse before marriage is not sanctioned; however, in practice it takes place as evidenced by the prevalence of non-marital births. Premarital sex is valued for it imparts experiential knowledge and contributes to the perfection of the sexual organ. This explains why Turkana *Ngeropese* engage in sexual intercourse frequently with girls.

It has emerged that men are more willing to discuss sexual matters with their partners than women. The main reason men give for doing this is to make sure that their partners do not engage in extramarital sexual intercourse. The youth rely on peers for education and experiential knowledge of sexuality.

Though respondents attributed diverse meanings to 'safer sex', it means practices that ensure protection against sexually transmissible infections such as using condoms, trusting one partner, having 'controlled' sexual intercourse, and not having sex with commercial sex workers. This kind of knowledge should be reinforced by education and prevention messages. The use of family planning devices is very low in Lodwar, with natural family planning being the most popular. Condom use is not popular among the Turkana of Lodwar township and those from rural communities. Both theoretical knowledge

and experiential knowledge of the use of the condom as a prophylactic is very limited. A condom is associated with sexual promiscuity and indicates a lack of trust between the partners. In addition, there is still misconception about the efficacy of condoms.

HIV-1/AIDS, or *Lokwake!*, is common in Lodwar township. All respondents had heard about HIV-1/AIDS since 1985. There is no distinction made between HIV-1 and AIDS, which is not surprising. *Lokwake!* is seen as a dangerous illness that kills. In the same way that Western discourse and biomedical knowledge has constructed HIV-1/AIDS as having originated in Africa due to the African culture and its exotic customs that are deemed to be responsible for the passage of the virus from monkeys to humans, so do the Turkana blame the Mzungu for having brought HIV-1. In addition, modern life, modelled on Western culture, is seen as having brought HIV-1/AIDS. AIDS is therefore largely constructed as a foreign and an urban illness.

The Turkana indicate that *Lokwake!* is caused, and spread, through sexual intercourse with the infected persons. Even though *Lokwake!* makes the body weak, the informants noted that one can live for many years if they are not depressed or frustrated. In addition, the infected person should abstain from sexual intercourse. The Turkana also noted that poverty manifested in a lack of food and medicine, facilitates death faster among the HIV-1 infected.

Informants indicated that knowing about *lokwake!* has influenced them to change their sexual lifestyles, with most people staying with one partner and finding out more about the partner before having sex. In addition, they noted that multiple sexual partnerships are seen as increasing the vulnerability to HIV-1/AIDS. However, there is no evidence that behavioural change has taken place.

Most respondents perceived themselves as not at risk of contracting HIV-1. Some women perceived that they could be at risk of contracting HIV-1, because they did not use condoms with their partners and they were worried that their partners had multiple partners in the past or had sexual intercourse with commercial sex workers. Men also thought that they could be at risk due to previous involvement in multiple sexual intercourse without the use of condoms. The risk of contracting HIV-1 is strongly associated with sex with

commercial sex workers. Most people think that they are safe from HIV-1/AIDS as long as they do not have sexual intercourse with commercial sex workers.

Women are wary of men as they are the ones that are likely to engage in sex with commercial workers. Young girls are particularly at risk due to the assumption that they are pure and safe so are vulnerable to sugar daddies. In addition, lorry drivers, truckers, unmarried people, and adolescents are at greater risk compared to the general population. Though both genders are at risk, generally both male and female respondents indicated that women are at a higher risk than men are.

HIV-1 is transmitted mainly through sexual intercourse with infected partners, including commercial sex workers, and through contaminated and non-sterile needles, other skin piercing objects, kissing an infected person, and indigenous invasive procedures. So HIV-1/AIDS is an impersonal and naturalistic infection caused and spread through contact with another person's body fluids through sex, accidents, or treatment procedures.

The most common symptoms of HIV-1/AIDS mentioned by the informants are severe loss of weight, persistent cough, red lips, chronic diarrhoea, and chronic illnesses such as malaria, typhoid, TB, the common cold, and skin diseases.

Most of the respondents indicated that HIV-1/AIDS is preventable. The modes of prevention include: no casual sex; no sex until marriage; the use of sterile and safe needles; the use of safe blood for transfusion; no sex with commercial sex workers; and avoiding *kaada*. Respondents indicated that monogamy is an effective way of preventing *lokwakel*.

The Turkana think that AIDS is curable through the use of herbal concoctions such as the drinking of soups derived from monkeys, baboons, and dogs. Ninety-three percent of the respondents indicated that they know of people who were reported to be infected with HIV-1/AIDS or had died of HIV-1/AIDS. This indicated the existence of knowledge of the prevalence of AIDS in the community. Even in nomadic communities, some people were known to be infected. HIV-1/AIDS is spreading fast in Turkana land, pervading all sections of the population, young and old, poor and rich, with effects such as increased mortality, poor health, loss of income, increased morbidity, orphaned street children, loss of skilled labour / workers, etc.

The Turkana's local knowledge regarding sexually transmitted infections is important because of the nexus between HIV-1/AIDS and other sexually transmitted infections. This has implications for the control of HIV-1/AIDS. Other sexually transmitted infections are less dangerous, curable, and short term, as opposed to HIV-1/AIDS. In addition, while STIs affect the genitals, HIV-1/AIDS affects the whole body.

Only 11 percent and 27 percent of females (n=50) and males (n=50), respectively admitted having visited the STD clinic in the last year. All respondents indicated that they had heard of people who had been previously infected. The main source of information on STIs is other people, health workers, radio, newspapers, and government employees in that order.

The types of sexually transmitted infections that were thought to exist in Turkana are *elepot* (gonorrhoea), ebola, *etogo* (syphilis), *engech*, *atapun*, *akilala*, *eus* (syphilis?), *echakari*, *lonywe*, 'burns on the body' (herpes zoster), and 'big boils'. Gonorrhoea, syphilis, and *eus*, share symptoms and signs such as swollen genitals, itching genitals, the discharge of hot urine, the discharge of pus, pyrexia, foul odour, restlessness, etc.

The factors of the ecosystem that the respondents considered as influential in the transmission and contraction of sexually transmitted infections are mainly sexual intercourse with the infected and anthropoids. These factors include the sharing of personal effects, flies, unsafe blood for transfusion, multiple sexual partners, contact with blood, poor personal hygiene, sexual intercourse with foreigners, and poverty. The local knowledge indicated that sexually transmitted infections are mostly attributed to impersonal causes and not personalistic causes as is often indicated by other researchers. Rape is common in Lodwar township. It is frequently mentioned as one of the factors that can lead to the rapid spread of HIV-1. Alcoholics and women in polygamous unions are at risk of contracting HIV-1.

STIs are highly stigmatised in Turkana. However, women are more stigmatised than men are. This means that women are more likely to suffer in silence than men without recourse to treatment. This has great implications for the treatment and prevention of sexually transmitted infections. The fact that most of sexually transmitted infections among

women are asymptomatic means that women will continue to bear the burden of most infections.

The risk of contracting and transmitting sexually transmitted infections like HIV-1/AIDS is high among groups such as commercial sex workers, adolescents, single persons, alcoholics, widows, bus conductors and drivers, people with no fixed abode, and lorry and trailer drivers. It is perceived that some men are at a higher risk because of their economic power and the masculine culture, poor genital hygiene, the lack of circumcision, polygamy, and the lack of acid in the penis. On the one hand, women are at risk because of widow inheritance, poverty, and an early sexual debut.

Sexually transmitted infections are preventable through a variety of channels such as having one partner, using condoms, practicing better personal hygiene, avoiding sharing tobacco, abstinence, and avoiding sex with commercial sex workers. These factors could be highlighted in the design of programs to control sexually transmitted infections.

Only 15 percent of the respondents indicated that some sexually transmitted infections are incurable. The government hospital appeared as the most important source of therapy (97 percent) followed by mission hospitals (67 percent), private clinics (66 percent) and indigenous healers (53 percent). There are indigenous medications for treatment of all the STIs mentioned. However, these forms of therapy could not be validated for their efficacy. What is worrying is the efficacy of dog, baboon, and monkey soup as a cure for HIV-1/AIDS and other sexually transmitted infections like *eus*. However, it is indicative that even herbal healers accepted that biomedical treatment is effective in curing gonorrhoea and syphilis.

STIs are prevalent in Lodwar township as indicated by 69 percent of the respondents who claim that the prevalence of STIs has gone up over the last few years. Forty-seven percent of the respondents indicated that having a background infection with sexually transmitted infections would make one more vulnerable to HIV-1 infection. While 9 percent indicated that there would be less vulnerability, 15 percent did not know. This has implications for the control of HIV-1/AIDS. Only 11 percent and 8 percent of the male and female respondents, respectively, indicated that they would inform their partners if they were infected with STIs. The majority of the respondents, 50 percent of the females and

48 percent of the males, believed that someone with an STI would not use a condom. Only 14 percent of males and 8 percent of females believed that most people would ask a new partner if he or she is infected with a sexually transmitted infection. In the same vein, only 12 percent and 10 percent of the males and females, respectively, think that most people would tell a new sexual partner if they were infected with STIs. These results indicate that STIs are shrouded in secrecy, making control and treatment an uphill task. There is general knowledge that many people would not take the necessary precautions to reduce the contraction and transmission of sexually transmitted infections.

A good many factors of the ecosystem are seen to influence the contraction and transmission of sexually transmitted infections at various levels. Behavioural factors include *edonga* (traditional dances), forced / arranged marriages, poor personal hygiene, burial dances, *kaada*, multiple sexual partnerships, commercial sex working, settlement in townships, widow inheritance, polygamy, non-circumcision, discos, culture change, immigration, and marrying a divorcee. Structural factors include migration, lack of healthcare resources, regional wars and raiding, underdevelopment, and the prevalence of background infections. Finally, environmental factors such as drought and ensuing famine also play a role in the contraction and transmission of STIs. Prevention of sexually transmitted infections requires mitigation of these factors.

Experiential knowledge of sexually transmitted infections is very pertinent to attempts to understand the illness, and in planning for intervention. In this regard, experiential knowledge provides information concerning what people exactly do when they have sexually transmitted infections. Two groups of people were interviewed in the village and the Lodwar District Hospital STD Clinic. The most common types of sexually transmitted infections experienced are gonorrhoea and syphilis. Gonorrhoea still emerged as the most common form of illness, affecting both men and women. In the village, the male respondents had signs and symptoms for an average of three weeks and women had the infections for five weeks before seeking therapy. The knowledge in Turkana that it takes longer for signs and symptoms of sexually transmitted infections to become apparent in women does not auger well for prevention and treatment. From these data, it seems that people had sexual intercourse with the alleged sources of their infections when they were

already infected. This indicates that permissive sexual intercourse is common in Lodwar township and that infections are transmitted far and wide before treatment is sought.

There are a variety of sources of treatment such as hospitals, private clinics, indigenous healers, and village injectors, vendors of either biomedical or indigenous medicines, or self-treatment with indigenous medicine. Antibiotics were widely distributed along gender lines. Subordinate staff members at the hospital were sources of antibiotics and other medication. Friends are important sources of information on STIs. There is clear misuse of antibiotics bought from shops, chemists, hospital subordinate staff, and quacks. This could lead to resistance to antibiotics, especially tetracycline and penicillin. Informants tried various pathways of therapy starting with self-treatment using herbs, visiting indigenous healers, obtaining free drugs, and visiting private clinics and government hospitals. It is instructive that effective therapy was only attributed to biomedicine obtained from either the private clinic or the Lodwar District Hospital STD Clinic. The most popular type of treatment was herbs (55 percent), followed by the chemist (50 percent), private clinics (50 percent) and government hospitals (39 percent). All the infected tried self-treatment with herbs, but eventually received effective cures from the hospitals or private clinics, indicating a triumph of biomedicine over other forms of therapy.

The knowledge that STIs are rarely cured completely in women, but rather hibernate, only to reappear, does not auger well for the control and treatment of infections. This situation could lead to laxity in searching for complete cures.

Experience indicated that gonorrhoea and syphilis have similar symptoms and signs. There is no clear distinction between the two illnesses in Lodwar township. Half of the respondents indicated that they had sexual intercourse while still experiencing the symptoms. I believe that even those who said that they did not engage in sexual intercourse after experiencing the symptoms and signs could have engaged in sexual intercourse while infected. The respondents were unanimous that a background STI infection could increase the chances of contracting HIV-1.

At the district hospital, patients who presented with sexually transmitted diseases indicated that they had been ill for one week to two years before presenting at the hospital. While the mean wait time for women was two months, men waited slightly longer before

seeking treatment, indicating that men generally attend health institutions less frequently. On the other hand, most single women (possibly commercial sex workers) attended the clinics more often, perhaps because their decisions to do so were their own since they do not have to consult their partners or husbands. All ten women and seven men had sexual intercourse while still experiencing symptoms of sexually transmitted infections. Only two men used condoms, while only two women indicated that their partners used condoms. The response to HIV-1/AIDS would require the effective control and management of sexually transmitted infections as well. Most of the factors of the ecosystem that influence the prevalence of all sexually transmitted infections, including HIV-1/AIDS, are discussed in chapter ten.

Local Knowledge of the Nexus between *Mycobacterium tuberculosis* and HIV-1/AIDS

9:1 Introduction

It might be tempting to ask why a project that focuses on HIV-1/AIDS should digress to tuberculosis. One of the aims of this research project was to discover the prevalent illnesses which exert a heavy toll on morbidity and mortality in Turkana. *Lokou*, or TB, incorporating cough, is one of the most common illnesses mentioned by Lodwar township residents. When I was conducting interviews on local knowledge of HIV-1/AIDS, the informants impressed upon me that TB is intricately linked to HIV-1/AIDS. As one female respondent put it: 'HIV-1/AIDS and TB are like co-wives'. This heightened my interest in exploring this link.

In my household survey, the five top illnesses mentioned were malaria, cough, tuberculosis, typhoid, and pneumonia, in that order. If I merge tuberculosis, pneumonia, and cough, then respiratory infections are the most common infections found in Lodwar township, followed by malaria.

Furthermore, TB patients in the Lodwar District Hospital were likely to be doubly infected with HIV-1 and TB. As there were no Turkana willing to publicly acknowledge that they were HIV-1 infected, my interview with those who were co-infected with TB and HIV-1 provided me with a valuable opportunity to talk to informants who were HIV-1-infected, albeit under the cover of TB.

Moreover, I found that treating and preventing TB in places where there is high prevalence of both HIV-1/AIDS and TB, cannot be successful without a joint programme to control both illnesses. TB control programmes must also incorporate HIV-1/AIDS and vice versa. More emphasis should also be placed on the understanding of respiratory diseases, such as pneumonia and tuberculosis, as they constitute a large portion of the HIV-1-related and non-HIV-1-related diseases in sub-Saharan Africa (WHO 2001).

Eleven healers, five men and six women of various ages, were interviewed on their knowledge of tuberculosis. In addition, twelve people, five women and eight men, were interviewed in the TB Manyatta²³⁰ within the Lodwar District Hospital. Another fourteen people, seven females and seven males infected with TB, were interviewed in the isolation ward at the Lodwar District Hospital. Some of the TB-infected patients were also HIV-1 infected as verified by sero-prevalence survey data carried out by the district's AIDS Control Programme in conjunction with National AIDS and Sexually Transmitted Diseases Control Programme (NAS COP). In 2002, some of the TB patients in both the Isolation Wards²³¹ and TB Manyatta were tested anonymously and the results were not communicated back to them. Additional knowledge was gathered from community health workers and Turkana nursing students at the Lodwar Medical Training College.

This chapter is divided into five overlapping sub-chapters and main themes, which are given below. The first sub-chapter discusses the clinical link between TB and HIV-1/AIDS. The second sub-chapter presents the local knowledge of tuberculosis. The discussion is further sub-divided into: reported and recorded tuberculosis statistics at the Turkana District Hospital; local knowledge of tuberculosis; the general causes of tuberculosis; specific causes of various types; treatments for various types of tuberculosis; and prevention of respiratory infections. The third sub-chapter discusses the knowledge of tuberculosis among TB-infected patients admitted at TB Manyatta and two isolation wards. The discussion is further sub-divided into: causes of TB; experienced symptoms and signs; indigenous therapy; the efficacy of hospital treatment; the consequences of tuberculosis; the feelings and perceptions of relatives and friends about TB infection; description of therapy regime in the Lodwar District Hospital; TB re-infection; case histories: trajectories and lived experiences of TB infections; and discussions. The fourth sub-chapter presents the local knowledge of the link between TB and HIV-1/AIDS among Turkana in Lodwar township. The sub-chapter is further sub-divided into: life histories: cases of double infection; the links between TB and HIV-1/AIDS, encompassing causality; symptomatology; treatment; the ecosystem factors that influence the incidence of TB and HIV-1/AIDS

²³⁰TB Manyatta comprises manayatta-like dwellings for the TB patients whose prognosis is better, but who neither reside near Lodwar nor have relatives nearby and therefore need housing in order to be present for the full course of directly observed therapy (DOTS).

²³¹ There are two Isolation Wards, mainly used by TB in-patients.

prevention of TB HIV-1/AIDS; and (v) implications of the conceptual link between tuberculosis and HIV-1/AIDS in control and prevention of TB/HIV-1/AIDS.

9:2 The clinical link between HIV-1/AIDS and tuberculosis

There are a number of pathogens that cause clinical disease in the course of the progression of HIV-1 infection, following immunosuppression. These pathogens are generally grouped into two categories: high-grade, which are pathogenic even in healthy individuals, hence can cause diseases at any stage (e.g., pneumococcus, non-typhoid salmonellae and *Mycobacterium tuberculosis*); and low-grade pathogens, which are rarely pathogenic in healthy individuals but cause diseases at the advanced stages of immunosuppression (e.g., *Candida*, *Cryptococcus neoformans*, toxoplasma, *Pneumocystis carinii* and atypical mycobacteria) (WHO 2001:11b). However, the virulence of these low-grade pathogens is greatly enhanced in populations that live in extreme conditions of poverty. This is why the range of opportunistic infections in HIV-1-infected populations portrays a global variation (Kaplan, *et al.* 1996). Sub-Saharan Africa is burdened with high-grade pathogens, especially bacterial and mycobacterial infections, such as the pneumococcus, non-typhoid salmonellae, and *Mycobacterium tuberculosis* (Gilks, Katabira, and De Cock 2000). These pathogens are inextricably linked to poor living conditions. In addition, they are efficiently transmitted in environments characterised by high population density and poor personal and environmental hygiene. In the current study, I am particularly interested in *Mycobacterium tuberculosis*, which has emerged as the leading cause of death among the people infected with HIV-1 as it accounts for about a third of AIDS deaths worldwide (UNAIDS 2000b). This picture is even made worse by the fact that over 90 percent of those living with HIV-1 inhabits sub-Saharan Africa and South East Asia.

In her classical treatise, Kochi argued that mortality and morbidity from tuberculosis remain high with an estimated eight million active tuberculosis cases and three million deaths annually (Kochi 1991). According to the World Health Organisation (WHO) and the Stop TB Partnership, one third of the global population is infected with TB (WHO 2001). In

addition, tuberculosis infection is latent in nearly two billion people (WHO 2001). Moreover, every day more than 23,000 people develop active tuberculosis worldwide. The WHO estimates that every year there are about 8.7 million new cases of TB, and an estimated two million deaths of which 1.5 millions occur in sub-Saharan Africa (WHO 2001; Boseley 2002). However, the emergence of HIV-1/AIDS increases case-fatalities from TB among populations that are infected by both. The global impact of HIV-1 on TB is staggering. Prior to the AIDS epidemic, each year there were over 7 million new cases of tuberculosis, which accounted for more than 2.5 million deaths (more than any single pathogen) (Murray, *et al.* 1990). In 1992, WHO estimated that approximately 4 million people had been infected with both TB and HIV-1, 95 percent of them in developing countries.

There is a vicious synergistic relationship between TB and HIV-1/AIDS: co-infection with TB accelerates death from HIV-1/AIDS by adversely affecting HIV-1 progression through enhancement of HIV-1 replication; infection with HIV-1 leads to increased susceptibility to the development and transmission of active TB; and HIV-1 accelerates the progression of active TB among people with latent TB. Furthermore, the increase in dual infection leads to an increased transmission of tuberculosis in the general community, even to the non-HIV-1 infected. People infected with HIV-1 are 800 times more likely to develop active TB. HIV-1 infection increases the rate of recurrent tuberculosis, which may be due to either endogenous reactivation (true relapse) or exogenous re-infection (Rieder *et al.* 1989; Fitzgerald *et al.* 2000). HIV-1 is therefore the most powerful known risk factor for the reactivation of a latent tuberculosis infection to an active disease (Rieder *et al.* 1989). HIV-1 infection also increases susceptibility to low-grade infections, leading to increased deaths from preventable and curable infectious diseases, which are numerous in sub-Saharan Africa, and other environments characterised by poor living conditions. In addition, it has also been recognised that there is an association between HIV-1 infection and the increased frequency of clinical malaria (Whitworth *et al.* 2000).

Just as in the case of HIV-1/AIDS, there is a vicious cycle of poverty and TB, whereby poverty increases the risk of TB, and TB impoverishes its victims. TB and HIV-1/AIDS are referred to, therefore, as two of the “three horsemen of the apocalypse” (malaria is the third) riding through the poverty stricken populations of the third world, especially sub-Saharan Africa, causing among them 300 million illnesses and more than 5 million deaths

every year (Boseley 2002). The runaway rates of tuberculosis in sub-Saharan African and some parts of South East Asia (e.g. Thailand) are attributed to the HIV-1 pandemic (Bleed, Dye, and Raviglione 2000). Since the mid 1980s, in many African countries including those with well-organised programmes based on WHO's directly observed therapy (DOT) strategy (Kenyon *et al.* 1999; Harries *et al.* 1996), annual tuberculosis case notification has risen up to four-fold, reaching peaks of more than 400 cases per 100,000 in the population (WHO 2001a). By 1997, up to about 70 percent of the patients with smear-positive pulmonary tuberculosis were HIV-1 positive in some countries in Sub-Saharan Africa (Raviglione *et al.* 1997; Harries *et al.* 2001). It is estimated that overall about 60 percent of reported TB cases in Kenya are co-infections with HIV-1²³². According to Rossman and Mayock (1999), tuberculosis should be considered in every HIV-1-infected patient with an abnormal chest radiograph appearance.

Patients co-infected with tuberculosis and HIV-1/AIDS are more likely to have extra-pulmonary involvement than patients with tuberculosis without HIV-1/AIDS, affecting 60 percent and 28 percent, respectively (Chaison *et al.* 1987). Only 35-50 percent of HIV-1-positive people have pulmonary tuberculosis detectable from sputum tests (UNAIDS 1997b). The remainder have disseminated extra-pulmonary TB, which can only be diagnosed with special laboratory facilities, non-existent in most of Africa's healthcare facilities. Some studies have shown that HIV-1-related TB in sub-Saharan Africa is mainly extra-pulmonary (Eriki *et al.* 1991; Elliott *et al.* 1990; Nunn *et al.* 1992; Elliott *et al.* 1993; Batungwanayo *et al.* 1992). This makes tuberculosis harder to diagnose in HIV-1-infected persons than in un-infected people in sub-Saharan Africa. Because of this difficulty in diagnosis, disseminated tuberculosis accounts for a high proportion of deaths in hospital with HIV-1-infected patients. In a study in Abidjan, tuberculosis was the prime cause of death in 80 (32 percent) out of an autopsy sample of 247 HIV-1 positive cadavers and was widely disseminated in all but 10 patients (Lucas *et al.* 1993). Significant extra-pulmonary disease has been seen in Malawi (57 percent), Nairobi, Kenya (57 percent), Zambia (60 percent), as well as Kinshasa, Zaire, (48 percent) (Colebunders *et al.* 1989; Elliott *et al.* 1990; Nunn *et al.* 1992; Elliott *et al.* 1993). Virtually, extra-pulmonary (disseminated) TB

²³²AIDSKENYA.ORG 'The National Antiretroviral Therapy Consultative Forum' Available from: www.aidskenya.org/html/ART.html. Accessed on: 15/06/2006.

has been accepted as an AIDS-defining diagnosis (CDC 1987). In Turkana, deaths are never autopsied so it is difficult to make accurate diagnoses of the causes of death. Moreover, the accurate diagnosis of disseminated tuberculosis would not be achieved with the use of symptomatology and signs, which might be misleading in view of the burden of multiple infections among most of the populations.

A low-grade infection, disseminated *Mycobacterium avium* complex (MAC), also known as non-tuberculous mycobacteria, is an infection rarely reported before the AIDS epidemic, but is currently a frequent cause of intestinal disease in HIV-1-infected patients (Manela 1999). The Turkana stomach TB can be biomedically linked to this subset of MAC. *Mycobacterium avium* complex embodies two species, *M. avium* and *M. intracellulare*, and a number of unspeciated mycobacteria (Inderlied *et al.* 1993). The salient epidemiologic risk factor for disseminated infection with *Mycobacterium avium* complex is advanced immunosuppression (Holzman 1996). MAC organisms are common environmental saprophytes found in soil, water, and a variety of mammals, fish, reptiles, birds, food, and tobacco products (Horseburgh and Selik 1989; Eaton, Falkinham, and von Reyn 1995; Holzman 1996). There is, however, a difficulty in distinguishing TB from *M. avium* in HIV-1 infected persons (Small and Selcer 1999). In the pre-AIDS era, the infections attributed to disseminated *M. avium* and *M. intracellulare* were very rare (Holzman 1996). Though there is an absence of reports of disease attributable to *Mycobacterium avium* complex among Africans, it would be premature to conclude that these infections do not occur here (Holzman 1996). Some of the symptoms and signs attributable to these infections, like chronic diarrhoea and abdominal pain, are common AIDS symptoms in Turkana and larger sub-Saharan Africa. In addition, the diagnosis of *M. avium* could also be obfuscated by the numerous bacterial infections, by malnutrition, and by other consequences of poverty.

The association between tuberculosis and HIV-1 exists because the immune system is both the primary host defence mechanism against tuberculosis and the major target of HIV-1 infection (Small and Selcer 1999). This is why patients with HIV-1 infection and pulmonary tuberculosis can be divided into those whose diagnoses were made prior to the diagnoses of HIV-1 infection, and those whose diagnoses was made after the patient is HIV-1-infected (Pitchenik and Robinson 1985). While the former group are less immunosuppressed and more likely to present with typical tuberculosis (upper lobe

infiltrates with cavities), the latter group are more immunosuppressed and have fewer circulating CD4+ cells. Various studies in the United States have confirmed this association (Hanwerger *et al.* 1987; Pitchenisk *et al.* 1984; Louie *et al.* 1986; Sunderam *et al.* 1986; Chaisson *et al.* 1987; Pitchenik *et al.* 1987). This is because the CD4+ T lymphocytes and macrophages that play a vital role in the immune response to mycobacterial infection are progressively depleted by the HIV-1 virus, rendering the body vulnerable to reactivation of latent TB and other opportunistic infections (Bender *et al.* 1988). Immunosuppression increases as CD4+ cell count falls. The clinical manifestations of tuberculosis in HIV-1-infected adults tend to be typical when the CD4+ cell count is more than 500/mm³, but become “atypical” as the CD4+ cell count falls (Barnes *et al.* 1991). Finally, with profound immunosuppression, less virulent pathogens, such as *Mycobacterium avium* complex, cause clinical syndromes that are unique to HIV-1-infected persons. HIV-1 has not only increased the prevalence of TB in developing and developed countries, but has also changed the clinical course of tuberculosis, making it more difficult to diagnose and more complicated to treat (Small and Selcer 1999). Tuberculosis develops faster in HIV-1-infected people and occurs earlier in the course of HIV-1 infection than do other opportunistic infections and infectivity continues at all levels of CD4+ count (Mukadi *et al.* 1993; Ackah *et al.* 1995; UNAIDS 1997b; Badri *et al.* 2002).

Several lines of evidence link the HIV-1 epidemic and that of the resurgence of tuberculosis: First, because AIDS is associated with depressed cell-mediated immunity, it would not be surprising for it not to be associated with active tuberculosis. Second, epidemiological evidence suggests that the two diseases are related. The countries with the greatest increase in active tuberculosis also have the greatest number of AIDS cases. In addition, the social groups characterised by poor social conditions of living that have the largest number of HIV-1/AIDS cases also have the leading number of tuberculosis cases. Third, as discussed earlier, several studies have now documented that the incidence of tuberculosis among patients with HIV-1/AIDS has increased, and finally the clinical presentation of patients with HIV-1 infection and tuberculosis suggest a strong correlation. Symptoms and signs of TB/HIV-1/AIDS are blurred. For example, HIV-1-associated fevers, and weight loss, lymphoma, and disseminated histoplasmosis can produce symptoms consistent with tuberculosis. In addition, HIV-1 does make some tuberculosis symptoms

like anorexia, weight loss, fatigue, fevers, sweats, and cough less specific (Modilevsky *et al.* 1989). Since the pathology of tuberculosis results from the host's response to the infection, it is not surprising that signs of tuberculosis vary considerably with the severity of HIV-1-induced immunosuppression (Small and Selcer 1999). As in the case of HIV-1-infected persons, the lymph nodes are the most common site of extra-pulmonary involvement in HIV-1-infected patients (Small and Selcer 1999) as was evident in the Lodwar District Hospital.

Many studies have reported high levels of HIV-1 seroprevalence among TB patients, averaging 40 percent with a range of 20-73 percent (Eriki *et al.* 1991; Elliott *et al.* 1990; Nunn *et al.* 1992; Colebunders *et al.* 1989; Elliott *et al.* 1993). In early 1992, it was estimated that more than 4 million persons had dual HIV-1 and TB infections worldwide, with 3.12 million living in sub-Saharan Africa (77.8 percent of the total) (Narain *et al.* 1992). For instance, in Uganda, and Zambia, more than 60 percent of TB patients were HIV-1 seropositive, while 30 percent of newly diagnosed TB patients in Kenya were HIV-1 seropositive (Eriki, *et al.* 1991; Elliott, *et al.* 1990; Nunn, *et al.* 1992; Elliott, *et al.* 1993). Since the advent of AIDS, Kenya has witnessed an annual increase of 20 percent (National Leprosy and Tuberculosis Programme, 2000). According to Kenya's National AIDS Control Council (NACC 2002), about 27 percent of TB patients in Kenyatta National Hospital in Nairobi are HIV-1 positive. In KwaZulu-Natal Province, one of the epicentres of HIV-1/AIDS in South Africa, there is a marked increase in the presentations of TB in hospitals attributed to HIV-1/AIDS (Cullinan 2002). In a KwaZulu Natal hospital, 70 percent of TB patients are HIV-1 positive (Mail and Guardian 2002). According to the South African National Tuberculosis Association, one South African dies from TB every hour and 49 percent of South African TB patients have HIV-1 /AIDS, representing about 40 percent of all case fatalities from AIDS (Mail and Guardian 2002). In South Africa, TB is the most common opportunistic infection, responsible for about 40 percent of all case-fatalities from AIDS. Recently it was found that 60 percent of TB patients overall are also HIV-infected, with all patients with extensively drug resistant tuberculosis (XDR-TB) found to HIV-1 positive (UNAIDS 2006). In addition, HIV-1 has led to an increased risk of developing TB in other parts of sub-Saharan Africa as demonstrated by an increase in reported cases from

Burundi, Tanzania, Zambia, and Malawi by percentages of 140, 86, 154, and 180 respectively (Narain *et al.* 1992).

Studies have also been carried out on the influence of HIV-1-infection on *Mycobacterium bovis* (brucellosis). However, HIV-1 related cases of *Mycobacterium bovis* have been reported in France (2 out of 128 cases of TB in HIV-1-infected patients) and in Southeast England (2 out of 167 HIV-1-seropositive cases reported between 1984 and 1992) (Dupon and Regnaud 1992 cited in Garay 1996; Yates *et al.* 1993). In addition, a nosocomial outbreak of multi-drug-resistant *M. bovis* TB was reported among HIV-1 infected patients hospitalised in a special unit in Paris (Bouvet *et al.* 1993). This has huge implications for pastoralist populations like Turkana, who not only have a close proximity to livestock but also rely on livestock-based dietary products, which predispose them to *M. bovis* infections. Local knowledge in Turkana indicated that *M. bovis* exists, and there is an observed increase in its prevalence. Whether this is due to HIV-1/AIDS, as there is in an increase in TB prevalence as well, is currently unknown.

The nexus between tuberculosis and HIV-1/AIDS is currently well established. This is demonstrated by the number of studies and journal articles that have focused on the subject. In addition, a journal entitled *TB and HIV-1* has been in existence since 1994. Though the biomedical and epidemiological connection between TB and HIV-1/AIDS could be obvious to researchers and biomedical practitioners, it would, however, be fruitful to find out how this interconnectedness, if it exists, is perceived by the local systems of knowledge and practices.

My aim in conducting questionnaire interviews concerning TB was to discover the local knowledge of the connection between HIV-1 and TB. In addition, comprehension of this connection by both the population and the health care workers would contribute greatly to the prevention of TB and HIV-1/AIDS in communities where both are prevalent. This unified approach is justified because HIV-1 drives the tuberculosis epidemic. Prevention of HIV-1 could contribute to the control and treatment of tuberculosis, and tuberculosis care and prevention should be a priority concern of HIV-1/AIDS control and prevention programmes (WHO 2001b). As the case of Turkana will demonstrate, there is value in tackling HIV-1/AIDS and TB as co-infections rather than as dual infections. As Green

(1999:181) points out, infectious diseases like TB are of great concern to us in this era of HIV-1/AIDS because: they account for high morbidity and mortality in poor populations; they increase the susceptibility to HIV-1/AIDS; and they require culturally appropriate interventions.

9:3 Local knowledge of tuberculosis among the Turkana in Lodwar township

This section begins with the presentation of morbidity and mortality statistics due to TB from the Lodwar District Hospital. This is followed by a discussion of local knowledge of tuberculosis collected through interviews with ordinary men and women, healers, and village health workers from the villages of California and Kanamkemer. This knowledge encompasses local knowledge of TB, general causes of TB, specific causes of various classes of TB, treatment for tuberculosis, and prevention of respiratory infections.

9:3:1 Reported and recorded tuberculosis statistics from the Turkana District Hospital

The data is divided into two categories: morbidity statistics and mortality statistics.

9:3:1:1 TB Morbidity Statistics

Since morbidity statistics were first recorded during the colonial period, TB and other respiratory infections, like cough (chest), have dominated, indicating a high prevalence. That most of the existing data are confined to towns and settlements inhabited by poor and destitute Turkana indicate that these infectious diseases are particularly prevalent among the sedentary populations. According to morbidity reports from the Nakwanamoru Catholic Mission Health Centre from 1973 to 1978, cough (chest) was the most common infection after malaria. At position five is tuberculosis. Morbidity statistics from 1997 to 1998 indicate that diseases of the respiratory system were the second most common form of illness. In my household survey, cough and TB were the second and third most common illnesses in

Lodwar township. However, diseases of the respiratory system emerged as the most common infections if tuberculosis, cough, chest pains and pneumonia are combined.

The Turkana District Public Health Officer indicated that TB is becoming a concern in Turkana particularly due to HIV-1/AIDS' immunosuppression. In addition, the community's patterns of constructing shelters and poor sanitation have contributed significantly to the high prevalence of TB. Tuberculosis is so common that people associate every cough and all chest pain with TB. Because the government provides free TB treatment, those who have easy access to biomedical services are willing to come forward for treatment.

In many parts of the world, the current approach to TB involves case finding and treatment through the strategy of directly observed therapy (DOTs) for TB management. The data presented here were collected from the Lodwar District Hospital, the only facility that screens and treats TB patients in the expansive Turkana District. The International Committee of the Red Cross (ICRC) and the International Rescue Committee's health facilities in the Lokichoggio and Kakuma Refugee Camps offer these services to refugees. The remaining health facilities refer suspected TB cases to the Lodwar District Hospital.

The statistics presented in table 55 below indicate that TB infects the productive age group, that is, those aged between 15 and 54-years old. It appears that TB is more prevalent among men than women.

Table 55: Reported TB cases in Lodwar District Hospital, 1993-2000

AGE	0- 14	5- 24	25-34	35- 44	45-54	55 - 64	65+	TOTAL	
SEX	M F	M F	M F	M F	M F	M F	M F	M F	TOTAL
1993	11 6	57 23	40 26	31 11	18 12	15 2	6 4	179 83	262
1994	2 4	21 26	38 10	13 16	10 5	4 0	0 1	88 66	154
1995	1 3	41 45	43 37	21 13	18 3	7 2	3 0	134 110	244
1996	0 3	53 48	60 30	33 20	19 12	9 1	3 2	180 124	304
1997	2 6	49 30	35 37	20 21	14 11	13 6	3 0	137 111	248
1998	4 6	48 38	46 41	34 16	31 9	4 2	0 1	180 113	293
1999	6 5	55 60	60 38	31 22	20 20	2 0	1 1	174 53	327
2000	4 7	48 33	71 41	35 20	26 12	3 6	1 0	188 119	307

Table 56: Pulmonary tuberculosis (smear positive) case finding report, 1993-2000

Year	Smear Positive			Smear negative	Extra-pulmonary	Total
	New	Relapse	Re-admission	<15 yrs 15+ yrs	<15 yrs 15+ yrs	
1993	262	3	-	208 (age not indicated)	195 (age not indicated)	668
1994	154	1	-	249 (age not indicated)	184 (age not indicated)	593
1995	244	5	-	263 (age not indicated)	191 (age not indicated)	712
1996	307	5	-	112 (age not indicated)	263 (age not indicated)	823
1997	248	6	1	120 75	74 97	621
1998	295	16	12	68 120	77 87	796
1999	326	19	15	73 199	78 71	832
2000	307	26	19	136 231	98 77	894

According to data presented in table 56 above, it appears that the number of reported TB infections has remained nearly constant over the last several years. It appears, however, that the number of TB relapse cases has increased in the recent past. One explanation could be attributed to the increase in the prevalence of HIV-1/AIDS.

As indicated in the pie-chart below, in 2000, relapse represented 4.4 percent of reported cases of TB.

Pie-chart: Tuberculosis case finding, 2000

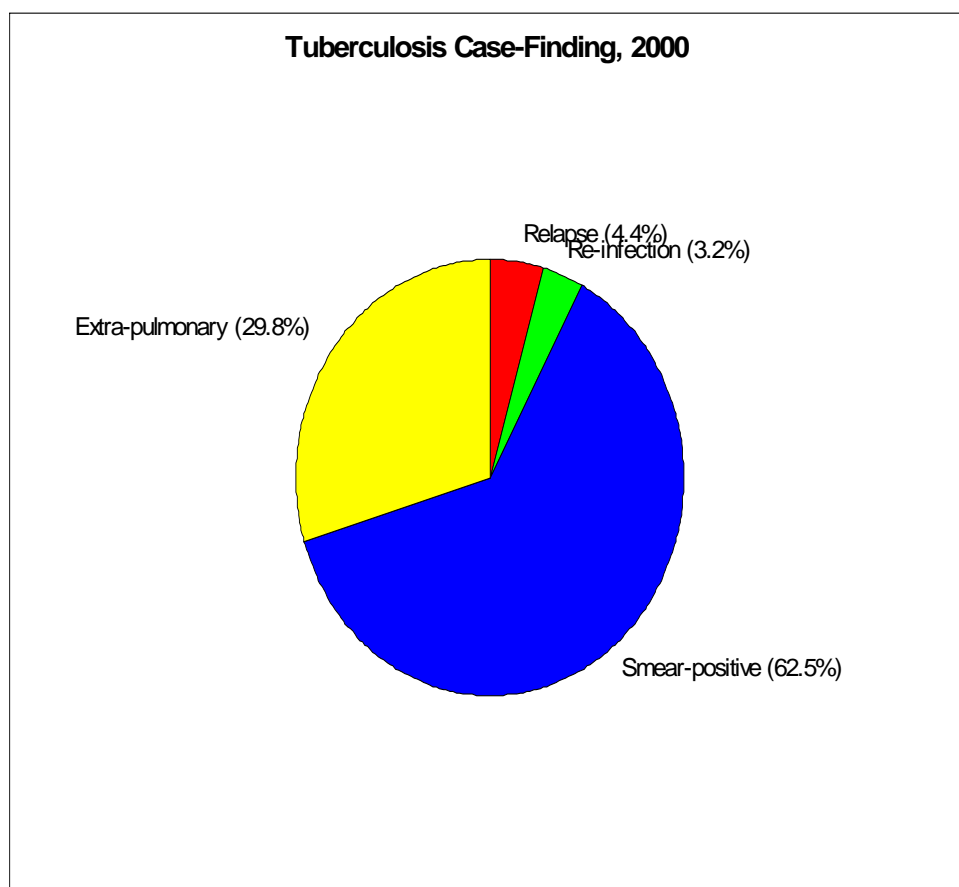


Table 57: TB Morbidity, Lodwar District Hospital, as of December 2000 to April 2001.

Age	0 - 4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	Adult
Sex	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F
TB Manyatta	5 1	0 2	1 1	4 0	4 1	5 1	2 5	2 1	2 0	3 1	3 5	0 1	0 2	1 0	2 1
Isolation and out-patient wards	13 13	5 6	2 5	8 10	12 20	21 14	18 8	11 3	6 3	5 2	4 4	0 3	3 0	0 0	4 2

Two hundred and fifty nine people presented with TB over the five-month period between December 2000 and April 2001. Of the total number of cases, 36 people were diagnosed with extra-pulmonary tuberculosis, representing 26 females and 17 males. One hundred and forty-six of those patients were from Lodwar township. The rest were mostly from other emerging towns in the Turkana District, particularly Kakuma, Lokichoggio, Kalokol, and Lokitaung. This indicates that increased population density in permanent settlements has increased susceptibility to tuberculosis. In another way, it could be argued that the close proximity to health facilities often found in these big settlements necessitates case reporting and finding, resulting in suspected tuberculosis cases being referred to the Lodwar District Hospital. The majority of the infected were between the ages of 15-44 years, representing a productive age group. This is consistent with the previous statistics as shown in table 57 above. Forty-five percent of patients (n=45) relapsed. It was indicated that cases of relapse were due to absconsion, rather than multi-drug resistance.

9:3:1:2 TB mortality statistics

The availability of mortality data was skewed. However, I managed to compile the data for 1997, 1998, and 1999. In 1997, there were 331 deaths recorded in the Turkana District, of which 119 were attributed to TB. There were 70 male and 49 female deaths. Of the total TB deaths, 18 were due to pulmonary tuberculosis and immunosuppression. Only one death was recorded as due to tuberculosis and HIV-1. Another death was recorded as being due to tuberculosis and malnutrition. I am under the impression that deaths recorded as due to tuberculosis and immunosuppression were caused by HIV-1/AIDS. The rest of the causes of mortality were malaria, dehydration, snakebites, spider bites, and bullet wounds.

The table 58 below indicates the TB mortality for the year 2000. Of all the TB deaths, only seven were children under 7-years old. In 1998, 69 deaths out of 254 were due to tuberculosis. Only three were recorded as due to tuberculosis and immunosuppression. Of these deaths, 42 were male, while four were children under five. If the deaths of patients whose exact age were recorded rather than as adults, we find that 26 patients were aged between 15-39-years-of-age. Nineteen deaths were recorded as adults. However, in Kenya adulthood begins at the age of 18 years; in Turkana, those aged above 15 years

are recorded as adults. As the majority of deaths were generally classed as adults, it follows that tuberculosis continue to devour the reproductive sector of the population.

The data for mortality in 2000, as presented in table 58 and the graph below, reinforces the notion that TB mostly affects the productive age group. The statistics further show that more females than males died from tuberculosis. The graph below demonstrates TB mortality according to gender.

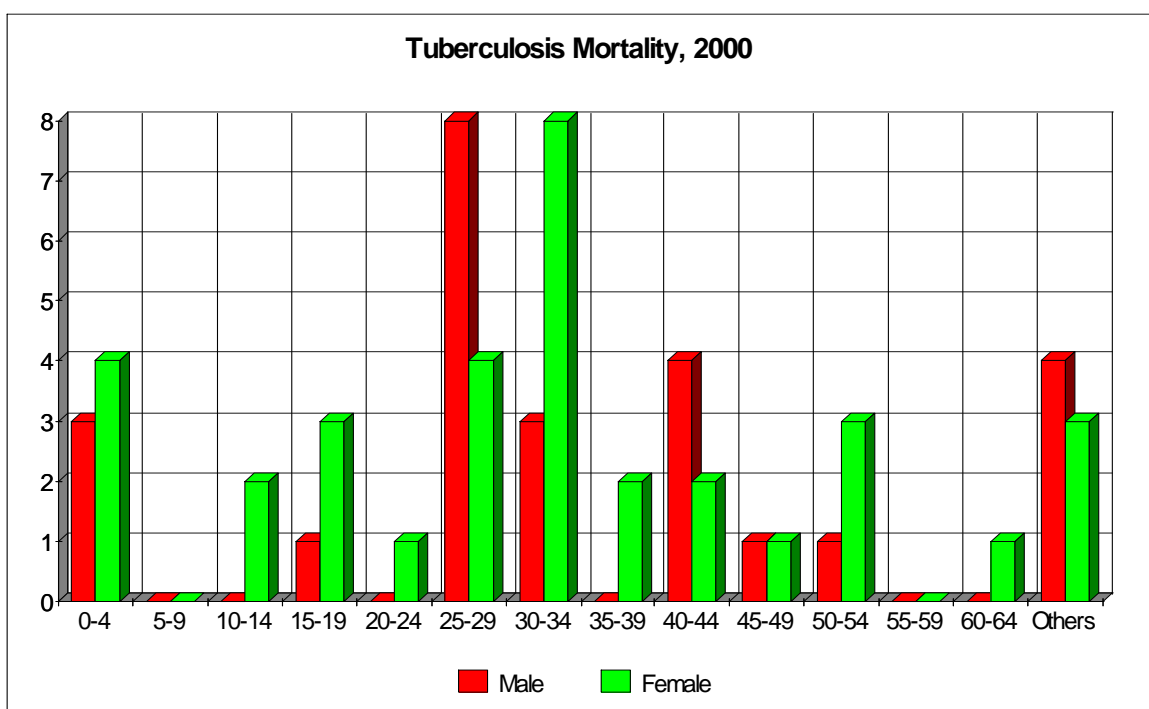


Table 58: TB Mortality - January to December 2000

6	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	Other adults	Total
	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F	M F
TB Manyatta	0 1	0 0	0 1	0 0	0 1	1 0	1 3	0 2	1 1	1 0	0 0	0 0	0 0	1 0	5 9
Isolation and out-patient	3 3	0 0	0 1	1 3	0 0	7 4	2 5	0 2	3 1	0 1	1 3	0 0	0 1	3 3	19 27

During December 2000 to April 2001, nine people (four men and five women) from the isolation wards died because of pulmonary tuberculosis while one 12 year old boy from the TB Manyatta died. The rest of the deceased were aged 15 to 40 years, with one man aged 50 years. In the TB Manyatta, eleven patients had extra-pulmonary tuberculosis. Only 14 patients in the TB Manyatta were from Lodwar township, the rest were from the other densely populated settlements of Lokichoggio, Kalokol, Lokitaung, Nadapal, Lokori, and Kodepa. Seven out of the nine people who died were from Lodwar township. This scenario has three implications:

- The patients probably had HIV-1/AIDS, and hence were immunosuppressed, as they were in close proximity to the hospital and could have sought medical therapy earlier to avoid fatality.
- The patients were probably too poor to afford early diagnoses, which could have resulted in appropriate therapy being given at the District hospital²³³.
- The patients probably avoided seeking prompt medical therapy leading to a poor prognosis.

The first two arguments seem to be more convincing than the last. In fact, most of the patients in the isolation ward were from Lodwar township, indicating a significant delay in seeking therapy. All the immunosuppressed TB patients were from Lodwar township. In fact, of those whose deaths were recorded as due to tuberculosis and immunosuppression, six were from Lodwar township, while one was from Kalokol. The origins of the rest were not recorded.

9:3:2 Local knowledge of tuberculosis

Respondents were asked to mention the types of TB that exist in Turkana after it became apparent that Turkana nosology of TB incorporates many variants. According to village health workers from California and Kanamkemer villages, the various types of respiratory infections that exist in Turkana are: Bone TB (*angakoyo/ lokoyo/ langakoyo*);

²³³ Though the drugs given through the DOTs programme are free of charge, the patients have to pay for diagnostic tests.

Glands TB (TB *to itubui ngagarurei/ logarurei, akuturupunun*); Chest TB (*eurememe lo etigit erarum/ eromit ama imagalit*); Cough TB (also indicated as whooping cough) (*eurememe lo ketoalan arukum napus nakoni ngabulon/ lokud / nekwii / lokuchuma / ewalamu / akichumit erarum*); Stomach TB; Lung TB (*lokou*); Tonsils TB (*klim / ebele*); Asthma; Milk TB; Flue (*arukum*); and Pneumonia (*kiyoi*).

However, according to the healers, the most common types of respiratory infections in Turkana are: Cough TB, Glands TB, Bones TB, Chest TB (*akichumit erarum*), and Lung TB. The healers did not mention other types of respiratory infections like pneumonia or colds that were mentioned during the household survey. Their knowledge implied that TB, divided into various types, is only a type of respiratory infection found in Lodwar township. The reason for this could be that tuberculosis is not only prevalent in Turkana township, but also virulent. It also indicates that many cases of TB are presented to indigenous healers. The clinical officer responsible for the Tuberculosis and Leprosy Control Programme asserted that local population believe that anybody that coughs has TB.

The various types of tuberculosis mentioned have their own respective symptoms. These symptoms, as mentioned by the healers, are translated and recorded below:

(I) Bone TB - (TB *langakoyo*)

This type of TB is characterised by anorexia, or severe loss of weight. In addition, as one healer put it, one infected with TB *langakoyo* does not gain weight even if they eat nutritious food. Another healer put it in Swahili thus: "*mwili inaisha, inabaki tu mafupa peke yake* (the body weight just disappears until one is all but bones)". Those infected with TB *langakoyo* would still lose body weight even if they were not coughing.

Other symptoms and signs for TB *langakoyo* include difficulty in walking and movement, restlessness, weakness of the bones and joints, sweating at night, shortness of breath, dry mouth, dry body, the loss of hair on the head, and the lack or loss of appetite. It was indicated that this type of TB would compromise the body's immunity, as one would become susceptible to other infections. The body would become weak and turn pale in colour. Community health workers indicated that Bone TB could only be diagnosed using an x-ray machine.

(II) Tonsil TB, *Klim*

Tonsil TB would be characterised by a continuous cough.

(III) Asthma

Signs and symptoms include a disturbed mental state and an unsteady gait.

(IV) Glands TB (TB *la ketorupan ngiberei a ngarurei*)

Signs and symptoms are characterised by the swelling of *the ngarurei*, glands at base of the neck, evidenced by 'big boils' called *amoding*. The swollen glands would be very painful. I was told that there is always an appearance and disappearance of the glands. In some people, the 'big boils' discharge pus.

Other symptoms and signs include a painful chest, the loss of weight, sweating at night, weakness of the body's muscles and joints, shortness of breath when walking long distances, difficulty in breathing, and swollen face and legs (feet).

(V) Lung TB (TB *lokou*)

Signs and symptoms for TB *lokou* include difficulty in breathing, sweating at night, a continuous cough, loss of appetite, loss of weight, change of body colour, and shortness of breath while walking.

(VI) Chest TB (TB *erarum*)

The signs and symptoms mentioned by the informants are loss of weight, painful chest, dry body, sweating at night, vomiting blood, painful lungs, and the discharge of 'green sticky saliva', (sputum).

(VII) Cough TB (TB *ewalanu or lokud*)

This type of TB is characterised by loss of weight, persistent cough, loss of hair, fever, dry throat, dry body, dry lips, coughing all the times (dry cough), spitting 'sticky yellowish or greenish fluid like pus' (sputum), sweating at night, weak joints all over the body, restlessness, morning sickness, high body temperature, shortness of breath when it is

windy, lack of appetite, thinness of hair (turns yellowish), and shortness of breath when walking along a steep hill.

(VIII) Stomach TB

The symptoms and signs of Stomach TB encompass excruciating pain in the stomach and persistent diarrhoea.

(IX) *Arukum*, Flue

Arukum is characterised by a runny nose, red eyes, and sneezing.

(X) *Kiyoi*, Pneumonia

Kiyoi is characterised by difficulty in breathing and a blocked chest.

9:3:3 General causes of tuberculosis

All the respondents were asked about the causes of the diverse types of tuberculosis. It appears that the causes of TB could be broadly classed into both external and internal factors. In this context, internal means the destruction of the body's organs, and external means the attribution of causality to outside agents through consumption, breathing, and contact with wild animals, livestock, dogs, and inanimate objects.

It was noted that TB is caused (and transmitted) by being close to the infected person through the sharing of meals, milk, utensils, and sleeping space in the *ekol*. For instance, during the seasons when milk is plentiful, the Turkana hawk goat milk in urban centres. The milk is typically contained in dirty containers and the cups are re-used without being washed. People that buy milk drink from the same cup. In addition, it is locally known that smoking tobacco and drinking too much alcohol causes TB.

The internal factors that cause TB encompasses the destruction of breathing veins by *ngabulon*, infected lungs (*ngukou tobosa*), closed holes (blocked bronchioles) in the lungs, and having wounds in the heart and lungs.

It was noted that TB could be transmitted in two ways: i) if *lokou* or TB infected cattle are paid as bride wealth, then the woman could 'catch' the illness; and ii) if a warrior killed somebody infected with *lokou* during war or a raid, the illness would follow him.

Consumption of fresh milk and blood, dirty water, or poorly cooked food was mentioned as causes of TB. In addition, air pollution due to dust and smoke was mentioned as particularly dangerous. It was remarked that poor housing, especially the Turkana's poorly ventilated huts, put people at risk of getting TB. The use of dirty utensils and the consumption of dirty food were believed to cause TB.

It was indicated that as a communicable infection, TB is transmitted and contracted through 'infected dust' and 'spits' from the infected person. For example, whenever a mother has TB, the child would eventually contract it.

The Turkana also mentioned that the sharing of hand dug wells with livestock, dogs, and wildlife cause TB. The performance of heavy work and the carrying of heavy loads were mentioned as one of the causes of TB. Turkana nursing students also indicated that the high temperature in Turkana is conducive to the causative agent of TB, thus leading to the high prevalence. They noted that the situation is exacerbated by the lack of vegetation that facilitates the efficient spread of TB by winds.

Consumption of livestock products, which are not cooked or boiled properly, is linked to TB. One healer indicated that people contract TB from livestock through the consumption of livestock products such as milk and meat.

The Turkana of Lodwar township perceive TB as a environment-related illness caused by poor personal and environmental hygiene, poor food, overcrowding, dirty water, and excessive wind. Poverty is recognised in the local knowledge as a major factor in the prevalence of TB in Lodwar township. It is poverty that forces people to share utensils and beddings, and live in cramped and overcrowded conditions. When the pastoralist system of production is compromised by drought, loss of livestock, and cattle raids, the destitute are put at greater risk as they are forced to settle in towns, which are characterised by overcrowding and unsanitary spaces. This has led to the efficient transmission of infectious illnesses like TB.

Seasonal changes influence the incidence of respiratory infections. They are particularly common during *akamu*, the hot, dry season, because of "the dryness of the air". In addition, the frequent winds transport and transmit droplets containing micro-organisms, which cause respiratory infections. The frequent dusty winds during the hot, dry season

also cause respiratory infections on their own. During these seasons, all family members are likely to stay in the poorly ventilated *eko*, leading to the efficient spread of respiratory infections. In addition, these periods are marked by blowing winds, which cause and spread the respiratory infections. As one healer noted, dry seasons are characterised by hunger and the scarcity of food and water, resulting in the occurrence of many illnesses.

One healer also noted that respiratory infections are common during *akiporo*, the wet, cold season because people drink a great deal of milk, leading to the incidence of many illnesses. This is significant because brucellosis, bovine TB, is spread through the consumption of livestock products and close proximity to livestock.

According to the healers, respiratory infections are generally common in sandy, cold, dusty, windy, and dirty densely populated environments. The District Public Health Officer and the Chest Clinic's Clinical Officer noted that the pertinent factors that influence the prevalence of TB in Turkana are shelter, sanitation, sharing utensils in places where *kaada* is served, spitting, and overcrowding.

9:3:4 Specific causes of various classes of tuberculosis

(I) The causes of Chest TB

Chest TB is perceived to be caused by carrying heavy items, accidental injury to the chest, smoking, and drinking *kaada*. In addition, inflicted injuries to the chest could cause TB.

(II) The causes of Cough TB

Cough TB is mainly caused through close contact with an infected person, especially if one breathes 'dust droplets' with bacilli infections and if the infected person breathes directly onto the uninfected person. The sharing of meals or sleeping spaces with the infected person could lead to contraction of Cough TB. In addition, infected people spread infections through spitting. It was indicated that the wind would blow the saliva onto either food or water. Moreover, TB is spread through contagion by flies, which get the TB bacteria from such spit and transport them to the uninfected.

(III) The causes of *klim*, Tonsil TB

Tonsil TB, *klim* is caused by the growth of the tonsils / uvula. If the tonsil bursts and one swallows the contents, it results in serious illness including TB, if not death.

(IV) The causes of asthma

It was indicated that this type of TB is very rare in Turkana. However, it is caused by smoking.

(V) The causes of Glands TB

One could be infected with Gland TB if he or she touches the pus discharged from the swollen glands of the infected person. Such close contact, through either sleeping where the infected person slept or using the clothes of the infected person would lead to one having contact with the discharge. Glands TB could also be inherited as discussed earlier.

9:3:5 Treatments for various types of tuberculosis

The Turkana healers were able to differentiate between the general treatments for specific TB. One healer pointed out that a long time ago, TB was called *egedo*, and the main treatment was hot animal fat. In fact drinking animal fat or putting it in food was variously mentioned as a very potent treatment for TB as it 'smoothes' the chest.

In addition, various herbal remedies from trees such as *etirae*, *ngapeto*, *emus*, and *epuu* were also mentioned. Drinking bitter herbs, concocted through the crushing of the leaves of the *echuchuka* tree was mentioned as a potent medicine. It is ironic that drinking livestock blood, which could cause TB, is also considered therapeutic. It was mentioned that hospital treatment is very effective.

The following types of therapies were noted as therapies for the treatment of specific types of TB:

(I) Cough TB

Cough TB could be cured through drinking bitter herbal concoctions made from leaves and roots from trees such as the *echorokong*, *egis*, and *emus*. In addition, it was recommended that patients should be taken to the hospital.

Other types of therapies encompassed drinking blood from sheep and cattle, boiled animal fat, and hot milk. Various herbal concoctions made from roots and leaves, mostly crushed then mixed with soup, milk, or porridge were mentioned as effective therapies. For instance, the leaves of *abach* and *egis* are crushed, mixed with water, and then given to the patient to drink; *eusugu* is crushed, mixed with tea, and then given to the patient to drink; *egis* roots are crushed and boiled, then given to patient to drink; and *ebei*, *edung*, *esekon*, *ekuleu*, and *epuu* leaves are crushed then mixed with water and given to the patient to drink.

TB could also be treated through a ritual. Livestock (especially a goat or a sheep) is slaughtered, and the blood and oil are kept aside. Two stones are put on the fire until they become very hot. After that, they are put in the blood, and then the blood is given to the patient to drink. However, the patient would not swallow the stones, as they are relatively large in size.

Cough TB is also cured through a surgical procedure that involves cutting the uvula, which is assumed to be responsible for its cause. It was also mentioned that taking *changaa*, a local distilled spirit with a high alcoholic content, is good for 'burning' the TB bacilli in the respiratory system. In addition, it was mentioned that inhaling smoke derived from burning a donkey's dung mixed with tobacco could also cure cough TB. Hot oil could also be rubbed onto the chest. It was recommended that a person who is infected with cough TB should consume large quantities of meat to 'smoothen' the chest.

(II) *Klim*, tonsils

Therapy is administered by cutting out the tonsils before they fall off and are swallowed by the ill.

(III) Asthma²³⁴

Esikilele roots are crushed, mixed with either oil or soup from sheep or donkey then given to the sick to drink.

²³⁴ The Turkana of Lodwar Township, like people in other African communities, have appropriated some of the biomedical terms into their nosology.

(IV) Bones TB

Bone TB is cured through drinking bitter herbs, eating lots of fat and food rich in protein. In addition, hospital treatment was recommended.

(V) Glands TB

Glands TB is mainly healed through rituals encompassing slaughtering a sheep and pouring blood on the body of the sick. Another ritual involves smearing red-coloured ochre or animal fat on the infected glands.

One healer indicated that he had previously treated Glands TB by smearing dried waste from dogs on the infected part. The process involved smearing oil on the infected part first, followed with the dog waste. Another herbal therapy involves using roasted bone, which is crushed into dust, mixed with fat, and then smeared on the infected gland. In addition, therapy can be facilitated by using leaves harvested from the *etir* tree, which are then crushed, dried, mixed with animal fat and smeared onto the glands, often on the neck. A herbal concoction can also be prepared by crushing a cobweb, mixing it with fat, and then smearing it on the swollen glands.

(VI) Chest TB

Drinking fat from slaughtered sheep is highly recommended, not only for the treatment of chest TB, but also as a prophylactic measure. Another therapy incorporates drinking warm sheep's blood, which is heated with two round white stones that have been placed on a fire. Once they are hot, they are put in the container with the blood, and this is given to the patient to drink. In addition, there are herbal concoctions extracted from *emus* roots or *echuchuka* leaves. They are roasted, crushed, and mixed with water. The resultant concoction is mixed with either porridge, soup, or milk, and then given to the patient to drink.

(VII) *Arukum*, flu

The most common therapy for flu is snuff, which is sniffed and which, I was informed, clears the nasal cavity by 'drying the nasal secretions' thereby easing the congestion. Another herbal therapy involves the use of the roots of *etesiro*, *esekon*, *ebei*, and *epete*

trees. While they burn in a fire, the ill person is expected to inhale the smoke that is emitted. In addition, the ill person can also chew the roots of the *esikele* tree and swallow the saliva.

9:3:6 The prevention of respiratory infections

There was general knowledge that asthma and *klim* cannot be prevented, as they cannot be transmitted from one person to the next. However, there were diverse ways of preventing all other respiratory infections.

The informants indicated that prevention of respiratory infections should encompass public health education through providing information to the public, especially children in schools. In addition, it was indicated that the public should specifically be educated to boil water fetched from the streams and hand-dug boreholes. People should also be educated against spitting in shelters and public spaces.

It was indicated that people could prevent TB through the consumption of properly cooked meat and by drinking boiled milk. In addition, the utensils should be washed with clean, boiled water.

In addition to isolating the infected persons, it was indicated that any items used by the infected should not be shared with others. In fact, the infected should 'not breathe while their mouths are open' or 'cough with open mouths', especially whilst in their *eko* or crowded spaces. It was mentioned that utensils and any other items used by the infected should be isolated.

Some measures that encompassed environmental hygiene included eradicating *kaada*, the provision, and use, of pit latrines, and not smoking cigarettes. Even though there were few pit latrines, they were often not used appropriately. It was, therefore, indicated that the population should be educated on the importance of using pit latrines and the effect it would have on the prevention of infectious illnesses like TB.

Compliance with hospital therapy is one of the ways mentioned to halt the spread of TB. This means that people value the timely and effective treatment of active TB cases, before the ill become highly infectious and more likely to spread the disease to others.

9:4 Knowledge of tuberculosis among tuberculosis-infected patients admitted at TB Manyatta and Isolation Wards

The Lodwar District Hospital has a TB Manyatta and two TB isolation wards. Most of the patients admitted at the TB Manyatta originate from outside Lodwar township and would therefore find it hard to travel to the Lodwar District Hospital every morning for their daily tuberculosis drugs, administered through DOTs (directly observed therapy). In addition, these patients did not have relatives in Lodwar township with whom they could lodge while undergoing therapy. Some of the patients came from as far away as Kibbich and Lokitaung. Though the two TB isolation wards – segregated into female and male wards – contained patients from far distances, they also had some patients from Lodwar township whose prognoses were very serious, bordering on the acute phases of the illness. These patients could not walk to hospital every morning to receive their DOTs. In addition, most of them required close medical attention due to the advanced nature of their tuberculosis.

Twelve patients of various ages, eight men and four women, were interviewed at the TB Manyatta. All the patients were suffering from pulmonary tuberculosis. Their prognoses were variable as some were seriously ill, while others were on the road to recovery. In addition, 12 patients, eight females and four males, were interviewed at the isolation ward.

The main aims of interviewing those who were infected with TB were:

- i) To broaden the local knowledge of TB.
- ii) To gather experiential knowledge of TB.
- iii) To gather knowledge of 'experienced dual infections' of TB and HIV-1/AIDS.

The experiential knowledge is far from being theoretical, for it refers to personal experiences of the infections.

9:4:1 The causes of tuberculosis (inferred from the experienced signs and symptoms)

Informants who were TB infected gave various causes for their experienced tuberculosis. This kind of knowledge is very important for it not only relates to a subjectively experienced condition, but also to an objectively observed state. This type of knowledge supplements that gathered from healers and other informants from the local population. The healers' knowledge could also be based on past personal experience, theoretical knowledge, and that gained from relatives and friends.

Various reasons were given for the causes of tuberculosis. An assistant chief from Lokitaung indicated that his TB was caused by a lorry accident. He was in a lorry that fell down and a whole load of nine bags of 90 kg each fell on him. In addition, the gun he perpetually carried on his shoulder, especially during the fight with Merille *ngoroko*, cattle raiders, contributed to its severity.

A 23-year-old man, who was very emaciated, indicated that he did not know what caused his illness. He noted that for a long time his illness had been 'on and off'. He had been ill for five months before coming to the hospital, where he had been a patient for about four months.

A boy indicated that 'heavy work' caused his painful chest. He had been ill for three months before coming to the hospital. The illness began with the painful chest followed by a cough, which eventually progressed to TB. Another man from Loturerei also indicated that his illness was caused by his daily chores, which involved feeding the livestock acacia pods harvested from acacia trees using a hooked stick. In addition, digging boreholes on the river basin to water the livestock was a contributory factor. His illness, he said, was exacerbated by hunger.

Most patients attributed their illnesses to natural causes, through 'consumption'. A woman from Lokichoggio stated that her illness was caused by the consumption of meat and milk from livestock. A 21-year-old male indicated that smoking tobacco caused his illness. In the same vein, a 31-year-old non-Turkana said that smoking cigarettes, drinking alcohol, and chewing *miraa* caused his illness, initially diagnosed as "typhoid and

bronchitis". His illness was characterised by loss of weight, coughing up blood, a painful chest, weakness of the joints, dryness of the body, and the loss of hair. Other informants indicated that their TB infections were caused by dirty water, feeding or eating with dirty hands, dirty and long fingernails, and the consumption of infected meat. In addition, the consumption of raw or improperly cooked meat was deemed to have caused infections. A married woman (who had been ill for two and a half years) from Kawalathe indicated that her illness was caused through the inhalation of dust spread by the heavy winds that are prevalent in Turkana.

Other informants also indicated that their illnesses were contracted from their relatives, who had been previously infected. A 22-year-old commercial sex worker from Kanamkemer, who was HIV-1 positive, noted that she contracted the infection from her sister.

Some patients could not identify the cause(s) of their experienced states. One man explained to me that his illness, characterised by a painful chest, swollen glands, sweating at night, and a loss of weight, did not have identifiable causality. A 30-year-old male who was HIV-1 positive did not know what caused his illness, which was characterised by hypothermia, night sweats, coughing, loss of appetite, weakness of the joints, an emaciated body, and difficulty in breathing. A 28-year-old married woman who had been ill for over two years but did not know what caused her illness thought that she could have been cursed. The few that did not know what specifically caused their illnesses often resorted to supernatural explanations as a last resort. A 21-year-old single male from Kalokol indicated that his relatives thought that he could have HIV-1/ AIDS, while some thought that it was just TB. On the other hand, some diagnosed his illness as *morukarion*, amoebiasis dysentery. Some of them thought that it was *egodo*, an illness characterised by vomiting blood. He, however, diagnosed his illness as *kisilikoro*. The illness started when he ate meat down country in the presence of a person with an evil eye. The meat was stuck in his throat and caused his cough. Relatives of an adult female from Kaikor, who had been ill for over two years, also thought that her illness was caused by a curse, and that it would eventually kill her. One woman attributed her illness to both supernatural and natural causes. She indicated that her illness was caused by carrying heavy commodities for long distances. In addition, the *akatwan* who treated her chest pain told her that it was

caused by a curse from a relative and that it would eventually kill her. Her relatives shared similar views.

There is general knowledge that other illnesses could cause TB. A 23-year-old female from Napetet noted that her illness was caused by pneumonia and coughing. She also noted that her relatives thought that she could be suffering from HIV-1/AIDS and not TB. Another informant said that her TB started as *amoding* (a big swelling on the neck), which burst after short period.

9:4:2 Experienced symptoms and signs of tuberculosis

The in-patients at both the TB Manyatta and the isolation wards experienced various symptoms and signs. A 22-year-old commercial sex worker from Kanamkemer, who was doubly infected with TB and HIV-1/AIDS, experienced the following symptoms and signs: loss of weight, coughing, loss of hair, weakness of the joints, dryness of the skin, painful back, and itching body. Another man from Nawoitorong, who was also doubly infected, said that his illness was characterised by loss of weight, loss of hair, thin yellowish hair, weakness of the joints, red lips, night sweats, deep cough, dry skin, swollen feet, white teeth, and an open mouth all the times. He was so emaciated that he could not walk unaided. In addition, he needed assistance in meeting his personal hygiene needs and in the daily activities of living.

Other experienced signs and symptoms mentioned by the patients were: frequent vomiting after eating, weakness of the body and joints, difficulty in walking, the disappearance of voice, difficulty in laughing ('if you laugh you would automatically cough until you vomit'), night sweats, stomach pains ('as if there are round stones in the stomach'), white eyes and teeth, dry lips, bloody diarrhoea – haematuria, painful chest, swollen feet, itching all over the body, a high body temperature, swollen neck (*amoding*), insufficient blood in the body, loss of hair, dry body, difficulty in sitting upright, deafness, and slurred speech.

9:4:3 Indigenous therapies for tuberculosis

All patients admitted to either the TB Manyatta or the TB isolation wards had been ill for periods ranging from two months to two years before seeking medical treatment at the Lodwar District Hospital. Most of the patients received some form of therapy before they were either admitted to the TB Manyatta or the isolation ward. The diverse therapies ranged from buying medication from the chemist, to utilising herbal and ritual therapies. The use of diverse forms of indigenous therapies was popular with patients before they went to the hospital.

There was no significant difference in the period of time before admission between those admitted either to the TB Manyatta or the isolation ward. A woman who was doubly HIV-1-infected had been ill for over one year before seeking admission to the isolation ward, while a 40-year-old man at the TB Manyatta had been ill for two and a half years. On the other hand, a doubly infected man had been ill for eight months. Another HIV-1-infected man from Nawoitorong had been ill for nearly six months before admission.

The distance from home to Lodwar did not influence the first choice of therapy, as even those who resided in Lodwar township admitted having used indigenous therapies before going to the hospital. Patients admitted at either the TB Manyatta or the isolation ward came to the hospital after significant periods of living with their illnesses, and their illness were severe, with poor prognoses. It was therefore pertinent to find out, whether they had used any other types of therapies before seeking treatment from the biomedical health facility in Lodwar.

All the patients used a variety of indigenous therapies, which were mainly herbal and ritual in nature, before coming to the Lodwar District Hospital. A 40-year-old married man from Kibbish who was admitted to the isolation ward had been ill for three years before going to the Hospital, and had used indigenous therapies. A healer had slaughtered a sheep, and blood was poured all over his body. He also used dried *ewoi* tree leaves, which were crushed into dust, mixed with oil from the sheep to form a thick mixture, and then put on the swelling on his neck. He admitted that he did not experience any changes before coming to the hospital.

A married woman from Kanamkemer, who had been ill for two and half years used herbs because her relatives thought that she was inflicted with an illness different from TB. In addition, various types of livestock were slaughtered at different periods so that she could drink the soups, which were mixed with the crushed herbs to form herbal concoctions. However, she did not experience any change in her symptoms after one month.

A 22-year-old commercial sex worker who was doubly HIV-1-infected used the following therapies before going to the hospital: *egong* roots were crushed and mixed with sour milk; she then drank this mixture. In addition, she boiled *emus* leaves, and drank the concoction. In yet another attempt to alleviate her symptoms, she roasted *emus* roots, then boiled it in the water and drank the concoction. She admitted that all the indigenous medications failed to cure her. Another woman from Kerio used herbal medicines before coming to the hospital. She crushed *ekaye* roots, and mixed the fine product with *akuring*, oil from a sheep. She then swallowed the sticky mixture. Another married woman (who had been ill for over two years) crushed the leaves and roots of the *egong* tree, mixed them with water, and then drank the concoction. She also smeared red and white soil all over her body. In addition, a healing ritual was performed for her where many goats were slaughtered and feasted upon.

An assistant chief obtained drugs from a dispensary in Kibbish. He indicated that his wives also gave him some herbal concoctions to drink. He also received some capsules from the hospital even though he had not been diagnosed with TB as he had not had an X-ray. Another 12-year-old boy used drugs he received from the hospital (capsules and other antibiotics) for his illness. In addition, he was also injected with medications at a private clinic where he was taken by his parents.

Two variants of the *Aramakin Eta* ritual were performed for an 18-year-old woman from Lokichoggio who had been ill for two years. A diviner told her that her maternal relatives cursed her, and instructed her to consult a healer so that a healing ritual could be performed. First, a goat was slaughtered and the heart removed while the muscles were still contracting. The healer then ritually beat her body with the heart amidst chanting. The healer then stood in front of her, and threw the heart over her from the front while facing in the same direction as the ill woman. Secondly, after the illness had persisted for some

time, a hen was killed and the woman's body was beaten with the dead hen in a ritual circle. The hen was discarded in the bush. In addition, she drank herbal concoctions from crushed roots and leaves of *epong*, *emus* and *ekangiteng*. Another adult woman from Kalokol, who had been ill at home for over five months, used an indigenous ritual called *aramakin etau*. First, a healer beat a goat while running around her four times. Then the goat was killed and the blood poured all over her body. However, she did not experience any change in her symptoms after one month.

An adult male from Loturerei used leaves from the *egis*, *ngisaja* and *emus*, which were crushed, and then mixed with water. The concoction was left to stand still for a while before he drank it. Two goats were slaughtered within a span of two months, and he used fat and soup to 'cool off the cough'.

9:4:4 The efficacy of hospital treatment

Before coming to the hospital all the patients noted that their conditions were very severe with numerous discomforts. This was evident, even to the observer, as they were very ill. This observation was buttressed by the kinds of symptoms that the patients described themselves. There was no significant difference in the severity of the illnesses between the patients in the TB Manyatta and those in the TB isolation wards. Besides physical emaciation, they were psychologically scarred by the social stigma attached to TB. The illness was described as 'bad and annoying'. A 23-year-old emaciated single male patient in the TB Manyatta considered his state of health to be 'very bad', and he was doubtful whether he would recover.

Those admitted to the TB Manyatta and isolation wards tested positive for TB after both sputum and X-ray tests. Once admitted, the patients were under a strict regime of daily therapy - taking drugs every morning under the DOTs. These drugs were dispensed free of charge. However, some patients had to pay the initial cost of TB test, and in some cases, this led to a delay in seeking therapy. For some patients, the tests were free, especially if they were referred from either the mission or the government dispensaries.

Most of the patients indicated that they had experienced enormous changes in their health status since coming to the hospital. One patient indicated that he had experienced

changes including, for instance, reduced vomiting and a reduction in coughing after staying in the hospital for one month. After being in the TB Manyatta for seven months, one woman confirmed that she experienced some positive changes compared to the indigenous therapies she used previously. In addition, an 18-year-old female experienced changes immediately after coming to the hospital. Even those who were still weak and emaciated noted that since coming to the hospital, their symptoms had changed for the better.

Many patients complained that they were not being provided with proper food, which might combat the adverse effects of the powerful drugs they were taking. The patients not only disliked the hospital diet, which they complained was composed of 'town people's food', but they also complained that it was poorly cooked. As patients were emaciated and struggling with powerful chemotherapeutic drugs, they required highly nutritious foods. The food types served at the hospital, like maize and beans, or *ugali* and *sukuma wiki*, were not part of the Turkana's traditional diet. This was exacerbated by the fact that most of the patients were not settlers but semi-nomadic and nomadic pastoralists whose diet is tilted towards livestock products. This poor state of food and personal care prompted a local charity to commence providing well-cooked meals and fruits every Tuesday and Friday.

9:4:5 The consequences of tuberculosis

TB infection and the resultant change in health status had enormous consequences for all of the respondents both in the TB Manyatta and on the isolation wards. The respondents provided the specific psychological, economic, and social effects of the illness.

Tuberculosis is an illness with adverse effects on its victims. At an advanced stage, it leaves the victims emaciated and unable to walk or perform daily economic activities. If left untreated, it causes death. The experiences of patients are divided into three categories: psychological, economic, and social consequences.

a) Psychological consequences

Patients suffered emotional distress due to physical separation from other members of the household, and this was exacerbated by their long stay in Lodwar, a foreign place.

Staying away from family members for long periods of time was very traumatising for the patients. One woman noted that her illness had forced her to stay in the TB Manyatta, which she did not like, resulting in depression and worries. Being isolated from the other patients in the hospital was considered as a source of social stigma as they viewed themselves as more or less ostracised not only from the rest of their family members and the community at large, but also from other sick people.

The patients constantly mentioned being rejected by close family members and relatives. This rejection, even if only in the form of mistrust and suspicions about their general health status, was very painful to the respondents. A HIV-1-infected man noted that his wives were not sure about his general health status. They thought that he could be infected with HIV-1/ AIDS.

One patient expressed that most of his friends did not want to associate with him as they thought that he could be doubly infected with TB and HIV-1. One patient from the nomadic community was worried about the environmental hygiene in the TB Manyatta, which to her was very poor and was negatively affecting her health. She indicated that 'when I walk around in the village I see and smell faecal waste and this affects my health'.

One patient noted that she was thinking too much about the illness, as she did not know whether she would live or die. Loneliness and separation from her familiar abode was distressing and caused her to live in constant fear. In addition, she had been isolated from her family members since her co-wives thought she was suffering from AIDS.

The most common problem experienced by people infected with TB is isolation from spouse, children, and the rest of the family members and friends. A 12-year-old boy noted that his friends and peers did not want to play or eat with him. In addition, they did not want to have contact with anything that he touched. Moreover, he felt lonely and isolated from his family members. A 29-year-old married male indicated that he could not make love with his wife anymore. In addition, people were not talking to him. He was paranoid that some people might accuse him, or even beat him up, for having transmitted the illness to them or other relatives. Others did not share food or even engage in social interactions with him. He indicated that some of his friends had even said that he could be suffering from AIDS.

Having been infected with TB was a source of embarrassment, especially for those who were seriously affected, as they could not perform private tasks like personal care. For instance, many patients were so emaciated and weak that they could hardly walk or even stand, and could not bathe nor go to toilet unaided. A man from Loturerei who was in that position felt embarrassed because his younger brother had to dispose of his faecal matter. Another 22-year-old female commercial sex worker with double TB and HIV-1 infections tearfully expressed how she was unable to wash herself. In addition, she could not go to the toilet unaided, nor stand un-supported.

b) Socio-economic consequences

There were diverse socio-economic consequences from TB infection. A male respondent told me that he could not carry out his economic activities like herding and planting arrowroots due to the illness. As he noted, "the illness has contributed to my loss of livestock. To make it worse even my wife has left me because of my long absence from home". Another man said that the "illness has destroyed my body. People fear me, as they think that I might transmit the infection to them".

A 21-year-old male indicated that due to his illness, he could not carry out his trade, cooking and selling chapatti. In addition, subsequent admissions to the TB Manyatta occasioned his long absence from home. The illness also severely compromised his physical fitness and social standing in the community. Another informant, an assistant chief, also indicated that the illness compromised his effectiveness as a government officer.

Some patients noted that they could not carry out their daily chores like fetching water, herding, and gathering fruits. A 12-year-old boy could not go to school because of the illness. The illness also compromised his ability to help his parents with daily chores. In addition, it compromised his normal growth and development. He complained that he could not live and play as other kids.

9:4:6 Feelings and perceptions of relatives and friends towards those who are infected with tuberculosis

The perceptions and feelings of family members and friends towards those who were infected with TB were marked with remarkable ambivalence. Most family members feared that their relatives could be infected with HIV-1/AIDS as well. This perpetuated the knowledge that TB could be a smokescreen for HIV-1/AIDS. A male TB patient from Lorugum, in the isolation ward, indicated that some of his friends and his wife thought that his illness could be HIV-1/AIDS due to his loss of weight. The patient indicated that his isolation from other patients with other diseases was stigmatising as it showed that his disease was far worse than other diseases. The family also felt the disease had dealt them a blow, as it had befallen the breadwinner.

Many patients expressed the fact that most of their family members had mixed feelings, as they did not know whether they (the patients) would live or die. As one patient indicated, her family members had vowed to utilise all the available resources until she was cured. On the other hand, other families had lost hope. An adult married woman who had been ill for over two years noted that her relatives doubted whether she would ever recover. She thought that the TB would not kill her because she had been ill with it for a very long time. Her relatives only asked whether she was still alive. She noted that, "my relatives think that I might die. There is a lot of sadness in the village. They always entertain the possibility of my death".

Many respondents felt that their relatives did not fully comprehend the nature of their illnesses. They were also ambivalent about the prognoses of their illnesses. An HIV-1-infected commercial sex worker noted that her family members doubted the nature of her illness. As she pointed out, "they sympathise with me because of my emaciated body. Some people nevertheless fear greeting me. Some of my friends talk about me behind my back. Other patients are also stigmatised in the hospital by the nature of their isolation from the rest of the sick population. It demonstrates to those who come to visit us that we are different from the rest. We have the most dangerous illness in Lodwar. We are treated like death". As another man with a double TB/HIV-1 infection noted: "My family members think

that I might die soon. Some of them say that I could be suffering from the serious illness called AIDS. They see my illness as different from other illnesses. My friends and family members advised me to continue taking drugs". Another patient noted that his "relatives feel that I will die at any time. However, if I do not die, I will live. For now, they say that I am as good as a dead person, since I will be dead soon".

Some relatives, instead of sympathising with the patients, gossiped about the true nature of their illnesses. For instance, a 21-year-old single male from Kalokol indicated that his relatives thought that he might have HIV-1/AIDS, while some thought that it was just TB. On the other hand some diagnosed his illness as *morukarion*, amoebas asks dysentery. Some of them thought that it was *egodo*, an illness characterised by the vomiting of blood.

Some family members even feared that they could contract TB if they sat or stayed close to the infected relative. One patient complained that her relatives feared her because of her TB. Due to this, they did not visit her in the hospital.

A few patients expressed and appreciated the kind of psychosocial support they received from family members. For instance, the assistant chief said that his family members were supportive. They bought foods like meat, vegetables, and fruits for him so that he could cook in the TB Manyatta to supplement the poor hospital food. That was similar to a 23-year-old single male's relatives who were very cooperative, praying for him and even advising him to comply with chemotherapy. On the other hand, some of the relatives and friends thought that he would not get well, and he also eventually started to doubt whether he would get well.

A 21-year-old single male indicated that even though his sister said that he might have HIV-1/AIDS, relatives were still praying for him and they noticed and appreciated the recovery that he experienced over a period of one month. In a similar tone, an adult married female indicated that even though her family members did not know whether she would survive, they were nevertheless praying to God so that she would recover from the illness.

A man from Loturerei who was being treated in the TB Manyatta indicated that his relatives did not know what kind of illness he was suffering from. The relatives were also

doubtful about whether he might die or live. In fact, the last time I saw him, he was on his way home, though just managing to walk with the constant support of his brother, having been discharged abruptly from the hospital. That was surprising as he could hardly walk a few paces without sitting down to gather his breath before moving on. Loturerei, where he lived, was several kilometres from Lodwar. He told me that he had been told just to go home. That was a typical way of discharging patients who were doubly infected with HIV-1/AIDS. As they were not responding to treatment, they were sent home to die.

9:4:7 Descriptions of therapy regimes followed in the Lodwar District Hospital

The treatment of TB in the Lodwar District Hospital was based on the recommended therapy for adults, which is isoniazid (INH) (300 mg/day), rifampin (450 mg/day for patients weighing less than 50 kg or 600 mg/day for those weighing more than 50kg), ethambutol (25 mg/kg/day) plus pyrazinamide (25 mg/kg/day) for the initial two months, to be followed by INH and rifampin alone (Small and Selcer 1999:335). Patients receive daily-supervised treatment for four months; thereafter they are discharged from the hospital with a three months drug supply for self-administration. These drugs generally have side effects characterised by gastro-intestinal upset (nausea, vomiting, diarrhoea) abdominal syndrome, joint pains, ringing in the ears, dizziness, jaundice, blurred vision, headache, flu-like symptoms, red urine, and shortness of breath (National Leprosy and Tuberculosis Control Programme 2000). Isoniazid drug specifically causes peripheral neuropathy in the HIV-1 co-infected and in malnourished patients (National Leprosy and Tuberculosis Control Programme 2000).

Patients indicated that they received drugs every day. All patients regarded the drugs as having 'a lot of power' due to the experienced adverse side effects. One patient noted that the drugs had an effect on the colour of his urine and faecal matter, both of which turned red. The drugs, however, gave him an appetite. He indicated that he would take the drugs from the TB Manyatta for four months, and carry another dosage for two months when discharged.

One adult female patient indicated that the doctors did change the drugs “if they do not agree with your blood”. Many patients indicated that they were often prone to other infections that they contracted while in the hospital, which were treated as well. As a 23-year-old single emaciated male summed up the therapy regime at Lodwar Hospital, “food is provided everyday. Drugs are given everyday. The examination is done every Monday to see whether the illness’ prognosis is changing for the better. At times I suffer from other illness like stomach-ache and headache. When I suffer from these other illnesses, the hospital gives me some other drugs”. Respondents indicated that the powerful drugs they were taking required them to have proper nutrition. Even though the patients were granted the freedom to cook their own supplementary meals, most of them were either too poor to afford food stuffs from the shops, or did not have relatives willing to bring them food. Patients who could afford cooking oil and a few other ingredients could be seen re-cooking their hospital meals. A few patients had relatives staying with them who were responsible for re-cooking or cooking meals every now and again.

Occasionally, the out-patients and in-patients were provided with health education before the administration of their daily doses. The health education events that I participated in were very enlightening and there was a huge willingness on the part of the patients to acquire more information about tuberculosis. However, it was obvious that they still lacked sufficient information about tuberculosis as demonstrated by the kinds of questions they asked me. In fact, there was an impression that health education was not a normal occurrence in the hospital, even though patients expressed a great deal of interest in it.

Drugs were seen as very powerful. It was therefore not surprising that some patients considered their states of health as being worsened by the powerful chemotherapeutic drugs. These complaints had a basis, as most of them were thin, and existing on a poor diet. An adult female indicated that she could not tell whether she was improving because the drugs given to her everyday had weakened her body to the extent that she could not identify any changes. In fact, she indicated that the drugs she took worsened her prognosis as the ‘illness continued to travel around her body all the time’.

9:4:8 Re-infections with tuberculosis

Re-infection with TB is very common in places where the illness is prevalent. Of the thirteen people in the TB Manyatta and the twelve in the TB isolation ward, four and three respectively were cases of re-infection. One was a HIV-1 positive man who was first infected with TB three years earlier. All the patients had been re-infected twice. These cases of re-infection are very important for they suggest a possible double infection with HIV-1, especially if the place of previous residence and occupation of the client are considered high risk factors for the contraction of HIV-1.

9:4:9 Case histories: Trajectories and lived experiences of tuberculosis infections

There are two case histories that will shed light on the experiences of tuberculosis infection. In addition, case histories indicate the life circumstances of patients before they were infected with TB. Due to the nexus between TB and HIV-1, the case histories also delved into sexual behaviour. One life history demonstrates the sexual history of a Turkana man who had settled in Lodwar township. More importantly, one case history charts the migration pattern of a Turkana man to many towns in Western Kenya and the Rift Valley in search of employment. The cases demonstrate how sexual behaviour and patterns of life put ordinary individuals at risk of contracting and transmitting HIV-1 and TB.

Case History I

Loyane was born in 1968. He was a hawker, selling clothes for a Somali trader in return for a commission. He started hawking in 1984 at the age of 15. Previously, from 1989 to 1999, he hawked *miraa*, supplying Lokichoggio and Kakuma on behalf of a supplier in Meru. He had never been married.

He indicated that he became ill in July 2000. His illness started 'like malaria and typhoid'. However, he experienced excruciating pain in his chest and back. When he came to the hospital in November 2000, his sputum smear test was negative for pulmonary tuberculosis. He was instead given medication for typhoid. However, he later had a chest X-ray and a sputum test that revealed a tuberculosis infection. His relatives paid for the cost of the X-ray and sputum

test. He was immediately admitted to the TB isolation ward and commenced a TB therapy regimen. Since he was a case of relapse (his first infection was in 1992), he would stay at the hospital for six months of directly observed therapy.

Loyane however, has had unprotected sexual intercourse with many women. He has never used a condom. He prefers non-barrier sexual intercourse, which he termed *nyama kwa nyama* (skin to skin). As he said “using a condom is a *mzungu's* culture. Our fore parents never used a condom. This is why they brought forth many children. I cannot use a condom. What if a condom gets stuck in the woman's uterus? Furthermore condoms have chemicals that itches the penis when one is having sex”. He was not worried that he would contract HIV-1/AIDS. He went on to say that, “if I get HIV-1, I would just die, no problem, but I cannot use a condom whatsoever”.

Loyane indicated that since admission, he had stopped drinking alcohol and smoking tobacco. However, he would not stop having unprotected casual sex with women he meets with ‘here and there’. Since I told him about condoms, he noted that he might in future use them selectively with women that he does not trust. He stated that he has never contracted any sexually transmitted disease.

Case History II

Ekale was born in 1967, and married in 1974. He had two children. He originated from Kakuma where he lived until 1987. He moved to Kisumu town in western Kenya in 1987 and was employed as house help for a wealthy family. From 1991 to 1994, he moved to Chemelil town to work as a security guard for the Chemelil Sugar Factory. He thereafter moved to Kapsabet town in 1994 and remained until 1998. He eked out a living as a shoe shiner. Still in Kapsabet town in the Rift Valley, he secured employment from an Asian in 1998.

In August 1999, while still based at Kapsabet, he travelled to an agricultural show in Eldoret. On his way back, he diverted to a small town called Soi (Mile Nane), inhabited by Turkana women. He talked with one Turkana woman, who agreed to travel back with him to Kapsabet. The woman was constantly drunk

and he suspected that she had had sex with many other men. After a while, he contracted syphilis and gonorrhoea, and the Indian employer treated him at the local clinic at a cost of Kshs 2,800/- which was later deducted from his wages. He recovered after one month. While with the Turkana woman, he continued to have sexual relationship with other four girls (two Luyhas, one Nandi, and one Turkana). He thought he might have contracted syphilis from any of them. He stayed with the Turkana woman until he left Kapsabet. Though he left the woman in Kapsabet, she later travelled to Lodwar and now lives at Nawoitorong.

When the Asian employer dismissed him in April 2000, he travelled back to Kakuma. When he returned to Kakuma, he commenced drinking *changaa*, *busaa* and smoking cannabis. After some period, he developed a chest infection characterised by a mild shallow cough.

In June 2000, he travelled to Lodwar to visit his brother imprisoned in a Lodwar Prison because of possession of alcohol. On arrival in Lodwar, he found that his brother had been released from jail. His brother was then residing in the sprawling Soweto estate adjacent to the town centre. His brother found him a job as a loader with the National Cereals and Produce Board, a government parastatal charged with the storage and distribution of grains and cereals. After a while, his chest pain worsened and he started coughing blood. He continued to drink alcohol very heavily.

His brother bought him some tablets from the local chemist, but there was no improvement. His cough worsened and he begun coughing up blood. He suffered from a loss of appetite. In November 2000, his brother brought him to the hospital for a chest X-ray and sputum test. His smear test was positive for tuberculosis. He was immediately admitted to the isolation ward for therapy.

While he was working in Kisumu, Chemelil and Kapsabet, he left his wife behind in a village near Kakuma. He did not have a female partner in Kisumu as his employer objected to sexual liaisons of any nature. However, in Chemelil, he had one girlfriend who eventually infected him with syphilis. He received treatment at the Miwani Hospital. In Kapsabet, he had another girlfriend, whom he stayed with for three days. After a few days, he found another woman while in a disco hall, with whom he stayed for one day.

His wife still lived in Kakuma with the children. She did not, however, contract tuberculosis. While he was away, the wife eked out a living selling *kaada* in Nanyemeyen village near Kakuma town.

He noted that he never used a condom with any of the women. One woman in Kapsabet persuaded him to use a condom, but he adamantly refused, preferring 'meat to meat'. His refusal to use a condom was because it hinders *raha*, the full accomplishment of sexual intercourse.

However, he indicated that after discharge from the hospital he would consider using a condom with his casual partners. He would not use a condom with his wife. He indicated that having multiple partners exposed him to sexually transmitted infections, including HIV-1/AIDS. However, he still intended to have as many sexual partners as possible, even up to five. At the time of the interview, he had two girlfriends in Lodwar who normally visited him at the hospital. Occasionally, he also visited them at their homes. He noted that he would go for a HIV-1 test if he had the opportunity or if he was asked to do so.

These life histories indicate that those who are TB infected delay seeking therapy from the hospital. In addition, engagement in unprotected sexual intercourse with multiple sexual partners is prevalent. This puts the actors at risk of contracting HIV-1, and increases their vulnerability to double infection with TB. The consumption of alcohol, a popular past-time in the township, not only lowers the body's immune system in the absence of good nutrition, but also impairs the rational evaluation of risk.

9:4:10 Discussion

I will now synthesise the main issues in the previous sub-chapter under the following headings: the nexus between local knowledge and the biomedical nosology of tuberculosis; and Turkana knowledge of Tuberculosis.

9:4:10:1 The nexus between local knowledge and biomedical nosology of tuberculosis

Before and during the course of this research, I did not review the biomedical literature on the clinical types of TB. I therefore carried out this project with a blind, non-biomedical focus on tuberculosis. When the indigenous healers mentioned the various types of TB found in Turkana, I was astounded by their comprehensive knowledge of TB. It was later, after the completion of the research project that I carried out a biomedical literature search on the clinical types of TB. I was amazed at the similarity between the Turkana's nosology of different types of TB and the biomedical classification. Though the most common form of TB is pulmonary TB, dissemination of mycobacterium TB can lead to TB infection anywhere in the body, like the kidney, bone, epididymis, meninges, skin, eye, and gastrointestinal system. As discussed below, the common biomedical classification of TB with subsequent symptoms and signs mirrors that of the Turkana.

The Turkana's notion of stomach TB could be tuberculous enteritis mentioned in the biomedical classification of TB. This type of TB, caused by the ingestion of expectorated sputum contaminated with tubercle bacillus, is prevalent in developing countries (Tandon and Prakash 1972; Tabriski *et al.* 1975). Symptoms include abdominal pain and diarrhoea (Manela 1999). The Turkana stomach TB could also be related to abdominal tuberculosis peritonitis, caused by *M. bovis*, which affects more women than men (Shetty and Kane 1999). The Turkana are at risk of contracting tuberculous peritonitis because of their close proximity to cattle, and their reliance on livestock-based foods. Tuberculosis peritonitis is often the initial manifestation of HIV-1 infection (Chaisson *et al.* 1987; Soubani and Glatt 1992; Schanaider and Madi 1995). Symptoms and signs are intermittent fever, fatigue, nausea and vomiting, diarrhoea, anorexia, abdominal tenderness, and weight loss over several months with abdominal distension and pain.

Tuberculosis of the liver and biliary tract could be correlated with Turkana stomach TB since the liver and biliary ducts are located in the stomach. A tuberculosis infection confined predominantly to the liver or biliary tract has been recognised with some regularity, especially in areas where tuberculosis remains endemic (Lewis and Zimmerman

1999). TB confined to the lungs involves the liver less often than does extra-pulmonary tuberculosis (Lewis and Zimmerman 1999). A typical *Mycobacterium avium complex* continues to play an important role in the course of AIDS, especially with respect to liver involvement (Horsburg 1991; Small *et al.* 1991). Clinical signs include fever, chills, fatigue, abdominal pain, weight loss, and enlargement of the spleen.

The Turkana lung TB (*loukoi*) and cough TB (*lokud*) could be correlated with pulmonary tuberculosis, which is the most common TB in the world. In the majority of people, the disease stays dormant after entry into the lungs, either indefinitely or for many years, and when a breakdown occurs it may be secondary to a decrease in the body's immunity (Rossman and Mayock 1999). Increased susceptibility to the development of tuberculosis is governed by: a non-specific decrease in resistance due to adolescence, malnutrition, hard work, excessive smoking, diabetes mellitus, or other debilitating conditions; a decrease in resistance due to hormonal effects as a result of pregnancy and therapy with adrenocortical steroids; a decrease in local resistance due to silicosis; a decrease in specific immunity due to lymphomas, uremia, immunosuppressive therapy, sarcoidosis; a live virus vaccination, and AIDS (Rossman and Mayock 1999: 143-144). The symptoms of pulmonary tuberculosis are divided into those that are constitutional and those that are pulmonary. Constitutional symptoms are fever, night 'sweat', toxaemia, malaise, irritability, weakness, unusual fatigue, headache, weight loss, localised chest pain, cough, and sputum. The severity of the disease is indicated by shortness of breath, and parenchyma or some form of tracheobronchial obstruction.

The Turkana tonsil TB could be equivalent to upper respiratory tuberculosis. Though rare, primary tuberculosis of the tonsils exists (McDowell 1954). Pharyngeal and tonsillar tuberculosis cause a sensation of increased warmth, fullness, and stiffness in the throat (Rohwedder 1999: 157). Tuberculosis of the larynx, epiglottis, pharynx, tonsils, middle ear, tongue, and buccal mucous membrane usually results from direct infection by the sputum (Rohwedder 1999).

Otologic tuberculosis, tuberculosis of the middle ear (tuberculosis otitis media), is caused in older people through the ingestion and regurgitation of tuberculous materials such as contaminated milk (Pankey 1999). Hearing loss is frequent in all patients. This

type of TB is also characterised by ear drainage (discharge), ear pain, perforations, facial palsy, aural polyp, and granulations (Pankey 1999). There is also ocular tuberculosis; granulomatous inflammation in ocular TB could be confused with that due to syphilis, brucellosis, toxoplasmosis, *Toxocara* infection, and sarcoid (Albert, Imesch, and Dehm 1999).

Central nervous system tuberculosis, also known as tuberculous meningitis (TBM), begins with the inhalation of an infected droplet of aerosolised sputum generated by the cough of a person with active pulmonary TB (Kasik 1999). After multiplication in the lung, the bacilli are carried through the lymphatics of the thoracic duct and from there, via general circulation, to various parts of the body including the meninges (Kasik 1999). Symptoms include headaches, seizures, paralysis, signs of meningitis, cranial nerve damage, patchy neurologic defects, and personality change (Kasik 1999). Closely related to this is cardiovascular tuberculosis (two types- pericardial tuberculosis and tuberculosis of aorta and myocardium). Common symptoms are weight loss, cough, dyspnoea, orthopnea, chest pain, and ankle swelling (Crocco 1999). Pericardial TB occurs in less than one percent of cases of TB.

The Turkana's gland TB could be tuberculosis lymphadenitis. Tuberculosis of the lymph nodes is one of the most common forms of extra-pulmonary tuberculosis in developing countries. In the developed world (Australia, Canada, USA, and UK) those suffering from tuberculosis lymphadenitis are mainly from the Asian subcontinent (Powell 1999). Historically, lymph node TB was caused by *M. bovis*, but now most tuberculosis lymphadenitis is due to *M. tuberculosis* (Cantrell, Hansen, and Reid 1975 cited by Powell 1999). Though the symptoms of tuberculosis lymphadenitis depend largely on the location of the involved nodes, the primary presenting symptom of cervical lymphadenitis is a painless, slowly progressive swelling on the neck (Ord and Matz 1974, cited in Powell 1999). There is also weight loss, chronic chest pains, fever, low-grade night sweats, chronic abdominal pain, temperature elevation, anorexia, fatigue, malaise, progressive jaundice due to biliary obstruction, generalised lymph node enlargement, large rubbery nodes, nodes softening due to abscess formation, a neck mass with dysphagia caused by a traction diverticulum of the oesophagus, or pain (Kohn and Atman 1973; Powell 1999). Delay or lack of therapy may lead to the cassation and erosion of the nodes.

It is interesting that the Turkana assert that some tuberculosis can be transmitted through sexual intercourse, while the biomedical classification lists genitourinary tuberculosis, which is often missed as patients present with vague urinary tract symptoms (Gow 1999). Symptoms are painful testicular swelling, suprapubic pain accompanied by severe painful frequency of micturition, recurrent cystitis, a superficial ulcer on the glands, and microscopic haematuria (Gow 1999). Genitourinary TB includes tuberculosis of the kidney, renal calcification, renal tuberculosis, TB of the urethra, TB of the bladder, TB of the testis, tuberculosis epididymitis, tuberculosis of the prostate, tuberculosis of the penis, and tuberculosis of the urethra. Some of the genitourinary tuberculosis could easily pass under the Turkana umbrella of stomach TB. Transmission of genital tuberculosis from male to female through sexual intercourse exists but is rare (Sutherland, Glen and MacFarlane 1982). Tuberculosis infection of the genital organs leads to infertility and abdominal or tubal pregnancy, premature births, and intrauterine growth retardation (Weisse and Aronoff 1999).

The Turkana bone TB could be the equivalent of biomedical musculoskeletal tuberculosis. While skeletal TB occurs among older adult in the US, in developing countries where infection rates are high, bone and joint TB occurs mainly in children (Davidson and Lee 1999). Skeletal TB results from the dissemination of bacilli hematogeneously and through lymphatic drainage, following primary infection. Various types are TB spondylitis (spinal), TB osteomyelitis (rib, skull, mandible, and pelvis), TB arthritis (joint), and TB myositis. General symptoms includes local pain, regional muscle wasting and joint deformity, back pain, rigidity of the spine, weakness and paralysis of the lower extremities, neck pain and stiffness, hip deformity, pain in the affected joint, a single site painless abscess, which may progress to multisite abscesses following immunosuppression (Davidson and Le 1999). Advanced cases are characterised by fever, night sweats, and weight loss (Davidson and Le 1999).

9:4:10:2 Turkana knowledge of tuberculosis

Turkana knowledge of TB is not unique in sub-Saharan Africa. As discussed above, the Turkana nosology is similar to the biomedical nosology. For instance, the Turkana knowledge that hard (heavy) work causes TB is congruent with biomedical knowledge,

which posits that such work increases the vulnerability to pulmonary TB through a decrease in the body's immunity (Ross and Mayack 1999:143-144). The Turkana considered TB to be a mainly contagious, natural infection whose prevalence is also linked to the social living conditions and to behavioural norms and practices. Some few informants however, noted that TB could be inherited or transmitted through a curse. There are other communities in sub-Saharan Africa whose views that tuberculosis is natural as opposed to a supernatural illness are similar to that of the Turkana.

Some of the symptoms mentioned by the Turkana conform to those of the Nyanja speakers, such as prolonged cough, weakness of the body, loss of weight, chest pains, loss of hair, thinning of the body, and body rash (Green 1999). These symptoms are similar to biomedical signs and symptoms of pulmonary tuberculosis. Though the Bemba and Nyanja, in their classification systems, have asymptomatic TB, the Turkana do not.

Some of the attributed causes of respiratory infections among the Turkana in Lodwar township are similar to those of the Bemba speakers of Southern Africa (Green 1999:195). Personal hygiene is seen to play an important role in the causality and transmission of TB among the Turkana. Green (1999) found that the Nyanja speakers of Southern Africa attributed tuberculosis to unwashed blankets, dirty (un-swept) dwellings, and the lack of general cleanliness. In addition, to personal hygiene, TB is thought to be transmitted from person to person through several means: sharing the same bed with the affected person; the sharing of utensils with the infected persons; through kissing; and eating at the same table with infected persons. As the Bemba put it, tuberculosis is "transmitted through sharing of cups when drinking beer and also breathing the same air with people who have the illness. This (is) possible because the germs travel in air" (Green 1999:194).

The Turkana's personal and environmental hygiene is conducive to the spread of tuberculosis. In addition, spitting on the ground is common though it exacerbates the spread of tuberculosis. Turkana houses contribute to the incidence and efficient spread of tuberculosis. The Turkana *eko* are temporary shelters covered with leaves and hides that do not prevent dust from entering and making household items, including water and food dirty. The floors are normally dusty, and people often sleep on the hide or mats spread on the floor. It is common to see children and adults sleeping on bare ground. The shelters

constructed in the villages lack ventilation as there are no openings in the walls, while the ones constructed by the nomadic populations are temporary, open structures covered only by skins. These shelters leak when it rains, and expose them to the risk of respiratory infections and increases susceptibility to TB. When it rains, the shelter becomes too cold for its inhabitants, whose shelter reflects a life determined by a hot environment.

Both the Bemba and Turkana agree that environmental factors and the social conditions of living play a vital role in the transmission of tuberculosis. Poor housing and environmental conditions have the greatest impact on acute respiratory infections. In developing countries, about 700 million people, mainly women and children in poor rural areas, inhale harmful smoke from burning wood and other fuels (WHO 1999:34). Indoor air pollution leads to the increased risk of acute respiratory infections, chronic obstructive pulmonary disease, and lung cancer (Smith 1997; Chen *et al.* 1990). Most Lodwar residents used wood and charcoal, while a few used kerosene, especially in cooking stoves and lamps. Wood is burnt in open fireplaces consisting of three stones and a pot on top. Combustion is very poor and often incomplete, resulting in emissions that, in the presence of poor ventilation due to the way an *ekol* is constructed, produce high levels of indoor pollution. Various studies have shown an association between exposure to indoor pollution and acute lower respiratory infections (Robin *et al.* 1996; Campbell *et al.* 1989; Cerqueiro *et al.* 1990). Exposure to smoke reduces resistance to respiratory infections that damage the respiratory epithelium (Bruce *et al.* 2000). An analysis of data on 200,000 Indian adults found an association between self-reported tuberculosis and exposure to wood smoke (Mishra *et al.* 1999). This leads to reduced resistance to lung infection and in conjunction with poverty, causes immunosuppression leading to the risk of TB or accelerated death from AIDS.

Public health officers in Lodwar indicated that, generally, cases of tuberculosis have been rising over the last few years, especially since the late 1990s. This was attributed to a number of factors including: a population increase and overcrowding in settlements; an increase in the number of big settlements; nutritional deficiencies, leading to lower immunity and an increase in vulnerability to a host of infections; and the sharing of chewed tobacco. As one elder suggested, the shelters in towns are close to each other, leading to a high population density conducive to the spread of TB infections. In addition, most

herders sleep either in the midst of their livestock or next to goats in their home. During a discussion with community health workers in Kanamkemer, there were concerns that the prevalence of brucellosis has gone up. They indicated that in the past, the prevalence was very low. They wondered why brucellosis could be more prevalent in the township rather than in the rural areas. The sharing of hand dug wells with livestock, dogs, and wildlife was also mentioned as a possible cause for the high prevalence of tuberculosis.

According to the Bemba, today TB is mainly transmitted through sexual intercourse and the locally brewed beer, *kachasu*. Drinking alcohol in the absence of proper nutrition increases the risk of contracting TB. Drinking too much *kaada* and sharing the same cup amongst many people, especially if one is infected with TB, is a particularly strong factor in TB transmission. Beer is perceived as compromising the immune system. The Turkana also attributed the transmission of TB to sexual intercourse and / or the "sharing of a bed", a euphemism for sexual intercourse. In the biomedical literature, cutaneous TB is also caused by kissing, injection with unsterilised needles, ear piercing, tattooing, insect bites, and sexual intercourse (Bjornstad 1997).

Another important factor in the cause of TB in Turkana, and all pastoralist communities, could be milk, though little research has been done on this subject. It is instructive that though the Bemba are not pastoralists, they still recognise the role of milk as a cause of tuberculosis. The Bemba noted that TB is transmitted through drinking milk straight from a cow. The Turkana were aware of milk TB, brucellosis caused by *M. bovis*, transmitted through drinking milk and consuming meat that is not properly cooked. As one patient indicated, "TB is a disease of consumption, as it is mainly transmitted via eating either the bacteria through sharing of food or *kaada* with infected, or eating contaminated meat and / or drinking infected milk".

One Nyanja speaker indicated that TB is inherited (Green 1999:195). In the same vein, the Turkana indicated that there are instances when TB could be inherited through marriage. In this instance, a woman would contract *loukoi* if one of the cattle given as dowry was suffering from *loukoi*. In addition, one could inherit TB if he killed somebody suffering from tuberculosis during a battle or cattle raid.

There is clear evidence of naturalism and the incorporation of titbits of biomedical concepts into local knowledge of the causes of TB and its numerous sub-types. First of all, the name TB, as a biomedical term, as been incorporated into the local semantics: the Turkana refer to all respiratory infections as TB. This could also be a sign that the illness is of great concern to the local population due to its prevalence, and its effect in the way it causes debilitating morbidity and mortality. The Turkana's medical knowledge lends support to the existence and predominance of indigenous illness causation theories in sub-Saharan Africa (Green 1999).

It is evident here, as it is among the Bemba and Nyanja speakers, that TB, which is biomedically classified as an infectious disease, is interpreted, for the most part, as an impersonal illness. As such, it is caused by germs, dusts, alcohol, flies, wind and dangerous environmental conditions, sexual intercourse and kissing, diet, poverty, lack of food, overcrowding, poor personal hygiene, and heredity.

9:5 '*Mycobacterium tuberculosis* (TB) and HIV-1/AIDS are like two wives married to one man': Local knowledge of the link between tuberculosis and HIV-1/AIDS among Turkana of Lodwar township

In this section, the local knowledge of the link between TB and HIV-1/AIDS is discussed. Two case histories are used to illustrate how this link manifests itself in people's experience with double infections of TB and HIV-1/AIDS. The nexus between the two infections is delineated through: causality; symptoms and signs; treatment; ecosystem factors that influence the incidences; and their prevention.

9:5:1 The link between tuberculosis and HIV-1/AIDS: A synopsis

My interest in the subject was stimulated during an interview with an indigenous healer concerning knowledge of HIV-1/AIDS. As I was interviewing the healer, his wife, who was busy preparing the evening meal, interjected that HIV-1/AIDS is inextricably linked with TB. She likened TB and HIV-1/AIDS to two women married to one man. She went on to mention that nowadays many people who are HIV-1-infected hide under the umbrella of TB, as the symptoms and signs of the two infections are similar. In addition, relatives that have lost people to HIV-1/AIDS would always indicate that they were afflicted with tuberculosis, which, in effect, caused their deaths. After a number of interviews, the link between TB and HIV-1/AIDS was frequently mentioned. As one elder said, "TB masks the true symptoms of AIDS. This is why in hospital, due to the similarity of symptoms and signs, those who are HIV-1 infected are often transferred to the TB isolation ward or the TB Manyatta to wait for their deaths". As another Turkana leader put it, "*TB ndiyo ugonjwa maridad*"²³⁵.

During a leader's workshop in Lodwar, one participant remarked that people currently opine that TB is the sister of AIDS. As one informant said, "TB and HIV-1/AIDS are like brothers. When you have TB you go to the hospital, they give you medicine, and you are cured. After a short while, you go to the hospital again, and you are cured. The third time you go to the hospital, you do not recover, but die. This is because you are also HIV-1 infected. The chronic form of TB is HIV-1/AIDS. Therefore, TB and AIDS are like brothers and sisters. While a single infection with TB can be cured, a dual infection cannot be treated".

Questionnaires were administered to a total of twenty people. Ten men and ten women were interviewed in Lodwar township. More information was gathered from the TB patients admitted at both the TB Manyatta and the isolation wards. This heightened my interest in the subject and led to my carrying out further specific interviews on the subject. In addition, further knowledge was gathered among those who were already infected with TB and were

²³⁵ 'TB is the beautiful illness'. This statement is made in reference to the fact that HIV-1/AIDS is much more stigmatised than TB, so it is acceptable to have TB infections but not HIV-1/AIDS.

admitted to the Lodwar District Hospital's TB Manyatta and isolation wards. Some of these patients were also HIV-1-infected. Additional knowledge was elicited through group discussion with community healthcare committees in Kanamkemer and with California and Turkana nursing students.

All informants and ordinary Turkana acknowledge that TB exists as they have seen and nursed people infected with it. However, it is only those who have seen and have heard about HIV-1/AIDS that were able to make a link between the two illnesses. Informants implied that TB and AIDS have combined efforts to inflict maximum pain and suffering on people such that in reality, we would not be able to know exactly what has killed somebody. Even though people were aware that TB is curable, the 'current TB' perplexed them.

A surveillance survey in Lodwar District Hospital confirmed the existence of the link between TB and HIV-1/AIDS as 58 percent of the TB patients in the TB Manyatta and Isolation Wards were HIV-1-infected.

According to the National Surveillance Survey conducted in the Lodwar District Hospital between February 3 and March 3, 2001, twelve patients, seven from the isolation ward, and five from the TB Manyatta, were tested anonymously. Six out of seven tuberculosis patients in the isolation wards were HIV-1 infected, while in the TB Manyatta, only one patient was doubly infected. Eighty-five percent of the total number of TB patients tested for HIV-1 in the isolation wards was doubly infected. When data from the TB Manyatta and isolation wards are combined, we find that 58 percent of patients were doubly infected. According to this surveillance, many more women were doubly infected than men. Out of seven men tested, three were HIV-1 infected, while out of five females tested, four were doubly infected. Of these doubly infected women, two were single; one was a divorcee, and the other a widow. The Chest and Skin Clinic Clinical Officer also indicated that generally, nearly 40 percent of all smear test positive patients are also HIV-1-infected.

Table 59: TB patients in the Isolation Wards, March 2001

Age	Sex	Marital status	District of origin	Education	HIV-1 Status
A	F	S	Turkana	primary	positive
27	F	Divorced	Mandera	None	Positive
27	F	M	Turkana	Primary	negative
21	F	S	Turkana	Primary	Positive
20	M	S	Turkana	None	Positive
30	M	M	Turkana	Primary	Positive
A	M	M	Turkana	Primary	Positive

Table 60: TB patients from TB Manyatta, March 2001

Age	Sex	Marital status	District of origin	Education	HIV-1 Status
A	M	M	Turkana	None	Negative
A	M	M	Turkana	None	Negative
A	M	M	Turkana	None	Negative
A	M	M	Turkana	None	Negative
A	F	Widowed	Turkana	None	Positive

Questionnaire interviews were conducted among men and women who were not infected with TB. Only three indicated that there is no link between TB and HIV-1/AIDS. These interviewees indicated that there is no link because TB has a cure, while HIV-1/AIDS has no cure. In addition, HIV-1 is sexually transmitted, while TB is not.

Of the thirteen in-patients at the TB Manyatta, seven indicated that there is no link, while three did not know of the existence of a link. Only three affirmed that a link between TB and HIV-1/AIDS does exist. In the same vein, of the thirteen TB patients interviewed in the TB isolation ward, ten indicated that there was no link; three indicated that there was a link, while one did not know whether a link exists or not. Those who were not TB infected were more likely to affirm the link than those who were infected. This is due to the stigma attached to both TB and HIV-1/AIDS, with the latter being more stigmatised than the former. It is acceptable to have TB but not HIV-1/AIDS. And it is common practice to sweep HIV-1 infections under the carpet of TB.

An interviewee at the TB Manyatta indicated that there is a link between TB and HIV-1/AIDS because “when you are infected with TB, you lose weight (‘your body turns into a skeleton’), the colour of your hair changes, and you experience general body weakness just like somebody who is infected with HIV-1. In addition, treating TB is just as difficult as treating HIV-1/AIDS”. As a 21-year-old male at the TB Manyatta said, “when you suffer from tuberculosis, especially when you grow very thin, people mistake you to be suffering from HIV-1/AIDS, therefore their behaviour towards you change. They stop sharing things with you, including greetings. This is because when one is infected with TB, the symptoms and signs are similar to one who is infected with HIV-1/AIDS even TB turns the body into a skeleton as AIDS does”. The link between TB and HIV-1/AIDS is also demonstrated in the arena of treatment, as treating both illnesses is not easy. As a man from Lorugum in the TB isolation ward indicated that there is a link because “both illnesses kill. When TB gets into the body exhaustively, it kills no matter the kind of drugs one takes. This is why people say that TB changes to AIDS when it becomes chronic”.

A HIV-1 positive man in the TB isolation ward concurred that though there is link between TB and HIV-1/AIDS in terms of symptomatology and signs, they differ when it comes to the impact of treatment (drugs). While one suffering from TB can recover, one who is HIV-1 infected will die. A TB/HIV-1-infected commercial sex worker from the Kanamkemer sub-location indicated that there is a link because “when a doctor discovers that you have AIDS they cannot tell you. Instead, they tell you that you are only suffering from TB because in any case they have similar symptoms. In addition, in hospital there is no isolation ward for HIV-1/AIDS sufferers. This means that definitely AIDS patients are isolated amongst us who are suffering from TB”. Another commercial sex worker said “when you have HIV-1, you will get TB. And that if you have tuberculosis you might be HIV-1 positive”. Another informant noted that just like HIV-1/AIDS, non-Turkana migrants, and travellers have brought TB into Turkana over the recent past, especially from Uganda, Sudan and Tanzania. Both infections are associated with foreign, non-Turkana populations and town dwellers.

The woman in the Napetet village who originally introduced me to the nexus between TB and HIV-1/AIDS indicated that TB is a brother of HIV-1/AIDS because of similar symptoms and signs. In addition, a TB infected person who is not cured would die just like those

infected with HIV-1/AIDS. TB is like one person married to two wives. If one is infected with TB, which is persistent and chronic, it is likely that they have HIV-1/AIDS. In addition, a person who is HIV-1 infected will definitely have TB. It is the same way that, when one man is married to two wives, if he has an infectious illness he will pass it to all the wives. She indicated that she 'recently saw a man from Kangaros brought into the hospital by White medical practitioners because of TB infection. However, it looks like he had AIDS. He had three wives, who were possibly infected. The man once visited Lodwar, got infected then went back to the village. The disease is found everywhere even in the remote villages. TB can only be stopped through isolation and better hygiene'.

An assistant chief from Kibbish, on the northern tip of Turkana country, indicated that there is no link between HIV-1/AIDS and TB as they are very different illnesses. As explained by a person admitted to the isolation ward with TB, there is no link between AIDS and TB "because AIDS normally infects through sexual intercourse but TB has always been there. TB eats and affects the whole of your body, but after some time you just recover". Another explanation given is that HIV-1/AIDS is transmitted through sexual intercourse, while TB is transmitted through dust, water, and contact with infected persons. There is a significant proportion of the Turkana population, especially in remote rural villages, who have never seen anybody who is diagnosed as having HIV-1/AIDS. This is epitomised by one respondent from outside Lodwar that did not know whether there is a link between TB and HIV-1/AIDS as she did not know how AIDS affects somebody. However, she knew the effect (symptoms) of TB as she was already infected. Similarly, a woman from a village very far from Lodwar indicated that there is no link between TB and HIV-1/AIDS as the latter comes from God. That woman only heard about HIV-1/AIDS when she came to the Lodwar District Hospital. Another respondent indicated that there is no link because AIDS has no cure, while TB is curable.

A 31-year-old non-Turkana did not know whether there is a link between TB and HIV-1/AIDS, as he could not distinguish the difference between TB and HIV-1/AIDS by the symptoms. Their symptoms are the same. As he said, "some of the AIDS patients could have been isolated with us here, we do not know".

An adult female from Lokichoggio, when asked about the link, responded thus: "I am too old to get HIV-1/AIDS. However, if the disease is transmitted by contact through walking, then I might have it. Nevertheless, if not, I do not have it. I do not have sexual intercourse nowadays". Thus, those who had not witnessed HIV-1 infected persons or been in towns where stories abound about HIV-1/AIDS, were likely to indicate that there is no link, or that they were not aware / had no information / knowledge about the existence of such a link.

9:5:2 Life histories: cases of double infections

The two life histories recorded below of a Turkana man and a non-Turkana woman who were infected with TB and HIV-1, demonstrate the experienced connection between TB and HIV-1/AIDS. The life histories reveal the unsatisfactory care offered to those who are HIV-1 infected who are more or less left to die in the hospital or 'simply sent home to die'. In addition, they demonstrate how HIV-1/AIDS patients are stigmatised. The life histories are followed by a discussion of local knowledge of the nexus between TB and HIV-1/AIDS.

Case History I - 'Sent home to die'

Lobuin was an 18 year old single male. Though I first met him in the TB isolation wards, this interview was conducted at his home in Nawoitorong. He had been abruptly discharged from hospital, even though he was still emaciated, dehydrated, and weak. I enquired from him why he had been discharged even though it was obvious that he was still seriously ill. He replied thus: 'The doctor told me that I am wasting the government's drugs for tuberculosis as my file is missing. I was told to leave the hospital by the following day'. The nurse blamed him for the disappearance of the file. He could not fathom how the file, kept in the nursing office, could get lost. An HIV-1 test was carried out in the Hospital through the 'stealing method'²³⁶. As is the norm, the results were never disclosed to him. He was simply sent home to die.

Lobuin had a vehicle accident in 1995. He was travelling to Lodwar from Nairobi at the time, and he was treated at a Nairobi Hospital for a broken arm. His mother, interjected that she thought that the accident must have caused

²³⁶ Being tested for HIV-1 without consent.

damage to his stomach. She indicated that it was due to that accident that he still had a lot of pain, leading to diarrhoea. The mother indicated that there was nothing he could do. Even her close relatives did not want to help her son.

Lobuin previously worked in a maize plantation in Kapsabet town where he was residing with his brother-in-law. He had two casual girlfriends in Kapsabet, with whom he occasionally had sexual intercourse. His sister and brother-in-law died the previous year, with the former dying first. They thought the brother-in-law was bewitched at work, at the Kenya Army Barracks, where he was working as a soldier. He had just been promoted. They (and Lobuin's sister) died from symptoms characterised by weight loss, diarrhoea, vomiting, and coughing. He indicated that the symptoms and signs were similar to his. They left two children; the last-born having died soon after birth. Lobuin's widowed mother is taking care of the two grandchildren.

Lobuin's TB started in April 2000, while he was still living in Kapsabet. He continued to lose weight. Lobuin sought medical treatment in a private clinic in Kapsabet, but due to a lack of money, he could not afford to continue with treatment. That was when he decided to travel back to Lodwar in September 2000. On the second day of his arrival, he went to the hospital and was immediately admitted. He was discharged in March 2001, as he was not responding to medication.

Lobuin insisted that the hospital never performed any tests before he was discharged, apart from the initial test on admission to the hospital. When I conducted my interview at his home, he was still coughing. He indicated that he thought the tuberculosis was gone. He also indicated that he vomits frequently, and the vomit contains sticky fluid, probably sputum. In addition, he still had diarrhoea, which as he indicated to me, contributed to his weight loss. As well, he still had chest pains, indicative of TB, mouth lesions, oral thrush, swollen ankles, foot pain, and Kaposi's sarcoma – the malignant skin tumours that flourish in AIDS patients. He had also Herpes zoster, common in people whose immune systems have been weakened. The tumour that covered the right side of his face was healing. His forehead was swollen, and the left side was dotted with smaller black lesions. There was no cure for him. There was no remedy for opportunistic infections. There were no remedial measures for

his pain, to lessen the suffering. His only hope for relief was in death, to which he had been condemned by poverty, an uncaring biomedical staff, the socio-political system that has not invested in social and healthcare infrastructure, and an economic system that made him vulnerable to HIV-1 infection in the first place.

Lobuin died a week after this interview. I arranged to visit him three days before his death, but I did not manage to honour the promise due to a change of plans. When I reached the home, a hush silence fell over the children that were playing in the compound. When I asked for Lobuin, not knowing that he had died, I was taken to the graveside. I had brought some fruits, milk, bread, and sugar for him. Filled with grief and empathy, I handed over the shopping to one of the children, with instructions to keep the food safe for their grandmother.

Case History II – ‘Waiting to die’

As I entered the female isolation ward, I waded through the water on the floor. The two huge water tanks, which had been leaking over the last six months outside the ward, were leaking very badly. The water splashed into the ward through the open window. The patients’ beds were safely out of the stagnant water. However, the water still had implications for infection control, especially cholera and malaria. Secondly, it was a measure of the state of the health care infrastructure in Turkana District.

Once in the ward I gazed at the bed, and saw an emaciated body. The body lying on the bed gave me a broad smile. As I drew near I said ‘Habari yako’, and she replied back, ‘salama’, with a very clear shrill voice. Despite her lack of energy and visible exhaustion, she was evidently very happy to see me. As I had kept my promise that I would visit her, she was, amidst exhaustion, very happy to see me.

Abdira was admitted into the TB Isolation Ward five months prior to the interview. When I interviewed her, she had just finished her four-month course of DOTs and was due for discharge. However, a routine sputum smear test proved positive. She had no choice but to remain in the hospital and continue

with therapy. She wanted to leave the hospital. Since she was HIV-1 infected, the hospital was ready to let her go; however, she was too weak to leave.

Abdira was emaciated, with protruding bones all over her body. She was too weak to sit upright. Her eyes were very bright, with conspicuous sockets, and she had bright protruding teeth.

Abdira was of Somali origin, born in Lorugum. Her husband, a Somali, was an army officer based in the Kahawa Barracks in Nairobi. They were both Muslims. They both initially lived in the Kahawa Barracks in Nairobi. Her tuberculosis infection started in October 2000, while she was still in Nairobi. She went to the Forces Memorial Hospital, but she was only treated for malaria. She eventually came to Lodwar in January 2001. She was soon diagnosed with tuberculosis and admitted into the Lodwar District Hospital. She very likely was also HIV-1 infected by then.

This was not Abdira's initial tuberculosis infection. She had been previously infected with tuberculosis in 1996 when she was pregnant with her first child. She was treated in Lodwar. She was again infected with tuberculosis in 1998 and sought treatment in Lodwar.

Her husband has never visited her in the Lodwar Hospital because he was 'very busy with army duties dealing with food, and the army personnel going abroad for peacekeeping duties. I could not even leave the baby with him'. She indicated that her husband had married another woman while she was in the hospital. Her husband has had a baby girl with this other woman. She was unaware whether she was HIV-1 infected as well.

9:5:3 The link between tuberculosis and HIV-1/AIDS

I have discussed the link between TB and HIV-1/AIDS as identified by the Turkana of Lodwar township at the following levels:

9:5:3:1 Causality

The similarity between TB and HIV-1/AIDS is identified at the level of causality. The Turkana believe that TB and HIV-1/AIDS are caused by alcohol and bacteria or viruses. Just as the *ngikuru (viini)* virus was mentioned as a cause of HIV-1, bacteria were cited as

a cause of 'dudu' tuberculosis. Both illnesses are seen as infectious and transmissible from the infected person to the non-infected.

Turkana knowledge stipulates that sharing alcohol using the same cup causes or spreads TB. The most common drink mentioned is the local brew, *kaada*. The local populations, while drinking *kaada* in the villages or California market in Lodwar Town, are used to sharing drinks from one cup. TB bacillus and HIV-1 could be either contracted or transmitted when the infected share alcohol with the non-infected. As people share alcohol, they also share TB infections. When people are drinking alcohol, they sit close to one another thus facilitating the spread of TB through breath. Drinking alcohol is also mentioned as a cause of HIV-1 because when people of different sexes drink together, they are likely thereafter to engage in sexual intercourse. In addition, alcohol, be it *kaada* or bottled or canned beer, impairs the judgement and perception of reality. Once people are drunk, (especially men) they are more likely to engage in sex with either commercial sex workers or other partners. In addition, as the Turkana point out, 'sleeping with a TB infected person' – sharing the same bed and beddings - spreads TB. Sexual intercourse provides the best avenue for the spread of TB, as partners are more likely to breathe directly onto each other. In the same vein, sleeping together with many sexual partners leads to the contraction of HIV-1. In sum, both TB and HIV-1/AIDS can be spread through sexual intercourse if one has sex with someone infected with either TB or HIV-1/AIDS. The Nyanja speakers, like the Turkana, perceive the TB and HIV-1 of today as mainly being transmitted through sexual intercourse and alcohol. In fact they note that young men who drink too much *kachasu* (locally brewed alcoholic drink) get the sliming disease after drinking alcohol for a long time in the absence of proper nutrition (Green 1999). TB is also transmitted through kissing and eating at the same table with infected persons. The Turkana of Lodwar township share the same knowledge. In addition, those who drink *kaada* do not eat properly, contributing to a lack of immunity, thus increasing the risk of TB infection. *Kaada* causes TB and AIDS, so the Turkana indicate.

The sharing of non-sterilised blades, needles, toothbrushes, and chewed tobacco, practices common among the Turkana, were all mentioned as causes of TB and HIV-1/AIDS. In addition, insects are mentioned as being involved in the cause and transmission

of both illnesses. It is indicated that flies and mosquitoes cause TB and HIV-1/AIDS respectively.

At another level, TB is seen as the 'cause' of HIV-1/AIDS. As one 30-year-old female healer put it, "when you are re-infected several times with TB, the result is death. After this, people would say that you are infected with HIV-1/AIDS". "In fact, when a person infected with TB is not treated, people believe that the illness becomes chronic and changes to HIV-1/AIDS, as the body's white blood cells become weaker", said a 28-year-old married female from Namibia with a standard eighth level of primary education. In local knowledge, a frequent re-infection with TB would lead to a change in diagnosis to HIV-1/AIDS. Both illnesses are fatal, and kill mercilessly.

9:5:3:2 Symptoms and signs

The similarity of HIV-1/AIDS and TB symptoms and signs is more pronounced. The link between TB and HIV-1/AIDS is that they have almost the same signs / symptoms. This is made more apparent as TB frequently infects those with HIV-1/AIDS. The Turkana mentioned varied symptoms and signs that are shared between HIV-1/AIDS and TB. The loss of weight is constantly mentioned as both a symptom of HIV-1/AIDS and TB. Most of the TB patients who were admitted to the Lodwar District's isolation ward and the TB Manyatta were visibly thin, with a significant number with skeleton bodies. Similarly, according to some Nyanja speakers, "tuberculosis or *icifuba* could actually be a symptom of AIDS or that it might only appear to be so because of the symptom of weight loss. This illness makes a person slim because he/she loses appetite. One becomes a laughing stock as people start associating the patient with...AIDS" (Green 1999:193). The Turkana know that there is no difference between the AIDS and the TB patient since both illnesses look alike as they share the same signs. Those who have HIV-1/AIDS can easily pass for a TB patient.

Continuous (persistent) cough is a symptom of persons infected with either TB or HIV-1/AIDS. Having TB or just a continuous cough is therefore perceived as a strong hint that one is likely to be HIV-1-infected. In Lodwar township, a persistent TB infection over a long time is a sign that one could be HIV-1 infected as well. Therefore, a patient (person) with tuberculosis is easily perceived by relatives or friends as suffering from HIV-1/AIDS.

Other symptoms shared between TB and HIV-1/AIDS are white teeth, loss of appetite, loss of hair, change of skin colour to pale, coughing blood, red lips, lethargy, dry body, skin rashes, continuous vomiting, high body temperature, ringworms, change of hair colour, perennial diarrhoea, and the appearance of the wounds on the body.

9:5:3:3 Treatment

In the hospital, patients suffering from both HIV-1/AIDS and TB are cared for together in the same wards. Both illnesses affect the person slowly, and in the same vein, the infected loses weight slowly until she or he turns into a walking skeleton. Over all, it is indicated that though TB can be treated, HIV-1/AIDS is still without a cure. However, a few respondents (for instance a female primary teacher, and an 18-year-old secondary student) indicated that currently AIDS can also be cured, just like TB. During the course of this research, there was debate in Nairobi about highly active retroviral therapy (HAART) that was frequently highlighted by the press. In Lodwar township, there were T-shirts printed by the international NGOs, *Medicins Sans Frontieres* and Action Aid, campaigning for free access to AIDS drugs, with a slogan 'Free Access to AIDS Drugs'. This campaign made a significant number of people believe that HIV-1/AIDS could be cured.

9:5:4 Factors of the ecosystem that influence the incidences of tuberculosis and HIV-1/AIDS

Varied cultural and social factors influence the occurrence and prevalence of both tuberculosis and HIV-1/AIDS. According to the Turkana, there are some similar socio-cultural and ecological factors that determine the transmission and contraction of tuberculosis and HIV-1/AIDS.

9:5:4:1 Socio-cultural factors

As both infections are contagious, it was indicated that inheriting a widow whose husband had died of TB, HIV-1/AIDS or both could lead to one contracting the particular infection. An additional risk factor is the practice of polygamy, whereby sharing one husband would result in the spread of illness to all wives if the husband were infected with

either HIV-1/AIDS or TB. In the same vein, one infected wife could transmit either illness to the husband, and eventually the husband, once infected, would efficiently transmit the infection to the other wives. Frequent change of wives, short-term, loose sexual relationships, and long-term separation might lead to a high chance of engagement in multiple partnerships, which predispose both men, and women to the contraction of HIV-1 or TB.

Spitting saliva or water directly on the faces of both children and adults by parents or healers as a sign of blessing is a common practice in Turkana. In addition spitting is done when naming a child. However, such spitting of water and/or saliva from the mouth, which can be contaminated with blood and/or TB bacilli, could lead to the transmission of either TB or HIV-1 infections.

It was noted that dirty drinking water, fetched from ponds when it rains, is contaminated with waste products from baboons. Those who drink such water could contract diarrhoea, which could progress to tuberculosis. In addition, it is believed that dancing with someone infected with either TB or HIV-1/AIDS at disco halls increases the risk of contracting either infection. The person with TB would transmit the TB bacilli through breathing and/or sneezing, facilitated by close contact and air pollution in the dance hall. In addition, most casual sexual liaisons happen after attending discos. Young women and men meet before a dance or on the dance floor, and later are likely to engage in sexual intercourse, which puts them at risk of contracting HIV-1.

It was noted that drinking *kaada* in a group composed of both men and women would lead to them engaging in sexual intercourse. In the same vein, sharing of alcohol with one cup or drinking container would predispose one to contract either TB or HIV-1. The community health committee members expressed concern that people were not accustomed to drinking *kaada* in large quantity and in large groups, the way they do today. All informants, ranging from commercial sex workers in California, where the sprawling California market is located, to TB patients, noted that TB has a connection to *kaada*, an emerging problem among the urban Turkana. Most informants argued that *kaada* is the

*shamba and ngombe ya waturkana*²³⁷. They noted that the consumption of *kaada* has led to the high incidence and transmission of many illnesses, including tuberculosis. It is not uncommon for the people to share one cup of *kaada* amongst themselves. In addition, brewers have neither enough cups nor water to properly wash the few cups that they have. Even in the homes, utensils are at times just wiped due to the lack of water. Many lives are dependant on *kaada*, and many women who sell *kaada* have children. Most of these women are divorcees, commercial sex workers, or single mothers. Some suggested that if *kaada* were eradicated, they would not be able to earn a living. *Kaada* is affordable among the poor, as bottled or canned beer is too expensive. Small kiosks, licensed to sell food, sell *kaada* in disguise. The previous District Commissioner Rotich vowed to eradicate *kaada* but stopped because the prison cells were full. While some politicians support the brewing and selling of *kaada*, the local MP in his *Jamhuri* (Independence) Day address exhorted the Turkana to stop drinking *kaada* as it causes tuberculosis. He counselled his people that alcohol has already killed many Turkana. The Turkana environment is hot, causing dehydration, and the replacement of water in the body with alcohol is disastrous to life. The MP further noted that even children drink *kaada*. In the market and in most of the trading locations in the villages, *kaada* remains a booming business with patrons encompassing the salaried professionals in Lodwar, like civil servants, police officers, and biomedical health workers. In addition, immigrants from down country drink *kaada*. *Kaada* has taken Turkana by storm as even semi-nomadic populations travel to Lodwar for it. Drinking *kaada* also increases their chances of contracting HIV-1, which is further spread among the semi-nomadic and nomadic populations.

Most ceremonies involve rituals incorporating the drinking of blood or alcohol with one cup, which is passed on from one elder to another, in order of seniority. This might lead to either the contraction or the transmission of either tuberculosis or HIV-1. Some ceremonies with high risk mentioned by the Turkana are: *Asapan* initiation- the sharing of milk or blood using one cup; and *Nagkot na Akunta* – the drinking of blood during a marriage ceremony. All of these ceremonies involve the sharing of containers by all the

²³⁷ *Kaada* is seen as the equivalent of land and livestock for the Turkana. This mostly refers to the Turkana that have settled in urban centres and do not have livestock. In addition, land is used in reference to agricultural production, which is popular among the agriculturalist communities in other parts of Kenya with fertile grounds, but is largely missing in semi-arid regions. The *Kaada* brewers I talked to asked me what they would do if the brewing and sale of 'illicit' brews is banned.

participants in order of seniority. Another practice called *Agurum*, which involves sharing one cup while drinking milk is also considered a risky social practice. The traditional practices of chewing food for the baby or the old toothless men and women and spitting saliva into the mouth of an infant one is named after, were considered as efficient means of transmitting TB. The Turkana are also known to share chewed tobacco, tooth brush, and blades during healing, shaving, and body decoration (tattooing), all of which put them at risk for the two infections.

Travelling together in the same vehicle might predispose one to TB if there is one passenger who is infected. In the same vein, if one is travelling in a vehicle and it is involved in an accident where bleeding occurs, one who is infected with HIV-1 might transmit the virus to other passengers.

Poverty and malnutrition lead to vulnerability to infections including HIV-1/AIDS and TB. In addition, droughts that cause protein-calorie-malnutrition, social dislocation, loss of livestock, poverty, and migration are factors in the transmission and contraction of both TB and HIV-1/AIDS. Raping women during raids was also mentioned as a factor in the transmission of both infections. It was also indicated that the lack of medical facilities necessitating the sharing of needles and delays in accessing medical care, influence the prevalence of the two infections in Turkana.

High population density was mentioned as a factor in TB and HIV-1 transmission. The Turkana are traditionally nomadic, moving in small groups. However, when people settle, they have larger sexual networks thus increasing their vulnerability to the contraction and transmission of HIV-1. The overcrowding occasioned by settlements would create good social conditions for the transmission of TB.

It was indicated that a nomadic and semi-nomadic pattern of life predisposes the population to the contraction of TB and HIV-1/AIDS. In the course of moving from place to place, one might encounter a person who is TB or HIV-1-infected. Such an infected person would transmit the infections to many other places through migration.

9:5:4:2 Biological and ecological factors

The Turkana have noted that TB could be inherited through family history, indicating that there is a biological or genetic predisposition to TB infection. It was also indicated that flies aid the transmission of both HIV-1/AIDS and tuberculosis.

9:5:5 Prevention of tuberculosis and HIV-1/AIDS

The community health workers expressed concern that the government was not doing enough to control the prevalence of TB and HIV-1/AIDS. Cost sharing hinders people from seeking medical intervention. Informants pointed out that TB cases have gone up since the introduction of cost sharing, which has resulted in delays in seeking hospital treatment. In addition, government workers are not honest, as they frequently ask for *kitu kidogo*, or a bribe, before they offer treatment. In fact, they wondered aloud why the government brings medicine to the hospital but every time they present with illnesses, they are informed that there are no drugs. The clinicians, instead, advise them to go and buy drugs from private clinics. Their suspicions were buttressed by the fact that many private clinics are owned or run by the clinicians and nurses working in the government hospitals. It was alleged that when a person requires drugs from the hospital that costs US\$ 1, the clinician would instead refer that person to their clinics where a similar drug costs US\$ 3.

The modes of prevention of both TB and HIV-1/AIDS were seen as similar in several ways. Improvement in both personal and environmental hygiene was frequently mentioned as a means of preventing the spread of TB and HIV-1/AIDS, such as not sharing utensils, toothbrushes, blades, chewed tobacco, and using safe and sterilised medical facilities. The provision of free testing and the prompt treatment of TB/HIV-1/AIDS patients were frequently mentioned as ways of containing the spread of the two maladies. Informants also indicated that those who contract TB and HIV-1/AIDS should be encouraged to seek prompt treatment.

In addition, frequent divorce and remarriage - serial monogamy or polygamy - should be avoided. It was mentioned that many Turkana men and women in urban centres engage in 'loose' unions characterised by frequent change of partners.

Education of the masses about TB and HIV-1/AIDS was frequently mentioned. Educating people through churches, schools, and *barazas*, gatherings led by chiefs, DOs, DCs, and politicians, was also recommended. Education should encompass the creation of awareness and immunisation campaigns, and the education of people regarding how to cough and dispose of sputum, and regarding personal and environmental hygiene. In addition, people should be educated on the traditional practices that facilitate the spread and transmission of tuberculosis.

The interviewees were also asked whether the number of people infected with TB has increased over the last few years due to the incidence of HIV-1/AIDS. Of the twenty men and women interviewed, 85 percent of the respondents (n=17) agreed that the number of TB cases has risen in Lodwar township due to HIV-1/AIDS. As a 35-year-old widow brewing alcohol in California indicated, the increase in TB cases is obfuscated by the similarity between TB and AIDS. In addition, a 27-year-old male primary teacher said that "it is hard to make a difference between the two. There is an increase in TB and AIDS, since there is no difference between patients with AIDS from that with TB as the symptoms are similar". Only 15 percent of the respondents (n=3) indicated that they did not know whether there is an increase in the number of people infected with TB due to the prevalence of HIV-1/AIDS. In addition, one of the respondents (5 percent) indicated that TB prevalence has not been influenced by the incidence of HIV-1/AIDS because TB has been always there. However, the prevailing scientific knowledge is similar to local Turkana knowledge as both indicate that HIV-1/AIDS has led to an increase in the prevalence of TB in Lodwar township. Though no research has been carried out to determine this, the logical conclusion would support the local knowledge.

9:6 Implications of the conceptual link between tuberculosis and HIV-1/AIDS for control and prevention of tuberculosis and HIV-1/AIDS

As demonstrated by the local knowledge among the Turkana of Lodwar township, TB and HIV-1/AIDS are inextricably linked. As discussed above, biomedical science has also shown that there is a strong nexus between TB and HIV-1/AIDS. The association between

TB and HIV-1/AIDS is not confined to Turkana alone. In fact, the residents, healers, patients, and members of the general population of the Nyanja speakers of Southern Africa thought the same (Green 1999). This association adds stigma and social rejection to an already unfortunate condition.

In Turkana, a nurse with the TB clinic expressed concern that most of the tuberculosis smear positive patients are doubly infected with HIV-1. He previously screened four patients and all of them were HIV-1 positive. He felt that there should be cooperation between the TB clinic, the STI clinic and the District AIDS and STIs Control Programme (DASCOP). He guessed that nearly a quarter of the then 154 TB in-patients and out-patients could be HIV-1 positive. Community health workers decried the lack of money for health promotion in Turkana. They do not have regular seminars as they previously had when NORAD, a Norwegian development agency, was still active in Turkana. They noted that during the periods when they had seminars followed by health promotion in the village, illnesses were markedly reduced in Turkana. However, these illnesses have increased tremendously since the seminars were discontinued.

Continued failure to develop joint programmes to control both diseases together will instead drive both of them underground. In Turkana, before the advent of the AIDS pandemic, there was no significant stigma attached to TB. However, HIV-1/AIDS is highly stigmatised. As discussed earlier, many people misuse the interconnectedness between TB and HIV-1/AIDS by labelling all HIV-1-infected people as suffering from TB. It is socially acceptable for one to suffer from TB but not HIV-1/AIDS. Due to this, another factor has emerged: those who have chronic TB with symptoms such as emaciation, loss of weight, and thin hair are simply labelled as suffering from HIV-1/AIDS. This means that TB is becoming stigmatised. One with TB is perceived as being HIV-1-infected as well. Just like in a KwaZulu Natal hospital in South Africa, TB is the cherry on the top that forces patients to seek treatment (Mail and Guardian 2002). It is felt that many people infected with HIV-1 take cover under TB. The stigma among TB patients in South Africa where they are thought to be HIV-1-infected as well is fast developing in Turkana. This will mean that controlling TB will be hard, as those who have the disease will simple not reveal this fact.

There is a need for vigorous education among the Turkana population of Lodwar township to dispel the myths surrounding TB and HIV-1/AIDS. Health education aimed at HIV-1 prevention must also be aimed at TB prevention. The illnesses must be pursued through a single strategy. The Turkana perceive some control and prevention strategies against TB and HIV-1 as similar. Some of the causes are also viewed as analogous. Those charged with the design of programmes - the public health and biomedical specialists - must incorporate this knowledge into their programmes. Many interviewees including teachers, students, and local members of the public expressed concern over the lack of education and vigorous health campaigns on either TB or HIV-1/AIDS in the District.

The confluence of the AIDS epidemic and the high rates of TB infection in poor countries have ominous social and medical implications (Narain *et al.* 1992). At the socio-economic level, both TB and HIV-1/AIDS are generally infections of poverty as they affect, for the most part, those who live in conditions of extreme poverty and protein-calorie-malnutrition coupled with inadequate health services. Both infections contribute to insurmountable poverty in sub-Saharan Africa. The advancement in people's socio-economic status will positively influence the prevention and control of both infections. Most of the TB patients were visibly poor and hungry, and battled to take their often-strong chemotherapeutic medication on an empty stomach and with an emaciated body.

Tuberculosis in HIV-1-infected patients responds well to standard therapy (Pitchenik *et al.* 1984; Louie *et al.* 1986; Sunderam *et al.* 1986; Chaisson *et al.* 1987; Pitchenik *et al.* 1987; Small *et al.* 1991). Because of higher risk of non-compliance with treatment, those infected with HIV-1 should be subjected to directly observed therapy as the standard care (Small and Selcer 1999). In addition, HIV-1 complicates the management of tuberculosis due to frequent adverse drug reactions and drug interactions where both of them are being managed. In one review, it was found that the incidence of adverse drug reactions to anti-tuberculosis chemotherapy was 18 percent (Small *et al.* 1991), substantially higher than that reported in HIV-1-seronegative persons from the same clinic (Slutkin *et al.* 1988). HIV-1-infected people receiving chemotherapy for tuberculosis should be closely monitored for evidence of drug toxicity with frequent blood testing and symptom review (Small and Selcer 1999). While the former was never done in Turkana despite the complaints of some patients that drugs made them ill, only the latter was done weekly to monitor the prognoses

of the patients through sputum testing. The failure to monitor closely those on chemotherapy at the local, communal, and national levels was even more serious because some of the patients were dually infected. Though none of the patients was receiving anti-retroviral drugs, their combination with anti-tuberculosis drugs and/or those for other opportunistic infections may result in adverse reactions (Small and Selcer 1999). These reactions could lead to a reduction in the potency of other drugs, drug toxicity, the production of multi-drug resistant tuberculosis, and even to the rapid development of resistance to highly active antiretroviral drugs. An extraordinarily high rate of mucocutaneous reactions due to thiacetazone requiring discontinuation has been reported in Zambia and Nairobi, Kenya (Nunn *et al.* 1992; Kelly *et al.* 1994, cited in Garay 1996). Toxic epidermal necrolysis and death have also been reported. This calls for joint management of TB/HIV-1/AIDS.

At therapeutic level, HIV-1/AIDS antiretroviral drugs should be made available to all. Since some of the drugs, when given to TB patients with HIV-1/AIDS, have adverse effects, it is important that the two departments cooperate. Some TB drugs such as isoniazid (INH), rifampin, and PZA can cause liver and haematological toxicities, chest infections, recurrent diarrhoea, gastrointestinal upset, skin rash, and hepatitis (Harries *et al.* 2001; WHO 2001). These complications could cause death if left untreated. With the absence of regular tests in Turkana, the deaths due to adverse reactions to these drugs in TB patients will never be known. In addition, the combination of TB drugs and HAART will require enormous resources for monitoring if both therapies are to be effective in combating TB and inhibiting the multiplication of HIV-1 in the body. If these dual therapies are not monitored closely, it would lead to the development of multi-drug resistant TB and resistance to HAART, which has dramatically reduced death rates in HIV-1 infected patients in developed countries.

TB treatment and control programmes should introduce some form of counselling before a sputum test, because, as we have discussed above, and as the Turkana in Lodwar township already know, a positive smear test may often indicate that the patient is also HIV-1 positive. In fact, the counsellors, whenever they are available in Lodwar, must be trained in both TB and AIDS control issues.

Because newly acquired TB infections in HIV-1-infected patients can spread readily and progress rapidly to active disease, there should be heightened surveillance for TB in populations with a high prevalence rate of TB or homes inhabited by HIV-1-infected persons. Though the Turkana comprehended the risk involved in cohabiting with a HIV-1 infected person, they often did not know the infected person's status since this information was never passed on to the person and subsequently to family members. There is an urgent need for a change in this policy.

Bacille Calmette-Guérin (BCG) is a [vaccine](#) against mycobacterium tuberculosis that is prepared from a strain of the attenuated (weakened) live bovine tuberculosis bacillus, [Mycobacterium bovis](#). Though fears have been raised regarding the safety of BCG in HIV-1-positive infants (Boudes *et al.* 1989), WHO still recommends vaccination for asymptomatic HIV-1-infected children who are at risk of TB (WHO/IUATLD 1989; WHO 1996). In the US, though there is minimal BCG vaccination, the American Thoracic Society and the CDC find HIV-1 infection a contraindication for BCG vaccination (CDC 1989a; American Thoracic Society 1994). In the United Kingdom, it is recommended that live vaccines not be given to the HIV-1-infected (Baker 2001). What is the implication of this for places with high HIV-1 and TB infections? What is the implication of vaccinating children with symptomatic HIV-1 infection who are never tested and could be assumed to be presenting with signs and symptoms of common childhood infections, malnutrition or poverty? In Turkana, like many other sub-Saharan African countries, BCG is a minimum standard of vaccination regime for children. Though the Ministry of Health recommends that BCG should not be given to children with HIV-1/AIDS, children are still mass vaccinated annually in Kenya (National Tuberculosis and Leprosy Control Programme 2000). There is an iota of caution on the face of HIV-1/AIDS. However, tests should be performed in order to ensure that HIV-1 infected children are not vaccinated, so that their lives are not shortened. In addition, with mass poverty in Turkana, BCG, DOTS and even preventive therapy has little in effect on tuberculosis' mortality and morbidity. These responses are only effective in better socio-economic environments, which are the ultimate determinants of the incidence of TB and HIV-1/AIDS. In addition, BCG vaccination has a limited preventive effect on the infectious adult TB patient (Kochi 1991). BCG, therefore,

has a limited effect on the reduction of TB transmission, which is more efficiently carried out by the HIV-1-infected.

One of the difficulties in diagnosing TB in places where infectious illnesses are prevalent is that symptoms and signs are easily attributed to an existing disease (Rossman and Mayock 1999). This calls for meticulous efforts in accurate diagnosis and for making HIV-1 tests a standard requirement for all in-patients in hospitals. In addition, care should be taken to make sure that the course of therapy is completed, as non-compliance would lead to further progression or recurrence of the disease, leading to fatality. In fact, HIV-1-infected people who have recently recovered from TB are susceptible to re-infection with new strains of TB due to immunosuppression. This is even more complicated if one is doubly infected with HIV-1 as well. Specimens from any site suspected of being infected with tuberculosis should be submitted for mycobacterial smear and culture (Small and Selcer 1999). One study suggested that among patients with culture-proven tuberculosis, significantly fewer HIV-1-infected patients experienced positive acid-fast bacillus (AFB) stains of expectorated sputum smears (45 percent vs. 81 percent) (Klein *et al.* 1989). In general, the sensitivity of sputum smear examination may be reduced slightly in advanced HIV-1 disease (Small and Selcer 1999). In the same vein, anergy, which develops as result of HIV-1 infection, undermines the success of testing for tuberculosis through tuberculin skin test (Garay 1996). HIV-1-infected persons with active tuberculosis have a negative skin test result in 40 percent to 60 percent of cases (Margono *et al.* 1994; CDC 1990). The skin negativity is highly correlated with the CD4+ cell count. All person infected with HIV-1 should be screened with Mantoux skin tests as part of their routine health care (Small and Selcer 1999). Currently, this is not practiced in Turkana. The argument for the integration of the response to TB and HIV-1/AIDS is further developed and discussed in Chapter 12.

Local knowledge of Factors of the Ecosystem that Influence the Contraction and Transmission of HIV-1/AIDS in Lodwar Township

10:1 Introduction

According to the Turkana, the causes of HIV-1/AIDS and other sexually transmitted infections are mainly impersonal and natural. This finding is in accord with other research projects from other parts of Africa, such as South Africa and Mozambique, which have demonstrated that locally recognized STIs are attributed to natural causes, mainly through contagion (Green 1997, 1999). STIs are believed to be caused through contact with an infected person, objects associated with the infected, insects (houseflies) or contamination with *ngikuro (viini)*, tiny infectious 'living things' in blood and other body fluids. Green (1999) has classified these forms of explanatory models of illness causation as 'indigenous contagion theories'.

This chapter discusses the many factors of the ecosystem that were mentioned as responsible for the contraction and transmission of HIV-1/AIDS, and other STIs in Lodwar township. At the end of the chapter, I have also presented a conceptualisation of the evolving impact of HIV-1/AIDS on pastoralist production.

10:2 Factors of the ecosystem that are seen to influence the contraction and transmission of HIV- 1/AIDS in Lodwar township

Turkana informants and leaders indicated that there are many factors that facilitate the rapid transmission and contraction of HIV-1/AIDS and other sexually transmitted infections in Lodwar township. These factors can be divided into broad categories such as those that encourage unprotected sex, those that encourage mobility, factors of social organization

that encourage risky sex, factors related to deficient health-care and socio-economic factors. More specifically, factors that encourage unprotected sexual contact include *kaada*, video and disco halls, emerging sexual behaviour and practices, and poverty-accentuated commercial sex work. Factors of mobility that encourage the pursuit of casual sexual partnerships encompass migration and travel, refugees, urbanisation, truck drivers who transport goods over long distance, the movement of military personnel, and banditry. Factors of social organization that encourage risky sex or open sexual networks include polygamy, widow inheritance, and gender inequality. In addition, factors related to deficient health-care also influence the transmission and contraction of disease and these include iatrogenic factors (unsafe medical practices and unsafe blood for transfusion), poor sexual health and the prevalence of sexually transmitted infections, and the low use of condoms. Finally, socio-economic factors, specifically the social conditions of living epitomised by poverty, play a role in the transmission and contraction of HIV-1/AIDS.

10:2:1 Ecosystem factors that encourage unprotected sexual contact

10:2:1:1 *Kaada*

Alcohol has taken Turkana by storm. In the past, the Turkana were not accustomed to alcohol as their diet was mainly based on livestock products. The transport of grains to Turkana has led to the brewing of *kaada*, a type of *busaa*, which is popular in western Kenya. *Kaada* is made from water, yeast, sugar, and millet or maize flour. On the other hand, *busaa* is made from water, flour, millet and sorghum. While in making *kaada*, commercial yeast is used to ferment the drink, *busaa* uses the indigenous yeast made from fermented sorghum. *Kaada* is therefore more potent and has the potential to engender more adverse effects on health than does *busaa*. Another local drink available in Turkana, as in other parts of Kenya, is *changaa*²³⁸. The sale of local brews is a popular and booming business in Lodwar township, other townships, trading centres, and large

²³⁸ *Changaa* is the equivalent of whisky. It is distilled from fermented *kaada* or *busaa* and its alcoholic content is often nearly 100 percent. It is less affordable among the ordinary Turkana than *kaada*. *Changaa* dealers are mostly from down country.

settlements. Numerous small kiosks licensed to sell cooked food in market places sell *kaada* in disguise. Many families are literally dependant on income that ensues from the sale of *kaada*. *Kaada* brewers are mostly single mothers, divorcees, and commercial sex workers.

Though the government does not condone 'illicit' brews, their consumption pervades even the provincial administration. Some administration police officers drink *kaada* and have girlfriends who sell it. In addition, some administration police agents operate a mafia-type cartel whereby they shield those who pay them money from arrest and prosecution. A former Turkana DC who wanted to ban *kaada* had to stop arresting drinkers and brewers because the cells were full and there was no decrease in the brewing and drinking *kaada*. Politicians support the brewing of *kaada* both as an economic activity and as a popularity stunt. One councillor indicated that the Turkana are entitled to have some form of leisure, like all other communities in Kenya. He noted that currently, *kaada* drinking is the only affordable pastime available in urban settlements. Both men and women travel for long distances from their nomadic camps to reach urban centres in order to drink *kaada*.

There is popular knowledge that as long as there is *kaada*, *lokwakel* cannot be controlled. In fact, *kaada* is seen as the greatest obstacle to the fight against *lokwakel* in Turkana. In addition, women group leaders indicated that *kaada* is the source of all social and health problems in Lodwar township. It was suggested that men go out to drink *kaada* without their wives and end up having sex with other women. The drunkenness that ensues from drinking alcohol increases the prevalence of sexually transmitted infections in urban trading centres. Drinking too much in public places often leads to uncontrolled behaviour and impaired judgement. In a discussion with members of the community health workers committee in Kanamkemer, one of them commented 'if you meet those who are drunk and you ask them where they are going they would reply that they are looking for somebody to save them', a euphemism for sexual intercourse. Informants indicated that, when drinking *kaada* or any other alcohol together, men and women begin to admire each other under the influence of alcohol and end up having sex. Some informants noted that alcohol excites men sexually and raises the urge to have sex with any woman anywhere, hence heightening the risk of contracting STIs. A study of a general population sample of young adults found that respondents who reported more frequent use of alcohol and drugs

were seven times less likely to always use condoms during sex (Bagnall *et al.* 1990). Another study among teenage higher secondary school students in India found that alcohol and drug usage was associated with engaging in actual sexual intercourse (Selvan *et al.* 2002). Fromme *et al.* (1999) reported that having sex when intoxicated is related to risky sexual practices. Those who are drunk can rarely make rational decisions, especially concerning condom use. Beer drinking is therefore related to the non-use of condoms (Zachariah *et al.* 2003). Bars and lodgings are also the 'hunting' grounds of many young women looking for money to barter for sex. Commercial sex workers only make moves towards men when they appear drunk. In addition, alcohol leads to 'rough sex', which could cause bruising to the epithelial layer of the genitalia. In fact, beer drinking often precedes sexual violence.

Drinking too much *kaada* causes poverty in households. It was also noted that money that could be used to purchase food and supplies is often spent on alcohol, thus facilitating protein-calorie-malnutrition amongst some households. Problems lurk in too much drinking as alcohol not only impairs judgment, but also compromises the body's defence mechanism. The lowered immune system that results from this behaviour facilitates the efficient transmission or contraction of HIV-1. *Kaada* encourages TB transmission and contraction as result of the practice of sharing of the drinking 'cup', poor hygiene, and the close proximity of consumers. *Kaada* will continue to compromise the health of the Turkana population and also interfere with socio-economic production.

10:2:1:2 Video and disco halls

The most common form of entertainment that has captivated urban centres in Turkana is the public airings of films. Normally, video films are broadcast through home entertainment systems to large audiences in small public spaces. It has become a booming business. The youth often watch these videos until late at night.

Some of the videos I sampled glorified war, guns, or sex. Though the video films were clearly identified as being for adults, age restrictions were not enforced. It is normal for children to watch adult movies as long as they can pay the entrance fee. Some children could also be seen peeping through the window and standing beside the entrance trying to have a glimpse of the action-packed movies, especially the steamy sex scenes. Men often

pay entry charges for women and girls. Therefore, video halls in Turkana are putting many young lives at risk of contracting HIV-1/AIDS.

It was noted that the early debut in sexual intercourse among the youth in Turkana is attributable to changes in culture through exposure to Western liberal views on sexuality broadcast through films and in literature. Studies in Kenya have shown that teenagers have their sexual debuts at between 12 to 13-years-of-age (Ajayi *et al.* 1991), have many sexual partners, and often do not use condoms (Lema and Hassan 1994; Pattullo *et al.* 1994). Because of the long HIV-1 incubation period, ranging from 5-10 years, especially among the healthy youth, they are likely to transmit the virus far and wide through their large sexual networks.

Discos are very popular in Lodwar township. Disco dances are frequently staged in bars and lodgings. These are high-risk spaces, which influence sexual encounters. Like the post-school youth of Uganda (Bohmer and Kirumba 2000), the Turkana consider disco halls as spaces for acquiring sexual partners or for entertaining partners, some of whom were picked earlier at the entrance. It was frequently mentioned that men and women often meet in disco halls or go to the disco together and later engage in sexual intercourse. In some instances, young girls are lured into the disco by men who pay their entrance fees. After the disco, they would be obliged to pay back through sexual intercourse.

Many respondents indicated that both video and disco halls should be shut down or subject to stricter controls to root out pornography. In addition, the film ratings should conform to the age of the audience.

10:2:1:3 Emerging sexual behaviour and practices

Men with many extramarital sexual partners were noted to be very popular in Lodwar township. Rich Turkana, especially salaried men, tend to have many sexual partners. Ignorant poor girls fall victim to salaried men. Such girls are lured when they are desperate and hungry, when they are most vulnerable to cash handouts with promises of marrying them in future as second or third wives. After they become pregnant, they are quickly abandoned. Since these girls are still hoping to marry in future, they are bent on maintaining a relationship with some men as potential suitors. School-going children, in

most cases, are the ones that enter into predatory relationships with rich men (sugar daddies). These relationships could be long-term, based on payment of school fees and the provision of pocket money, or short-term, one off sexual intercourse. After impregnating these young girls, they leave them and look for fresh ones. A Catholic Church's monthly pamphlet in Lodwar once decried how men shamelessly take advantage of young girls because of poverty. Generally, as the District Public Health Officer (DPHO) noted, the Turkana do not condemn multiple partnerships as long as the community is structured along lines that make polygamous unions culturally acceptable. When people are told that they should avoid multiple partnerships, it is as if their culturally accepted traditions have been challenged.

Older men seek young women because they appear more vulnerable and are easier to manipulate than older women. In South Africa, children as young as nine months old are often raped by relatives due to the myth that men can cleanse themselves of the HIV-1 virus by having sex with a virgin²³⁹. A study carried out in ten districts in Kenya for UNICEF confirmed that the sexual abuse of children in families by relatives is becoming alarmingly prevalent²⁴⁰. Child brides are common in Turkana, where young girls are forced not only into marriage, but also to marry old men already in polygamous unions. This leads to the early onset of sexual intercourse, damaging the epithelial layer and leading to exposure to HIV-1/AIDS. The older partner would engage in multiple sexual relationships for sexual gratification, thus exposing the young girl (partner) to HIV-1/AIDS. In Turkana, girls of fourteen years or below are often ripe for marriage with or without their consent. The informants indicated that currently even boys are vulnerable to older women.

Both the DPHO and the head of the STIs Programme noted that multiple sexual partnerships are popular among the Turkana, especially in urban centres. Whether this is born out of prejudice and ignorance is hard to judge, as quite a number of people, mostly non-Turkana, expressed the same view. 'Promiscuity' was attributed to hot climate and idleness among the destitute Turkana residing in urban centres. Many times, I heard comments that the Turkana women in towns are uncontrollable and promiscuous. The

²³⁹ Between January 2000 and June 2001, 31,780 cases of rape and attempted rape were reported among children. South African Press Association, 2001 HIV-1 'virgin' myth suspected behind rapes of children in South Africa' South African Press Association, November 2, 2001.

²⁴⁰ Mathangani, P. 2003. 'Sexual abuse rife in families' *Daily Nation*, August 5, 2003.

alleged 'promiscuity' should be viewed against the backdrop of changing cultural and social norms governing sexual relations. Even though culture writes the script governing sexual relations, in recent years, especially among those who have migrated to urban centres, there has occurred a transformation on perceptions concerning sexual relations and practices. This often leads to a display of sexual innuendos in public, which are often interpreted by the local population as signs of moral decadence and 'promiscuity'.

The Turkana sex culture is seen by both Turkana and non-Turkana as being very liberal. It was claimed that in the townships there do not seem to be rules prohibiting sexual relationships leading to multiple partnerships. There was a conjectural explanation for this: Many marriages in the townships are not conducted according to traditions. According to tradition, a man does not have conjugal rights over the woman until full payment of bride-wealth is completed. Even though a woman could stay with a man over long periods, he cannot claim rights over the children or sex. In essence, he cannot control her sexual adventures. Focus group discussions and in-depth interviews revealed that some Turkana women in the townships change men regularly. Such women, though, might not become commercial sex workers, but do engage in sex either regularly or occasionally for either material gain or sexual gratification outside of the loose union.

Women's power is amplified by the fact that they are the ones that construct shelters. This technically indicates that the house belongs to the woman. Most of the single women rent their houses and have loose sexual partnerships with multiple men. These men might even help in paying for the rent and food, though the house belongs to the women who could swap them for others at anytime. However, it emerged during a women's group workshop that at present, there has been a culture change whereby some women give alcohol and money to men so they will build houses for them. They also engage with them in sexual intercourse, thus spreading *lokwake!*

10:2:1:4 Poverty-accentuated commercial sex work

In this thesis, the term 'commercial sex work' does contain the connotations of prostitution; as I will show, it reflects the lifeline of many women and female-headed households. Even though I admit that commercial sex workers play a great role in the transmission of HIV-1, I refuse to take the moral high ground because of the economic

realities of providing sexual, social, and affective services to men. Even before the advent of HIV-1/AIDS, commercial sex workers were noted to have a significant role in the epidemiology of sexually transmitted infections (Plummer *et al.* 1983). Commercial sex work is common in Lodwar township. On many nights, while walking in the township, women who wanted money for sex had accosted me. This is also apparent in other towns like Kakuma and Lokichoggio where there is a huge presence of non-Turkana that have disposable income. The rate of commercial sex work has gone up due to the fact there are so many truck and lorry drivers and loaders who not only bring relief foods all the way from Mombasa Port, but also criss-cross the district distributing relief food. There are many commercial sex workers in Kakuma due to the influx of refugees. To demonstrate that commercial sex working is attaining recognition as an industry in Lodwar township, it was alleged that a local politician once told the local commercial sex workers to commence charging more money for sexual intercourse to reflect the high cost of living.

There are various categories of people who engage in sex for money, material goods, or favours. According to Turkana leaders, all sexual intercourse outside marriage is commercial sex work or *usharati*. As opposed to other forms of casual sex, commercial sex here implies engaging in sexual intercourse with the intention of receiving 'something' other than sexual gratification in return. Sexual intercourse could also be exchanged for drinks and security. There are three categories of commercial sex workers:

(I) *Barmaids*: They combine sex working with working in the bar. They are employed as waiters in bars that serve alcohol. They are also expected to fraternise with the patrons, some of whom later become their customers. The money they are paid is often not enough to live on as they are on the extreme end of the pay scale and often not paid on time. In fact, it is as if their employers expect them to engage in commercial sex to supplement the amount of money they are paid.

(II) *Full-time commercial sex workers*: women whose only occupation is that of commercial sex work. Most of their clientele are businessmen, truckers, loaders, and immigrant workers. They often hang around in bars, lodgings, and hotels looking for clients.

(III) *Informal (or part-time) sex workers*: Women or girls who engage in other economic activities during the day, like fish mongering, brewing and selling alcohol, and domestic work, but turn to commercial sex work during the night to supplement their incomes. Selling alcohol as a supplement to commercial sex work has been recorded in Tanzania (Outwater *et al.* 2001). These informal sex workers often take clients to their rented accommodation, or go with the clients to their rented rooms in bars and lodgings.

There are also categories of young inexperienced commercial sex workers who are under the tutelage of senior experienced commercial sex workers. These young girls - mostly recent migrants from the nomadic communities - rely on the senior commercial sex workers for guidance and training on the necessary skills. The young girls customarily pay a commission to their mentors, and pursue sex as a means of survival. In addition, sex is a source of money for buying clothes, soaps, perfumes, and paying rent and school fees. Many rural girls' sexual lives are also influenced by expectations, economic pressures, and personal social needs (Muyinda *et al.* 2001). Some of the material goods that young girls engage in paid sex to obtain should have been provided by their parents. These girls are not necessarily commercial sex workers. This is why the boundary between sex workers and sex for money is very blurred, and many women gravitate between the two. I would consider sex for money or material goods to be at the beginning of the continuum and sex work to be at the end of the continuum.

Though it is only overt commercial sex work that is known and regularly talked about, women sell sex in other various forms. Young girls see sugar daddies as avenues for gaining luxuries such as make-up, school fees, or clothing. There is preference for young girls still in school, or who have just left school, or who have never been to school to hang around bars and lodgings, and disco and video halls. They attract men who pay the entrance fees for them and who buy them drinks, food and later, in return, receive sexual favours. Single women often have regular partners who pay for rent, buy food and pay bills. Single mothers and widows may barter sex as a means of providing for their non-marital children or those abandoned by their fathers. For this thesis, I only interviewed the barmaids and those who were actively engaged in commercial sex work. The number of women and girls involved in some form of trading sex for money or goods in Lodwar

township averages about four hundred in number. One barmaid, however, overestimated that there could be over 1000 commercial sex workers in the township.

Commercial sexual relationships take a variety of forms ranging from quick short stints of hours to much longer periods. The men who stay for longer periods also receive other services such as the washing of clothing and cooked meals. However, such men would be expected to play an active role in the household by paying rent and providing money for food. This would be a very convenient way of living, especially for non-accompanied men who have just immigrated into towns.

The society does not approve of commercial sex working and CSWs are often despised and stigmatised. Women hate commercial sex workers as they are seen as man-eaters. Whenever they pass, one would hear other women murmuring and gossiping, and pointing out that the individual is a commercial sex worker, a dirty job. Women in both urban and rural areas view these women as being responsible for the reduction of cash and goods brought home by their husbands / partners. These women are also envied since they are experienced in sex, hence capable of satisfying their husbands to the level that they themselves cannot do. Commercial sex workers are also perceived as outright thieves as some of them do take advantage of men and steal more cash after sexual intercourse from drunken clients. It was indicated that the easy prey are often the men from nomadic populations who travelled to sell livestock in the urban centres after which they drink *kaada*.

CSWs often drink in places where they recruit their clients, especially bars. They often drink together with their prospective clients. A study found that many women who work in the commercial sex industry often drink regularly and in excessive amounts (Gossop *et al.* 2003). Other studies have also suggested that the use of alcohol and drugs may not only be associated with an increased risk of pursuing risk behaviours, but also with a disinhibitory effect (Plant and Plant 1992). Faugio *et al.* (1994) found that CSWs using drugs gave intoxication as one of the reasons for their failure to use condoms. In Malawi a study among CSWs, indicate that of the 374 CSWs that reported having sex while still symptomatic of STIs, 6 percent used condoms always, 78 percent used condoms intermittently, while 17 percent did not use condoms (Zachariah *et al.* 2003). Among

women commercial sex workers in south London, one third of the sample would be willing to offer unprotected sex to clients in return for more money, and there was a correlation between the willingness to have unprotected sex for more money and drinking larger amounts of alcohol and drinking more often. In fact, the majority of women who had long-term sexual partners (for instance boyfriends), never used condoms. Commercial sex workers in the Netherlands reported that they drink to ease interaction with clients and to set negative feelings about their job aside (De Graaf *et al.* 1995). In addition, it was found that illicit drugs had a great influence on engaging in unsafe sexual activities.

Search for partners in the urban township is a privatised, individual affair. Woman often hover around the bars, dressed smartly. Most commercial sex workers are widely recognised through the way they dress and through their personal grooming. Some would enter and sit at the bar counter with a bottle of beer. The men would then either send a beer to her as a sign that she is being courted or invite her directly to the table where they would drink together on the man's account until they would retire for sexual intercourse. Men perceived commercial sex workers as ardent drinkers who rarely get blackouts. Some women, however, do not drink but rather send the bottles back to the counter for cash through the barmaid, whom they often know. In some instances, a man would keep sending drinks to a barmaid, hoping that they would retire together when the bar closes. At times women in bars advertise their services by walking and touching men provocatively, especially targeting those who are drunk who could be lured easily into sexual intercourse, and therefore become easy prey for money.

Some CSWs in the village are not often smartly or provocatively dressed. They pass as ordinary women, most of whom are in single-headed households. Some of them double as fishmongers or illicit alcohol brewers and sellers. During daytime, they engage in these petty business activities while at night they serve men. Most of their customers at night are their customers during daytime – beer drinkers. My evidence from Lodwar indicates that the face of commercial sex working has changed considerably over time. This is evident from the stories about the Majengo slums (renowned commercial sex workers' zone) of Nairobi where CSWs sat on stools near the doorsteps of their mud-walled hovels, enticing customers with thighs exposed in the 1960s through to the 1980s. It was some kind of open market arrangement with the sellers spreading their "wares" for sampling by sex-

starved male (mostly migrant workers) buyers. In addition, as late as the 1980s, men parted with five shillings for a fling or a shot, as it is known in the commercial sex trade parlance. However, in line with changing trends in retail trade, today's commercial sex worker is like a hawker, literally on the move, hunting for clients. In the town centre, most CSWs are trendy and sparkling, as they note that the whole trick lies in looking beautiful and sophisticated in a competitive world. Today, CSWs have taken a new aggressive and sophisticated approach to attracting clients.

In many areas of Lodwar township, one sees women hanging around the hotels and in less predictable locations on dark streets, and near the bars and *kaada* drinking places posing as patrons while in effect looking for customers. Men always know how commercial sex workers present themselves. In any case, detecting them is not difficult, as normally married women do not frequent bars. In fact, women that go to bars to drink beer are often labelled as commercial sex workers, or *malaya*²⁴¹. *Malaya* would, in addition, dress provocatively, act seductively, would be sexually disinhibited when communicating with men, and would ordinarily have physical contact with the same. Such women would perform an emerging trendy practice, 'babe sitting', whereby half-nude women sit on the clients' laps cuddling and wriggling to the disco music or just offering intimate company.

To discuss the factor of commercial sex in the transmission and contraction of HIV-1/AIDS within the context of Lodwar township, I specifically gathered knowledge of commercial sex workers to supplement the information provided by those informants that considered the practice as contributing to the spread of HIV-1/AIDS, and other sexually transmitted infections. I therefore interviewed eighteen commercial sex workers of various categories with the aim of gathering knowledge of their sexual behaviour that could put them at risk of contracting and transmitting HIV-1. Since the Turkana consider commercial sex work as one of the factors of the ecosystem that influence the transmission and contraction of HIV-1 and other sexually transmitted illnesses in Turkana, I wanted to find out those factors that motivate women into taking an active role in commercial sex work. This approach was necessitated by the fact that commercial sex work was, in particular, blamed by all respondents as responsible for the rapid increase in HIV-1-infected persons

²⁴¹ While *Malaya* is a Swahili word for commercial sex worker, in local usage it includes those women that engage in casual sexual intercourse with multiple partners, be it for money, gifts, or gratification.

in Lodwar township. Commercial sex workers have the highest prevalence of HIV-1 and other sexually transmitted infections in other parts of sub-Saharan Africa (Plummer *et al.* 1991; Nkya *et al.* 1991; Hunter 1993; Outwater *et al.* 2001). In Abidjan, Cote d'Ivoire, Diallo (1992) reported that 90 percent of HIV-1 positive male STD attendees had visited sex workers.

I asked the commercial sex workers about their knowledge of sexually transmitted infections. The table 61 below indicates the most common types of sexually transmitted infections mentioned by the eighteen commercial sex workers. Even though 'Ebola' is not a sexually transmitted infection, it was mentioned by two CSWs as such.

Table 61: The common types of sexually transmitted infections

Types of sexually transmitted infections	Number of CSWs
Syphilis	18
Gonorrhoea	12
HIV-1/AIDS	18
'Ebola'	2

All the commercial sex workers had heard of HIV-1/AIDS between 1994 and 1998. The sources of information as mentioned by the commercial sex workers are indicated in the table 62 below.

Table 62: Sources of information on HIV/AIDS

Sources of Information	Number of Comercial Sex Workers
Radio	12
Other people	18
Television	4
Newspaper	6
Parents	8
School (teachers)	4
Hospital worker	6

The commercial sex workers' local knowledge of HIV-1/AIDS was diverse and similar to that of the general population discussed in the previous chapter. However, it is important to discuss here whether commercial sex workers are able to 'diagnose' potential clients who are infected with STIs, including HIV-1/AIDS, in order to prevent potential contraction of HIV-1 and other STIs.

All respondents indicated that they could not recognise if one is HIV-1 infected. On the other hand, many respondents indicated that they have seen people suffering from AIDS. To the naked eye, those who are HIV-1 positive are harder to recognise than those who have AIDS, whose symptoms are often conspicuous. Respondents could only recognise those who had developed AIDS through signs, such as severe weight loss. For instance, one commercial sex worker's close encounter with HIV-1/AIDS was when an emaciated man with TB offered a great deal of money for sexual intercourse. Most commercial sex workers noted that men who are HIV-1 infected would often offer huge sums of money for sex.

Even though commercial sex workers indicated that all sexually transmitted infections are preventable through many methods, including the use of a condom during all sexual activities, only fourteen respondents (77.8 percent) indicated that they had used a condom previously. Of the fourteen, four respondents indicated that they only used condoms occasionally, while ten indicated that they always used a condom. Four 19-year-olds indicated that they had never used a condom with their clients. Condoms are, therefore, not frequently used by CSWs and their clients, especially with boyfriends, regular customers, and other customers who are willing to pay more for unprotected sex.

Commercial sex workers indicated that they buy condoms from the shops, bars, and pharmacies. The brand mostly used is a TRUST condom. Some CSWs also indicated that they get their condoms from the Hospital's STD Clinic, where they are supplied for free. Only four commercial sex workers indicated that they do not know how condoms should be used properly. While four commercial sex workers indicated that they do assist their clients to wear condoms, the rest noted that they let the men put on the condoms. The commercial sex workers who did not assist clients had no way of ascertaining whether a

condom had been worn. Some commercial sex workers requested clients to wear two to three condoms per sexual act to increase safety.

All respondents indicated that there are occasions when clients refuse to use a condom. On such occasion, some CSWs indicated that they just agree to have sex because they need the money. Ten respondents (55.6 percent) indicated that they have never declined to have sex with clients even though they suspected that they (clients) could be HIV-1-infected. As one said, "I just agree to have sex with him, because if I refuse I remain hungry". Four informants (22.2 percent) indicated that they would refuse sex, and possibly look for other clients. Since most clients loathe condoms, they do not carry any. It is therefore incumbent upon the CSW to buy and carry condoms. Since this adds an additional cost to the poor CSWs, there is very little motivation to own and use condoms. Though there is occasional provision of free condoms in bars and lodgings and at the STD Clinic, these condoms are not trusted. Those who use condoms prefer to buy the 'TRUST' brand from the shops, pharmacy, and bars and lodgings. Men manage to have sexual intercourse with CSWs without condoms when they are drunk. Some CSWs indicated that men give them alcohol prior to sexual intercourse to diminish their resistance and judgement with regards to making informed decisions concerning the use of condoms during sexual intercourse. Even if clients accept to use a condom, it is likely that it would not be used properly. As one CSW indicated, "I met this rich, civil servant at the bar. We drank alcohol until very late at night. He wanted me for the whole night and he was prepared to pay for my company. We retired to bed in my rented accommodation. The man was willing to use a condom. He told me that he has a big family down country. He has two wives as well whom he did not wish to transmit any infections to when he travels home during Christmas. Prior to sexual intercourse, I tried to assist him to put on a condom in vain. During the first attempt, the condom came off, as soon as we started the sexual intercourse. We tried again to put on a condom, and it busted. We ended up having sexual intercourse without a condom against our will".

One night I travelled to Kakuma and spent the night in a lodging. In a room adjacent to mine, there was a man and a woman arguing over the use of a condom. The woman wanted to use a condom but the man saw this as an indication that the woman did not trust him. "You mean you do not trust me?" the man asked. "Not that I do not trust you, but it is

not wise to take chances", the woman responded. "Oh! You regard having sex with me without using a condom as taking chances! You think I would be this healthy if I had the virus", the man retorted. What transpired after this altercation, though seemingly inconsequential has implications for the prevalence of HIV-1 in the Turkana township.

Reasons as to why male clients refuse to use condoms encompass the following: it compromises full pleasure, the body-to-body feeling they have paid for; they tighten the head of the penis, leading to a risk of injury and bleeding; and they are tainted with the HIV-1 virus, especially condoms provided by the Ministry of Health. Some CSWs indicated that when they insist on the use of condoms, their clients interpret that as a sign that they could be infected with HIV-1, and other sexually transmitted illnesses. Men want to pay less for sex with a condom because, firstly, there is already an acknowledged risk of contracting sexually transmitted infections, and secondly, there is a reduced sexual satisfaction.

Six CSWs relied on male partners to provide condoms, while four got condoms from the female friends. Eight provided condoms themselves. All CSWs indicated that there are some clients with whom they do not use condoms. These are either known customers with whom they have had sexual relationships for long periods of time, or healthy-looking rich customers who are likely to pay generous amounts of money. This is a risky endeavour considering that people cannot always tell whether one is infected or not. All CSWs had some sexual relationships they consider as relatively permanent partnerships where condoms were not used. They consider them as permanent partners. Some CSWs indicated that even though they do not trust them as they have other partners and wives, they deserve sex without a condom because they look healthy and they have known them for long periods of time. As one CSW said, "they are good, regular customers. Like a shopkeeper, I can give them sexual intercourse occasionally free or on credit". These men play an active role in the payment of rent and the purchase of food. One CSW who also worked as a barmaid had such a live-in-boyfriend from Bungoma, in the western part of Kenya, employed in the civil service sector. He was stationed in Lokitaung, several miles from Lodwar, in the northern part of Turkana. This man travelled to Lodwar every weekend. The man had two wives and several children, all living down country.

Generally, it emerged from this study that even though all CSWs considered condoms as effective against HIV-1/AIDS, in practice, their use is influenced by many factors, and not all of them use condoms consistently, while others have never used them. CSWs do not practice safer sex, and, in fact, they do have other permanent partners with whom they do not use condoms. They lack awareness about the level of risk to which they are exposed. The offer of money is a great temptation against the use of condoms. Even if they are aware of the risk of contracting HIV-1, they engage in intramissive sex as they view the risk of hunger and the lack of shelter as higher than that of HIV-1. The health belief model (Rosenstock 19974) and model of reasoned action (Fishbein 1972; Ajzen and Fishbein 1980) indicate that a beneficial behaviour will only be chosen if its benefits outweigh the costs of an alternative. The choice of a particular mode of action is, however, contextualised and person specific. Commercial sex workers consider the contraction of HIV-1 as an unavoidable accident, over which people do not have control.

Though vaginal sexual intercourse is the most common, two CSWs admitted that they have met clients who have preferred to have anal sex. The four clients were truck drivers, originating from Mombasa town. The two CSWs indicated that their main reason for preferring anal sex was because it significantly reduces the risk of contacting and transmitting HIV-1, and other sexually transmitted infections. Though homosexual relations are popular in Mombasa between poor young men and older rich men, there is no recorded preference for anal sexual intercourse by men. However, Miguda-Attyang (1996) reported that Asian and White clients in Kisumu City, Kenya, preferred anal sexual intercourse with commercial sex workers whom they pick up discretely from three star hotels. Just like in Lodwar, CSWs' clients who prefer anal sexual intercourse are truck and oil tanker drivers who pass through Kisumu on their way from Mombasa to Uganda, Rwanda, Burundi, and the Democratic Republic of the Congo. Anal sex is preferred because it is seen to not necessitate the use of condoms, which many clients do not want.

The types of clients that commercial sex workers have sex with are met in bars and include disco DJs, NGO employees, Kenyan army personnel, lorry drivers, loaders (helpers), policemen, civil servants, businessmen, teachers, and healthcare workers from Lokichoggio and Nairobi. It was indicated that refugees often pay large sums of money for sexual intercourse. They are, however, selective as they only want sexual intercourse with

CSWs from down country. Commercial sex workers indicated that they have sex with various numbers of men averaging between three and four per week. A 30-year-old barmaid had about 30 men per week. One woman who had sex with one to three men per week indicated that at times she would decide to stay with one male client for about a week. Another 28-year-old widow with two children alleged that she has about 40 clients per week.

There are diverse reasons why women and girls have chosen to eke out a living through commercial sex work. The CSWs, when asked about what brought them into the business, cited poverty, the lack of viable alternative income generating opportunities, single parenthood, migration to the urban centre to look for alternative ways of making money, and a partner who had decamped. Some were lured into the business by other girls who glorified the lucrative nature of commercial sex work. The predicament of the Turkana women who engage in commercial sex work is aptly captured by Schoepf's indication that "linking the macro-level political economy to micro-level ethnography shows how women's survival strategies have turned into death strategies" (Schoepf 1992b: 279).

The CSWs consider commercial sex work as their only viable income-generating opportunity. As a 17-year-old commercial sex worker indicated, "even though my job is bad, as it will finish me one day, I have no other choice. I have no money to start up a business". Another 27-year-old barmaid with one child said: "*umalaya* is not a good job, because you can easily be infected with HIV-1/AIDS. However, because of poverty, it is my only source of income". Another 30-year-old barmaid said: "it is good because it is the only alternative. I have chosen it because there is no other job; there is no man to marry me". CSWs appreciated that theirs is a business of death as far as contracting HIV-1 is concerned. Though theirs is a hopeless and dangerous money-getting venture, poverty constrains their perceptions of risk. To CSWs, the lack of food and shelter is a far higher risk than that of HIV-1/AIDS.

The two case histories presented below demonstrate the typical life circumstances of a commercial sex worker in Lodwar town. They demonstrate how engagement in sex work is influenced by factors of the ecosystem that are far greater than those that dictate societal and / or individual preferences.

Case History I

Nyandoto was a 35-year-old single mother with three children. She did not have any other source of income. She was living in a one-room rented accommodation in Lodwar Town. All her children were attending the local primary school. She went to school until class seven. She started commercial sex working in 1990 in Lodwar.

Nyandoto had limited knowledge of HIV-1/AIDS. She noted that one that suffers from the illness presents with constant 'high body temperature' (pyrexia), diarrhea, and persistent cough. She noted that TB and HIV-1/AIDS have similar symptoms. According to Nyandoto, the only way one could prevent HIV-1 is through the avoidance of *tanga tanga*, one should have only one partner. She indicated that people could also use condoms to prevent the contraction of HIV-1/AIDS. She said she has used condoms many times in the past. Nyandoto indicated that her customers come with their own condoms. She demonstrated a good theoretical knowledge of how the condom is used, that is, inserted over the penis when the man is ready, meaning erect. If somebody refused to use a condom, she would normally conclude that he was infected with STIs or HIV-1. She said that some customers who were drunk often refuse to use a condom, and she risked being beaten up if she insisted. In such circumstances she was forced to have sex without condoms, as she needed the money. Though she could identify a person who had developed AIDS, she could not tell if one was HIV-1 infected, especially if he was still asymptomatic.

She normally visits the bars for customers. Most of her clientele are touts, teachers, and police officers / administration police. She has about five clients per week.

Nyandoto chose commercial sex work because she had no alternative source of income. She noted that at least she gets enough money to pay rent, and feed and clothe her children. Nyandoto normally earned an average KShs 500 (US\$ 7) per week or less. As she noted, '*ningependa awe na kitu la kufanya, alafu ni wache kazi ya ulaya*' (I would like to have something else to do, and then quit this job).

If she were to be told that she had HIV-1, she would be shocked. In addition, she would stop her work as continuance with sex would only exacerbate her condition and she would become more ill. This is predicated on the belief that continued work in the sex industry would mean that the same men she would be having sex with were the ones that gave her the illness in the first place, leading to more virus being pumped into her body. However, Nyandoto noted that if she had a STI, she could not tell the customer because she needs the money.

She has previously been infected with a STI. She suspected that she was infected by a customer who lodged in her house for up to two days. Women have trouble knowing that they are infected, as most STIs are asymptomatic, and it is only when they go to the hospital that they know for sure. In addition, she indicated that it is also possible to know if she is infected, if a customer she previously had sex with comes back to her to complain that he has contracted a STI.

She estimated that there could be about three hundred commercial sex workers in Lodwar township.

Case History II

Nyambunyo, who indicated that she is 27 years old, though she looked older for her age, had one child. She started working at the bar in 1994. This is the very year that she first heard about AIDS, *ukimwi*. She heard that AIDS came in various forms: boils, malaria, tuberculosis, and typhoid. She thought that AIDS is a terrible disease, and she had seen two women with AIDS at the local hospital.

She indicated that she normally buys TRUST condoms from the shop. In addition, she picks up some occasionally from the STD Clinic at Lodwar District Hospital. The bar manager where she works also gets some condoms from the hospital, which are distributed free. She noted that TRUST condoms are the best type of condom. The types of condoms provided free from the hospital are weak and can break during sexual intercourse.

She noted that she normally declines to have sex with those who do not want to use a condom as they could be HIV-1 positive. There are, however, some customers that she tells not to use a condom - like the one she had been living with for over one month. The current one, a civil servant, has a wife back down country as do most of her customers. The man works at the headquarters of Lokitaung Sub-District. He comes to Lodwar quite often to stay with her. Previous men have stayed with her for time periods ranging from one month to four years. The current man pays for her rent and buys food. In addition, she gets other clients from her work place. She said that the man indicated that he does not like the fact that she engages in commercial sex work. She thinks that if he finds out that she goes out with other men, he would leave her.

She had been infected previously with gonorrhea, in 1995, and sought treatment at the district hospital. She said that clients would never reveal that they are infected with STIs because they think that they could be refused sexual intercourse. She indicated that she can easily tell whether her clients are infected. Ordinarily, before sex she insists that clients use a condom. She would occasionally tell a client to use at least two condoms.

She said that she has seen many people with HIV-1/AIDS. Recently she saw a man who had an emaciated 'burnt' body (probably, herpes zoster), and continuously had malaria and other infections. He could not recover from these illnesses and from other minor infections. She had turned three men down after suspecting that they could be infected with HIV-1/AIDS.

Most of her customers are civil servants who work in the DCs offices, truck drivers, teachers, NGO employees, police officers, and businessmen. The lodgings are mostly full at the end of the month, when men are paid, and this is when her business also booms.

She has never witnessed any campaign against HIV-1/AIDS in Lodwar. She spends most of her time in the bar, as she works from morning to midnight, when the bar closes. Her work could be extended until morning if she gets a client. She does not like her job; however, she holds on to it because she has to feed herself and her child. She lives with men because a woman should not live without a man. The man helps in paying for rent and buying

food, clothes, and in paying school fees for her child. For this reason, she is quite willing to stay with the men she lodges for short periods. She indicated that her friends do not like her job. However, she does it because of the income. She thought that very soon she might leave the job and start a business.

If she found that she was HIV-1 infected, she would kill herself. She cannot spread the illnesses, as this would accelerate her death. She indicated that when one is infected, she needs rest and good nutrition in order to have enough energy. Contrarily, if one engages in sexual intercourse, he / she would lose the energy that the body needs to fight the HIV-1 infection.

She normally has about four clients per week. Some of the clients refuse to pay money after sexual intercourse. In addition, she indicated that she has been previously beaten up by a policeman because she refused to have sex with him.

She estimated that there could be about 1000 commercial sex workers in Lodwar township and the surrounding villages.

All CSW respondents know that their occupation puts them at risk of contacting sexually transmitted infections, including HIV-1. However, others intimated that they would continue with the occupation until they have enough resources to be able to move into acceptable occupations or business ventures. One commercial sex worker expressed that she would continue with her career until she builds her home. She hoped to get married in the future, if she can find a nice man. One woman expressed a desire to get a home to live in, get married, and have children. Another 33-year-old widow with two children indicated: "if I get some money, I will leave this job and go and start a business selling *sukuma wiki* and fish". On the other hand, a thirty-year-old woman indicated that she would continue with commercial sex work. Commercial sex work is regarded as a temporary income venture, which many hope to leave as soon as new alternatives emerge. However, the truth is that these alternatives are not likely to emerge in the near future. Instead, many women are likely to be sucked deeper into the sex industry.

Some respondents indicated that they have previously nursed friends with HIV-1/AIDS. A barmaid had nursed a HIV-1 infected woman who was alleged to have once married a

white man. Another commercial sex worker had nursed a relative. Most respondents indicated that they would be shocked if they found that they were HIV-1-infected. Some of the responses were: "I will be shocked and I will blame my clients", and "I will commit suicide or die of depression". Other CSWs indicated that they would, instead, continue with their occupations. Members of this group of CSWs made the following comments: "I will have sex with many clients"; "I just keep quiet, not tell any one, have many clients and pray to God"; and one said "I will sell my sex cheaply, get more money quickly and die with many men".

Twelve CSWs indicated that having a sexually transmitted infection could make one more vulnerable to contracting HIV-1/AIDS. However, six respondents did not know about the link between STIs and HIV-1/AIDS. In addition, only four CSWs said that they would tell their clients if they were infected with any sexually transmitted infection, including HIV-1/AIDS. Two said that they would lie to their prospective clients and say they were ovulating so that they did not engage in sexual intercourse. Another two indicated that revealing their status would mean no money, as the man would say no to sexual intercourse. Commercial sex workers indicated that it is hard to tell whether clients are infected. In addition, many clients refuse to use condoms. All the respondents thought that commercial sex working put them at risk of contracting HIV-1, because they do not consistently use condoms, and they could not ascertain whether their clients were infected or not.

Only four out of eighteen commercial sex workers had not experienced any physical abuse / violence from their clients. The two were abused and physically assaulted because clients found them with other men. One woman was also beaten up because she refused to have sex with a man who refused to pay in advance. A 17-year-old woman indicated that she had been forced to have sex with a client who also physically assaulted her. Another 23-year-old widow was allegedly beaten up and forced into sexual intercourse.

Part time 'commercial sex workers' in the villages epitomises the changing face of commercial sex work. While commercial sex workers in the town centre have a remarkable, disinhibited behaviour towards their clients, those in the village pretend to lead

an ordinary lifestyle during the day when they pass as shopkeepers, tailors, hairdressers, cleaners, house helps, and hawkers. The following case illustrates my argument:

Nyangoro runs a grocery kiosk in the populous village during the day. From her mien, she could pass for any ordinary kiosk-keeper doing business to be able to put food on the table for her family. However, when night falls and her four children are in bed, the single mother hits the road in search of clients. She is, however, different because she does not have the glamour that is usually associated with CSWs in the centre of town.

Nyangoro and others of her ilk hang out in strategic places and at the entrances of popular bars in villages for the better part of the night. She offers services to any man willing to pay anything ranging from KShs 50 (US\$ 0.67) to KShs 200 (US\$ 2.66). The time of the month, frequency of customers, and her bargaining skills determine the amount of money paid for the sexual service. She says her 'night work' helps to supplement what she earns from the kiosk business. "I am only able to make a profit of at most KShs 200 per week. This is not enough to pay for rent where I live with my four children. I therefore need to get another way of making ends meet. I need to feed and clothe my children — and three are in school. My night work is therefore drawn out of sheer want and the need to cater for these lives and not necessarily because I am morally bent," she said. Before she parted ways with her husband some years ago, Nyangoro explained that she was an ordinary housewife.

Today, the village widow or poor single mother provides extremely cheap sex to the youth in an effort to feed her family. The village CSWs pose a greater risk of spreading STIs than the twilight girl in the town centre, as they (village CSWs) are cheap, and discrete. Traditionally, the plight of single mothers and widows were taken care of by the larger family, clan, or community at large. Without any assets and in the absence of this provision, therefore, this vulnerable group resorts to commercial sex work, settling for anything on offer from anybody.

As mentioned above, economic stress often reduces the choices available to those engaging in transactional sex. In addition, the focus on the immediate needs of survival, such as rent, food, clothing, children's school fees and educational equipment, as well as on luxuries such as cosmetics and pleasures of the body, diminish the fear of illness and

even death. As one commercial sex worker indicated, “it is better I be paid a full amount than it be reduced by the acquisition of a worthless condom”. These CSWs have a choice between *mpira*²⁴² and hunger.

10:2:2 Factors of mobility that encourage pursuit of casual sexual partnerships

10:2:2:1 Migration and travel

The main characteristic of pastoral production is mobility, which is dependant on the availability of pastures and water. Nomadic communities like the Turkana are at risk of contracting HIV-1 due to increased mobility, which exacerbates marginalisation and puts pressure on limited access to social services. Land alienation, the increased policy of sedentarisation, and the opening up of pastoral areas to agricultural communities and other projects is leading to increased mobility among the nomads in search of pastures and water, and exacerbates their poor living conditions. Mobility has acquired new dimensions leading to new forms of “pastoralism” or “nomadism” as a result of: journeys undertaken to market livestock and / or products; journeys undertaken to obtain relief food or buy cereals and other consumer goods in the townships; and the lack of employment opportunities for destitute former pastoralists who have migrated to the emerging urban centres. In addition, there is frequent mobility undertaken by young herders who often have visits from young girls that bring them food and with whom they often engage in sexual intercourse. Such practices facilitate the contraction and transmission of HIV-1/AIDS among the nomadic and semi-nomadic communities.

Yearly, thousands of Kenyans travel from their rural homes to urban centres in search of employment and the social amenities that urban life offers. Migration of non-Turkana to the Turkana District has been precipitated by the high rates of unemployment in Kenya and the prevalence of both local and international non-governmental organisations and donor agencies located in the district. Migrants are lured by prospects of well-paying jobs. On the other hand, Turkana migrants are lured into the emerging urban centres by prospects of a

²⁴² Mpira refers to a plastic. It is the pejorative word derived from Swahili for a condom.

better life, uncharacterised by perennial famine and poverty, only to find themselves pushed to the margins of the urban economy dominated by non-Turkana. Some of the non-Turkana migrants are vectors for HIV-1 transmission, and the Turkana migrants become recipients of HIV-1 infections.

Routes of travel to the Turkana District are crucial in the rapid spread of HIV-1 and other sexually transmitted infections. Most towns in sub-Saharan Africa have high rates of HIV-1 due to the high proximity to road and highway networks used by long-distance traders and truck drivers. In Kenya, Mombasa is the starting point of the Trans-African Highway that passes through Nairobi, western Kenya, namely Kisumu, and extends all the way to Lagos, Nigeria. From Kisumu, the road diverges into highways linking Kenya to east and central Africa. The Trans-African highway also traverses through the Turkana District as it trunks into the Kitale (Kenya) - Juba (Sudan) highway, leading into Sudan. In Turkana the Kitale – Juba road lined with urban centres such as Kainuk, Lokichar, Lodwar, Lokore, Kakuma, Naposta, and Lokichoggio a conducive infrastructure for the diffusion of HIV-1. As a result of this road network, Lodwar town, the district headquarters, has been transformed from a dusty, remote town into a thriving economic centre with an array of shops, services, and a transport hub characterised by lorries, trailers, and NGOs' and UN agencies' four-wheel drive vehicles (Broch-Due and Sanders n.d). Other small settlements along this highway have also benefited in terms of attracting more populations and an influx of cash and consumer goods.

Evidence from most parts of sub-Saharan Africa indicates that HIV-1/AIDS is more prevalent in urban centres than in rural communities. In addition, the prevalence of HIV-1/AIDS was first recognised in urban centres before it diffused into the rural communities. For instance, in 1998, the national incidence rate of HIV-1 per 100,000 was set at 4.31 percent and the urban incidence rate was 19.94 percent. The fact that the national incidence rate is about a fifth lower than the urban rate suggests that HIV-1 was spreading from urban areas to rural areas in Kenya (Obudho 1992). It is argued that with the aid of highway network, HIV-1 diffused hierarchically to the three major urban centres of Mombasa, Nairobi, and Kisumu (Ouma 1996). Afterwards, the infection diffused contiguously from these major towns to their environs and hinterlands. Over the years, these patterns of diffusion have been repeated as HIV-1 spreads to small towns and then

diffuses further to the hinterlands as the prevalence of infection rises. In the Rift Valley Province, the least affected by HIV-1/AIDS, HIV-1 spread hierarchically into Nakuru and from there it diffused into the mainly semi-nomadic and nomadic districts of Kericho, Bomet, Usian Gishu, Baringo, Nandi, Laikipia, and into Turkana. Though currently the rate of HIV-1 infection is still low in sparsely populated, mostly semi-arid and arid pastoral districts, including Kajiado, Narok, West Pokot, and Elgeyo Marakwet, this only suggests that the diffusion is still going on as evidenced by the increasing level of prevalence. HIV-1 will continue to diffuse hierarchically into these emerging urban centres among settled and semi-nomadic populations, then contiguously into the hinterland of Turkana among the semi-nomadic and nomadic populations. Semi-nomadic and Nomadic modes of life will facilitate the rapid spread of HIV-1 into the hinterlands.

New development projects in Turkana (e.g., relief distribution, water projects, fishing projects, the Turkwell Dam), and refugee camps have brought with them migrant workers who naturally create a demand for commercial sex and casual sexual relationships. When the cyclical hunger and famine²⁴³ set in, NGOs normally react, resulting in the pouring in of relief supplies and relief workers to the district and town centres. Many Turkana, in addition, often migrate from the interior to towns or relief settlements. Some families stay either permanently for longer periods or only until the end of relief distribution. These new populations create a conducive atmosphere for the creation of multiple sexual relations or even commercial sexual networks. Forced to live away from home for long periods, men go back to their families bringing both the money earned from employment and the virus contracted from other casual sexual partners. Their wives, who remained at home in rural areas, are then infected, and some become pregnant and give birth to HIV-1-infected children.

Immigrant workers from 'down country' do not normally migrate with their spouses. They are likely to engage in sexual intercourse with the local or fellow immigrant women leading to the extension of sexual networks. A Turkana chief once joked with me that non-Turkana

²⁴³ The cyclical vulnerability of Turkana to famine has been confirmed again in 2004, as the Food and Agricultural Organisation in its report on food supply situation in sub-Saharan Africa indicated that most of the more than 1 million people that face starvation in Kenya reside in Turkana District. (Irungu, G., 2004. 'One million in famine threat' *Daily Nation*, [online] April, 13, 2004. Available from: www.nationmedia.com/dailynation/ Accessed on: April 13, 2004).

civil servants, traders and NGO employees leave their wives in their rural villages only to compete with the ordinary Turkana for the Turkana women. There is a general perception that the non-Turkana working in Lodwar often have many Turkana girlfriends because of their economic might. Most of these men and other Turkana migrants in urban centres use sex and alcohol as a means of satisfying sexual desires and coping with boredom. This high prevalence of migration to urban centres for the purpose of employment and trade is popular in sub-Saharan Africa. The government policy of transferring and posting civil servants without due regard for family unity escalates the prevalence of HIV-1. When families are separated for prolonged periods, it is hard to maintain genuine communication or reasonable marital relations across time and distance. It is no coincidence that HIV-1/AIDS has made particular inroads in professional groupings that are normally associated with high mobility, including teachers, police officers and soldiers. In addition, insecurity along the roads and the cost of travel discourages migrants from making regular visits home.

Even if not very regular, there is still circulation of people from rural to urban areas and back to the rural areas and from urban to urban areas. Other studies have demonstrated that circular migration by men between an urban workplace and a rural home influences high prevalence of sexually transmitted infections (Colvin *et al.* 1995). In addition, there are people that regularly migrate back and forth between herding location (mostly nomadic populations) and the settlement centres (mostly semi-nomadic and permanently settled population).

The Turkana migrate to urban centres, especially Lodwar, Kakuma, and Lokichoggio in large droves. It was confirmed in Lokangae, that many people had moved and settled in towns including the trained village health workers and the community's own resource persons. When the Turkana migrate from rural areas (nomadic and semi-nomadic settings), they have unrealistic ideas of what happens in urban centres – social conditions of living and employment – and some have no friends or relatives. This leads to personal alienation, crises, and insecurity and vulnerability to exploitation. Faced with dismal and uncertain future, women turn to desperate socio-economic measures such as sex for money. In some instances, females engaged as domestic servants for cheap labour often submit to sexual demands from the male head of the household.

Migration to urban centres often leads to changes in gender roles as single women with children take a more active role in their households as they become the main providers. These women, many of whom have no sources of income, often must pay rent, and buy food and clothes for their children. This study has demonstrated how women who migrate to urban centres are lured into poverty-induced commercial sex work. Food insecurity and lack of money to meet needs force them to sell sex, thus increasing their susceptibility to contracting HIV-1.

Women whose husbands have migrated are left to fend for themselves often engaging in petty trade or even sex for material gain. Men who remain in the villages or townships often view the women left behind by their partners as sexually available and are often ready to exploit their vulnerability.

In remote parts of Turkana, there are traders that sell food products like sugar, cooking oil, tealeaves, etc on donkeys. Such men form the link between remote communities and urban centres. In Tanzania, it was found that crop buyers were the main external sources of HIV-1/AIDS in remote communities (de Zaluendo, Msamanga, and Chen 1989). In Turkana, there are, in addition, nomadic populations that travel to urban centres to sell livestock hoping to get the best prices. Some of them, as I was reliably informed, do not travel back immediately but spend up to a week in these urban centres indulging in the urban life with all its trappings, including alcohol and young women. When they eventually go back to the nomadic community, they carry not only town goods but also new behaviours and experiences, and possibly sexually transmitted infections, including HIV-1, which they then spread in the communities.

Journeys to the townships to market livestock products were very common. After the sale of livestock, men indulge in not only *kaada* drinking but also in commercial sex. The high visibility of Maasai women prostitutes in border towns have been reported by Coast (2000). Coast also reports that a large number of Maasai women migrate to towns such as Dar es Salaam, Arusha, Zanzibar, Kampala, and Nairobi to sell beads and traditional medicines for cash to support their families (see also May 2003; May and McCabe 2004). This migration, however, increases their vulnerability to the contraction of HIV-1, especially as they move to areas with high HIV-1 prevalent levels. Talle (1999) similarly found that a

growing number of Maasai men make marketing and purchasing trips to the towns and have sex with non-Maasai prostitutes. All these behaviours increase the susceptibility and vulnerability to HIV-1 /AIDS. Talle (1999) has noted the increase in transactional sex among Maasai women in Kenya and Tanzania and, according to White (1990), this goes back to colonial Nairobi. Some transactional sex has also been observed among Muslim pastoralists such as the Ethiopian Afar women in Djibouti, and the Beja women in Port Sudan (Gatachew 2001). This risk is increased by the delayed marriage of the migrants, as men cannot accumulate enough money to buy livestock for bride-wealth. This situation perpetuates loose sexual relationships. Since the Turkana male migrants do not have cattle and cannot formally marry, they have diminished authority over the women they consort with, increasing the chances of multiple sexual relationships for both.

10:2:2:2 Urbanisation and settlement in the townships

Urbanism influences many changes in human behaviour, affecting risk to illnesses and infections. The urban ecosystem is fundamentally different from the rural ecosystem as they encompass different levels of interplay among the environment / ecology, socio-economic and political factors, conditions of living, and socio-cultural norms and behaviours. The urban environment is characterised by mobile labourers²⁴⁴, overcrowding, poor conditions of living, and increased movement between rural and urban areas. In addition, urbanism leads to culture change due to cultural diversity, especially diverse sexual behaviours. Change in culture influences the demand for commercial sex, and increased relaxation of indigenous cultural norms yielding new patterns of behaviour and sexual norms and practices. The high rate of urbanisation has been associated with many socio-economic, environmental and health problems, including HIV-1. In Turkana, this has led to changes in sexual behaviours, and drinking *kaada*, resulting in drunkenness. Urbanism was pivotal in launching the high prevalence of HIV-1 in the 1980s and 1990s (Morse 1995) as the prevalence of HIV-1 was initially high in towns but later spread to rural areas as migrants travelled back home with the infection.

Some of the Turkana are semi-settled in towns - with one foot in the urban centres, and the other in the rural areas. They are marking time in urban centres, waiting for the

²⁴⁴ Such as truck drivers, police officers, road repairers and relief workers)

opportune time when they can return to their ideal way of life - nomadic pastoralism. On the other hand, some have relatives looking after livestock while the old men and women, and children settle in towns and other temporary settlements for relief supplies. As an emerging phenomenon, nomadic populations often visit urban centres to sell livestock and purchase foodstuffs. In the process, they also meet relatives. It was indicated that some nomadic men often become vulnerable to the Turkana commercial sex workers in the townships who frequently lure them into drinking *kaada*, which is then followed by sexual intercourse. Some of those men would spend one to two days in the townships before travelling back to their villages.

Those who have migrated and settled in towns often do not subscribe to the indigenous norms on sexuality. Nomadic populations often come into towns to sell livestock, and buy sex from women with the proceeds, a practice they cannot do in the nomadic settings. Some women residing in Lodwar, whose husbands work in other locations in Turkana, possibly with NGOs or the civil service, when hard pressed for cash, engage in sexual intercourse for money. Sex in the township is cheap. For instance, in the rural areas, a man who engages in sex outside marriage would be fined ten heads of cattle and twenty shoats (goats and sheep). However, sex in towns can be bought for less than US\$ 1, with no penalty even if one is caught in the act.

Urbanisation and sedentarisation is increasing in Turkana District. Even remote locations that hitherto lacked permanent settlements now do. During my visit to Lokangae²⁴⁵, the settlement centres encompassing the permanent residences for the local population were relatively permanent, with iron-roofed shelters. Some of the settlements had shops, mainly operated by Somalis, a school, and a chief camp. It was apparent that many people are opting to stay in these permanent settlements, especially during droughts and famine. These settlements are also considered as second homes by those who have other homes in the herding non-permanent settlements. These settlements are becoming places where *kaada* is brewed. They are, in addition, turning into centres of deprivation with many young women, who sources indicated, engage in multiple sexual intercourse

²⁴⁵ Lokangae is one of the remote locations in northern tip of the Turkana District, mostly inhabited by nomadic populations.

with men. As one female leader noted that women go to market places in urban centres not only to trade and buy food, but also bring home *lokwake!*

10:2:2:3 Truck drivers

HIV-1/AIDS has followed the routes of trade and commerce: the highways, the migration of labour, the transportation of goods, and the delivery of services. Mobility through truck drivers and their assistants, and the girls, women, and commercial sex workers they interact with in their various stops along the highway, plays a momentous role in the spread of HIV-1 and other sexually transmitted infections. The incidence of HIV-1/AIDS among truck drivers in Kenya is estimated at 40 percent (NASCOP 2001). The results of a demographic survey of truck drivers carried out in India revealed that 84 percent of the interviewees were suffering from some kind of sexually transmitted infections (UNAIDS 2002). In analysing the sexual behaviour of truck drivers infected with sexually transmitted infections, 94 percent were found to have visited commercial sex workers during the past year. In South Africa, over a half of all the truck drivers are HIV-1-infected²⁴⁶. Truck stops, often trading centres attracting huge populations, are associated with commercial sex workers, with the transport industry earning the dubious distinction of being the engine driving the spread of HIV-1 and other sexually transmitted infections.

Turkana is traversed by the Kitale-Juba road lined with urban centres. Though the truckers only rest in Lodwar, Kakuma, and Lokichoggio, these growing roadside towns have become foci of HIV-1/AIDS and other sexually transmitted infections. Long distance traders, and drivers and their helpers are seen as transporting the virus between communities and town centres along the journey routes. The leading transport companies to Turkana are A.O. Bayusuf and Sons Ltd. and M.A. Bayusuf and Sons Ltd., whose trailers number about twenty a night in Lodwar and more than a dozen in Lokichoggio. Some can also be found in Kakuma. The drivers and conductors work under tempting conditions. For example, the crew's journey from Mombasa to Lokichoggio is nearly two weeks, round trip. The previous month, the same crew could have travelled from Mombasa on a journey to Uganda, Malawi, or the Democratic Republic of the Congo, which could

²⁴⁶ East African, 2003. 'In SA, over Half of All long-Distance Drivers are HIV-1-Positive' East African, September 22, 2003. Available from: www.nationaudio.com/News/EastAfrican/current/Features. Accessed on: September 22, 2003.

have taken up to six weeks in a slow truck, with many stops along the way. Most of the truck drivers and their assistants indulge in sexual activities with commercial sex workers in areas where they usually spend the night. Often a driver has to make several such trips before being granted leave to see his family. As they indulge in sex from station to station, they contract and transmit the HIV-1 virus, which they finally transmit to their wives or partners when they return home after nearly a month on the road. The trucking companies mentioned above have acknowledged that their employees die of HIV-1/AIDS²⁴⁷. As one manager said, "we are alarmed and highly concerned with the frequent AIDS-related ailments and death rates among our drivers and conductors". The truck and lorry drivers, as one Turkana leader put it, "bring relief plus". Mohammad, a driver with Bayusuf and Sons Ltd. indicated that he lives in fear. A father of two, he readily confessed that his travels from Mombasa to Lokichoggio and at times across eastern Africa have been marked by many sexual encounters at various stops, putting him at risk of exposure to contracting HIV-1. He is aware that trucking has increased the spread of HIV-1 in Turkana townships, helping percolate it into the rural interior.

The fact that the companies that employ drivers do not bother to give them adequate leave or to conduct HIV-1 awareness programmes complicates the situation. The longer the people stay away from home, the higher the risk. This is exacerbated by poverty and social dislocation in the townships, which are often the transport corridors, with the local women seeing the truckers as ready sources of income. Just as the truck drivers exploit the girls' and women's desperation for money and material goods, the girls and women exploit the men's weakness and starvation for sexual gratification.

Many respondents indicated that truckers bring HIV-1/AIDS to Turkana. Even the community leaders were more candid in their remarks regarding the dangers that lurk in truckers. An official of the Turkana Central Constituency HIV-1/AIDS Control Committee (CACC), while addressing an AIDS awareness meeting in the sprawling Nakwamekwi village in Lodwar township, blamed long-distance truck drivers for spreading the infection in Turkana through their 'indiscriminate sexual behaviour'²⁴⁸. Like my informant, he accused

²⁴⁷ Lumiti, D. 2001. 'Transporters in Aids war' East African Standard, April, 26, 2001.

²⁴⁸ Pana, 2001. 'Truck drivers blamed for spreading HIV/AIDS'. *Panafrican News Agency*, September, 17th 2001.

the drivers of encouraging immorality by luring girls, as young as those aged between 13 and 16 years, with money in exchange for sex. To emphasise his concerns, he even appealed to the police to crack down on drivers plying the Lodwar-Lokichoggio highway to check the spread of the pandemic in the area.

The living conditions of the truckers are often uncertain and full of dangers as they are often at risk of death through road accidents or hijackings by bandits and thieves. Kenyan roads are often in a terrible state, contributing to many fatal accidents. The truckers, therefore, consider themselves to be faced with multiple of risks, of which HIV-1 is just but one. In addition, truckers that pass through insecure or war torn regions are not certain of their safe return home. Most of them, therefore, live for the present – ‘today and now’.

10:2:2:4 Military personnel

Military personnel are known to be a source of sexually transmitted infections including HIV-1/AIDS (Akeroyd 1997: 16). There is no exception in Kenya, and definitely not in Turkana. It is common knowledge that many military personnel were often returned in caskets. As one welder indicated, soldiers are vulnerable to HIV-1/AIDS because they do not stay with their wives, and they like a lot of *raha*²⁴⁹ whereby they either have sex with commercial sex workers or have multiple partnerships. Soldiers have a considerable amount of money, especially those that had returned from peacekeeping duties in locations such as East Timor, Bosnia or Sierra Leone. These resources are often used to buy sex from the limited number of women in and around barracks. In addition, they often have many sexual partners, engage in alcohol and drug abuse, and have high rates of sexually transmitted infections. The military personnel are frequently young, always mobile, and unattached with money to throw about, thus providing opportunities for commercial sex. The Turkana District has an army barrack in Lokichoggio, and several police stations and posts staffed by military police (General Service Unit) and regular police officers.

²⁴⁹ *Raha* is a Swahili term for happiness.

10:2:2:5 Banditry: *ngengora* (*ngoroko*) and cattle raiders

The changing nature of livestock raiding and its role in insecurity and famine has been examined in the past (Hendrickson *et al.* 1999; Pkalya *et al.* 2003). As I have discussed earlier, the role played by livestock raiding in increasing vulnerability to the vagaries of weather and famine has increased. The raiding of today is more predatory, occurring in a large scale, extremely violent, and sponsored by actors from outside the pastoral sector with criminal motives. It is largely initiated by people from outside the district, including armed bandits residing in Kenya or the surrounding states, as an economic enterprise. The proceeds are sold on the market for profits or to feed the armies. The direct impact of predatory raids on livelihoods and food security can be devastating, while the threat of raids and measures taken to cope with this uncertainty undermine herders' livelihood strategies. Self-imposed restrictions on mobility negatively affect seasonal patterns of migration, grazing, and trade.

The Turkana age group called *ngengora*, warriors (youth), have transformed their outlook and function to that of *ngoroko*, raiders and bandits. The original function of the *ngengora* was to scout for pasture and protect livestock from raids. In addition, their function was to conduct raids in Ethiopia, Sudan, and Uganda to collect livestock, which they would later use for marriage. In most cases, when they raid, they leave a trail of mayhem, as they kill, maim, and rape women and young girls. It was indicated that *ngiropese*, young men preceding the *ngengora* age group, also participate in the act of raping. In recent years, *ngengora*, have turned out to be car jackers, thieves, and outright rapists, especially along the Kakuma – Lokichoggio road. It was indicated that they do rape women in the townships as well, since there are no heavy fines to pay.

The warriors, *ngengora*, often travel to towns like Lodwar, Kakuma, Lokichoggio, and Lokitaung, where they not only sell livestock and / or buy food products, but also indulge in casual sex with the Turkana that have settled in such places. When they return to the small villages / settlements, they indulge in casual sex again through which, they can spread sexually transmitted infections including HIV-1 and put in place a chain of infection.

Cattle raiding have impoverished many Turkana. As an immediate consequence, several families are displaced, with some taking refuge in emerging urban centres. The

displaced families are therefore put at risk of contracting HIV-1 due to the living conditions and through mingling with the already settled communities that have become used to having multiple-partnerships. Cattle raiding normally turn the displaced into beggars. For example, in January 2003, more than 300 families in Kainuk, Lokapel, and Juluk were forced to move to the Lokichar, Katilu, and Kalemongorok trading centres through a raid by the Pokot that saw seven Turkana killed²⁵⁰. In January 2006, eight Turkana herdsmen were killed when Ethiopian raiders attacked a remote village in Turkana and drove away over 500 animals²⁵¹. It is indicated that over 1,200 people are believed to have been killed and over 300,000 heads of cattle stolen in raids in the latter half of the 1990s in northern Kenya (Human Rights Watch 2003:14). Since the early 1990s, livestock are sold in Nairobi or other urban centres, as well as southern Sudan, and the Middle East, and are therefore non-retrievable.

During dry seasons, young herders move with the non-milking animals to dry season grazing areas. If they are married, their wives may or may not accompany them (Gulliver 1951; Dyson-Hudson and McCabe 1985). If the place is very insecure²⁵², as most of the dry season grazing areas are, they will go alone with occasional visits from the girls to take them food and cook for them. The dry season *awi*, habitually engage in frequent and periodic movements (between five and ten per year), often less than 10 Km, but occasionally up to 50 Km (Dyson-Hudson and McCabe 1985; McCabe 1994, 2004). This means that most of them are without regular partners, but often engaging in rape and casual sex. Moreover, as was found among the Ngisonyoka Turkana, movements necessitated by insecurity led to decreased access to health clinics (Pike 2004). Due to insecurity, the Turkana have had to adopt a mode of social organisation where women and children are separated from herds, and this contributes to disparities in health and nutritional status and safety.

Conflicts generate other avenues to the contraction and transmission of HIV-1 through increased rural to urban and peri-urban migration, which is associated with an increased

²⁵⁰ Standard Reporter, 2003. 'Banditry: 300 hundred Turkana families flee homes' *East African Standard*, January 16, 2003.

²⁵¹ Kusimab, M., and Obare, O. 2006. '40 killed as rustlers raid village' *East Africa Standard*, January 19, 2006

²⁵² Cattle raiding / rustling and banditry is frequent in dry grazing areas, which are also located along the international boundaries.

risk of exposure to HIV-1 as displaced persons become vulnerable to exploitation, including sexual contact with high-risk persons. Conflict is also associated with rape, impoverishment, and a breakdown of social order, which all contribute directly to the spread of HIV-1/AIDS. In addition, conflict and insecurity contribute to increasing levels of food insecurity, which leads to the sale of livestock, leading to rising levels of impoverishment, increasing female-headed households, attempts to secure paid work, and increased levels of migration to urban and peri-urban areas.

Conflict and wars of any nature do not portend well for the containment of HIV-1/AIDS. As happens during the conflict, socio-economic and health infrastructure is destroyed, hence delaying the intervention programmes for HIV-1/AIDS. In addition, peace keepers and army personnel are known all over the world to be carriers of STIs, and well as HIV. Opportunity for risk-taking behaviour is rampant, and exposure to risk is exacerbated as they stay away from home.

The perpetual banditry in Turkana, the conflicts in southern Sudan, together with droughts and famine, and adverse weather conditions, has resulted in large numbers of internally displaced persons and returnees. The returnees, especially young females, are highly vulnerable to forced high-risk sexual contact and sexual abuse, rape, multiple sexual partnerships, unprotected sex, and the offering of sex for cash and gifts. These make them more vulnerable than other members of the society.

10:2:2:6 Refugees

The Kakuma Refugee Camp, established in 1992 following the displacement of over 40,000 boys from southern Sudan, is one of the world's oldest and largest refugee camps. The camp's population was diversified following civil wars in Ethiopia, Burundi, Rwanda, the Democratic Republic of the Congo, Uganda, and Somali leading to the creation of Kakuma I and II. As of October 2004, there were 86,703 (UNHCR estimate) refugees in the Kakuma Refugee Camp²⁵³. The camp provides a locality for growing social conflict, economic decline, and abuse. The factors that unleash the dynamics for the fastest

²⁵³ The refugees are from different nine nations, that is, 75 percent from southern Sudanese, 20 percent from Somalia, and the balance from Burundi, Central African Republic, Democratic Republic of the Congo, Eritrea, Ethiopia, Rwanda, and Uganda.

transmission and contraction of HIV-1 in the Turkana region would be perpetual conflicts among and within countries such as Kenya, Uganda, Sudan, and Ethiopia and the resulting large number of refugees, internally displaced people, returnees, and voluntary cross-country movements for water, pasture, and trade.

My focus here is on the fact that the Turkana interviewed noted that refugees contribute to the high incidence of HIV-1 infections in Lodwar township. The main argument here is that the refugees have disposable income in the form of "a lot of money" and are therefore able to buy sex from the poor Turkana populations. Often refugees are socially and economically better than their hosts, which number only about 10,000 Turkana.

Apart from the mostly rural Sudanese, the rest of refugees mostly originated from urban populations with a presumably high prevalence of HIV-1. It is probable that refugees from places like Rwanda, the DR Congo, Burundi, Uganda, and other countries with high prevalence rates brought infections into the camps. The Turkana situation is comparable to other countries that have hosted refugees. There was evidence and concern that the influx of refugees from neighbouring Liberia was fuelling the HIV-1/AIDS pandemic in Guinea's remote southeast²⁵⁴. The influx of Liberian refugees has resulted in flourishing promiscuity and prostitution as they often practised commercial sex work to feed themselves.

Refugees put pressure on the delicate Turkana environment / ecology, and social services including those provided to them by the UNHCR for personal aggrandisement. The Turkana in Kakuma find themselves in conflict with foreigners who fled their countries because of wars, poor economic conditions, political persecution, and marginalisation. Though Turkana situations are characterised by a history of internal displacement, cattle rustling, banditry, natural calamities, and generalised violence, they neither get help from the UNHR nor the government of Kenya that is congruent with that received by their visitors. The Turkana are in an unofficial war zone and therefore the threats that caused these refugees to be relocated into this district are being faced by the Turkana on a daily basis. During the 1999-2000 famine, and subsequent famines, it was common to witness

²⁵⁴ IRIN, 2004, 'Guinea: Little action as refugees fuel AIDS'. UN Integrated Regional Information Networks – July 27, 2004. Available from: <http://www.aegis.com/news/irin/2004/IR040782.html>. Accessed in 14th June 2006.

humanitarian aid passing through the district in convoys of trucks being channelled to the refugees, without regard to their hosts who often die from such calamities.

In the camps, refugees often sell food to supplement their rations. Many of them run businesses and flaunt the trappings of wealth. In fact, camps are booming with business. Locals frequent the camps to buy food because of lower prices. In addition, the camps boasts of foreign exchange bureaus, cyber cafes, money transfer agencies, boutiques, grocery stores, hardware stores, video halls with satellite television links, salons, barber shops, and restaurants. To the Turkana, the refugee camp is where the money is. Every morning, it is routine to see women carrying loads of charcoal or firewood, men dragging goats or camels, and others rushing for manual labour jobs at the camps.

Initially, the Turkana had good relations with the refugees, but this deteriorated when some refugees allegedly provoked the Turkana by 'roaming around villages without serious business'²⁵⁵ stealing, robbing with violence, and causing unprovoked fights with the Turkana. A cattle rustling incident in which a missing cow was found in the refugee camp, which later led to fighting between the two groups and the deaths of 12 people, epitomises the tension between the Turkana and the refugees²⁵⁶. Furthermore, on realizing that Turkana did not want the wanton felling of trees, the Dinka formed groups that became a security threat and continued the 'massive felling of trees by well-armed gangs'. In addition, the Dinka refugees are accused of repeatedly raping Turkana women²⁵⁷. On the other hand, refugees also complain that the Turkana enter the camp at night to rob and rape²⁵⁸.

The Turkana blame the refugees for putting a strain on the available water resources. The water lines are overloaded, as generators pumping water are small and cannot accommodate the rise in population. Turkana women are forced to travel long distances to fetch water, resulting in 'chest pains and miscarriages'. The Turkana blame food insecurities on the refugees as pastures and water are hard to come by because of the

²⁵⁵ Letter to the UNHCR, 'Kakuma Turkana proposed assistance from UNHCR branch office through UNHCR sub-office, Kakuma' 15/9/1997.

²⁵⁶ IRIN, 25/06/2003. Turkana man killed in shoot-out with police. Available from: <http://www.ethnonet-africa.org/data/kenya/rep0603.htm>. Accessed on: 24th December 2005.

²⁵⁷ *Ibid*

²⁵⁸ Brown, M. and Thompson, L., 2003. 'Kakuma: A Troubled Refugees camp in Kenya' Accessed: <http://www.interaction.org/newswire/detail.php>. Accessed on: January 9th 2006.

degradation caused by the presence of the refugees. In 2005, thirteen people died following a dispute between the Turkana and the refugees when they fought over the use of water from River Tarach²⁵⁹. Similarly, in August 2006, more than three people died during a clash between refugees and residents²⁶⁰.

The Turkana argue that their land has lost the natural capacity to sustain their means of livelihood because of occupation and devastation by refugees, causing acrimony and agitation among the youth²⁶¹. In addition, the Turkana contend that all the NGOs are headed by non-Turkana, who practice nepotism, tribalism, and favouritism, and sideline them because of the stereotype that they are 'primitive and unqualified'. The majority of the NGOs staff is airlifted from Nairobi in UNHCR planes. Even though the Turkana could supply firewood, thatch, and meat to the refugees, the same were tendered to non-Turkana suppliers from Kitale. The Turkana, being pastoralists, were not allowed to supply meat and milk products even though they have plenty of livestock.

The refugees cut down trees for cooking and construction at a distance of up to five kilometres from the camp, leading to deforestation. The Turkana also feel that they should control the supply of firewood and building materials for economic gain, which is disrupted by the refugees.

Although the Turkana appreciate the health facilities extended to them, they contend that poor sanitation in Kakuma is due to the lack of toilet facilities and the many refugees are also linked to bad sanitary conditions and the trading of commodities whose suitability for human consumption was highly suspect. In addition, refugees use River Tarach as a bathtub, which has resulted in water borne diseases such as typhoid, bilharzias, and dysentery.

Even though the elopement of girls in the Turkana tradition indicates the beginning of negotiations for marriage and demonstrates an intention of the groom to marry, the refugees do not understand the above practice and its importance to the Turkana, who traditionally demand dowry or compensation for pregnancy. Turkana informants confirmed that girls breach traditional values because of the pressure to bring in proceeds for the

²⁵⁹ Nation Team, 2006. Three die in clash at refugees' camp. *Daily Nation*, 2nd August 2006.

²⁶⁰ Nation Team, 2006. Three die in clash at refugees' camp. *Daily Nation*, 2nd August 2006.

²⁶¹ Letter to MP, 'Kakuma Youth Proposals to the Hon. MP' 10/01/1998.

impoverished families through such unions. They blamed refugees for the growth of brothels and prostitution resulting in STIs, including HIV-1/AIDS. There are Turkana from Lodwar who work in Kakuma. Some of them, it was mentioned, do have sexual intercourse with Turkana women who are likely to have had sexual intercourse with the refugees and other non-Turkana Kenyans that have outnumbered the locals in this refugee town.

The confluence of the high prevalence of HIV, conflict, and poverty has led to particularly dangerous conditions for refugees, internally displaced persons, and the communities they interact with. Kakuma and Lokichoggio have many internally displaced persons. These internally displaced persons are vulnerable to sexual violence and abuse, the fertile modes for the transmission and contraction of HIV-1 and other STIs.

In other parts of Africa, refugees have been implicated in the spread of HIV-1/AIDS to their host populations. In Rwanda, it is reported that the men in the camps often pursued female refugees to latrines and water taps, taking advantage of the lack of basic needs to subject women and girls to sexual coercion (Benjamin 2001). A survey conducted among Burundians in a Tanzanian camp revealed that 26 percent of women had endured sexual violence since becoming refugees (Holmes 2001). Many refugee adolescents and children are separated from their families and must fend for themselves, and sometimes for younger siblings (Ritsema 2003). Both women and children, living as internally displaced persons or refugees, are forced by the need for survival to engage in transactional sex with other refugees, member of the host population, or a combination of the two, a further and significant risk factor for HIV transmission (Spiegel 2004). In Kakuma, refugees are likely to pay more for sex than the local population. It was noted that commercial sex work, being one of the ways through which desperate poor women earn money to exchange for food, was fully established around the refugee camps. They are themselves vulnerable to HIV-1/AIDS because most of the women are subjected to sexual abuse and domestic violence. This makes refugee camps the foci of HIV-1/AIDS, which is then, transmitted far and wide through sexual contact with the local population.

Turkana informants were concerned that the male Sudanese refugees roam into Kakuma and beyond despite the fact that HIV-1/AIDS is prevalent amongst them. The American Refugee Committee (2001) reported that HIV-1/AIDS, if not addressed, would

eclipse the war to become the worst tragedy to hit southern Sudan. In addition, southern Sudan has recently “experienced an increase in the traffic of military personnel, commercial transporters, commercial sex workers and other at-risk groups” (American Refugee Committee 2001). The Turkana are, therefore, surrounded by populations with a high HIV-1 prevalence in southern Sudan and south-western Ethiopia (for instance Gambella with a 19 percent prevalence rate) (Merid 2003). With the end of war in southern Sudan, the returnees to Sudan would play a significant role in the transmission of HIV-1.

HIV/AIDS does not recognise local, national, and international boundaries especially when movements by populations across borders are influenced by conflicts and the search for means of survival. This is more so around the porous borders of northern Kenya, marked by fluidity in population movements and the presence of refugees. The continuous interaction among the nomadic populations who move across borders for access to pastures, water, and trade unleashes dynamics that cause the transmission of infections across borders.

10:2:3 Factors of social organisation that encourage risky sexual behaviour / multiple sexual networks

10:2:3:1 Polygamy

Sexual behaviour, the core of HIV- transmission and contraction, is governed by cultural and religious knowledge. The Turkana culture encourages early marriages, polygamy, widow inheritance, and subtle promiscuity, especially as practised by men who are perceived as naturally polygamous. Just like the Turkana, Coast (2003) reports that the Maasai have a strong polygamous marriage culture, and an early sexual debut for females, with strong social sanctions for non-participation. In addition, there are high levels of sexual networking both within and outside of marriage (by unmarried warriors with unmarried girls, widows, and married men). Since elders have young wives, they are subjected to sexual overtures from unmarried warriors. Moreover, similar to the Turkana, non-consensual sex was commonplace. Morton (2003) and Coast (2003) found that the BaHima and Maasai respectively have a custom of wife sharing among males of the same patrilineage.

Polygamy has informally given men the right to have as many wives and casual sexual partnerships as possible and as they can manage. In some respects, it encourages philandering as extra-marital partners are considered as potential wives. The importance of polygamy in the spread of HIV-1/AIDS and STIs is demonstrated by the case of a man who had six wives: three based in Lodwar and the remaining three in Turkwell. He sought treatment in a private clinic in Lodwar. He later brought all three of his wives to a private clinic in Lodwar. However, he went home to Turkwell and was re-infected. When he came back to Lodwar, he re-infected the three wives. The circle of infection and treatment continued for nearly two years without breaking the chain of infection. Such cases are common in Turkana since people have wives divided between the town and the rural settlements.

The modern form of polygamy is typified by the following case of a primary school teacher with four wives. One was a primary teacher, whom he was staying with in his place of work, Kalemnyang. His other wife was a *kaada* seller in California, Lodwar Town. Another wife sold *kaada* in Kalokol. One of his wives, who subsisted by brewing and selling *kaada*, died in Kalemnyang, allegedly of tuberculosis. This is the typical modern structure of polygamy, with wives living in diverse locations. This is also a recipe for the transmission and contraction of HIV-1. In fact, polygamy was often mentioned by the respondents as contributing to the risk of acquiring HIV-1/AIDS.

10:2:3:2 Widow inheritance

Wife inheritance is common among the Turkana. Even an elder son can inherit one of the father's younger wives. It is also practised by men in polygamous unions. Widow inheritance is in place not only to protect the woman and take care of the children, but also to ensure that she continues to give birth to children for the descent group. The wife inheritance practice places the man or the woman, and the man's other wives if there are any, at risk of contracting HIV-1. Women who refuse to be inherited are often subjected to violence and abuse.

Inheritance may lead to infection from the dead man's brother. Alternatively, if the husband died, wives who are left insecure may be forced to exchange sex for money, food, or livestock products. Women who are not inherited by their husbands remain 'unclean'

and cannot socialise. To them the fear of being ostracised overrides the risk of getting HIV-1.

10:2:3:3 Gender-accentuated power imbalance

In Turkana culture, women do not own livestock. However, they have rights over the milk. This makes females dependant upon males for livestock products. Women who are divorced cannot re-marry. In addition, widows are subject to inheritance within the clan, and quiet often do not have a choice over who inherits them. Women cannot inherit livestock on their own, but depend on their children and the often-married man who has inherited her. A widowed woman cannot marry, and the society decides who will inherit her. The children of married women belong to the husband's lineage.

Many women, in addition, put themselves at risk of being HIV-1 infected in the hope of fulfilling cultural and familial obligations as they are expected to marry and beget children. Poverty pushes women to put their daughters at risk of contracting HIV-1/AIDS through arranged marriages to older men. Most women in polygamous unions marry much older husbands who are allegedly wise and rich. This subjects women to subservient positions, where they cannot negotiate sexual relations with rich and wise old men. Women are culturally and socially circumvented from asking or even contemplating discussing sex, let alone asking their husbands to practice safe sex, even if she has knowledge of HIV-1/AIDS and other sexually transmitted infections. This is due to fear and 'respect'.

Women have low education levels and cannot hold paying jobs. They cannot therefore be economically self-sufficient. Due to lack of economic means, women will date older rich men outside of relationships with their boyfriends or absentee husbands to procure monetary gains. These women are not commercial sex workers, but participate in the occasional, poverty-accentuated bartering of sex due to economic exigencies. Under these circumstances, women will not protect themselves if the partner is unwilling.

Generally, the commencement of sex at a younger age predisposes women to a higher risk of contracting sexually transmitted infections over time. Biologically, due to the undeveloped epithelial layer in the uterine cervix, young girls are predisposed to efficient contraction of viral infections. In addition, their risk is increased since they will have

multiple sexual partners. Physical and psychological abuse inflicted by commercial sex exploitation makes it one of the most hazardous forms of child labour. No matter how high the payment or how few the hours of each sexual contact, the children involved have to confront serious health risks everyday, including unwanted pregnancies, rapid 'aging', respiratory infections, and sexually transmitted infections, including HIV-1/AIDS. This only leads to a vicious circle of commercial sex work that begets single motherhood, which begets the exploitation of girls, which in turn begets commercial sex work. They are also plunged into a distorted reality in which violence and distrust, and shame and rejection are the norms. While women's inexperience in sexual matters is cherished, men are supposed to have experiential knowledge in sexual intercourse. The women ironically want experienced men that will satisfy them during sexual intercourse. On the other hand, women who are over-experienced and dominating during sexual intercourse are viewed as having engaged in sexual intercourse with many men. This is not a positive attribute.

Married women do not have control over sex. They 'belong' to their husbands. When and how they engage in sexual intercourse is entirely controlled by men. This is further reinforced by popular knowledge that sex is the pillar of marriage. Women are submissive to men, have little negotiating power on sexual practices, and cannot initiate discussions on safe sex with their husbands / partners. When a sexually transmitted infection appears in the partnership, women are often blamed. In fact, most of the Turkana men who had been previously infected with a sexually transmitted illness blamed their female partners.

Turkana women are powerless to safeguard themselves from the consequences of their husbands' or partners' involvement in multiple sexual relationships or extramarital relationships in polygamous unions. Women do not have the power to tell men to use condoms even though their 'instincts' might tell them that they could be HIV-1 infected. Men who stay in urban areas for nearly a year are very likely to have engaged in sexual intercourse with commercial sex workers or some other married or single partners. Their wives, left in other urban or rural areas are often aware of this. When women are tested during prenatal care, their husbands are often not tested. They have no power to convince their husbands to go for HIV-1 counselling and testing. Just like condom use, if wives tell their husbands that they want to be tested, the male partners might want to know why they should take the test.

While female education is associated with increased informed decision-making and power, the Turkana also, associate it with risk for HIV-1, and other sexually transmitted infections. Educated women are more likely to be employed and less likely to be controlled by their spouses; hence they would be more likely to engage in multiple sexual partnerships, just as men do. As the UN indicates, "increase in education of women and girls contributes to greater empowerment of women, to a postponement of the age of marriage, and to a reduction in size of families" (United Nations 1994, paragraph 11.3, chapter XI). The postponement of marriage and the greater power to make decisions make it easier for women to engage in practices that put them at greater risk. The Turkana indicated that educated women are 'loose' (powerful) and cannot be influenced by any man, including their husbands, if they are married. By empowering women to delay marriage, shun polygamous unions, and make independent decisions, women are paradoxically put at risk, as they are likely to have many casual sexual partners, thus increasing the risk of contracting HIV-1 and other sexually transmitted infections.

10:2:4 Factors of deficient healthcare infrastructure

10:2:4:1 Iatrogenic factors: unsafe medical practices and unsafe blood for transfusion

That unsafe medical practice, including unsafe blood for transfusion, are responsible for over 30 percent of all HIV-1 infections, has been noted by researchers²⁶² (Moore *et al.* 2001; Gisselquist *et al.* 2003). A study in five government hospitals in western Kenya found that 2 percent of blood transfusions transmitted HIV-1 (Moore *et al.* 2001). In Kenya, all government and private hospitals are responsible for their own blood-donor recruitment, blood collection, and testing. Shortages of blood are common as safe blood banks are still a problem in Turkana. I was reliably informed that there is shortage of HIV-1 testing kits in Turkana, which are a necessity for HIV-1 screening. In fact, test kits are normally delivered in abundance only during surveillance surveys. It is disheartening that during surveys in Kenya, some researchers found that HIV-1 test kits were not available nationwide for four

²⁶² Standard Correspondent, 2003, Aids blamed on unsafe blood' *East African Standard*, September 22, 2003. Available from: www.eastandard.net/headlines/news24092003002.htm. Accessed on: September 22, 2003.

weeks (Moore *et al.* 2001). Though blood donors are tested for HIV-1 after donation and infected blood is discarded, the laboratory technicians do not factor in the 'latency period' of HIV-1 infection, which is 6 to 12 weeks between HIV-1 infection and sero-conversion, and requires that sero-negative blood be retested after three months (McCullough 1998). This suggests that even though screened blood can be transfused, it has a measurable risk of transmitting the virus (Roberts *et al.* 1994). The use of tests that can detect the virus and / or its antigens during this period is not an affordable option as there is an apparent shortage of reagents for testing HIV-1 in Turkana. The cheapest HIV-1 testing kit in Kenya costs KShs 9000 (about US\$ 130) for a pack of twenty units²⁶³. This is unaffordable for poor populations like the Turkana, and would translate into about KShs 500 (US\$ 7) per test. In addition, hundreds of HIV-1 testing kits across the country are not being evaluated for effectiveness as required, allegedly due to lack of funds²⁶⁴. Many of the kits are also operated by unqualified personnel, while other kits remain in use long after expiry dates. The only option is to test blood once. The majority of health workers involved in providing STIs/HIV-1/AIDS services have not been trained in the universal precautions for handling blood or blood products. The Lodwar District Hospital laboratory was in a deplorable state, combined with a lack of facilities and trained personnel, substandard record keeping, the lack of a blood bank, and the lack of blood storage facilities. Moreover, the urgent need for blood transfusions does not allow for re-testing since often relatives donate blood for immediate use as the blood bank rarely has reserves. In addition, the storage facilities for blood in Turkana were apparently poor. In addition, due to HIV-1 stigma, people fear tests and therefore do not donate blood, while the demand for blood continues to be high. For instance, the prevalence of malaria-related anaemia has made blood transfusion common in the Lodwar District Hospital.

The HIV-1 antibody testing of blood donations remains incomplete in most countries in sub-Saharan Africa. Transfusions, therefore, continue to play major role in the spread of HIV-1 to those most likely to receive them: women of reproductive age and children, mostly due to malaria-induced anaemia. Though the government has established a blood transfusion policy to ensure the safety and availability of blood, this has hardly diffused to

²⁶³ Nation Reporter, 2002. 'New HIV-1-testing kit is launched' Daily Nation, October, 2, 2002.

²⁶⁴ Okwembah, A. 2001. 'Neglect cause of faulty HIV-1 kits' Daily Nation, January, 1, 2001.

the rural health facilities where, as we expected, most transfusions take place²⁶⁵. The provincial hospital, where such facilities exist, is far from Turkana. The Turkana have reasons to be concerned about the safety of blood used for transfusion, which could still be a source of HIV-1 infections. A prospective study in Nigeria found that 34 percent of the paediatric HIV infections were due to blood transfusions. Of the 12 HIV-infected children 41.7 percent and 25 percent were due to blood transfusion given due to malaria and sickle cell anaemia, respectively (Adejuyigbe *et al.* 2003). This shows that the provision of safe blood is paramount in stemming the transmission of HIV. Endemic malaria in Turkana, as in the rest of tropical Africa, will always lead to a high demand for blood transfusion due to anaemia (English *et al.* 2002).

Simonsen and colleagues estimated that Africans get an average of 1.5 medical injections per year of which 50 percent are unsafe (Simonsen *et al.* 1999). There is a strong belief in the efficacy of injections. Due to the introduction of user fees following implementation of the Structural Adjustment Programmes (SAPs), the provision of medical equipment like hypodermic needles has been passed on to the consumer. Patients are therefore required to buy hypodermic needles. Due to the extra costs put on the poor, it is common for the people to share hypodermic needles. The practitioners who are willing to facilitate this sharing are often the quacks who would readily administer injections to the whole family, if not the whole village, using one hypodermic needle. This poses a higher risk of spreading HIV-1.

Turkana informants indicated that contact with blood is one of the modes of contraction of sexually transmitted infections including HIV-1. It was, in addition, pointed out by all respondents that one of the ways of preventing the contraction of HIV-1 is to ensure that safe blood is used for transfusion. All respondents were concerned about the safety of blood meant for transfusion in the Lodwar District Hospital.

²⁶⁵ With the help of USAID, the government has constructed regional blood banks in Kenya. However, they are still far removed from most of the district and rural hospitals which would not benefit from the efficacy and safety of blood.

10:2:4:2 Poor sexual health and prevalence of sexually transmitted infections

Studies in Kenya and Zambia have shown that there is a nexus between HIV-1 infections and: a) an increased number of sexual partners, b) a history of sexually transmitted diseases and genital ulcers, c) the presence of an intact foreskin, and d) a history of commercial sex work or sexual contact with commercial sex workers (Bond and Vincent 1997: 85). As has already been discussed in the previous sections, studies undertaken in Africa show that there is association between genital ulcer diseases (GUD) caused by syphilis, chancroid, and genital herpes with increased risk of HIV-1 infection (Wesserheit 1992). Even non-ulcerative sexually transmitted diseases put people at risk. African women infected with gonorrhoea or chlamydia infections of the cervix, or with vaginal discharge caused by trichomonas, have been found to be at a higher risk of heterosexual HIV-1 transmission (Aral and Holmes 1991). These infections are more common than the ulcerative diseases, which are easy to detect. Therefore, if they do facilitate HIV-1 transmission, their effects in the population will be greater. It is the infections that are common among women and asymptomatic that often go untreated. The STIs become worse, causing more wounds in the private parts, which become easy avenues for contraction of the virus. Many females are also likely to be infected with sexually transmitted infections because a female is more likely to be infected from a single act of intercourse with an infected partner. With gonorrhoea, for example, the single-event risk for the male is 25 percent, for the woman it is 50 percent (Hatcher *et al.* 1994, cited in McNamara 1997: 117). It is the high prevalence of asymptomatic STIs that lead to them being referred to as 'those women's diseases'. STIs are also prevalent among the nomadic and semi-nomadic populations. At Lokangae, informants indicated that sexually transmitted infections are rampant in the settlement, attributed to an increase in population, and circular movements between the settlements and the emerging urban centres.

The factors most relevant to transmission and contraction of infection are the activities that interfere with the epithelial barrier in the female genitalia. The epithelial barrier is often broken through child bearing, insertion of object into the vagina, and trauma during sexual intercourse (McNamara 1997: 118). The local knowledge in Lodwar indicated that sexually

transmitted infections are transmitted efficiently due to poor personal hygiene, especially inadequate cleaning of the genitalia. However, rough cleaning of the genitals could also damage the epithelial mucosa, hence increasing the risk for HIV-1 infection. In fact, maintaining cleanliness of the genital area under the harsh conditions found in Turkana – nomadic life, drought, and the lack of sufficient water - require heroic measures.

In most casual or marital sexual intercourse, there is often a lack of foreplay, and it is foreplay that facilitates the lubrication of the female genitalia. The friction that ensues from dry sex, which is often considered 'sweeter' by men than 'wet' sex (a sign of an enlarged vaginal cavity), often leads to the tearing or wearing of the vaginal mucosa, often resulting in bleeding. Local opinion has it that a man attains satisfaction with his sexual prowess when, after sexual intercourse, he sees blood on the bed covers.

Female sexual health in Turkana is very poor. Even though some prenatal and antenatal care is provided at the clinics, the quality of this care is constrained by supplies, equipment, and the attitude of male staff, leading to non-examination of pelvic areas. Even if women are infected with symptomatic sexually transmitted infections, they might not be diagnosed. Secondly, the respondents indicated that quite often women are at risk of HIV-1 because most of the sexually transmitted infections are asymptomatic. According to Hatcher *et al.* (1994), women are often not aware of vaginitis and cervicitis, the common syndromes for lower tract infections. Other asymptomatic sexually transmitted infections are gonococcal cervicitis, trichomoniasis, and chlamydial cervicitis or bacterial vaginosis (Wesserheit *et al.* 1989, cited in Holmes *et al.* 1984). As McNamara (1997) points out, in the face of such ignorance amidst poor hygiene, and harsh environmental and social conditions (i.e., lack of water, hot climate, poor clothing, and dusty grounds), vaginal discharges may be taken as a normal condition not necessitating any medical attention. There is a belief prevalent among the non-Turkana health care workers that the local population has poor personal hygiene, so some of the symptoms and signs could be taken as simply characteristics of this poor hygiene. This reinforces local knowledge that considers these discharges as part and parcel of the functioning of the female genitalia. For example, in a study in Uganda, vaginal discharge though self-reported by only 7 percent of the female participants, was observed in 68 percent through clinical examination (Mulder *et al.* 1992, cited in McNamara 1997: 122). Women are more likely to confuse

discharge with menstruation or vaginal fluid. Women often lack understanding of their own bodies due to illiteracy and lack of education. In addition, most young girls know very little about reproductive and sexual health, and they do not have access to reproductive health services. Ignorance about sexuality and sexual and reproductive health encourages the spread of HIV-1/AIDS.

There is also unequal access to hospitals by gender. Women are hesitant in accessing STD clinics, as these clinics are often in open places with open access. The social stigma attached to these STD clinics and to sexually transmitted infections prevent many people, especially women, from visiting them. This is compounded by beliefs that since women are asymptomatic, they are always infected; hence, they are viewed as infection reservoirs. Unfortunately, unlike men, not many women can afford the private clinics that tend to be more discrete. Most infections in women, therefore, go untreated. Access to these services is influenced by society's attitude to STIs, affordability, accessibility, the quality of services, the distance to the nearest health centre, waiting times, and the lack of privacy and confidentiality. In addition, the judgemental and victim-blaming attitude of the service providers (mostly male) put many women off from presenting at STI clinics. This is where indigenous healers score very highly. Women indicated that they would be more willing to attend STD clinic if there were female members of staff rather than the male clinicians. They felt embarrassed to be examined by male nurses. Fear and stigma surround problems related to sexual organs, leading women to suffer in silence. The fact that women do not access the hospital for prenatal and postnatal care exacerbates their sexual health problems. Reports from a district hospital in Kenya indicated that maternity wards were facing closure due to shortages of patients, as most expectant mothers had opted for private clinics and indigenous birth attendants because of poor handling, harassment, and cruelty and abusive language by clinical officers and other hospital staff²⁶⁶.

The prevalence of syphilis and gonorrhoea in pregnant women in many parts of Africa is at least 10 percent, and it approaches 20 percent in some areas (Schulz, Cates and O'Mara 1989). So despite the burden of, and attention given to, HIV-1/AIDS, we must still be cognisant of the serious sequelae of other sexually transmitted infections like syphilis and gonorrhoea, the classical venereal diseases. It is clear that prevention of STIs remains

²⁶⁶ Osewe, P. 2001. 'Homabay hospital ward in crisis' *The East African*, May 2, 2001.

critical as a public health measure in its own right and as one of the most effective ways to reduce HIV-1 transmission among many of the populations most at risk. Improving STD services for women is particularly challenging because asymptomatic infections are so common in women and because of the social and cultural barriers they face in seeking treatment for symptomatic STIs. In a research study in South Africa, a sample of 55,974 women aged between 15 and 49, found that 48 percent were asymptomatic, and 50 percent were symptomatic but not seeking care (Wilkinson, *et al.* 1999). Sexually transmitted infections (*Trichomonas vaginalis*, *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, or *Treponema pallidum*) remained untreated because either women were asymptomatic or the symptoms were not recognized and treated. This meant that in the absence of mass treatment and increasing women's awareness, we are unlikely to control the prevalence of sexually transmitted infections. However, even if mass treatment rounds are given, they must be closely spaced in order to prevent the reintroduction of STIs into the community by travellers, returnees, or by community members who did not participate in the rounds. Generally, there are a number of categories of people with STDs in sub-Saharan Africa. Not all of those infected with STDs are symptomatic, not all of those who are symptomatic recognise the meaning of their symptoms and signs and seek effective care, not all of those who do seek care are adequately cured (Abdool Karim 1994), and not all seek an effective cure. These categories of people have implications for the control of all sexually transmitted infections, including HIV-1. While health promotion is important among men who are symptomatic and able to recognise the symptoms but do not seek or delay in seeking effective therapy, mass screening and treatment programmes should be given the highest priority among asymptomatic women. It is well established that 60-70 percent of gonococcal and chlamydial infections in women are asymptomatic (Mabey 1996; De Schryver and Maheus 1990), and a similar proportion of men may have asymptomatic infections (Grosskurth, *et al.* 1996). The higher prevalence of sexually transmitted infections occurs among women of reproductive age (Wilkinson *et al.* 1999).

Case management of sexually transmitted diseases will remain poor since even if asymptomatic women are detected and given adequate therapy, they would remain infectious and continue to spread the infections as partner tracing and treatment is non-existent and this perpetuates transmission. Most people do not take their partners for

treatment for fear of reprisals. While some men manage to deceive their partners and treat them without their knowledge, women are unlikely to adopt the same strategy or reveal that they are infected with sexually transmitted infections. They think that even though they might not be the source, they could still be accused of bringing the infection into the household or to their partners. Even women who are symptomatically infected do not seek therapy and few realise that they are infected (Wilkinson *et al.* 1997; Wilkinson *et al.* 1998).

There is apparent misuse of drugs among the Turkana. They use many drugs simultaneously, bought from the pharmacies and the hospital. These were used in addition to herbal concoctions. This situation could lead to the development of drug-resistant strains of microbes. In Morogoro, Tanzania, commercial sex workers used several therapies simultaneously, believing they might act synergistically (Outwater *et al.* 2001). In most cases, an under-dose was apparent, while in some cases there was an overdose. We do not know the effect of mixing indigenous medicines with hospital medicines. Overuse of antibiotics causes fungal infections in the sex organs, but also leads to the creation of drug-resistant strains of microbes. For example, in many brothel-based sex workers in Indonesia, 89 percent of *Nisserai gonorrhoeae* infections were resistant to penicillin and 98 percent to tetracycline (Joesoef *et al.* 1998). The Turkana are apparently unaware of the consequences of misuse of antibiotics and the simultaneous uses of a cocktail of antibiotics. The Turkana's health-seeking behaviour leads to misuse of antibiotics and other drugs, which are often acquired without prescription.

My research confirmed the Turkana perception that subordinate staff from the hospital sell drugs, especially the popular antibiotics, which they have stolen from the hospital pharmacy. Many respondents complained that drugs are often stolen and sold to the private clinics by the nurses who also work part-time in these clinics. Most of the respondents who had previously been infected with sexually transmitted infections bought their drugs from these unscrupulous subordinate staff. In Morogoro, Tanzania, the commercial sex workers at times bought Chloramphenicol, Tetracycline, or Ampicillin from the night watchman at the government hospital (Outwater *et al.* 2001). With the introduction of cost sharing in hospitals in some sub-Saharan African countries, the selling of drugs by hospital staff has become a normal practice.

A serious long-term health implication of untreated STIs is obvious in the case of pelvic inflammatory diseases. Commercial sex work among children could result in infertility, ectopic pregnancy, chronic pelvic pain, and an increased risk of hysterectomy. The Turkana are already aware of this, as they indicated that a 'woman that engages in sex too much', or starts having sex at an early age, risks infertility. Women's risk of developing cervical cancer is associated with a high number of sexual partners and a young age at sexual debut (Willis and Levy 2002).

Infections with the hepatitis B virus (HBV) and the hepatitis C virus (HCV), or both, are emerging as a serious problem in Turkana. A review found that there is evidence of high HCV prevalence in the general population of sub-Saharan Africa compared to developed countries (Madhava, Burgess and Drucker 2002). During this research, a drug firm in conjunction with AMREF was in the process of sponsoring the surveillance and early treatment of those infected with the hepatitis B virus immediately after birth (personal communication with a Nurse). Though no research has been carried out on the prevalence of hepatitis B and C, it is likely that they are prevalent in Turkana. This would be a proxy indication of the prevalence of the HIV-1 virus, as modes of transmission are similar to those of other viruses.

10:2:4:3 Low use of condoms

Many Turkana disdained the mention of condoms. The head of DASCOP indicated that there is particularly low usage of condoms in the district. In fact, the few that are used are utilised by migrants and refugees. The Turkana notion of the importance of sexual relationships is centred on procreation. Therefore, the promotion of condoms to protect against HIV-1 and other STIs goes against the popular knowledge that procreation is the pillar of society – perpetuation of the lineage. The initial promotion of condoms as a means of population control has effectively relegated its potential role in preventing STIs to the periphery. Secondly, the aftermath of sex is often accompanied by guilt and a feeling that the penis is contaminated with female fluids. As the penis becomes contaminated with the mixture of the female discharge, often mixed with blood and the male sperm, the genitalia becomes dirty requiring cleaning, so to touch a condom, dirty from the outside from contact with female fluids, and full of male fluids, is an experience that most men abhor.

The existence of male condoms put the control and prevention of HIV-1 on men, who loathe condoms. This further alienates women from participating in prevention activities. Female controlled condom could increase the condom usage by women. Women who knew about the existence of female condoms in a rural community in western Uganda asked if they could be made available so that they could control their sexuality (Kipp *et al.* 2002). Condom use is particularly low among women because they have no power over sexuality, and, as they said, they “do not want to annoy their partners”.

The use of condoms is very low not only in Turkana, but also in Kenya as a whole. In an opinion poll and a survey conducted in Kenya, 54 percent believed that condoms are not effective against HIV-1²⁶⁷. Most of the respondents who dismissed condoms were Christians (both Catholics and Protestants). Fifty-five percent of the respondents believed that condoms encourage immorality. In Turkana, even though most respondents mentioned condoms as means of preventing HIV-1, the actual use was negligible. Respondents who presented at the Lodwar District Hospital with STIs never used condoms, and even though infected, engaged in sexual intercourse without using a condom. The five female (out of fifty) respondents who indicated that they have previously used condoms while having sexual intercourse were all single. This demonstrates that single women have more power over their sexuality than married women. Many women did not contemplate using condoms and did not know that there are devices they could use to minimise the risk of contracting HIV-1/AIDS and other sexually transmitted infections. While town dwellers expressed interest in condom use, those from village settlements like Gold-Mukutano, expressed no wish to use them. My experience in Lokangae, a remote village, showed that herders loathe condoms. Women indicated that they have never seen condoms, and both men and women did not wish to discuss condoms. I was periodically warned that I risked being ‘beaten up’ if I insist on discussing “those ‘dirty’ things”.

There are widespread misconceptions about condoms among the Turkana. Respondents indicated that condoms are not only laced with HIV-1/AIDS, but they also have small pores and could bust during sexual intercourse. In addition, condoms could slip during sexual intercourse and get lodged in the uterus. The use of condoms was perceived

²⁶⁷ Teyie, A., and Sino, O., 2001. ‘Condoms are not safe – public’ East African Standard, September, 24, 2001.

as promoting promiscuity. Moreover condoms, it was pointed out, compromises the experience of 'natural sweetness' of sex – "one cannot eat a sweet with a wrapper still on". However, some of the allegations are supported by available information, as it has been reported that faulty condoms threaten the fight against AIDS in Africa²⁶⁸. Condoms deteriorate when stacked in the sun or when being freighted across the country in dry, hot conditions. Because condoms are distributed free, no choices of size are offered. Too-large condoms slip-off, putting the user at risk of infection, while uncomfortable small ones discourage men from using them. Some informants indicated that their long penises cannot comfortably fit into the condoms. In South Africa, it was found that 'some condoms had sand in the foil packets' and some cartons had water marks and were disintegrating²⁶⁹. These factors, and the general disinterest in condoms in Turkana, are a hindrance to the prevention activities in the Turkana District. Shortage of condoms is compounded by the fact that nomadic and semi-nomadic communities keep moving in search of pastures for their livestock.

Surprisingly, a comparative study, in 1994, of secondary school children in urban and rural settings found that those in urban centres were less likely to have used a condom than those in rural areas (Nyamongo n.d). In fact, in a study conducted by UNICEF, it was found that 64 percent of urban girls become pregnant in their teenage years²⁷⁰. This was attributed to the high cost²⁷¹ of condoms in urban centres. In rural areas condoms are freely dispensed from health centres and public places like bars and lodgings. In urban centres, people must buy condoms from the shops, bars, lodgings and pharmacies.

²⁶⁸ Foreign Desk, 1998. 'Faulty Condoms Thwart AIDS Fight in Africa' The New York Times, December 27, 1998

²⁶⁹ Foreign Desk, 1998. 'Faulty Condoms Thwart AIDS Fight in Africa' The New York Times, December 27, 1998.

²⁷⁰ Ewangusi, J. 2001, 'Unicef decries high girls' pregnancy rate' *East African Standard*, April, 21, 2001.

²⁷¹ Condoms are sold shops at about US\$ 2 per pack of three

10:2:5 Poverty as an ecosystem factor that increases vulnerability and risk

The highest incidence of poverty in Kenya is recorded in the arid and semi-arid regions of northern Kenya where the poor account for nearly 80 percent of the districts' population (Government of Kenya 1999b).

Insufficient per capita income, poor environmental hygiene, poor housing, the lack of health services, and illiteracy are some of the factors of the Lodwar township ecosystem that contribute to the prevalence of HIV-1/AIDS and other infectious infections. It was noted that those who have sufficient food and a good diet, even if infected, live longer while the poor die faster. Poverty, therefore, exacerbates the prevalence of HIV-1/AIDS through death and prevalence of opportunistic infections. Poverty, then, is the ultimate illness of the Turkana of Lodwar township. A Turkana elder, in a statement similar to that of President Thabo Mbeki of South Africa, maintained that poverty is the major factor in the prevalence of HIV-1/AIDS in Turkana, which contributes to more poverty. That poverty causes HIV-1/AIDS is made clear by the example of the Island of Elle Glade, Florida, which despite being in a sea of plenty, is characterised by penury and squalor. The black inhabitants had a high rate of HIV-1 not because they were black people, but because they suffered from overcrowding, poor sanitation, and malnutrition. In addition, they were living in hovels and boarding houses and had high prevalence of intravenous drugs users, homosexuals, and Haitian and West Indian migrant labourers working in 'the winter vegetable capital of the world' and in sugar cane farming²⁷². This is a classic example of how poverty and migrant labour, in whatever part of the hemisphere it situates itself, creates fertile ground for the breeding of HIV-1 infection. The ingredients of the AIDS epidemic found in Elle Glade are in abundance in the Turkana townships.

During a Jamhuri Day celebration in Lodwar, one politician indicated that it is the loading and unloading of maize into trucks that is killing the Turkana and not HIV-1/AIDS. He was complaining about the fact that the marginalisation of the Turkana is still being perpetuated

²⁷² Noedheimer, J., 1985. 'Poverty-scarred Town Now Stricken by AIDS' New York Times, May 2, 1985. Available from: www.nytimes.com/library/national/xscienec/aids/050285sci-aids.html. Accessed on: December 8, 2001.

by the numerous international organisations based in the district, such that many job opportunities are given to non-Turkana migrants. NGOs like World Vision only employed the Turkana in lowly paid positions and heavy jobs like those of loading and unloading maize bags into trucks for eventual distribution in the villages. Most Turkana could not be employed as support staff as they did not have the education. This same politician allegedly instructed commercial sex workers to charge more for sexual intercourse to reflect the rising cost of living.

Poverty leads to the prevalence of *lokwake!*: either one has the money to buy it, or one lacks money to such a degree that one engages in sexual intercourse for the same. An example was given of a teacher at Nakwamekwi who was a landlord in California, with much money. However, he used the money to buy *lokwake!*. The notion of poverty leading to HIV-1/AIDS does not apply only to the poor but also the rich. Poverty leads the rich to buy affordable sex. In the same vein, poverty forces the poor women to accept the gifts from men in exchange for sex. The prevalence of grinding poverty, hunger, and disease is common in other parts of sub-Saharan Africa where HIV-1/AIDS has left devastation. These factors influence population movements, general health status, and determine sexual behaviour. As Turkana leaders argued during their workshop, HIV-1 could finish the Turkana.

Poverty influences the decision to have an early debut in sexual intercourse. Sexual debut by younger girls is very worrying as research on HIV-1-infected populations reveals that young adults who engage in risky sexual behaviour begin such behaviour in their adolescent years (Petosa and Jackson 1991). As a study in Uganda found, often money or clothes entice girls in the 12-13-year age group to have sex with older men (Bohmer and Kirumira 2001: 211). The practice of old men engaging in sexual intercourse with young girls was very common. In Turkana, this involvement in sexual intercourse for material gain was not only common with older men, but also with their peers. Girls often agreed to negotiate for sexual intercourse through acceptance of gifts such as money, clothes, drinks, and food. A man is expected to 'treat' his girlfriend with gifts. In their desire to be financially independent, women are able to negotiate for money from men before sexual intercourse.

The desire for old men to seek younger girls is related to the popular myth that they are not infected with HIV-1 or other sexually transmitted infections. In addition, young girls are 'sweet' and 'fresh', as they have not engaged in many episodes of sexual intercourse over time. Young girls' sexuality is therefore in high demand as younger men feel that they are the ones they could sexually satisfy as opposed to older women who are experienced in sexual matters. Girls who are likely to drop out of school for lack of school fees are put under enormous pressure with limited alternatives but to engage in sexual intercourse for money. Under this realm, the pressures that determine the negotiation for sex is gender differentiated as girls, on one hand, are influenced by the lack of money and are under economic pressures to negotiate for sex at an early age. On the other hand, men use their money to lure girls. Boys are equally poor, yet are willing to use their last pennies to entertain or buy a girl a soda or dress so that they can have sexual intercourse. So while women are motivated by the need for money or material goods to meet basic needs, men are motivated by the need for sexual gratification and the perception of reduced risk of contracting HIV-1 and other sexually transmitted infections.

There is evidence that poor nutrition, in fact, contributes to the rapid onset of AIDS (Loevinsohn and Gillespie 2003) as failure to maintain good nutritional status weakens the immune system and increases the susceptibility to opportunistic infections, which in turn undermines nutritional status and hastens the onset of full-blown AIDS. This is very relevant among the poor Turkana pastoralists who have migrated to urban centres or those who have lost livestock to drought and banditry. Those who do not have access to milk would likely suffer from a particular vitamin A deficiency, which has been associated with the rapid onset of AIDS and the increased risk of infection through increased susceptibility to genital ulcers (Semba 1998). HIV-1/AIDS could, therefore, exacerbate the vulnerability of the Turkana to droughts, raids, famine, and infections, with negative consequences for pastoralist production. HIV-1-affected households would struggle to cope with the consequences of the vagaries of climate and weather, thus decreasing their resilience while increasing their vulnerability.

10:3 The conceptualisation of the evolving impact of HIV-1/AIDS on pastoralist production

This study has demonstrated that HIV-1/AIDS is prevalent among the pastoralist communities and, as such, they are similar to other populations. Even though there is dearth of research, we can conceptualise the susceptibility to HIV-1/AIDS and the possible effects of the same on pastoralist production. As the Turkana exemplify, pastoralists are a marginalised group of people, poor and ever vulnerable to the vagaries of weather, epidemics, banditry, conflict, and cattle rustling. This is exacerbated by their lack of access to healthcare resources and other social amenities.

The Turkana have recently suffered from recurrent drought and these droughts are becoming more frequent and more severe in meteorological terms. It is almost certain that pastoralists are becoming more vulnerable to them for complex reasons that include conflict and poor policy, forced sedentarisation, destitution, dependence on relief food, and poorly conceived development projects, as traditional coping strategies become more and more ineffective. It is without doubt that HIV-1/AIDS will increase the vulnerability of the Turkana to the above factors.

Few studies have looked at the effects of HIV-1/AIDS on nomadic / pastoralist production or how the change in this mode of production has influenced vulnerability and susceptibility to the contraction and transmission of HIV-1. However, other studies of smallholder farming systems have indicated how HIV-1/AIDS leads to the loss of livestock through forced sales to meet medical and funeral expenses (Haslwimmer 1994; Food and Agriculture Organisation 1995). Moreover, there is significant loss of labour due to the illnesses and deaths of adult men, leading to livestock production being left to widows and orphans with no livestock production skills. Morton (2003) indicates that the BaHima pastoralists were forced to sell livestock for medical care. Furthermore, many livestock would be slaughtered for rituals and to feed mourners. The death of a male member of the household will affect livestock production as men hold much of the local knowledge, and the experience with livestock production.

The loss of men to HIV-1 / AIDS would compromise pastoral production as the division of labour ensures that women do not generally herd larger stock, and, for the most part, are at home processing livestock products and milking. This marked sexual division of labour would exacerbate the loss of labour for herding and would increase the vulnerability to HIV-1/AIDS.

The loss of men to HIV-1/AIDS would also limit migration to key grazing, and water resources. These satellite camps conform to daily and seasonal patterns of herding livestock and would affect the natural and season-influenced management of grazing resources and livestock production.

Any conceptual framework analysing the risk to health amongst nomadic and semi-nomadic populations must also look at animal health and diseases, and in particular, how these in turn might influence the increased vulnerability to HIV-1/AIDS. Apart from these communities being predisposed to certain infections because of their close nexus to livestock, dogs and wildlife, the infections confined to livestock *per se* also directly and indirectly affect their welfare. When livestock are wiped out due to the vagaries of climate or parasitic infections, nomadic and semi-nomadic communities are always rendered destitute, with protein-calorie malnutrition as a result, making them even more vulnerable to infections. In addition, effective monitoring of diseases in animals would be beneficial to human health and vice versa. The monitoring of such diseases like brucellosis (animal tuberculosis) in livestock may result in an early warning to humans of possible outbreak or increased prevalence. As discussed earlier, a high prevalence of TB is a crude indicator of HIV-1/AIDS prevalence.

At present, there is a dearth of research on the interaction between HIV/AIDS and the numerous zoonoses that pastoralists are susceptible to, such as brucellosis and possibly tetanus among those who keep donkeys. The knowledge, however, would be vital for the prevention of infections.

10:4 Conclusion

The core of this thesis is formed by the investigation into the factors of the ecosystem that influence the spread of HIV-1/AIDS and other sexually infections in the Lodwar township. As expected, the theoretical framework that informs this study has led to the clear delineation of the said factors that, unless mitigated, would make the prevention and mitigation of the impact of the HIV-1/AIDS pandemic impossible.

It has emerged that the causes of all sexually transmitted infections are contracted and transmitted through contagion that is contact with the infected person, objects associated with the infected, insects, and the body fluids.

The Turkana mentioned that many factors of the ecosystem are responsible for the spread of sexually transmitted infections. They included the popular *kaada*, which has apparently taken the Turkana of Lodwar township by storm. The local respondents indicated that *kaada* is the greatest obstacle to fighting *lokwakel* as it encourages immorality, and clouds judgement leading to unprotected sex with multiple partners.

Video and disco halls create spaces that are conducive to sexual relationships, especially among the youth. Video halls are condemned for showing films inundated with pornography.

Iatrogenic factors including unsafe medical practices and unsafe blood for transfusion are responsible for the spread of HIV-1 and other blood borne viruses. This is complicated by the perennial shortage of HIV-1 testing kits in Turkana. In addition, village medical practitioners (quacks) facilitate the sharing of needles for injections. Other factors that influence the transmission of HIV-1 and other sexually transmitted infections encompass polygamy, and having concubines, which all lead to a multiplicity of sexual partners. In addition, the Turkana culture is perceived by outsiders as more liberal, creating grounds for sexual promiscuity.

Banditry and cattle raiding often lead to the rape of women and girls. At another level, banditry has led to the displacement of villagers with people often migrating to urban centres. Migrants become vulnerable to HIV-1 and other sexually transmitted infections due to poor living conditions. Raiding leads to the loss of life and cattle, creating poverty

and poor conditions of living, making many people vulnerable to exploitation. Urbanisation has also led to changes in sexual behaviour affecting risk to infections, especially due to human mobility, high population density, overcrowding, diverse sexual behaviours, poverty-induced commercial sex trade, and increased relaxation of indigenous cultural norms yielding new forms of sexual norms and practices. Migration and travel to and from rural areas lead to the spread of HIV-1 infections and other sexually transmitted infections into the nomadic and semi-nomadic communities.

Poverty is the major cause of sexually transmitted infections through commercial sex work, and in influencing decisions to have early sexual debuts among girls. Poverty influences when and how women engage in sexual intercourse. Turkana is full of truck drivers who ferry goods from places as far away as Mombasa, transporting the virus between communities and town centres along the journey routes. They bring relief and grief into Turkana.

Military personnel are often associated with high prevalence of HIV-1/AIDS. Military personnel are popularly brought back to Turkana for burial. Those that come back alive often bring HIV-1 with them and spread it to the local population. In addition, there are several police stations and an army barrack located in Turkana all attracting the poor women to trade sex for sustenance.

The use of condoms is very low in Turkana. The existence of male condoms places the burden of responsibility for the control of HIV-1 infections on men. Misconceptions still surround condoms as many think that condoms are laced with the virus, and that they can become lodged in either the uterus or slip during sexual intercourse. In Turkana, due to the hot dry climate, condoms are not stored properly, increasing the chances of their breakage and non-efficacy.

The gender-accentuated power imbalance has increased the vulnerability of women to contracting and transmitting HIV-1 and other sexually transmitted infections. Women put themselves at risk in the hope of fulfilling cultural and familial obligations as they are expected to marry and beget children. Poverty encourages parents to put their daughters at risk through arranged marriages. In addition, women and girls drift into commercial sex work in order to fulfil socio-economic obligations. Due to poverty, unmarried women in

urban centres cannot refuse money in exchange for sex, as socio-economic need is too strong a factor. The sexual debut at a younger age exposes women to higher risk, exacerbated by the undeveloped epithelial layer of the uterine cervix. Married women also have no control over when and how they engage in sexual intercourse. They dare not discuss condoms with their male partners. In addition, women are illiterate or too poorly educated to make informed decisions. They are vulnerable to men's control. On the other hand, the Turkana also state that educated women are loose and powerful enough not to be controlled by men, hence would engage in multiple sexual relationships just like men.

Poverty-accentuated commercial sex work plays a great role in the transmission of HIV-1 and other sexually transmitted infections. This research indicates that people engage in commercial sex work for money, material goods, and favours. Young, inexperienced commercial sex workers, mostly from nomadic and semi-nomadic communities, pursue sex as a means of survival. Interviewed commercial sex workers indicated that they do agree to engage in sexual intercourse when the man refuses to wear a condom because they need the money. Many of them have children whom they have to feed, shelter, and clothe. The clients of commercial sex workers are army personnel, NGO personnel, disco DJs, civil servants, businessman, lorry drivers, loaders, trailer drivers, teachers, and medical staff. Commercial sex workers, who are often drunk, might injure their vaginal protective barrier due to forced penile penetration, hence increase the risk to contracting HIV-1 or other sexually transmitted infections. Frequent sexual intercourse would further increase the probability of contracting HIV-1. Economic stress reduces the choices available to women, especially those who have transactional sex. The focus on the immediate needs of survival such as shelter, food, clothing, rent, school fees, and educational equipment, diminishes the fear of HIV-1/AIDS and other sexually transmitted infections.

Many unions in Lodwar township are not carried out according to tradition, through payment of bride-wealth. Such unions are fluid with both partners likely to acquire new partners, hence leading to frequent partner exchange. This means that separation and remarriage is common, with most women being shared among men without claim to ownership through marriage.

Wife inheritance is a common practice in Turkana and may lead to the contraction or transmission of HIV-1, and other sexually transmitted infections. Insecure widows left by a husband due to death are forced into being inherited for economic and cultural reasons. In the absence of an economic and / or a livestock base, such widows may be forced to exchange sex for economic gain or favours such as emotional protection.

Poor sexual health and the prevalence of sexually transmitted infections play a role in the prevalence of HIV-1. There is a nexus between an increased number of sexual partners, a history of commercial sexual work or sexual contact, and a history of sexually transmitted illness with HIV-1 infection. There is a strong association between genital ulcer disease caused by syphilis, chancroid, genital herpes and non-ulcerative infections with increased risk of HIV-1 infection. The care of female genitalia is poor in Turkana. The quality of care provided during antenatal and prenatal visit to clinics is equally poor. Due to a lack of equipment, women who are infected with asymptomatic STIs might be misdiagnosed or given ineffective care. Women are not aware of many of the sexually transmitted infections. In fact, the general knowledge of sexually transmitted infections is poor in Turkana, as only the most obvious, gonorrhoea and syphilis, are known. Symptoms and signs, such as vaginal discharge, could be taken as normal or as a sign of poor personal hygiene. In addition, discharge could be confused with menstruation or vaginal fluid, especially in this hot, dry place. The lack of reproductive health clinics reinforces the ignorance on sexuality and reproductive sexual health. Women are hesitant to access sexual health clinics due to social stigma, as clinics are often in clearly marked places. Going to these places shows that one is either a commercial sex worker, or plainly promiscuous or unfaithful. These clinics are staffed mostly by men, whom women fear.

Additional factors of the ecosystem mentioned by the Turkana encompass: invasive healing methods; removal of milk teeth using one tool; social gatherings; indigenous birth attendants; spitting directly on a person as sign of blessing; sharing tooth brushes and *anyakit*, sharing chewed tobacco; traditional surgery to expand the urinary passage through the cutting of the head of the penis; piercing of the ears and lips; travelling in the same vehicle with people who are infected and becoming infected during accidents; and day schools. Prevention and control of HIV-1/AIDS and other sexually transmitted

infections would require critical mitigation of all the factors of the ecosystem discussed in the chapter.

For a long time, the Turkana and other pastoralist communities have been adapted to survive amidst droughts, famine, banditry, conflicts, the consequences of regional wars, increased competition for meagre resources, sedentarisation and increased movements. A new virulent enemy has emerged: HIV-1/AIDS. As one Turkana remarked “unlike the Pokot or Merille warriors whom you can confront, HIV-1/AIDS will wipe the whole *adakar* and yet AK47 will not stop it. You can broker peace with the enemies, but you cannot talk to HIV-1/AIDS”. HIV-1/AIDS has the hallmarks of a calamity that has the potential to severely affect pastoral production, as well as change the face of pastoralism and nomadism.

Local Responses to HIV-1/AIDS in Turkana

11:1 Introduction

Before I discuss my proposed response to HIV-1/AIDS in Turkana, it is pertinent that I present what is already happening on the ground. Wherever people are afflicted directly or indirectly with an illness of the character and magnitude of HIV-1/AIDS, we would expect that all parties would respond. In this chapter, I will present my own assessment of the responses to HIV-1/AIDS in Turkana by examining the responses of individuals and families, communities, the government, and NGOs like the Catholic Church.

Generally, responses to HIV-1/AIDS in Turkana are low-key. There are no billboards with HIV-1/AIDS messages as is common in other parts of Kenya. This is despite the fact that STIs and HIV-1/AIDS are prevalent in Lodwar and other Turkana townships. The misconceptions concerning HIV-1/AIDS discussed earlier made it difficult for the Turkana to accept the information on HIV-1/AIDS until 1994/1995. Changes came about partly because of the growing awareness that many people were dying of HIV-1/AIDS in the district, especially the elite, including soldiers and teachers. As a result, the local population in Lodwar township came to the grim realisation that AIDS kills and leaves orphans. The Turkana in the townships have reluctantly accepted the reality of AIDS.

The response surrounding HIV-1/AIDS in Turkana is very limited. Responses have adopted mainly the public health through health education aimed at behavioural change and increased condom use, and biomedical approach via syndromic management of sexually transmitted diseases. While the government has focused on education intertwined with condom promotion and the treatment of sexually transmitted infections, the Catholic Church has mainly focused on behavioural change through its youth programmes. In addition, prevention campaigns are provided in public places, such as primary and secondary schools.

11:2 Responses by individuals and families

At an individual level, it is obvious that people have not changed their attitudes and behaviour in relation to the threat of HIV-1/AIDS. While the nomadic populations have not accepted the existence of HIV-1/AIDS, the settled populations know of its prevalence but do not accept that they could contract the virus. The responses varied from complete sympathy to hostility directed at those who are infected. The actual care of those infected was left to the family members who were more sympathetic. The home-based care encompassed cooking for, and washing the infected. There is a perception that local healers can treat HIV-1/AIDS and that they had cured many people. Many respondents mentioned that those who were infected utilised indigenous therapies.

Family members would be expected to provide care for the ill members. The hostility expressed towards the infected was usually directed at non-family and community members rather than family members who would be offered care. Local knowledge has it that proper nutrition would delay the adverse progression of HIV-1/AIDS. Therefore family members play a great role in providing food to the infected.

11:3 Responses at the community level

Due to the numerous infections, poverty, and famine that already existed in Turkana, people underestimated the severity of the epidemic. In fact, in the household survey, HIV-1/AIDS was rarely mentioned as a disease of concern, as other infectious diseases, such as malaria and respiratory infections topped the list. These illnesses and hunger are the immediate priorities for most Turkana households, pushing HIV-1/AIDS further aside. Other infections would become apparent when one is infected with HIV-1. Even if one is infected with HIV-1, the family and community would still struggle to treat other infections such as tuberculosis and malaria.

The local response to HIV-1/AIDS was investigated by examining attitudes towards people with HIV-1/AIDS. Some respondents indicated that those who are infected should be exposed to the public. As a women group leader wondered: "if someone comes to the hospital and tests HIV-1 positive, the spouse(s) and children are never told. What is the

value of letting other people get infected and die either through sexual intercourse or caring for the infected?" Some respondents even suggested that the HIV-1 infected should be locked up in prisons so that they would not infect others. The Turkana's views were similar to those from a study conducted in South Africa where respondents indicated that those who have HIV-1/AIDS should be killed, isolated, or provided with care (Webb 1997:165). Such views emerged because when it comes to HIV-1/AIDS people feel that the rights of the community supersede those of the individual. Relieving the suffering of a single individual could be sanctioned as long as the community is shielded from the infection. This is why some advocated that those who are HIV-1 positive should be exposed to the public so that they do not continue to spread the infection wittingly or unwittingly. As a response to the threat of HIV-1/AIDS and the threat posed by the secrecy surrounding the infection, some informants indicated that couples should be tested for HIV-1 before they marry. This measure would prevent the non-infected partner from contracting HIV-1/AIDS. If the couple have not lived together, this would be one of the tests before marriage such that a sero-positive test would lead to the cancellation of the marriage ceremony.

The desire to kill the afflicted, while extreme, is congruent with other responses to the epidemic, even in the Western hemisphere where there is homophobia towards homosexuals, prejudice against those who inject drugs, and hostility towards immigrants. Britain is reported to be at high risk for an HIV-1/AIDS epidemic and epidemics of other infectious diseases, particularly tuberculosis, due to immigrants (particularly asylum seekers) from sub-Saharan Africa²⁷³. Even public leaders have previously advocated for excessive measures against the infected. In Zimbabwe, a member of parliament advocated that pregnant women with AIDS should be killed so that 'AIDS end with them' (Webb 1994, citing *The Economist*, 19/3/1994: 69). It was also suggested that the HIV-1-infected should be imprisoned and publicly named. This is a characteristic of the higher level of stigmatisation accorded to those who have HIV-1/AIDS. Those who have AIDS often attract less sympathy from the community, as though they deserve to die due to their treacherous ways.

²⁷³ Revill, J. 2003. 'Fortress Britain at Risk of disease' *The Observer*, pg.13, 22 June 2003.

The Turkana's view on the isolation of the HIV-1-infected is consistent with the dominant view in the political system. This was made obvious in January 1990, when President Moi called for the isolation of people with HIV-1/AIDS since those who are infected deliberately infect other people. He cited an alleged incident in which one man infected about 100 women²⁷⁴. Out of 3000 people interviewed in Kenya, 654 wanted those who are infected to be jailed, while 527 wanted them killed, and 564 called for their isolation²⁷⁵. In 2001, A Kenyan Minister of State for Internal Security stated that doctors should be compelled to make public the names of persons living with HIV-1/AIDS, and that the malicious spread of the infection should be criminalised²⁷⁶. The same minister wanted couples tested before marriage²⁷⁷. Isolation is advocated because sexual intercourse is a private act, which cannot be monitored, and those who have HIV-1/AIDS would continue to have sex, thus spreading the infection everywhere. In Turkana, it was indicated by informants that those who have HIV-1/AIDS or any other sexually transmitted infection would not tell their partners. This is partly because the infected fear being ostracised. In addition, no Turkana has come out openly to indicate that they are HIV-1 positive for fear of isolation. In Lodwar, the story is known of the man who quit a well-paying job with an international NGO because he was HIV-1 positive. Armed with plenty of money in KShs 500 notes (US\$ 8) and a vow not to die alone, he set out on a sexual intercourse spree. That is a huge amount of money in Lodwar township and women willing to receive that money were numerous. Before he died, he asked for a paper and pen and wrote down 100 names of women with whom he had had sexual intercourse. This sent panic in the whole of the sub-location and those mentioned were avoided.

Knowledge of HIV-1/AIDS is lacking in rural areas. This was demonstrated by my visit to rural communities with both the Lodwar Catholic Diocese's and AMREF's mobile health clinics. The people indicated that AIDS is an urban disease. Their response to this 'urban illness' was to make sure that their children do not go to Lodwar (and other townships) where they would be exposed to the virus. They also indicated that their men would not

²⁷⁴ Africa Health, January 1990.

²⁷⁵ Teyie, A., and Sino, O., 2001. 'Condoms are not safe – public' *East African Standard*, September, 24, 2001.

²⁷⁶ Irin., 2001, Task force says HIV-1/AIDS a "national disaster". IRINNEWS.ORG, September, 18 2001. Available from: www.irinnews.org/print.asp?ReportID=11481. Accessed on: December, 14, 2001

²⁷⁷ Wangusi J. and Ita, J. 2001. Couples need HIV-1 test, says Madoka, *East African Standard*, July, 3, 2001.

marry 'those women who come from the towns'. As one village elder said, "it is those who put on clothes that have HIV-1/AIDS". The mobile health team staff - 'people who put on clothes' - were given as an example of those who could be infected with HIV-1/AIDS. To the Turkana, as long as they remain in traditional settings, dressed in skins and *shukas*, they would be cushioned from contracting HIV-1.

11:4 Responses by the Lodwar Catholic Diocese

The Lodwar Catholic Diocese, through its youth programme, is active in endeavouring to influence behavioural change among the youth. Their approach is different from that of the government in that they do not promote condom use. Clearly, these conflicting approaches have created conflict in the minds of the youth.

It was apparent that the Catholic Diocese does not work in harmony with the government. The main differences stem from two issues: condoms and family life (sex) education. The Catholic Church vehemently opposes the promotion and use of condoms and the exposure of school children to family life education. The Catholic Church's approach to the response to HIV-1/AIDS is, therefore, mainly through education and the promotion of behavioural change. The Youth Behavioural Change Programme normally holds seminars in secondary and primary schools in an endeavour to change the behaviour of the youth. The tenet of the youth programme is 'no sex before marriage, abstention, and faithfulness in marriage'.

The Catholic Diocese of Lodwar, through the mobile clinic, often endeavours to educate the nomadic communities on HIV-1/AIDS. However, time constraints did not always allow the nurse and her assistant to indulge in these issues in more detail. The Catholic Church's response to HIV-1/AIDS in Kenya, and particularly in Turkana, is of paramount importance as they have an insurmountable influence in Turkana, pervading all aspects of development in this marginalised arid and semi-arid district. The Catholic Church is the main provider of resources for education through which the Turkana youth could access public health education on HIV-1/AIDS. Therefore, they do censor what kind of knowledge filters through to the youth.

The officer responsible for the Catholic Church's response to HIV-1/AIDS indicated that their efforts are hampered by the government's lack of transparency in the way it allocates money, and how it collects and controls HIV-1/AIDS information. The Lodwar Catholic Diocese Youth Coordinator claimed that the District AIDS/STIs Control Coordinator (DASCO) is not transparent in its use of money. There was a case in point in 1999 on AIDS Day when the diocese organised all activities, but the DASCO did not reimburse them.

11:5 Government's response to HIV-1/AIDS

The government's response to HIV-1/AIDS through District AIDS and the STIs Control Programme (DASCOP) was begun in Turkana in 1999, though the whole concept was conceived in Kenya in 1997, following an act of parliament. The STI and HIV-1/AIDS preventive and curative activities are coordinated by the District AIDS and STIs Control Officer (DASCO). DASCOP has organised a safe blood supply, a school health programme, curative STI services and condom distribution. In addition, there is anonymous HIV-1 testing of prenatal mothers and in-patients. There is currently no voluntary counselling and testing, as there is no counsellor employed by the Lodwar District Hospital.

The government, which is supposed to take an active role in the prevention of HIV-1/AIDS and other sexually transmitted illnesses, was accused of providing spurious statistics that are of no use in the war against HIV-1/AIDS at the local level. There was a perception that DASCOP was controlling HIV-1/AIDS statistics. As the Catholic Diocese Youth Coordinator indicated, DASCOP always states, "We are still compiling statistics". The Youth Coordinator indicated that even the youth need to know the actual HIV-1/AIDS statistics in the Turkana District. Without reliable statistics, local populations are unlikely to believe that the prevalence of HIV-1/AIDS is high in the district. The credibility of a DASCOP officer was questioned several times. It appeared to me that there is a power struggle for the control of information on HIV-1/AIDS and prevention activities.

The DPHO indicated that prevention services receive very little financial support from the government or the local politicians. People favour the hospitals and the provision of

curative services, rather than education aimed at the prevention of illnesses whose impact on the individual is not very obvious in the short term.

Following the government's recommendation that every constituency should establish an HIV-1/AIDS control committee, the Central Constituency under which Lodwar township falls, formed a committee. The patron of the Constituency AIDS and STDs Control Committee (CACC) was the area's Member of Parliament. It had thirteen members drawn from all the administrative regions of the central constituency. The secretary was the divisional public health officer. The CACC was charged with designing programmes to transmit knowledge and information to the general population, and to provide funds for those infected and affected by HIV-1/AIDS (e.g., widows and orphans). The CACC was supposed to hire a trained HIV-1/AIDS counsellor. According to national guidelines, the composition of the CACC was supposed to include representation from women and people living with HIV-1/AIDS. The membership composition must be representative of the whole of the Central Constituency. At the time of this research, the group had been formed, but not officially launched due to lack of funds from the National AIDS Control Council (NACC). The NACC is supposed to disburse money to every constituency for the launch and execution of HIV-1/AIDS activities. However, all the constituencies that had launched their committees used funds from their area MPs, the patrons. Such money would later be refunded by the NACC. The members of the CACC that I interviewed considered the area MP to be an obstacle as he was supposed to facilitate the launch of the committee with his money. The MP, however, seemingly had different priorities. Two years later, it was reported in the press that the Turkana AIDS /STIs Control Committee received their first cheque of KShs 195,000 (US\$ 2,500) from the National AIDS Control Council for awareness campaigns and condom promotion²⁷⁸.

At the time of this research, the District AIDS/STIs Coordinating Committee (DACC) did not have a formal head like other districts in Kenya. I was informed that the post had been advertised, but remained vacant. The acting head, who, it was later confirmed after the research, was the former acting DASCO (STIs Coordinator) and a STIs clinician. While the syndromic management of STIs remains under the Ministry of Health, the DASCOP was

²⁷⁸ Daily Nation, 2003. 'Lodwar and Kisumu top in Aids cases' *Daily Nation*, March 14, 2003.

transferred to the Office of the President as HIV-1/AIDS was declared a national disaster and a multi-sectoral approach has been adopted for its prevention.

The government has responded to HIV-1/AIDS through heightened condom distribution, which is often seen as a quick fix approach. This accusation can be no truer than in Turkana where the government has been lukewarm in providing other strategies for HIV-1 prevention due to the lack of funds, but is willing to provide the donor-funded condoms, which the Turkana loathe using. According to the DASCOS records of condom distribution in the Turkana District, the Kakuma refugee camp had the highest use of 22,400 condoms, compared to Lodwar's 4,204 for the year 2000. Most of these condoms were distributed through boxes placed on the walls of bar and lodging premises. The DASCOS indicated that there is a very low usage of condoms in the whole district. The condoms are used mainly by the non-Turkana residing in the district. As mentioned previously, the Turkana consider condoms an anathema.

The free syndromic management of STIs in the district is carried out through the Lodwar District Hospital and mission hospitals. STIs management is more decentralised than tuberculosis. There is a minimal attempt made on contact tracing, counselling, and encouraging the presenting patient to bring his/her partner. The previous policy of forcing people to come with, or name, their partners was seen as deterring people from visiting the clinic, and was therefore discontinued. Patients are counselled on the spread and contraction of STIs, the effectiveness of therapy, the relation between STIs and HIV-1 contraction, and the proper use of condoms. Some treatments fail because of multiple infections, re-infection, and drug resistance. Though resistance is at times suspected, there is no culture test for confirmation.

According to the District Health Education Officer, HIV-1/AIDS currently forms a fundamental part of the subject matter content for all health-related training courses in the district. However, the impact is still minimal, as the majority of the population are still not targeted. Though there are community resource persons, like indigenous birth attendants and community-based health workers, who have adequate knowledge of HIV-1/AIDS, their impact is still minimal as they need resources to spread the message. The sections of Turkana inhabited by the nomadic and semi-nomadic communities are cut off from health

education. A chief at Lokangae, an area inhabited by nomadic populations, indicated that there is a lack of health education and factual knowledge of HIV-1/AIDS. The informants were not aware of the signs and symptoms of HIV-1/AIDS as they claimed they had never seen anyone who was infected, even though two chiefs of Lokangae indicated that many people have died of AIDS. In addition, it is popular knowledge that those who are infected use numerous indigenous medical resources, including the popular dog soup. One chief gave an example of a man in the village that had previously lived in Lokichoggio, who had been ill for nearly two years and had tried all indigenous medications to no effect.

Secondly, HIV-1/AIDS is not a priority in Turkana District in terms of the allocation and use of the district's budget. The Turkana District Commissioner noted that most of the resources in this district are devoted to security and not to development projects. In addition, resources from the government and other local and international NGOs are, for most part, devoted to the response to famine in any particular year.

In January 2001, as part of this research and the government's response to HIV-1/AIDS, three workshops were organised for three groups including: i) Turkana leaders, encompassing members of the provincial administration like district officers, chiefs and assistant chiefs, church leaders, business representatives, heads of government departments, and NGO representatives; ii) the women's group leaders workshop, comprising all women leaders in the district and all heads of women's groups; and iii) bar and lodging managers. While the Turkana leaders' workshop was organised for two days, the women's group leaders' and bar and lodging manager's workshops were organised for a single day each. The Turkana District Commissioner opened all the workshops.

During the Turkana leaders' workshop, some leaders decried the lack of resources for health promotion, and specifically for health education on HIV-1/AIDS. They indicated that leaders and other health workers are occasionally trained, but they lack the necessary tools and resources for use in health education and particularly for spreading the HIV-1/AIDS messages. One participant wondered whether there was any effective way that HIV-1/AIDS could be prevented in Turkana. At the end of the workshop, the leaders resolved that they would create HIV-1/AIDS awareness in chiefs' barazas, churches, institutions of learning, women groups, youth groups, the business community, and social

places. They would, in addition, collaborate with all NGOs, facilitate public education using visual aids, and encourage people infected with HIV-1/AIDS and other sexually transmitted infections, to attend the government's and mission's STD clinic as the services are offered free of charge. They suggested that the government should support the community-based organisations (CBOs) and community health care committees so that they could give advice on HIV-1/AIDS. As one concerned participant noted: "we can still save the Turkana in the interior from sexually transmitted infections, including *lokwakel*. The earlier they are educated about HIV-1/AIDS the better. Preventing HIV-1 in the interior of Turkana would stop the spread and save the Turkana. With the popularity of polygamy as a type of marriage, if *lokwakel* reaches the interior, it will wipe out the whole communities. Every time we hear there is no fuel, there are no materials for education, while at the same time we hear there is a lot of money to be used to fight *lokwakel*". The money for HIV-1/AIDS, it was suggested, should go to the CBOs and community based healthcare committees and not to the District Commissioner or the politicians. The leaders were very apprehensive about the constitution of the CACC as they thought that it was not representative. They were not happy with the formation of the District AIDS Control Committee as well. They saw corruption as having played a great role in the selection process. There was a contention that the Catholic Bishop of Lodwar, representing a powerful voice in Turkana, was unilaterally representing the church and all faith groups, while they did not even send a representative to the workshop, and they are vehemently opposed to the promotion of condoms. They wanted to know why the Pastors Fellowship of Lodwar and the NCCCK, another powerful church body in Kenya representing the protestant faiths, did not have a representative on the committee.

The participants in the leaders' seminar suggested that there is a dire need for public education in the communities. Educators, as one of them said, should go to where *kaada* is brewed and sold. "Alcohol drinkers should take one or two [bottles] and then go home". During a workshop with the bar and lodging managers, there was an indication that the government is not doing enough to educate the people on HIV-1/AIDS. In addition, little effort is made in the promotion of proper and consistent use of condoms, especially among the commercial sex workers. There was a perception by the DASCOP that bar and lodging managers should play an active role in the response to HIV-1/AIDS. In fact, this workshop

was a follow-up to the one they had in 1996. They, however, retorted that the government is not offering adequate public education on condoms. In the previous workshop, they agreed to form a four-man committee to ensure that condom dispensers were erected in all bars, lodgings, and hotels, through the support of Family Health International and UNICEF, which was actually done. The bar and lodging managers were to ensure dispensers were duly constructed on the walls, and that condoms were constantly available in these dispensers. They were, in addition, expected to create awareness concerning proper condom use and disposal of used condoms through the provision of litter containers in lodgings. The proper care and use of condom dispensers, is in addition, their responsibility. They however, decried the lack of cooperation and motivation from the STD clinic. The STI clinic head, the current DASCO, failed to coordinate the activities of the committee to ensure that condoms were distributed and that dispensers were constantly full. During the bar and lodging managers' workshop, it emerged that condoms were only distributed by DASCO for one month, following a previous workshop. The managers suggested that DASCO should make it a personal objective to distribute condoms to all the bars and lodgings on a monthly basis. The bar managers noted that most people that use condoms are refugees and not the local population, who detest condoms. As a new response to HIV-1/AIDS after the workshop, the bar and lodging managers agreed to form another committee to coordinate condom distribution. They would, in addition, ensure that they provide litter bins in rooms as people still flush condoms down the toilets or leave them under the bed. They suggested that "DASCOP should create awareness on condom use among the local population. The local population become annoyed when you talk about condoms to them – as talking about condoms is more or less taboo. Posters on condom use and prevention of HIV-1/AIDS should be printed so that they could be displayed in the bar and lodgings". Though one manager expressed concern that condom posters would be damaged as soon as they were displayed on the walls, many agreed that if that happens they would just put up new ones until people accepted the fact that HIV-1/AIDS is there and condoms can save those who either hire commercial sex workers and / or have non-protected sex, from HIV-1. DASCO also dispelled fears that condoms are of low quality by pumping air into one of them until it inflated to the size of a football. He noted that the free

condoms' quality is equivalent to that of the TRUST brand, as they originate from the same manufacturer.

Most of the participants at the Turkana leaders' workshop indicated that they had learnt a great deal through the workshop that they would pass on to the rest of the population. Church leaders were adamant that they would use gatherings to propagate the HIV-1 messages. However, the lack of resources for such endeavours was decried. All participants expressed amazement that sexually transmitted infections have symptoms and signs as shocking as those shown in the video. As one participant noted "People are dying because of lack of knowledge. After the Workshop I talked with my fellow tenants about the two videos we were shown about sexually transmitted infections and HIV-1/AIDS. The videos displayed shocking symptoms and signs. All my fellow tenants I talked to wanted to watch the video. Many people do not understand the symptoms and signs of sexually transmitted infections, including AIDS. Many have not seen the shocking effects of some of the sexually transmitted infections. People need to watch the videos". As one church leader said, quoting the Bible, Isaiah, 6, 'My people perish for lack of knowledge'. In all three workshops, people were shown a video titled 'Silent Epidemic' on sexually transmitted infections.

The leaders also suggested that there is a need for critical examination of some of the Turkana cultural practices such as incisions, *akidung*, tattooing, *akiger*, tooth removal, *akilok*, false teeth removal from babies, *akilem*, and shaving, *akibany*. These practices should be made safer through sterilisation of implements after single use. Proper boiling of the implements in water for relatively long periods should be enough for sterilisation.

Women's group leaders expressed interest in learning more about sexually transmitted infections, including HIV-1/AIDS. They confessed that they, and most of women, know very little about sexually transmitted infections. In addition, while people know about AIDS because of the obvious signs and symptoms, there is a lack of knowledge of HIV-1. They wanted to know how effective campaigns on HIV-1/AIDS could be carried out in Turkana. Just like other leaders, they also wanted the videos to be shown to people in the interior so that they could see for themselves the 'real' signs and symptoms of HIV-1/AIDS and other sexually transmitted infections. They expressed concern that people do not know much

about *lokwake!*. As one female leader asked, “why is the government taking too long to act in Turkana District? Why are the educational campaigns taking too long to reach the people in the interior (the semi-nomadic population and nomadic populations)? Is the government waiting for the Turkana to perish, this time not through hunger and destitution, but *lokwake!*?” To underscore the importance of HIV-1/AIDS, the women sang a song, which is becoming common in Turkana, telling people and the Turkana leaders not to sleep and let AIDS get out of hand. Instead, they should, through a concerted effort, drive *lokwake!* out of Turkana for good. As expected, the women expressed the belief that they should play a bigger role in the prevention of *lokwake!* as they are the ones that lose their husbands, breadwinners, and children or, conversely, leave their children as orphans. Women leaders resolved to create awareness about HIV-1/AIDS. As charity begins at home, they indicated that they would educate their husbands and children about the epidemic. They also resolved to work with community healthcare workers and committees, and create awareness among women’s group members.

These three workshops demonstrated that HIV-1 prevention efforts in Turkana are very limited. Even though the workshops were carried out every year, they have had minimal effect, as the wider population is not reached. What is generally lacking in the expansive Turkana District is a mass education movement designed and implemented within the socio-cultural structures and norms. As was indicated in all the workshops, the District HIV-1/AIDS Prevention Programme is more centred on workshops and seminars for ‘elite’ Turkana, most of whom reside in towns and are already aware of HIV-1/AIDS, rather than focusing on the masses throughout the district. The response has obviously been constrained by a great many variables including the lack of transport, computers for data collection and analysis, staff, especially a counsellor, home-based care programmes and specialists, and funds. In addition, the low priority accorded to HIV-1 prevention activities in pastoral areas, and the erratic cash flow from the district’s treasury has further hindered the response to HIV-1/AIDS. Indeed, the land itself has posed additional problems. The vastness and remoteness of the district, the rough terrain, the insecurity in the region, and the lack of effective infrastructure to reach the people in the rural communities (though it is envisaged that the CACCs would fill this vacuum) constrain the efforts to mount an

effective response. Finally, the stigmatisation of AIDS and the STI clinic play a role in limiting responses.

11:6 Conclusion

As discussed, the response to HIV-1/AIDS in Turkana is inadequate compared to the scale of the HIV-1/AIDS epidemic, and the government continues to have a lacklustre approach to HIV-1 prevention. This mirrors the underdevelopment that pervades the whole of the Turkana region. As indicated above, most of the resources devoted to HIV-1/AIDS are spent on seminars and workshops. As I found out, even the Turkana leaders, (both men and women) queried the logic of doing the same.

Minimal effort has been made to reach the semi-nomadic and the nomadic Turkana through the currently limited HIV-1 prevention efforts. This is despite the fact that HIV-1 is spatially diffusing into these regions as the evidence demonstrates. In the chapter that follows, I will present my proposed response to HIV-1/AIDS in Turkana.

A Proposed Integrated Response to HIV-1/AIDS in a Resource Poor Setting: A Case of Lodwar Township

12:1 Introduction

The complexity of the pandemic requires the broadening of the response to encompass not only public and biomedical health approaches, but also broad-based responses aimed at improving the social conditions of living. As so far the global response to HIV-1/AIDS has failed to halt its spread and alleviate its impact, the HIV-1/AIDS pandemic serves as a reminder that social, economic, and health problems cannot be “cured” with vertical, isolated, uncoordinated, and un-integrated approaches or responses ((FHI/AIDSCAP LACRO 1997: 2). A truly integrated and long-term multi-sectoral response to HIV-1/AIDS must encompass: i) a biomedical approach to treat opportunistic infections, offer highly active antiretroviral therapy (HAART) drugs to the HIV-1-infected, and broadly treat and prevent other infections; ii) a public health approach, to contain the spread of HIV-1 infections; and iii) the enhancement of socio-economic development, via investment, to alleviate poverty, lessen the socio-economic impact of HIV-1/AIDS, and to mitigate the social, cultural, political, and economic conditions that increases people’s vulnerability to infections. This broad approach is needed because HIV-1/AIDS, like numerous other infectious diseases in sub-Saharan Africa, are not a cause but rather a symptom of the inequitable distribution of resources, the deplorable social conditions of living, an unfavourable world (capitalist) economic system, and a dysfunctional socio-economic development process. As Josef Decosas (1996:73) states:

“HIV is an important piece in the puzzle of international development. It is linked to all the other pieces by a labyrinth of causal pathways. It is an indication of uneven or dysfunctional social development, it is the cause of developmental delays, and it is the result of inadequacies in the development of social and health services”.

The effective response to the HIV-1/AIDS pandemic should encompass the high-risk situations, “the conditions which are as great a factor in the spread of HIV-1/AIDS as individual behaviour” (FHI/AIDSCAP LACRO 1997: 28). It is ultimately the high-risk social conditions of living that influence human behaviour to make them high-risk – vulnerable to HIV-1 infection - giving rise to ‘high risk groups and behaviours’ in HIV-1 transmission. In addition, it is critical to understand that high levels of preventable diseases, inadequate healthcare resources, poverty, urbanisation, social upheavals, deplorable social conditions of living, and marginalisation, all facilitate the transmission of HIV-1. HIV-1/AIDS is, therefore, a complex problem that defies the established biomedical and public health models and demands an examination of social, political, and economic inequalities.

This chapter discusses the ways that an integrated response to HIV-1/AIDS could be implemented in the Turkana District. This integrated response incorporates tuberculosis because of its social and biomedical association with HIV-1/AIDS. The chapter is divided into two main sections. The first section is further divided into two sub-sections. The first sub-section discusses the rationale for an integrated and comprehensive response to HIV-1/AIDS. The second sub-section, divided into two themes, first discusses the proposed areas of intervention that address the ultimate causes of HIV-1/AIDS in Turkana, and secondly the response through the public health and biomedical approach.

The public health and biomedical approach to HIV-1/AIDS is further elaborated in the second section, which specifically discusses biomedical intervention using highly active anti-retroviral therapy (HAART), particularly in relation to Turkana. I have, in addition, proposed a way forward in the management of HIV-1/AIDS and TB through a joint strategy.

12:2 The rationale for an integrated response to HIV-1/AIDS

Response to HIV-1/AIDS should be at three levels: the prevention of new infections (public health approach); the treatment and care of those who have HIV-1/AIDS (biomedical approach); and the mitigation of the socio-economic impact and / or the causes of HIV-1/AIDS (socio-economic / development approach). An effective response to HIV-1/AIDS must be broad enough and multi-sectoral to encompass all three phases. This

research has provided a broader ecosystem approach to HIV-1/AIDS that could provide a broader ecosystem approach to the response to HIV-1/AIDS in Turkana. The theoretical approach to the response to HIV-1/AIDS in Turkana can be applicable to not only pastoralist areas, but also resource poor localities in sub-Saharan Africa and other parts of the developing world.

The ecosystem factors outlined in the previous chapters, which are apparent in Turkana, should provide policy guidance for responses to HIV-1/AIDS. Addressing symptoms rather than the causes of AIDS, as is done by the government and the non-government organisations in Turkana, will yield a very minimal effect on the control of HIV-1/AIDS. There are many contextualised factors that can be mitigated at the individual and community level while the rest can be addressed at the district, national, and international levels. For instance, responses to HIV-1/AIDS cannot be effective unless factors of the ecosystem that influence sexual behaviour are addressed, including the socio-economic factors that motivate individual sexual behaviour. Reduction of vulnerability to HIV-1 infection through risk reduction would be based on the recognition of individual risk-taking behaviours and the personal and societal factors that influence them. An ecosystem approach to HIV-1/AIDS would focus on the response at several levels, encompassing the reduction of risk through prevention, care and support, impact-alleviation, and the mitigation of the ecosystem factors that influence vulnerability.

The current response to HIV-1/AIDS has focused on the prevention of the contraction and transmission of HIV-1/AIDS, and other sexually transmitted diseases. These have largely ignored the ecosystem factors that cause these infections through their influence on sexual behaviour and on the motivations surrounding sexual acts. Education and the provision of free condoms alone cannot sustain behavioural changes that are influenced by ecosystem factors that are often left intact without change. It is currently axiomatic that knowledge alone is not sufficient for individuals to change their behaviour (Caldwell 1999), leading to a gap between knowledge and behavioural change. The emphasis on behavioural change presupposes individual agency. However, various forms of behaviour are influenced by ecosystem factors, thus negating the emphasis on individual agency, as individuals are constrained from altering their behaviour. Matters of sexuality surpass rationality as sexual behaviour cannot be predicted consistently based on knowledge,

attitudes, or intentions. In fact, the perception of risk with regard to sexuality is at times a matter of the heart and of personal choice. Therefore, regardless of the sexual partner, it cannot always be assumed that an individual with particular attitudes, knowledge, and experience will behave identically in all his or her sexual relationships. We have seen how commercial sex workers are willing to use a condom with occasional clients, but refrain from using one with regular partner(s). This is more so in the case of commercial sex workers who, despite being aware of the risks involved in unprotected sex, cannot change their sexual behaviours because of the need for income. Likewise, a labour migrant in Lodwar, far away from home and engulfed with fear of travelling home regularly due to banditry, would not refrain from having sexual gratification, a biological need. Due to the hardship and insecurity in the region, such migrants cannot afford to have their families with them. In both of the above cases, the practical benefits of engaging in sexual intercourse outweigh the perceived risk of, or vulnerability to, contracting HIV-1. Despite the fact that most of the respondents knew that multiple partnerships increase the risk of contracting HIV-1/AIDS and other STIs, they still have multiple sexual partners in addition to their conjugal partners. What they are saying is, 'ideal behaviour', is not consistent with the actual behaviour.

Any prevention strategy should also address the local needs of the community. Communication and education has had a minimal effect on behavioural change because they do not address the people's socio-economic needs. The poor Turkana are concerned about their basic needs for food, shelter, and water. As one Turkana female leader puts it,

"If I do not have food to eat, tell me in terms of priority where HIV-1/AIDS will fall. My first need, that I must satisfy, is the basic essentials for survival like food, after which I could assimilate the prevention messages. Many ordinary Turkana are particularly poor and hungry especially during periods of drought and widespread famine. To all these countless people in Lodwar township and the whole of Turkana District, their priority is food. Second, in order of priority would come numerous infections like malaria, cough, pneumonia and tuberculosis that they have to deal with on a daily basis. The third priority would be restocking and concerns of insecurity. A distant fourth would come in HIV-1/AIDS".

The most important challenge is to make HIV-1/AIDS and other sexually transmitted infections a priority. In terms of social prioritisation, other development issues, poverty, and hunger must be addressed too, and HIV-1/AIDS must be slotted in through practical and easy to understand correlations. For instance, in the rural community of Lokangae, there were children who were allegedly orphaned by HIV-1/AIDS. Through such existential examples, the local populations could understand how HIV-1/AIDS leads to the production of many orphans. In addition, the death of parents leads to the taking away of livestock by relatives, leaving the children with no means of survival.

Proposed interventions should factor in the connection between HIV-1/AIDS and other infections, especially tuberculosis and other sexually transmitted infections. While HIV-1/AIDS leads to the occurrence of numerous opportunistic infections, thus increasing the disease burden, other illnesses such as tuberculosis and sexually transmitted infections are linked to the transmission and contraction of HIV-1/AIDS. It is common knowledge that HIV-1/AIDS and TB are like co-wives, inextricably linked through cause, transmission, contraction, symptomatology and signs. At another level, the close proximity to livestock has led to the increased prevalence of brucellosis²⁷⁹ (Schwabe 1984; Bifani 1992). The high prevalence of brucellosis among people and livestock has been observed among other pastoralists, such as the Fulani and Mongolians (Schwabe 1984; Chabasse *et al.* 1985; Foggin *et al.* 1997). Brucellosis and tuberculosis are transmissible from animals to humans when the latter feed on animal products, especially uncooked meat or offal, unboiled milk, and through animal contact whereby parasites enter the body via sores and cuts. In addition, both diseases are transmissible from human to animals. In Africa, it is argued that cattle are a significant source of TB infection for man (Edelsten 1996). Moreover, due to the AIDS / HIV-1 pandemic, it is increasingly becoming possible that man will conversely become a risk to cattle, thus increasing zoonotic bovine TB as well (Daborn *et al.* 1991). This would have serious implications for the Turkana, who not only invest in livestock production, but also depend on livestock products for their nutrition and socio-cultural functioning. In addition, livestock would be sold to cure numerous infections that afflict the HIV-1-infected, further reducing the number of livestock, and thus compromising food security.

²⁷⁹ Brucellosis, bovine tuberculosis, is a zoonosis, affecting both animals and humans.

Cost effectiveness should be the guiding light for intervention strategies in view of the fact that there is stiff competition in poor countries for resources among an avalanche of equally important and deserving needs. Therefore, in endeavouring to propose strategies for intervention in resource poor communities like Turkana, we have to be cognizant of the cost, priorities in people's perception and local knowledge, sustainability, and total cost of the chosen project in comparison to other available and executable options. Creese and colleagues (2002) undertook a systematic review of interventions (single-dose nevirapine and short-course zidovudine for the prevention of mother-to-child transmission, blood safety measures, condom distribution, and treatment of sexually transmitted illnesses) in sub-Saharan Africa²⁸⁰. They calculated a standardised cost (US\$ for year 2000) per HIV-1 infection prevented and per disability-adjusted life-year (DALY) gained. Review results indicate that breastfeeding and formula feeding interventions cost from around US \$400 to over US \$20,000 per infection prevented, where as a single dose of Nevirapine costs about US\$ 20 to 341. On the other hand, diagnosis and treatment of sexually transmitted infections costs just over US \$270 per infection prevented and the figure for voluntary counselling and testing (VCT) was around US \$400 to 500 (Creese *et al.* 2002: 1637). The cost of condom distribution ranged from US \$11 to over US \$2000, and measures to improve blood safety cost US \$20 to US \$1000 to prevent a case of HIV-1. The cost per DALY gained by intervention ranged from around US \$1 for the combined treatment of sexually transmitted diseases (STD) and a condom promotion programme, and for blood screening, to well over US \$1000 for HAART (commonly known as drug cocktail therapy) in adults. On the other hand, blood safety measures and single-dose Nevirapine for prevention of mother-to-child transmission costs US \$10 per DALY. Tuberculosis treatment could also be less than US \$10 per DALY gained, but as high as US \$68 if in-patient care is involved, while VCT and co-trimoxazole prophylaxis for HIV-1-positive patients with tuberculosis costs around US \$20. Home-based care varied from US \$100 to US \$1000, with community-based care programmes having a lower cost per DALY than programmes organised from health care facilities.

²⁸⁰Most of the interventions reviewed were carried out Kenya, Zimbabwe, Cameroon, Uganda, South Africa, and Tanzania.

From this review, the most cost-effective interventions were those based on HIV-1 preventive measures and tuberculosis case finding and treatment, VCT, and co-trimoxazole prophylaxis for HIV-1-infected TB patients. This is why, though the focus of the thesis is on HIV-1/AIDS, I have given weight to the importance of having joint programmes for tuberculosis and HIV-1/AIDS. This cost effective analysis supports this endeavour. In addition, it shows that effective management of sexually transmitted infections and the distribution and promotion of condoms in urban centres, especially among high-risk groups (truck drivers, military personnel, sex workers, and immigrants), would be cost-effective.

Other effective measures would encompass the improved safety of blood intended for transfusion. Additionally, prevention of mother-to-child transmission through single dose Nevirapine is not only effective, but also a humanitarian, ethical, and human justice issue. Formula feeding is not only expensive, but would also pose enormous challenges to the mothers who would be under suspicion for not breastfeeding. This situation is exacerbated by the constant high-profile promotion of breastfeeding where mothers are told to shun tinned baby foods²⁸¹. While breast milk is good for boosting the social bond between child and mother and transferring important antibodies to the child, it is becoming a source of HIV-1 infection for children born by HIV-1-infected mothers.

It is not surprising that the authors (Creese *et al.* 2002) did not review the cost-effectiveness of development projects and poverty alleviation programmes on the reduction of HIV-1 infections and DALY gained. This could be because either no project has been implemented to directly prevent the prevalence of HIV-1, or the review did not fit neatly into the economic paradigm used.

The joint strategy for controlling TB and HIV-1/AIDS should comprise interventions against tuberculosis (intensified case finding and cure, and tuberculosis preventive treatment) and interventions against HIV-1 (and therefore indirectly against tuberculosis), such as condoms, the treatment of sexually transmitted infections, and highly active antiretroviral drug use (HAART) (WHO 2001: 7). Of interest to the Turkana situation is the treatment and identification of TB cases, and the prevention and treatment of STIs.

²⁸¹ Nation reporter, 2002. 'Mother's milk is best for the baby, insists health minister' Daily Nation, August 7, 2002.

Currently HAART is neither affordable nor accessible. Often the Turkana who present with TB are not aware of their HIV-1 status. This is why a joint strategy would be needed whereby all TB patients are tested for HIV-1, and those who are HIV-1 positive are tested for TB as well, without stigmatising both illnesses.

A joint strategy to address HIV-1/AIDS/TB will counter stigma and enhance community receptivity to take up prevention interventions. As noted by Turkana Nursing students,

"Initially there was no stigma attached to TB. But nowadays, due to AIDS, there is a social stigma. If one is not responding well to TB therapy, people say that it is AIDS. Currently, as people learn that TB is infectious and contagious, and that it is linked to HIV-1/AIDS, they run away from those who are infected. They do not even want to shake their hands. They only shake their hands once they realise that they are recovering. This is going to have disastrous consequences as approximately 94 percent of TB patients admitted at Lodwar District Hospital are doubly HIV-1-infected".

Reduction of stigma will enhance the local ownership of the national HIV-1/AIDS and TB control programmes.

Currently the following questions beg answers. Could the provision of the anti-TB prophylactic (co-trimoxazole prophylactic for HIV-1-positive adults with TB) and HAART form the most effective package in Turkana and generally in poor countries? Can the framework for effective tuberculosis control be used as a model for access to HAART? What would be the impact of HAART on TB? Finally, yet importantly, should we provide HAART or focus on the specific infectious diseases like TB and malaria plaguing both the HIV-1 infected and non-HIV-1-infected in sub-Saharan Africa? Operational research is, however, still needed in Turkana to find out how best HIV-1/AIDS and TB programmes can work together in the face of a joint strategy targeting two illnesses that are biomedically and ethnographically / socially linked. Looking at the Mama Mzungu Foundation (see 12:3:2:7 below), it would be necessary to determine the feasibility, effectiveness, and cost-effectiveness of providing free drugs to the HIV-1 infected for opportunistic infections, and whether this would include the sponsorship for HIV-1 and TB tests, regular viral load monitoring, provision of TB preventive therapy, and highly active antiretroviral therapy (HAART).

12:3 An integrated response to HIV-1/AIDS in Lodwar

township

Based on the findings of this research, I have presented a few options that could be explored further, in concert with the Turkana, in attempts aimed at mitigating and preventing HIV-1/AIDS.

12:3:1 Responses to HIV-1/AIDS through mitigation of the factors of the ecosystem that influence the risk and vulnerability to contraction and transmission

This sub-section presents the proposed areas of intervention that would address the root causes of HIV-1/AIDS. The factors of the ecosystem that make the Turkana vulnerable to the contraction and transmission of HIV-1 in Lodwar township are discussed, namely socio-economic development and poverty alleviation, intervention amongst high risk groups, specifically truck drivers, members of the armed forces, and commercial sex workers, the prevention and / or cure of prevalent illnesses, an improved healthcare infrastructure, and the empowerment of women.

12:3:1:1 Development of the healthcare infrastructure

The Director of Medical Services once noted that Kenya's health sector is in its worst shape in ten years²⁸². This has contributed to the reversal of gains made in reduced infant and child mortality rates from 61 to 74 per thousand. In addition, there is the increased burden of infections among the general populations. The focus of the National HIV-1/AIDS Programme, and the Tuberculosis and Leprosy Control Programme on improving specific services like prevention rather than supporting healthcare infrastructure and reducing poverty does not auger well for HIV-1/TB prevention (Guks *et al.* 1998). At present, the general healthcare infrastructure is an impediment to the fight against TB and HIV-1/AIDS and the management of AIDS with antiretroviral drugs. Infrastructure, which provides

²⁸² Kamau, W., 1999. 'Kenya's health sector 'in its worst shape in 10 years' Daily Nation, April, 26, 1999.

access to effective diagnoses and treatment of the diseases in both groups, is a necessity for the war against TB/HIV-1. In sub-Saharan Africa, regions with high burdens of HIV-1/AIDS morbidity have not successfully strengthened their general healthcare infrastructure to meet the insurmountable tide in morbidity and mortality to HIV-1-induced infections (WHO 2001).

With a poor health care system, the prevention of HIV-1 and the management of AIDS will have minimal public health effect. This means that the control of HIV-1 and the management of AIDS must be part of a wider programme to strengthen the health care infrastructure to focus on not only HIV-1/AIDS, but also other killer (opportunistic) infections such as malaria, tuberculosis, and sexually transmitted infections.

Currently, the health care resources are inadequate and rarely accessible by all sections of the Turkana population, especially the semi-nomadic and nomadic communities. Most of these health facilities are stationary while a large proportion of the Turkana population are mobile. In addition, the stationary health facilities are not equitably distributed, leaving vast sections without healthcare. Secondly, the health facilities that exist are under-funded and are in a deplorable state. The Lodwar District Hospital, the epitome of biomedical services in Turkana, is in a horrendous state, mired by lack of resources, beds, medical equipment, poor environmental hygiene, the lack of infection control policy and equipment, etc. The restructuring of the healthcare infrastructure, the decentralising of STD clinics, the training and employment of more female clinicians, and the transformation and re-branding of the STD clinic in Lodwar to be an expansive GUD Clinic with a wider focus on sexual and reproductive health, would be necessary. Of immediate concern would be a move to make the STD clinic anonymous so that sexual illnesses could be de-stigmatised and those who are accessing these services would be afforded anonymity.

The support for the healthcare infrastructure should also ensure that medical services are delivered through safe medical practices to curtail the iatrogenic transmission of HIV-1. A well-funded and well-staffed district-wide blood transfusion service should be established that, among others, would educate the public and organise effective donor campaigns. In addition, blood or blood product should be free for those receiving transfusion, or else paid for through government allocations or health insurance. Paid donors should be prohibited

and family donors should be discouraged. In addition, blood transfusion should only be for medically necessary interventions. Those who prescribe blood should be trained to avoid unnecessary or inappropriate transfusions. As a first major step, prevention of diseases such as malaria and early intervention, as well as raising general health standards are important measures to reduce unnecessary transfusions. All donated blood should be tested for HIV-1, HBV and syphilis, and other transfusion transmissible infections as determined by the local prevalence of epidemiological risk. There should be an establishment of proper storage facilities for blood by also ensuring a viable blood bank to avoid demand driven donations that do not allow for the retesting of blood to avoid sero-conversions that are not detectable by the initial test.

The Lodwar District Hospital is the main health facility that screens and offers directly observed therapy short course (DOTS) for the TB infected. It, in addition, acts as a feeder for mission hospitals and other health centres in the district that are required to refer suspected TB cases to Lodwar. The Kakuma Mission Hospital is the only other hospital that offered DOTS therapy to TB patients, using drugs sourced from the Lodwar District Hospital. The District TB management programme in Lodwar is overstretched beyond capacity. The first step for a joint TB/HIV-1/AIDS programme would be to decentralise the TB Manyatta, starting with one in each of the urban centres of Kakuma, Lokichoggio, Lokitaung, and Kalokol. Manyatta treatment is best for nomads, however the district is so wide and the infrastructure so poor, that reaching everywhere is a huge problem.

The mass theft of drugs and possibly medical equipment from the government pharmacy should be checked and stopped. It is general knowledge in Turkana township that medical personnel divert drugs to their privately owned or operated clinics. Even the Kenyan Permanent Secretary of Health once noted that most medical equipment and drugs stolen from government health institutions end up in private clinics²⁸³. Ironically, even though most of these private clinics are unhygienic and hardly adhere to infection control principles, they deliver 48 percent of the healthcare services in Kenya.

Better TB control relies on better infrastructure and equitable access to health care resources because it relies on better diagnostic tests, preventative therapy, case finding

²⁸³ Kamau, W., 1999. 'Kenya's health sector 'in its worst shape in 10 years' Daily Nation, April, 26, 1999.

and successful treatment and better case tracing. At present, there is no follow-up or contact tracing of tuberculosis patients into their homes to find out whether other family members are infected. TB is highly infectious and may infect the whole family. If only one member of the family, the one infected and with conspicuous symptoms and signs is treated, there remains a reservoir of infection. In addition, there was no way that the personal and environmental hygiene of the patients, such as the housing conditions, hygiene, nutrition, etc, which play an important role in the transmission and contraction of tuberculosis, could be assessed. I was reliably informed that there were no resources for such an important endeavour due to the lack of adequate staff and modes of transport. The Tuberculosis and Skin Clinic and the STD Clinic had only one functional motorbike each.

There is a need for more resources to be allocated to the Turkana District for the control of both tuberculosis and HIV-1/AIDS. The district is obviously marginalized in the allocation of healthcare resources characterised by few biomedical personnel, and a lack of motor vehicles. For instance, while all the districts in Kenya were provided with donor-funded four-wheel drive Toyotas for HIV-1/AIDS and STD control programmes, none was allocated to this district. There is also a need for more clinical officers, better diagnostic facilities, and appropriate diagnostic guidelines (Harries *et al.* 2001).

The case-finding and treatment of TB cases should be decentralised instead of sending all patients to a centrally located place in Lodwar, forcing many patients to live in unfamiliar TB Manyatta located in urban environments away from families and relatives, and their daily economic activities like herding and household chores. Unless this is done, many tuberculosis cases will go untreated leading to untold suffering and death. WHO has already pointed out that only 23 percent of all tuberculosis infections worldwide in 1999 had access to effective diagnoses and therapy (WHO 2001). In Turkana, this could even be lower. Moreover, failure to ensure an effective response to tuberculosis, especially in urban centres with a high prevalence of HIV-1/AIDS will only lead to a further tuberculosis burden (Dye *et al.* 1999).

There is often an obvious delay in seeking therapy due to distance, cost, and the lack of effective case finding. On an average, the time between the onset of symptoms and

diagnoses of smear-positive pulmonary TB is about 3-4 months in many Africa countries (Steen and Mazonde 1998; Salaniponi *et al.* 2000). This may even be longer for those with smear-negative pulmonary TB and extra-pulmonary TB, probably due to the lack of access to radiographic facilities (Salaniponi *et al.* 2000). As we discussed earlier, the patients in the TB and isolation wards took an average of three months before they went to the hospital. This delay was enough to make their TB more infectious. Furthermore, the delay in diagnosis and treatment of TB compounds the chances of curing TB in HIV-1-infected patients.

In order to offset the adverse effect of HIV-1 on the tuberculosis epidemic, tuberculosis control programmes have to be more effective in diagnosing more infectious cases earlier to maximise achievable treatment success rates in order to interrupt transmission and the further spread of TB (Lienhardt and Rodriguez 1997). The current case-finding methodology encompasses detecting cases among people presenting with symptoms at health services (Maher *et al.* 1997). In Kenya, most of these health services are offered at the district hospitals. While other districts might be well covered by their respective hospitals buttressed by a good network of effective health centres that are able to identify and refer potential TB cases to district hospitals for tests and confirmation of diagnosis, the Turkana District is a huge expanse. With a sparse semi-nomadic population punctuated with emerging, densely populated urban centres and other settlements, the district is inadequately covered by dysfunctional health services.

In the Turkana setting, one of the ways that TB cases can be detected and treated might encompass a number of methods including: test all persons presenting with respiratory symptoms and signs in all health services in the district; establish more health centres; establish centres for voluntary counselling and testing, and the tracing of all household contacts of all HIV-1 positive persons who have presented with infectious tuberculosis; set up mass education programmes on TB/HIV-1/AIDS; establish support groups for tuberculosis and people living with HIV-1/AIDS in the villages; decentralise TB detection and treatment infrastructure; train community health care workers to take an active part in tuberculosis and HIV-1/AIDS prevention and case detection; train indigenous healers and traditional birth attendants as counsellors; educate to de-stigmatise HIV-1 and other sexually transmitted infections; treat sexually transmitted diseases; improve the detection

of tuberculosis in the densely populated town centres and villages; teach people about universal infection control principles with regards to invasive procedures like body decorations, indigenous birth assistance, and healing practices such as tonsillectomy, bloodletting and surgical treatment; and provide logistics from the central government and donors in the form of motor vehicles, including bicycles and motorcycles.

The marginalisation of the Turkana in the budgetary allocations of basic healthcare infrastructure is evidently an act of covert discrimination. The Turkana District is crying for technical expertise and adequate resources for the control of TB/HIV-1/AIDS infections. Even the TB health workers in the district hospital expressed concern on the vastness of the district coupled with insecurity and poor infrastructure. Since prevention of transmission involves prompt diagnosis, this requires that people from resource poor counties need acceptable and accessible free testing. This was not the case in Turkana where the impact of cost sharing was experienced by the poverty-ravaged populations. In the course of data collection, I encountered various people who postponed going to the hospital to be tested for TB due to lack of money for tests, even though treatment was free. One man in a sprawling village in Lodwar township, who had been ill with tuberculosis and was exhibiting signs and symptoms such as coughing and weight loss, delayed going to the hospital for six months, until I gave him money for the sputum test and the x-ray examination. We can only but imagine the number of people that contracted *Tuberculosis bacillus* from him. Free tuberculosis examinations when buttressed with effective education will encourage the Turkana to regard the development of signs and symptoms as opportunities to seek treatment and not as a sign of HIV-1/AIDS, which needs to be hidden.

The development of the Turkana healthcare system would counter the impoverishment of Turkana and existing structural inequalities. The accessibility of healthcare resources to all the Turkana, and the availability of most of the drugs for infections would lay the foundation for the proper administration of HAART. It is not just a matter of the government making available free drugs through donor funds, but of making sure that there is a viable infrastructure to increase accessibility, detection, and treatment.

12:3:1:2 Empowerment of women

Women should be placed at the centre of HIV-1 prevention (Reid 1997). Women have traditionally borne the brunt of HIV-1/AIDS as more than 58 percent of Africans living with HIV-1/AIDS are women. Though many have contracted HIV-1 in their marital bed, they are the first to know their status when they become pregnant and undergo tests at antenatal clinics. Some women only know of their sero-status when their husbands fall ill, as men are often scared of HIV-1 tests, preferring to send their wives instead. Even outside marriage, girls aged 14 to 24 years are three times more likely to contract HIV-1 than boys in that age group because they tend to have relationships with older men (Gregson *et al.* 2001; Gregson *et al.* 2002), they have immature genital tracts that render them more susceptible to HIV-1 infection (Royce *et al.* 1997), and they lose their virginity early, which is associated with an increased risk of HIV-1 transmission (Bouvet *et al.* 1989). In general, HIV-1 is more efficiently transmitted from men to women than from women to men (Maestro and de Vincenzi 1996). In addition, women have greater vulnerability to HIV-1 infection due to the fact that they have less say on when and how sexual intercourse takes place, their limited decision-making power concerning condom use, the prevalence of asymptomatic or less symptomatic STDs (Royce *et al.* 1997), and their anatomy and physiology.

Due to the heterosexual nature of HIV-1 transmission in sub-Saharan Africa, removing gender inequality could be one of the effective ways of preventing the spread of HIV-1 infection. The battle against HIV-1/AIDS will not be won until we tackle the question of power relations not only at the personal level, but also in the way we distribute resources. In addition, some of the traditional ecosystem factors that define women's vulnerability to HIV-1 should be challenged. So far, the approaches currently being used for HIV-1 prevention obviously put men at the centre by virtue of the power imbalance between men and women. Women have little power to negotiate their sexual safety even though they have been the focus of HIV-1 education campaigns. Such programmes as those involved in the reduction of the number of sexual partners, condom usage, faithfulness in relationships, celibacy, abstinence and the treatment of sexually transmitted infections are all male biased as women do not have the power and resources to put them into practice.

This concurrence of sex with gender-determined power makes it clear that the control of HIV-1 is intimately intertwined with empowerment and social justice. Even if women are faithful, as they are expected to be, men are believed to be philanderers, and are encouraged by polygamy. In fact, most women infected with sexually transmitted infections in Africa have one sexual partner – their husbands only (Reid 1997:160).

Even though Caldwell (1999) suggests that the major focus on HIV-1 education in sub-Saharan Africa should shift to commercial sex workers and adolescent relationships, there would be minimal change in behaviour if the socio-economic structures such as gender inequality, sexual coercion, social exclusion, and economic exploitation that influence the behaviour exhibited by both are not urgently addressed. Educating women and making them aware of HIV-1 *per se* will not produce results, as knowledge alone cannot influence sexual behaviour. Women can only communicate with their partners about condoms if they are empowered, thus enabling them to demand safer sex. Even women in 'ordinary jobs' are often forced into sexual activities so as to keep their jobs or win promotions. In a flower farm in Naivasha, many women live with the dilemma of having to choose between losing their jobs but saving themselves from HIV-1, or retaining the job but risking their family existence and their health. As one woman said: 'if you are raped by the supervisor in the Green House or he touches your backside, you cannot scream or complain because you will be dismissed'²⁸⁴. In Lodwar, one woman alleged that she retained her job in the civil service during the World Bank's sponsored retrenchment programme because she agreed to engage in a sexual liaison with her immediate boss.

A study in Switzerland found that male power enforced condom use or the lack of it regardless of whether prior discussion of HIV-1 and protection measures took place (Bruhin 2003). In addition, negotiation on the use of condoms was effective in sexual contacts or relationships involving men and women who have equal power. In Turkana, there is a need for the strengthening of female power, and questioning male dominance in order to give women more freedom and power to negotiate the use of protective devices such as condoms. The imbalance of power in relationships among couples should be critically examined just as should general male dominance. Communication and the art of

²⁸⁴ Wang'ombe, F., 2002. 'Women workers are underpaid, sexually molested and exposed to big health risks' The East African Standard, March, 18-24, 2002.

negotiation between spouses regarding sexual matters should be promoted, as should that between parents and children.

Since adolescent women are more vulnerable, intervention programmes should target them through sex (life) education and information in schools, and within communities and families. Families with daughters should be sensitised to educate young girls in sexual matters, HIV-1 prevention, the identification of STD symptoms and signs, the value of prompt treatment, reproductive organs and functions, the avoidance of sex with older partners, and skills on how to rebuff sexual advances from boys and men in early puberty. To enhance gender equality, condom promotion should target couples to enhance use for dual protection against sexually transmitted infections and pregnancy. As young people, especially girls are more worried about pregnancy than sexually transmitted infections, the quality of condoms and their ability to offer dual protection should be highlighted and promoted. This would be the best opportunity to not only attract young women to sexual health clinics for routine examinations and the provision of curative services for the infected, but also to promote condoms and HIV-1 prevention.

Behavioural change promotion within family services and STI clinics will only be beneficial if they empower women to negotiate safer sex with their partners. Expanding family planning services with the view of aggressively targeting young men and adults would be one of the ways of addressing men's masculinity and how perceptions of the same might put both genders at risk of HIV-1. In Kenya, a study found out that family planning providers do not share knowledge in condom use with clients (Finger 2001). Similar findings have been found in Zimbabwe and Senegal where providers told only one in every five new clients and one in four new clients respectively about condoms (Miller *et al.* 1998).

The study demonstrates that there is lack of knowledge of sexual health generally, and particularly symptoms and signs of sexually transmitted infections. Women would benefit from education on both symptoms and signs of sexually transmitted infections. They would be able to not only self-diagnose but also detect infections in their partners. Moreover, with this knowledge, if a woman suspects that a man could be infected, she could simply refuse to have sex until the man is cured. This would enable the couple to seek therapy

jointly. We saw previously how a woman who was infected with a STI responded by refusing to engage in sexual intercourse and further abandoning her husband. In the case of HIV-1/AIDS, we suggest that it is better to say 'no' than to be submissive due to the fear of reprisals and later face unpleasant consequences including leaving the children orphaned. This alternative is "becoming more widespread in high incidence areas" (Reid 1997: 162). Women could even form groups so that they can use their collective power to change men's sexual behaviours. Such collective gender solidarity by all women would be based on 'no faithfulness, no sex'. In addition, commercial sex workers would help their sisters by insisting on 'no condoms, no sex' as well. There are some communities, like Maharashtra, where women forced men to change their drinking behaviour (Reid 1997: 163). They formed themselves into vigilante groups and decided to watch for drunken men. The women attracted sympathetic men with whom to build much needed cross-gender solidarity.

A gender-sensitive approach to addressing HIV-1/AIDS will allow the safeguarding of women's interests and the enhancement of their rights, thus creating an enabling environment within which women would effectively contribute to the fight against HIV-1/AIDS. Knowledge and improved socio-economic status would result in the empowerment of women whereby they would be able to make informed decisions on sex. This would lead to them negotiating safer sex, and powerfully and informatively resisting men's sexual advances.

There is an urgent need for female controlled prevention strategies and technologies, that is, female condoms (UNAIDS 1997c), diaphragms and spermicides (UNAIDS 1998d). Despite the fact that female condoms are available in other parts of Kenya, none was available in Turkana. Even if they were to be available in shops, the cost would be prohibitive as they are, ironically, more expensive than male condoms. Nevertheless, female condoms have been accepted in places where they have been tried in Kenya and Brazil (Ankrah 1999). Affordable and accessible female condoms would empower women to make decisions concerning when to use them. In the absence of female condoms, combining a microcide with a diaphragm could be an effective method of preventing HIV-1 transmission, as the chemical and the device would protect the thin and friable infection-susceptible cervical columnar epithelium and upper reproductive tract from the virus

(Padian 2001). Such a combination of diaphragm and microcide would be more effective than the condom. The non-production of these microcides and spermicides could be construed as part and parcel of the marginalisation of the female gender by the male-dominated science and manufacturing field. It is ironic that control of a deadly disease that infects more women than men, and is more efficiently transmitted from men to women, relies on males through male-designed and dominated technology. This justifies a female-oriented paradigm and female controlled prevention. While men might use condoms with commercial sex workers, they do not use them with girlfriends, and regular partners (Calentano *et al.* 1996; Mills *et al.* 1997; Mgalla and Pool 1997). In fact, sex workers and other women get infected by these men that they classify as regular partners or clients who would expect non-protective sexual intercourse as an expression of unconditional love. The male condom is not appropriate for the various types and levels of sexual relationships characterised by the duration of the relationship, the number of previous sexual contacts, the level of material, and emotional support, intimacy, trust, love and affection. At another level, condom use presupposes that one is infected or needs protection from contracting or transmitting the virus.

Polygamy is currently detrimental to women's health in sub-Saharan Africa. If a husband is infected, he would transmit the infection to all wives. In the same vein, if one of the wives is infected, she would infect all other wives through the husband. Rather than advocating strict monogamy, as expressed by informants there should be promotion of faithfulness and strict adherence to polygamy by those who have or are interested in having multiple wives. Already most of the respondents believed that having multiple partnerships increases the chances of contracting HIV-1. Such knowledge should be reinforced.

For adolescents, the value of virginity should be promoted. Early sexual debuts among girls increase their risk of contracting HIV-1. Research has found that the loss of virginity, which usually occurs in young women, has been associated with an increased risk of HIV-1 transmission (Bouvet *et al.* 1989). The loss of virginity through defloration of the vaginal tract increases the risk of contracting HIV-1. It therefore goes without saying that values that put a premium on virginity before marriage should be reinforced. In South Africa, a country ravaged by HIV-1/AIDS, virginity testing has been revived. Advocates are adamant that the revival of the rite, which had died out in all but a few rural areas late in the

twentieth century, is the most effective way to stop the spread of teenage pregnancy and the transmission and contraction of HIV-1²⁸⁵. This is being promoted in a country with a high rate of rape and child abuse, against the backdrop of the belief that if you have sex with a virgin you would be cured of HIV-1/AIDS. Indigenous leaders in conjunction with the current leaders should sensitise the population to the value of virginity, which could be rewarded with a higher bride-wealth. In addition, the eligible bachelors should be sensitised to value virginity, a sign of purity and faithfulness. The Turkana norms regarding rape and sex before marriage should be strengthened so that even those who have sex in towns would be subjected to heavy fines. In addition, nomadic men who go to the towns with large sums of money earned from the sale of livestock would be checked so that they do not run into 'cheap urban women' because there is no fine to be paid.

12:3:1:3 Provision of a safe working environment for commercial sex workers

Commercial sex work will always exist. In the developed world, despite improved living conditions and relatively more income-generating opportunities, commercial sex work is very prevalent. Our aim in Turkana should be, therefore, not to eliminate commercial sex work but to create a conducive environment in which sex workers could work safely without contracting or transmitting sexually transmitted infections, including HIV-1/AIDS. Commercial sex workers operate in a quandary; their practice is despised and stigmatised by society, and offends some sensibilities, yet men like to purchase sexual services from them, thereby providing a ready market. Commercial sex workers are stigmatised as the transmitters of HIV-1 and other sexually transmitted infections. The concern should therefore be how to empower commercial sex workers to practice safer sex, thereby protecting themselves and the wider society. State regulations of commercial sex workers are currently unattainable, as it would just increase illegal commercial sex work (Story, Kopp, and Soltz-Szots 1991; Goh and Chan 1995) and increase the number of child sex workers. On the other hand, unregistered commercial sex workers (without legal

²⁸⁵ Isa, M. 2001. 'Virginity testing gets new lease of life in SA' *Daily Nation*, January 1, 2001, p.6.

protection) are disempowered and are less able to insist on the use of condoms by all clients, and are more vulnerable to violence and exploitation. While commercial sex workers are blamed, their male clients are not often the focus of attention or even blamed for the infections that they contract from the commercial sex workers and transmit to the general population. This is a clear manifestation of the society's double standards, for if there was no demand for commercial sex, the sex workers could not sell their bodies and they would not be blamed for spreading sexually transmitted infections. So in effect, it is the male clients of commercial sex workers that sustain commercial sex work.

Decriminalisation of the adult sex industry through the promotion of human rights and health in New South Wales, Australia, led to improvement in public health in terms of a reduction in sexually transmitted infections and a reduction in violence and the exploitation of commercial sex workers (Donovan and Harcourt 1996). During a workshop for commercial sex workers in Kisumu City, the sex workers demanded the legalisation of the 'trade' because the government has failed to address the economic downturn that exacerbates poverty²⁸⁶. Legalisation and regulation of the sex industry as in the Netherlands, where it is worth an estimated US\$ 1 billion per annum or 5 percent of the Dutch economy, would empower commercial sex workers²⁸⁷ and make their working conditions safer. In addition, commercial sex workers would use their collective bargaining power to ensure that all sexual encounters are safer from the transmission or contraction of STIs. Such legislation should provide free regular tests for STIs, free or subsidised confidential and effective treatment, and free or subsidised condoms. In Turkana, commercial sex workers have found an unlikely ally in the arena of politics, who advocated that they should increase the amount of money they charge for sexual intercourse. Political support for such initiatives is very vital for their success. In addition commercial sex workers would benefit from having an association through which they would receive adequate information on sexual health, encompassing the female and male anatomy, modes of transmission and contraction of all STIs, modes of prevention of STIs, and modes of therapy for all curable STIs.

²⁸⁶ Odhiambo, A., and Ochieng, J., 2002. Gender groups faulted on AIDS' *Daily Nation*, August 30, 2002.

²⁸⁷ Daley, S. 2001. 'New Rights for Dutch Prostitutes, but No Gain' *The New York Times*, August 12, 2001. Available from: <http://www.nytimes.com/2001/08/12/international/12DUTC.html?pagewanted=print>. Accessed on: August 12, 2001.

Sex work should be regarded as a type of occupation rather than as a type of behaviour (Loff *et al.* 2003), with sexually transmitted infections and violence as occupational risks rather than as resulting from high-risk behaviours. This approach would increase the empowerment and self-esteem of commercial sex workers. This liberal approach is countered with a conservative argument that it would bolster the sex industry. The alternative would be a concomitant mitigation of factors that predispose women to commercial sex work, a farfetched proposal. The liberal approach would not glorify commercial sex work and make it attractive. Rather, the purpose of the approach is to protect those who are already caught up in the trade with no alternative sources of income. Prevention of STIs, including HIV-1, will be a by-product of the promotion of the wider issue of sexual health. To most commercial sex workers, the HIV-1 infection is not the only risk that they face. Lack of resources is the immediate and biggest risk they face everyday.

Selected CSWs (or leaders of CSWs empowerment groups) could be trained as peer educators so as to spread the message to all CSWs, including the ones that covertly practice commercial sex work, especially under the cover of darkness or other income-generating activities. As they would trust and know one another better, they would be effective communicators and be more accessible. In addition, they would be empathic, non-judgemental, and have a positive regard for their colleagues. They would promote the consistent use of condoms, and have a slogan, 'no condom, no sex'. If all CSWs insist on condom use, men would likely have no alternative but to accept the use of condoms at all times. In doing so, the CSWs would also, in effect, protect their other married 'sisters' with philandering husbands from contracting HIV-1. They would not only be protecting themselves from the effects of HIV-1/AIDS, but also the society as a whole through the reduction of the number of orphans. In Ratchaburi province, Thailand, a 100 percent Condom Use Programme (CPU) was initiated to empower sex workers to refuse to be put at risk of contracting HIV-1 (Rojanapithyakorn and Hanenberg 1996). When rolled out nationally, one research group estimated that it might prevent more than 2 million HIV-1 infections in Thailand (Robinson *et al.* 1996). Another study found that there was an increased condom use among a cohort of Nairobi commercial sex workers following a programme of HIV-1/AIDS and STDs education, free-condoms distribution, and counselling barazas, all coordinated by community health workers (Ngugi *et al.* 1988).

A programme similar to the UNICEF's Rescue Youth Group, a project rehabilitating CSWs modelled on the Bamako Initiative, should be piloted in Lodwar (Miguda-Attyang 1996). The CSWs would be trained in primary health care, HIV-1/AIDS, STD control, diagnosis, syndromic management, and referral of STIs, and TB case identification and referral. They would then be given drugs for STIs and other infections, like malaria, to dispense at an affordable cost to other CSWs and other willing members of the public as part of a self-sustaining, income-generating activity. It was found in Kisumu that those CSWs who were members of the group experienced behavioural change, reduced their commercial sex work, and spent more time in the Bamako Initiative Centre and at outreach activities. Others were married and returned to 'normal' lives. This project demonstrated one thing: that commercial sex is sustained by the lack of alternative income-generating activities and that if these opportunities are provided, CSWs would adopt them, change their sexual behaviour, and even quit commercial sex work for good.

Research is currently needed to assess the magnitude of the involvement of children in commercial sex industry in Turkana's urban centres. In addition, there is need to identify conditions under which children are forced into commercial sex work, identify their health problems and risks, and identify their long term needs if they are pulled off the streets or if they leave commercial sex work. We need to identify the factors that lead to child sex work to enable locally appropriate interventions to be developed and implemented. In Ethiopia, child sex workers are blamed for fuelling the HIV-1 virus in Addis-Ababa, with estimates that there are over 30,000 child sex workers on the streets²⁸⁸. As in Turkana, innocent teenage girls are lured from the country-side with promises of the good life and lots of money. Government agencies and NGOs could advocate strong policies to prevent child sex work, child labour²⁸⁹, and to provide adequate services. In Kenya, the government is already committed to removing children from streets and offering vocational training. This follows the introduction of universal, free primary education. However, the effect in places like Turkana would be minimal because of the lack of institutions where such children could be imparted with skills. In addition, child sex workers need convincing to leave sex work

²⁸⁸ CNN, 1999. 'Teen prostitution fuels AIDS in Addis Ababa, doctor says', October 28, 1999. Available from: <http://www.cnn.com/news>. Accessed on: January 5, 2000.

²⁸⁹ It is estimated that there are 3 million child labourers in Kenya involved in sexual slavery, and domestic and farm work. (East African Standard, 2001, 'Kenya has an estimated 3 million child labourers' East African Standard, May 1, 2001).

and other forms of exploitative labour. However, we have to be aware that in Turkana, as in most parts of sub-Saharan Africa, child labour is normal – as Turkana children are active participants in herding small livestock. Nevertheless, it is the modern forms of exploiting child labour, like sex work that should be challenged, as they are in no way as benign as herding.

12:3:1:4 Socio-economic development and poverty mitigation

Despite all the attempts at developing the pastoralist areas, Fratkin (1997) in a review of pastoral development, noted that semi-nomadic and nomadic populations are constantly faced with more constraints on their economies than at any previous time. The growth of human and livestock production, the loss of herding lands, urbanisation, out-migration, in-migration, increased commoditisation of the livestock economy, and the periodic social dislocations caused by droughts and wars threaten pastoral communities. These communities have therefore evolved new development problems, which cannot be based on old models and discourses of pastoral development²⁹⁰²⁹¹. While we have to design and implement policies that enhance the welfare of nomadic and semi-nomadic people without compromising the resilience and diversity that eons of climate variability have helped to bestow upon African ecosystems, we, at the same time, have to recognise culture change, and economic diversification and differentiation. As witnessed in Turkana, new problems of development have emerged that were non-existent in the last century. In fact, monumental changes have taken place, for example, the redundancy of socio-cultural institutions that were the pinnacle of adaptive herding strategies between contiguous pastures that pastoralists used in the past are almost dysfunctional.

Secondly, economic diversity has implications for pastoralist development, as pastoralist communities are no longer concentrating on pastoralist production *per se*. Pastoralists have consequently become jacks of all modes of production, but masters of none. This is evidenced by the Turkana's diversification into wage employment, fishing, irrigation

²⁹⁰ Issues surrounding pastoral development are comprehensively discussed in my bibliographic essay on '*Development, Ecology, and Sedentism: The Struggle for Survival among Pastoral Communities in Africa*' submitted to the Department of Anthropology, McGill University, in partial fulfilment of a requirement for a Doctor of Philosophy degree in Anthropology.

farming, trading, alcohol brewing and selling, commercial sex working, etc. Some have drifted into pauperism with long-term dependency on relief foods. They no longer pursue homogenous, communal interests, but rather a horde of diverse interests with individual interests countering the interests of the powerless majority. For development in Turkana to be successful, it should adopt a multifaceted approach encompassing livestock production, fishing, wage employment, small-scale industries and construction and provision of infrastructure such as roads, hospitals, dispensaries, schools, and security. Development in Turkana is, however, difficult to pursue because of the vagaries of weather, insecurity, droughts, famines, and wrong approaches to pastoralist development on the part of planners and the Kenyan government. In addition, a long history of political and socio-economic neglect (as discussed in chapters 4&5) has left a big hole of underdevelopment, which is difficult to fill with reactive development projects and policies. Today, the mere mention of Turkana conjures up visions of drought, death, banditry, cattle rustling, starvation, underdevelopment, and backwardness. I was met with shocking pictures of starving Turkana, initially through the press reports, and later by emaciated and rugged-looking people, while in Turkana. The Turkana are a people under siege. The siege, however, is more virulent in nature than originally thought, especially with the emergence of more severe yearly droughts and new epidemics.

Since HIV-1/AIDS is multi-faceted in cause and effect, and its reach extends to biomedical, socio-economic, political and cultural factors, it requires a multi-sectoral approach. Such a model would target the individual in terms of changes in risk behaviour, and ecosystem factors that influence behaviour in the context of the contraction of HIV-1 and the lowering of risk and vulnerability. Universal behavioural interventions through a public health approach alone have generally failed to halt the spread of HIV-1/AIDS in sub-Saharan Africa. However, well-resourced and targeted behavioural interventions, including those targeting commercial sex workers, the identification and early treatment of sexually transmitted infections, the promotion and use of condoms, the provision of information and education, needle and syringe exchange programs for drug injecting populations, and programmes targeting truck drivers – the so-called high risk groups – have netted success in the form of falling HIV-1 incidences and prevalence. Such interventions, however, remain patchy and poorly supported (Donovan and Ross 2000), relying on donor funds.

Most such programmes have never been replicated or delivered on a large scale, as they are not self-sustaining. From a public health perspective, though, the focus on the individual for behavioural change is useful, the inadequacy comes in the form of its inability to address the socio-cultural and economic roots of the prevalence of HIV-1 infections.

The key to preventing TB/HIV-1/AIDS, which with malaria are the leading cause of the communicable disease burden in sub-Saharan Africa, is poverty alleviation. We have to underscore poverty, underdevelopment, and illiteracy as the main contributing factors to the spread of HIV-1. For instance, food insecurity pushes women and girls to participate in commercial sex to buy food and other provisions for their families. Widow inheritance thrives because of the insecurity that results after a husband - in most cases the sole breadwinner in a polygamous household - dies from HIV-1/AIDS.

At first look, commercial sex work and engagement in other forms of multiple sexual partnerships might appear to represent conscious risk taking. However, when examined critically what might emerge is a web of causal factors that lead to such risky decisions and behaviours, ranging from the lack of power, food, and condoms, and perceptions regarding condom quality, definitions of sex, and various levels of meanings of sexual intercourse. For instance, a sex worker may decide to have unprotected sex with a regular client or steady partner, while using condoms with other clients.

Multi-sectoral responses to HIV-1/AIDS would require the integration of HIV-1/AIDS in development plans and poverty reduction strategies. To this end, the Turkana District Development Plan should address how social and economic development can contribute to the control of HIV-1/AIDS involving a multi-sectoral approach as proposed by NASCOP. Already, a Kenyan poverty reduction strategy paper (PRSP) includes the provision for increased resources targeted at AIDS orphans, child workers, nomadic groups, rural poor, slum dwellers, and food insecurity (Government of Kenya 1999b). However, due to lack of funds for implementation, poverty reduction proposals remain on *paper*. Socio-economic development and poverty mitigation should aim at increased investment in accessible healthcare systems, expanded education facilities, the provision of water, investment in sustainable projects and livestock production, the construction of infrastructure (especially Kitale - Lokichoggio road and the construction of road networks across the district), and

address the impact of the epidemic on individuals, households, communities and villages. The best mass HIV-1/AIDS vaccine is sustained equitable development (Loewenson and Whiteside 2001). Though the response to HIV-1/AIDS, largely through a public health approach, is touted to be producing results in some settings, as is the biomedical response through the introduction of HAART, they will only partially reduce the number of new infections and alleviate suffering from AIDS for the few that can afford them. However, effective mitigation must attack the underlying causes represented by the unique environmental and structural spheres within which individuals exist.

The lack of education facilities makes poverty endemic. It is accepted that education provides the safest and the quickest route out of poverty and ignorance, and that no community will develop without educating their men and women. Without education, they are doomed and irredeemable. The almost non-existence of educational facilities in rural Turkana ensures that the people remain permanently embedded in a sea of poverty, with a dark cloud of ignorance hovering over them. Investment in education infrastructure is critical since it stimulates development and in turn helps to alleviate poverty.

McKeown (1976) attributes most of the decline in mortality in England after the 1850s to improvements in social and environmental factors, including improvements in food and nutritional supplies, which boosted biological defences against infections, better housing and better water supplies, increasing literacy, and good domestic hygiene. Urbanism in Turkana has led to changes in social relationships and individual behaviour leading to a high population density causing poor sanitation, unsafe drinking water, polluted air, and indoor air pollution. Crowding and unsanitary conditions are important amplifiers of the transmission of infectious diseases as many thrive due to inadequate drainage, sanitation, and solid waste removal. Turkana urban centres are sources of inequality, poverty, and environmental health hazards. The major obstacles and consequences that people with HIV-1/AIDS endure stem from this poverty. Like McKeown, I envisage that tackling ecosystem factors that create unfavourable social and environmental living conditions will decrease the prevalence of HIV-1/AIDS and other infections.

Turkana is a territory of insecurity. While travelling around the Turkana District, the many abandoned Manyattas are apparent to the observer. Though the majority of the Turkana

lead semi-nomadic and nomadic lives, they have not willingly deserted these Manyattas. On travelling to Lokangae, I passed Nanaam village, some 20 km from Lokichoggio town where I met vulnerable women and children who survived a raid by the Toposa from Sudan that left over 100 people dead. Not long after my visit, a week of bloody battles ensued between the Toposa and the Turkana and claimed 18 lives, and left many homeless. In Lokangae, men and young boys were brandishing Kalashnikov, G3, and Epen guns openly like walking sticks. These guns are traded from Sudan at between KShs 10,000 (US\$ 200) and 20,000 (US\$ 400) or livestock of equivalent value. The prevalence of weapons has led to a high frequency of banditry and cattle rustling in Turkana. In addition, much of the conflict - banditry and cattle rustling - is fuelled by poverty and the general scarcity of resources such as pasture, food, water, and livestock, and by myopic local politicians²⁹². As one Turkana elder noted, "If we had water we would start sorting out the conflict. Much of the fighting is over water. If we have water our problems would be solved". Livestock mortalities, falling livestock prices, worsening malnutrition, politically driven cattle rustling, and increasing banditry have conspired to accentuate the precarious food security in Turkana, especially after rain failures. Due to the consequences of insecurity, stamping out cattle rustling and banditry should be a development priority. For the Turkana, this would contribute to the reduction of the senseless loss of livestock and human lives, and socio-economic dislocations. In addition, the region would attract more investment in other sectors of the economy like tourism and irrigation farming. Initiation of water development projects would stall conflict and foster economic development of the target population as most of Turkana land is arid, stifling the availability of clean water to people and livestock.

There should be measures in place, even at the planning level, to mitigate the impact of HIV-1/AIDS on human resource development. Already the elite Turkana, those well-trained and employed, are dying of HIV-1/AIDS. The most conspicuous impact of AIDS on human resources in Turkana is on the army personnel. The army is one of the sectors that offer employment to many Turkana. In the course of this research, we found that some Turkana teachers, nurses, and NGO workers were infected with HIV-1/AIDS. Anecdotal evidence from Nakwanamoru and Lokangae indicates that HIV-1 is fast spreading among the

²⁹² Standard Reporter, 2003. 'Banditry: 300 hundred Turkana families flee homes' *East African Standard*, January 16, 2003.

herding populations. Just as HIV-1/AIDS has had a huge impact on rural agricultural communities, AIDS will have an impact on livestock production in pastoral areas by reducing the herding work force and disrupting indigenous social security mechanisms. Commercial sector agriculture in agro-estates in Kenya is already facing a severe social and economic crisis due to HIV-1/AIDS through loss of the labour force, productivity, and profit (Rugalema 1999). I anticipate that the Turkana's livestock production will be severely affected by HIV-1/AIDS in ten years to come if nothing is done about HIV-1 prevention and measures are not instituted to mitigate the impact of AIDS. The aim of development should be to reduce the poverty that helps spread HIV-1, and accelerates the development of full-blown AIDS.

12:3:1:5 Interventions among high-risk occupations such as truckers and armed forces

Due to the significant number of truckers and their assistants in Turkana towns, they play an important role in spreading HIV-1 in the district. This is why they should form the foci of HIV-1 prevention through aggressive condom promotion. Truckers should appreciate the importance of using condoms if they cannot abstain from sex during haulage. In Kenya, long distance transport companies indicated that they had begun AIDS awareness campaigns, in addition to monitoring employees through regular checkups. However, this would not be enough unless business and haulage practices are changed to reduce the risk of truckers engaging in sexual intercourse, after staying away from their families for long periods. This would involve reviewing the work schedules of the drivers and their conductors so that they are given enough time to rest and meet with their families. The leading transport and haulage companies that travel to Turkana, A.O. Bayusuf and Sons Ltd., and M.A. Bayusuf and Sons Ltd., indicated that they had launched their own HIV-1/AIDS prevention programmes in the work place²⁹³. These corporate efforts should be supplemented with educating commercial sex workers, providing condoms, and displaying campaign posters in all bars and lodgings, the resting places of the truckers and their assistants. Some other strategies that could be employed encompass social

²⁹³ Lumiti, D. 2001. 'Transporters in Aids war' *East African Standard*, April 26, 2001.

marketing, mass media campaigns, and peer education among truckers, commercial sex workers, and other local girls and women. Moreover, halting the transmission of HIV-1 in communities along the highways would mark the beginning of stopping the spread of the virus to the semi-nomadic and nomadic communities.

Another group that deserves special attention are the military forces in the Turkana District. This encompasses the General Service Unit, the army and the police. In Lodwar, my covert investigations revealed that members of the armed forces, such as the regular police officers and the General Service Unit had multiple sexual partners. All military personnel should have access to knowledge of HIV-1 and all other sexually transmitted infections, encompassing knowledge of the spread, symptoms, and prevention of these diseases.

12:3:1:6 The prevention and curing of prevalent illnesses

AIDS in Africa is particularly interrelated with illnesses such as tuberculosis, polio, leukaemia, HBV, HCV, other sexually transmitted illnesses, and malaria. These illnesses deeply affect Africans, in part by reducing the strength of their immune system just as HIV-1 does. In addition, as AIDS in Africa is defined by WHO as a combination of fever, persistent cough, diarrhoea and a 10 percent loss of body weight in two months, it is impossible to distinguish these symptoms from those of malaria, tuberculosis, or the diseases of impoverished people. Africans are greatly vulnerable to these illnesses because they are the poorest and these illnesses are linked to poverty. It is these illnesses, dubbed opportunistic infections in HIV-1-infected individuals, which cause mass death in sub-Saharan Africa.

The most common causes of opportunistic infections, particularly tuberculosis and bacterial infections like diarrhoea, cause much death and suffering, yet they could be prevented (Grant *et al.* 2001). Prevention of other infectious illnesses should be a precursor to the effective prevention of AIDS deaths. Resources should also be geared towards curing infectious illnesses like malaria, pneumonia, diarrhoea, etc. In addition, prophylactic medication should be used in preventing the escalation of communicable illnesses. Those with inactive tuberculosis could benefit from a six-month course of isoniazid or a longer protection-generating prophylaxis, rifampicin (WHO 1998; Quigley *et*

al. 2001; Johnson *et al.* 2001). Clinical trials have shown that co-trimoxazole has reduced morbidity and mortality in Cote d'Ivoire by significantly lowering the frequency of death, with an efficacy most pronounced at the advanced stages of HIV-1 infection (Wiktor *et al.* 1999; Anglarret *et al.* 1999). HIV-1 infected individuals in urban locations may benefit from preventive tuberculosis treatment to decrease the risk of a first-ever episode of tuberculosis and the risk of a recurrent episode of tuberculosis (WHO 2001). As studies in the former Zaire (now the DRC Congo) (Perriens *et al.* 1995) and Haiti (Fitzgerald *et al.* 2000) showed, there is a higher recurrent rate of tuberculosis in HIV-1 infected individuals than in the non-HIV-1 infected.

A background infection with a sexually transmitted illness increases the risk of contracting HIV-1. In fact in Kenya, of the 15,889 STD patients who participated in the HIV-1 sentinel surveillance from 1990 to 2001, 4076 (25.7 percent) had an HIV-1 infection, with a higher prevalence rate in women than men (Joesoef *et al.* 2003). Treating sexually transmitted diseases reduces the incidence of HIV-1. The economic data from Mwanza, Tanzania show that improved STD treatment services are not only effective, but also highly cost-effective and should therefore be promoted as an essential component of HIV-1/AIDS control activities where STDs are prevalent. STD services should be provided in a private, confidential, non-judgemental, and supportive manner. That all STDs are preventable and curable make it incumbent upon the government, communities, and donors to meet the challenge of STD prevention and treatment services. A comprehensive provision of reproductive health services should encompass: pap smears for cervical cancer; screening for STDs; information on and access to contraceptives and condoms; prenatal care; access to safe abortions; education on strategies to avoid potential abuse and conflict situations; control and restraint techniques; prevention of intimate partner violence; skills on how to get clients / partners to use condoms; vaccinations against HBV; early and effective treatment of sexually transmitted infections; and training and recruitment of many female sexual health specialists.

The STD clinics should be debased and un-stigmatised through broadening in both name and scope to include all genitourinary tract infections. In effect, they should be for sexual and reproductive health. If this were done, many of the asymptomatic and ulcerative sexually transmitted infections would be detected during routine examination,

during prenatal and postnatal care, and during the provision of reproductive healthcare services. Instead of calling them STD clinics, they should be renamed Genito-Urinary Disease (GUD) clinics. In addition, the population should be enlightened that poor sexual health has far reaching consequences, such as ectopic pregnancies and infertility, cervical and other genital cancers, hepatitis, chronic liver disease, liver cancer, bacterial vaginosis, and premature birth. This would de-stigmatise sexually transmitted infections as sexual health is not only about the individual. Importantly, as the current STD clinic is staffed by a man, female nurses should be trained and recruited to work in the expanded sexual and reproductive health clinic. Expansion of sexual and reproductive health would be the first step towards integrating men and adolescent health into the integrated family planning and sexual health programmes.

There should be mass screening for sexually transmitted infections as part of the delivery of primary healthcare. Such screening would forestall the spread of asymptomatic infections. Women and men of the general population should be sensitised that not all genitourinary tract infections are sexually transmitted. The current thinking is that STD clinics are for people with multiple partners, and *malaya* or commercial sex workers - the immoral lot.

In addition to the provision of effective health care infrastructure, accessibility and /or affordability of drugs for the many infections in Turkana must be improved. The longevity of the HIV-1-infected person, as well as that of the general population, depends on the capability to treat the numerous opportunistic infections to which they are exposed. This is why it was encouraging that the Minister for Health announced that government hospitals had been ordered to treat malaria and TB patients free of charge²⁹⁴. Previously, it was only children below five years of age who were eligible for free drugs after the introduction of the World Bank-backed cost-sharing programmes in public services. I only hope that this public order would be implemented, and that the services will be extended to mission-sponsored hospitals, which often are the only health facilities in most remote parts of Kenya, such as the nomadic and semi-nomadic-inhabited districts like Turkana.

²⁹⁴ Oywa, J, 2003. Malaria, TB patients to receive free treatment. [online] *Daily Nation*, December 10, 2003. Available from: <http://www.nationmedia.com>. Accessed on: December 10, 2003. To date there has been no evidence that this pronouncement has been implemented.

12:3:2 Response to HIV-1/AIDS through a public health

approach

This subsection discusses the responses of the public health approach to HIV-1/AIDS and TB in Turkana. The discussion centres on the areas of intervention, such as counselling and testing, care of orphans, the training of indigenous healers and indigenous birth attendants, mass campaigns and health education, home-based care, the promotion of condom use, and the provision of nutrition.

12:3:2:1 HIV-1 counselling and testing

The vast majority of people worldwide do not know their HIV-1 status. It is indicated that at least 90 percent of the 25.3 million people living with HIV-1/AIDS in sub-Saharan Africa do not know that they are HIV-1 positive (WHO 2001). In Kenya, those whose status is known to the medical service providers are those who are tested because they have attended a prenatal clinic or have been tested in hospitals through routine testing procedures or during surveillance surveys. Quite often, they are never told about their HIV-1 status. These people with HIV-1/AIDS are largely ignored and continue to spread the infection while assuming that their illnesses and subsequent deaths are due to tuberculosis or malaria. These people rely on the debilitated healthcare infrastructure for the cure of their opportunistic infections, like tuberculosis. Since they are not aware of their HIV-1 status, they would not receive any support from the NASCOP / DASCOP, and local AIDS NGOs.

In 2002, the Kenyan government issued a policy document in support of HIV-1 voluntary counselling and testing (HIV-1 VCT), and it planned to establish these centres in every district hospital. Kenyan president, the Hon. Mwai Kibaki has urged Kenyans to go for HIV-1 tests as a means of curbing the spread of the infection. As he said, "prevention is embedded in non-indulgence by all people in casual sex. In view of the high prevalence of ...[HIV-1 infections], I urge all Kenyans to voluntarily go for testing to establish their HIV

status”²⁹⁵. Even in the developed world, for instance the USA, long delays in HIV-1 testing are blamed for fuelling AIDS²⁹⁶. Four in ten people do not know about their sero-status until a decade after acquiring the virus. Just as in Kenya, a significant number of people in the US only find out about their HIV-1 status when they come down with AIDS. In resource rich countries, early diagnosis allows one to start a life-prolonging combination of antiretroviral therapy after the virus starts to markedly damage the immune system. Lack of testing, or a delay in doing so, leads to missed opportunities to take advantage of the existing medical system. Equally important, a HIV-1 test would alert the infected people that they are at high risk of passing the virus to others if they do not change their sexual or drug injecting behaviour.

HIV-1 counselling and testing for those infected, non-infected, and sero-discordant couples is being advocated in poor countries that are characterised by poor health care infrastructure, and the lack of mass antiretroviral therapy. It is noted that HIV-1 VCT could slow the contraction and transmission of HIV-1, particularly through the influence of behavioural change predominantly leading to a reduction of unprotected sex, multiple partnerships, the increased and consistent use of condoms, the reduction of the social stigma, and the encouragement of the infected and affected to seek care and support from various agencies (Des Jerlis *et al.* 1988; Higgins *et al.* 1991; Holtgrave *et al.* 1993), if they exist. The support for HIV-1 VCT is mixed. Some authors have argued that it is expensive, especially in comparison to health education (Kamb *et al.* 1998; Shain *et al.* 1999) as it requires resources for reagents, trained personnel, and other laboratory equipment. In Turkana, HIV-1 tests were hampered by the lack of reagents. In fact, the reagents that were often used were leftovers from surveillance surveys. The remaining portions were only used for testing women presenting for prenatal care and in-patients with chronic illnesses. These tests would be impossible to carry out in remote settings like those in Turkana. In fact, as standard practice in Kenya, testing centres are often district and mission hospitals, which are often far from remote communities. Many people, therefore, have diminished chances of being tested for HIV-1.

²⁹⁵ Mugonyi, D. 2003. ‘Kibaki’s new appeal on AIDS’ Daily Nation, July 9, 2003. Accessed at: <http://www.nationaudio.com/News/DailyNation/Today/News44.html>. Accessed on July 9, 2003.

²⁹⁶ Simao, P, 2001 ‘Long Delay in HIV Tests May Be Fuelling AIDS in US’ Reuters.Com. Available from: www.reuters.com/printerfriendly.jhtml?StoryID. Accessed on: August 16, 2001.

It is argued that HIV-1 VCT could lead to violence in the households, especially against women, and would promote stigma and discrimination leading to divorce or even murder (Landesman *et al.* 1990; de Zoysa *et al.* 1995). In Turkana, HIV-1 testing is already leading to discrimination and quarantine in care. At the district hospital, those with chronic illnesses are often anonymously tested then either discharged or left without adequate care. Treatment and care is withdrawn for their opportunistic infections with the notion that 'they are a waste' of meagre public health resources, as they will never recover. In Turkana, there were two tuberculosis patients who were doubly infected with HIV-1 and TB and who could barely walk; they were discharged after their sero-status test. They were told to go home under the guise that 'their files had disappeared' and they were therefore 'wasting medication'. One of them died a week after discharge. If no HAART can be offered, and basic genuine and empathic care cannot be provided for the HIV-1-positive, is knowledge of sero-status helpful? The advantages in terms of adopting testing measures need to be weighed against the negative consequences such as abandonment, discrimination in the provisions of care, and a sense of hopelessness, worthlessness, and helplessness among the infected. Other studies have shown that people living with HIV-1/AIDS are stigmatised, discriminated against, and experience social rejection (Panell-Cope and Brown 1992; Sowell *et al.* 1997; Moore *et al.* 2003). Before testing, individuals should be emotionally and psychologically equipped, through counselling, for the challenges of care giving and acceptance of those who have HIV-1/AIDS.

Comparative clinical trials were carried out in Nairobi (Kenya), Dar es Salaam (Tanzania), and Port of Spain (Trinidad) to determine the efficacy of HIV-1 counselling and testing (HIV-1 VCT) (The Voluntary HIV-1 Counselling and Testing Efficacy Study Group 2000). This three-site research project was carried out in 1995-1998 among individuals or couple participants who were randomly assigned to groups that received either HIV-1 VCT or basic health information. The results indicated that fewer individuals receiving VCT participated in unprotected sexual intercourse with non-primary partners than those receiving health information only (men, 35 percent reduction with VCT vs. 13 percent reduction with health information; women 39 percent reduction with VCT vs. 17 percent reduction with health information) (The Voluntary HIV-1 Counselling and Testing Efficacy Study Group 2000:103). The HIV-1-infected individuals were more likely to reduce

unprotected sexual intercourse with primary and non-primary partners than uninfected men. Some other controlled trials have also indicated that HIV-1 VCT reduces the risk of the transmission and contraction of HIV-1 by infected persons and among sero-discordant couples (Wenhardt *et al.* 1999). In a Rwandan cohort study, HIV-1 sero-conversion rates decreased in sero-negative women whose partners were not tested (Allen *et al.* 1992). In addition, rates of gonorrhoea decreased in the study population. Another study in the former Zaire (Democratic Republic of Congo) found that there was an increase in condom use among sero-discordant couples (Kamanga *et al.* 1991). Most of these controlled trials or cohort studies have, however, been carried out in urban centres with higher levels of HIV-1 prevalence and with relatively better health care infrastructure, especially with the presence of a functioning laboratory and donor-funded reagents and personnel.

What is the future of HIV-1 VCT in resource-poor townships and communities, especially Turkana? The Turkana have noted that depression, a consequence of HIV-1/AIDS, leads to rapid death. This is because severe depression and altered mental states bordering on mental illness leads to the rapid progression of AIDS, weakening the body and leading to multiple infections and eventually death. The Turkana would benefit from VCT. However, the programmes that have demonstrated the efficacy of HIV-1 VCT in sub-Saharan Africa were donor-funded and internationally backed by foreign experts. In addition, they had the means and capability to treat even sexually transmitted infections on the spot. What about areas where they are not enough resources to treat sexually transmitted infections? What are the infected supposed to do after testing? However, the findings still reinforce the necessity of HIV-1 testing as part of a package of prevention strategies in sub-Saharan Africa. This would lead to a reduction in the risk of HIV-1 transmission and contraction, especially among sero-discordant couples. It is vital that both partners are tested even if only one was tested initially. This would accord women the necessary atmosphere to negotiate safe sex, especially if the woman is not infected. Counselling and effective communication might reduce violent abuse and the break-up of the relationship, which is often experienced by women, especially if all partners are sero-negative (van der Stratten *et al.* 1995). Depression, common among HIV-1-infected women (Keough *et al.* 1994), would be mitigated, thus preventing the occurrence of severe mental health problems. Sero-discordant couples should be counselled not to have children in situations where

there are neither antiretroviral drugs especially Zidovudine, that inhibit the transmission of HIV-1 to the infant, nor tinned milk that would prevent the transmission of infection through breast milk. These are still tall orders in resource-poor communities like Turkana. The only option, though harsh, for the HIV-1 infected is not to give birth. This is why introducing HIV-1 VCT has enormous challenges as it must be backed with resources such that those people who are HIV-1-positive are offered better ways of existence (Coates *et al.* 2000). Without resources, testing would only lead to more suffering and further make people insist that it is better to die without knowing your HIV-1 sero-status. The support for HIV-1 VCT would increase depending on the nature of care and support given to those who are found to be HIV-1 positive, especially the management of opportunistic infections and the offer of alternatives to breast feeding. The aggressive introduction of VCT services in resource-poor settings without psychological, economic, and medical support would be disastrous. There is no point in one knowing his or her sero-status, if one is powerless to change behaviour or patterns of living. In Turkana, HIV-1 VCT and care and support services would have to be entirely free.

One particular study has examined the perception and acceptance of HIV-1 VCT by a rural community in western Uganda (Kipp *et al.* 2002). The results showed that there was a demand for continuous HIV-1 counselling service. The community indicated that HIV-1 VCT is useful as it leads to a better knowledge base on HIV-1/AIDS in the community and less stigmatisation of persons with HIV-1/AIDS (Kipp *et al.* 2002:703). Some people thought that counselling might lead some people to go on a vicious sex rampage in order to spread the HIV-1 virus. More importantly, this study indicated a preference for counselling without testing. In Turkana, thirty-five out of fifty male respondents indicated that they would agree to be tested for HIV-1. HIV-1 testing is very rare in Turkana. Out of fifty male respondents, only six had been actually tested, as potential blood donors. HIV-1 counselling without testing would be very popular in Turkana. This method would be particularly relevant for rural and resource-poor communities. The rural community in western Uganda asked that counsellors be non-resident, as they would offer confidential service thus increasing the credibility of counselling at the village level. Due to the significance and prevalence of gossip in villages, it is presumed that non-resident local people might not be party to gossip through which HIV-1 sero-status might be divulged. In

fact, some of the counsellors would be HIV-1 positive individuals so that they could disseminate experiential knowledge. In Turkana, the local population expressed the need for counsellors emanating from the local community. In fact religious leaders and indigenous healers were widely cited as candidates. In addition to these, community health workers and indigenous birth attendants could be trained as the communities' own resource persons to provide continuous counselling to the population. Since HIV-1 is stigmatised, and TB is fast travelling on the same path, it was suggested by one nurse that religious leaders could play an important role in counselling to increase acceptance and hope. Counsellors should not double as biomedical personnel as the latter are not trusted and the ordinary Turkana do not have confidence in them. This is also made worse by the fact that these medical personnel are non-Turkana and can only speak Swahili.

The main aim of VCT is to influence behavioural change, evidenced by the infected and non-infected using condoms consistently to prevent the transmission and contraction of HIV-1 virus, respectively. The effect would be immediately felt by sero-discordant couples. However, some studies (Kipp *et al.* 2002) indicate that VCT does not always lead to an increase in condom use, which should only be one of the yardsticks used to measure sexual behavioural change. Kipp and colleagues (2002) presuppose that behavioural change is only measured through the increased use of condoms despite the fact that rural communities generally abhor condoms. In all likelihood, there are some indicators through which behavioural change could be measured in rural communities, where people are not as likely to adopt condom use as are urban dwellers, commercial sex workers, or truck drivers. In fact, at times I feel that the preoccupation with condom promotion in rural communities like Turkana is a waste of time, and contributes to a resistance to the HIV-1/AIDS messages.

The acceptability of counselling and testing by pregnant women has been reported in Abidjan, Kenya, Tanzania, Malawi, and Zimbabwe (Cartoux *et al.* 1998). This demand for counselling and testing services indicates that VCT services are not only considered as an opportunity for HIV-1 testing, but also as a reliable source of information on sexual matters even though change might be minimal (Kipp *et al.* 2002). However, one important finding of the Ugandan study is that counselling should be de-linked from testing. This would improve acceptability and accessibility. From another angle, this would make the project

cost effective in rural communities where laboratories cannot be established. In the absence of proper health care services, counselling without testing would be cost effective and moral. Even if there were counselling and testing, what would we do with those who are sero-positive? Would we test for statistical purposes only? For HIV-1 testing to be ethical and effective, there should be a programme for after care. The ethical question could also be pinned on the practice of testing pregnant mothers anonymously²⁹⁷ and doing nothing about those who test positive, as they continue to give birth to babies that will eventually be seropositive. Many people do not want to go for counselling and testing because they wonder what would happen if they are HIV-1 positive. What would they gain in terms of health? In fact, analogously, why would one go for malaria testing knowing full well that even if they were positive they could not afford anti-malarial therapy?

It is obvious that more people will choose to have HIV-1 testing when services are available that link the provisions of VCT for HIV-1 with the provision of other services for the prevention and treatment of common HIV-1-related diseases, including sexually transmitted infections and tuberculosis (WHO 2001). This is why WHO's Stop TB department is facilitating the ProTEST initiative that promotes VCT as an entry point for access to HIV-1 and TB prevention and care (WHO 2001). It is hoped that it will reduce the TB/HIV-1/AIDS burden through cost effective and affordable methods. It is hoped the VCT will also lead to: TB screening and treatment; preventive therapy; prophylaxis for HIV-1-related infections; STI treatment; condom use; and informed choices on sexual decisions. Already, the Turkana informants favoured HIV-1 testing for TB patients.

In addition, if a test reveals that one is doubly infected, they should be counselled and educated so that they can comprehend that curing TB increases healthy life expectancy as opposed to regarding tuberculosis as an ominous sign of AIDS. Awareness that there is a link between tuberculosis and HIV-1/AIDS should not lead to a delay of tuberculosis treatment or stigmatisation of tuberculosis. However, it has been reported that high AIDS awareness might cause a tuberculosis treatment delay (Ngavithyapong *et al.* 2000), and

²⁹⁷ During a workshop for women leaders in Nakuru, there were loud protests about anonymous HIV tests, which they said was contributing to women shunning antenatal care clinics. They noted that the reasons for carrying out the test are not clear as the results are never disclosed to women. As one woman leader noted: 'We do not know what the results are used for, if those tested are not told their HIV statuses. See also: Ngutu, M. 1999. 'Women's outcry over compulsory Aids tests' Daily Nation, December, 18, 1999.

the Turkana's awareness of the link between tuberculosis and HIV-1/AIDS led to the stigmatisation of TB. However, a proper joint approach to the control of tuberculosis and HIV-1/AIDS should dispel misconceptions.

The VCT services should not be seen as alternative to the provision of antiretroviral drugs. After the failure of HAART to trickle down to the masses even after legislation, the Kenyan government seemed to have jumped to VCTs. Is this not tantamount to juggling with methods of HIV-1 prevention? We should not be seen to be switching to the perceived easier options as soon as they appear which may be seen as an effort to hoodwink the court of public opinion that the government and the international community are doing something about HIV-1 prevention. Ever since the government announced the policy, the VCT services have not been decentralised so we still do not know whether they are sustainable or not. The successful randomised trials discussed earlier were donor-funded and were based on high-risk populations. This definitely contributed to their efficacy in the short term. Their long-term effect, though, is not known.

In Turkana, counselling and testing should be promoted with an emphasis on the former, for it would reduce the stigma and discrimination. It was reported, in 2004, that there were three registered, operational VCT centres, all based in Kakuma: two in the refugees' camp, and one based in the Kakuma Catholic Mission Hospital serving the local community²⁹⁸. Having only one VCT, located in one urban centre, in this expansive district would have only a minimal effect. Indeed, the VCT in Kakuma would serve mostly the non-Turkana migrants working with the NGOs to provide services to the refugees, with limited access by the Turkana.

VCT should be viewed as an educational and informative exercise rather than as a means to testing, in itself. At this stage, I would not recommend the popularisation of HIV-1 testing as a priority because, firstly, the Turkana would not be receptive, and secondly, it would be counterproductive to test people and not offer any remedy. However, a voluntary counselling and testing programme, if rolled out in Turkana as is planned by the government, should be viewed as an educational and informative exercise rather than as a means to testing in itself. Counselling and testing should be part of a wider comprehensive

²⁹⁸ ITDG-EA, 2004, ACT Services Among Pastoralists, *KIT Newsletter*, 2004.

program aimed at the introduction of HAART. I would find it disturbing to mass test people without them having a hope of receiving HAART therapy.

The following case illustrates the importance of testing and follow-up. During my interviews, I physically interacted with a patient that was suffering from a double infection. She was emaciated and too weak to talk. Though she was doubly infected, she, together with her relatives, only knew that she had tuberculosis. Though she was tested through the 'stealing method'²⁹⁹ she was never told the results. She was, however, dying of HIV-1/AIDS through tuberculosis. She had a young daughter who was nursing her. The clinical staff knew that this young girl could contract HIV-1 from the way she was nursing her mother. She frequently came into contact with body fluids, and there were no protective devices such as gloves. But even if there were, this would exacerbate the situation through stigma and even raise suspicion among fellow patients who might suspect that she had HIV-1/AIDS. Unfortunately, she did not live long after I saw her. No follow-up was done in this case, even to check the TB and HIV-1 status of the girl and other close relations that interacted very closely with the woman before she died. No one knew what was happening to the girl. No one bothered to find out about the husband, and the other two co-wives.

Importantly, VCT might lead to behavioural and attitudinal change, as it will give the counsellors a chance to explore the individual circumstances that influence sexual behaviour. This would lead to exploration of why people are receptive to messages but cannot adopt a given behaviour. It would provide an avenue for the reassessment of attitudes about sexuality and perhaps lead to breaking old moulds, elevating the status of women, and redefining what it means to be a man and a woman. In addition, it might also lead to discussions about cultural norms, such as polygamy and widow inheritance, in this era of HIV-1/AIDS.

12:3:2:2 The care of orphans

In Turkana, the increasing number of children sleeping rough in Lodwar township and other urban centres calls for immediate attention to their plight. Most children sleeping rough are vulnerable to HIV-1 infection. Currently, the few HIV-1 prevention programmes in

²⁹⁹ This is a method of testing for HIV-1 using obtained blood samples for other tests without the consent of the patient.

Lodwar are focused on commercial sex workers, and the youth in primary schools and secondary schools. These vulnerable children do not attend schools, yet they are at heightened risk of contacting HIV-1 and other sexually transmitted infections. In addition, these children are faced, everyday, with violence, poverty, and the struggle for survival as well as other situations that predispose them to sexual exploitation. They continually work under risky conditions, such as frying fish in the sun, draining sewage pits, and transporting firewood. Some of the interventions that Lodwar township would benefit from are: the establishment of community support groups for children and family members infected and affected by HIV-1 for emotional support and income-generating activities; nutritional support; health support; socio-economic support for families of dying parents and their children; and the removal and protection of children and adolescents from high risk situations (i.e., strengthening organisations for children, like Nadirkonyen in Lodwar). In addition, efforts should be aimed at prevention of dropping out of school, and skills training for older children (Lyons n.d: 8-9). In Turkana, there were four cases of four girls that were betrothed to men in polygamous marriages simply because it was the only way that their school fees could be paid. Many other girls also engage in sexual relationships with older men in order to get pocket money, books, and pens. This pattern is common in sub-Saharan Africa, as other studies have demonstrated (Meekers *et al.* 1995; Heise and Elias 1995; Bohmer and Kiruma 2000). Child labour will even increase at the household level as children, especially girls, take care of their terminally ill parents, especially when the mother has died or is chronically ill. In Zimbabwe, it was found that the majority of care givers are children with no nursing / home-based caring experience / knowledge (Machipisa 2001).

Even though the Turkana traditionally have practised the fostering of children, giving the impression that orphans will always find homes, in the face of HIV-1/AIDS and poverty, this is an unrealistic expectation. These children would always be stigmatised. If they are HIV-1 positive, it is likely that no family would accept them. In addition, the herds of small stock, which the children would help in herding, could diminish. In the towns, where children are at greatest risk, there is no fostering spirit. If it happens, they are exploited with domestic chores in return for food. Lack of fostering in the townships is what has led to the creation

of the Nadirkonyen Children's Home³⁰⁰, which was full to capacity. In the near future, the urban centres of Turkana risk being overrun with orphaned children who could be HIV-1-infected, or at risk of contracting HIV-1.

12:3:2:3 Indigenous healers and birth attendants

Indigenous healers play an important cultural and healthcare role in the community. It is only natural that these healers, who are willing to participate in HIV-1/AIDS prevention, are imparted with the necessary skills to help in the control of the same. Appreciation for the services provided by indigenous healers over hospital medicine in sexual health is common in non-Western cultures. In India, Mumbai slum dwellers found ayurvedic healers more respectable, approachable, and caring, and less expensive for matters involving non-contact sexual health problems, than doctors, whom they are shy talking to or whom did not respond to their concerns (Verma *et al.* 2003). Though I normally refer to indigenous healers as the 'uselessness of the useful' due to the non-efficacy of their therapeutic regimens, they could play an important role in spreading the message on HIV-1/AIDS and other sexually transmitted infections. This research shows that they already provide first contact for people infected with sexually transmitted infections. However, I am totally against the romanticisation of indigenous healers and indigenous health resources as though they provide a panacea to health problems in sub-Saharan Africa, or Turkana, in this case. We have seen how they are completely ineffective in their therapeutic response to AIDS and other sexually transmitted infections in Turkana. However, if trained and resourced, they could serve as a stop-gap measure in the provision of sexual health care as they are the first contact of people infected with sexually transmitted infections. They could also provide sexual health education. Indigenous healers, both male and female, expressed willingness to be trained and play an important role in the prevention of HIV-1/AIDS. When trained, they could utilise their authority, accessibility, and credibility to promote behaviour change. When trained in sexual health and HIV-1/AIDS, and in counselling skills, the network provided by indigenous healers could make counselling in the community a reality.

³⁰⁰ The Home is run by the Lodwar Catholic Diocese

Healers have been successfully trained in South Africa, Mozambique, Zambia, Swaziland, and Zimbabwe in the promotion of safe sexual behaviour, condom use, and health education (Green 1997). Using indigenous knowledge and resources, the programmers designed culturally meaningful HIV-1/AIDS communication strategies using symbols, metaphors, and local etiological concepts already in use to explain familiar sexually transmitted infections. STIs are already associated with impersonal causation theories, invoking insects, blood, *ngikuro*, contact with body fluids, and sex with commercial sex workers and strangers. Locally, it is known that sexually transmitted infections are preventable through a change of behaviour. Indigenous healers, in liaison with the Ministry of Health, could therefore play a significant role in the prevention and management of HIV-1/AIDS and other sexually transmitted infections. In Zimbabwe, the umbrella body of indigenous healers in affiliation with the Ministry of Health provide moral, psychosocial, economic, and cultural support to individuals, families, and communities affected by HIV-1/AIDS. They, in addition, promote HIV-1 prevention methods, including safe medical practices, and provide home-based care. They are also influential in the modification of sexual behaviour due to their high moral status in the community.

Though indigenous healers claimed that they could cure various sexually transmitted infections, they could be used to spread the information on sexually transmitted infections including HIV-1/AIDS. It happened that all respondents that had been previously infected with sexually transmitted infections all tried indigenous therapy, though unsuccessfully, before going to the hospital or private clinics. The healers should be encouraged or enticed to refer sexually transmitted infections to the district hospital.

In Kenya, the government has no control over indigenous medicines and this will lead to even further exploitation as people who cannot afford HAART, and are confused about the course of AIDS, would flock to indigenous healers as they are already doing. The public is already being exploited by unscrupulous healers who have staked a claim in the AIDS industry. In Turkana, dogs are fast disappearing due to their alleged efficacy in 'curing' AIDS. In addition, soups derived from cooked baboons, monkeys, and dogs are alleged by indigenous healers to have potent qualities in 'curing' AIDS. In Turkana, people must not only question the efficacy and safety of these concoctions, but also the poverty and desperation that drives the local populations to drink them. In addition, the Turkana could

be at risk of contracting other viral infections, or even manufacturing a deadlier form of HIV through viral combinations and replication.

In the household survey, it emerged that most women had their births at home with the assistance of indigenous birth attendants. They are important sources of prenatal, antenatal, and maternal care, and births in nomadic communities. If indigenous birth attendants are trained in basic female physiology, the physiology of the female genitalia, the signs and symptoms of sexually transmitted infections, and the principles of infection control, they would be invaluable resources in the fight against HIV-1/AIDS. They already examine pregnant women and this should be reinforced with skills and knowledge. They should be given the necessary knowledge to educate women on adequate sexual health including personal cleanliness and hygiene, especially of the genitalia.

Currently, indigenous birth attendants deliver babies without protective devices, gloves, or clothing. This raises the risk of contracting HIV-1 during birthing if either the woman or the birth attendant is HIV-1 positive. This should be addressed as it is one of the ways that they could contract HIV-1, which they could potentially transmit far and wide through their practice. Equipped with resources for dealing with sexually transmitted infections, genital care, and genital hygiene, indigenous birth attendants would be invaluable allies in the fight against HIV-1/AIDS.

Indigenous healers and indigenous birth attendants could spread the information on HIV-1/AIDS and other sexually transmitted infections. Though ineffective, as demonstrated by the therapy-seeking behaviour of those who had been previously infected with sexually transmitted infections and those who presented with sexually transmitted infections in the Lodwar STD clinic, they continue to be the first contact for care for the infected because of the confidence that people have in them. In some cases, they are the only available source of healthcare. When trained, they could use their authority, credibility and accessibility to promote behaviour change.

Using indigenous knowledge and resources, programmes could be designed that include culturally meaningful HIV-1/AIDS communication strategies using indigenous symbols, metaphors, and local etiological concepts already in use to explain familiar and unfamiliar sexually transmitted infections. Indigenous healers and birth attendants could

also provide psychosocial, economic, and culturally sensitive support to individuals, families and communities in home-based settings. In addition, they would also help in the formation of home-based care through community groups or clusters of communities modelled on socio-cultural structures. Moreover, their huge network in the community, and the trust the community bestows upon them, would make counselling in the community a reality. It is hoped that when trained, indigenous healers would be able to be honest enough to indicate that they cannot cure HIV-1/AIDS and other sexually transmitted infections using dogs and baboons the way they currently do.

As indigenous birth attendants are over-utilised in view of the lack of resources and the fact that they do voluntary work, resources should be provided for the extra workload and for motivation.

12:3:2:4 Mass campaigns and health education

The lack of adequate knowledge of HIV-1/AIDS and other sexually transmitted infections among the general population was decried by local leaders and all respondents. This has also resulted in low acceptance of the prevalence of HIV-1/AIDS. Many Turkana still perceive HIV-1/AIDS as an urban illness.

Normally it is the elite Turkana, some of whom have little in common with the local population, that play a great role in the delivery of educational campaigns. Quite often, non-Turkana who do not speak the local language design and execute the HIV-1/AIDS related programmes. For instance, a workshop for women's group leaders was facilitated by non-Turkana speakers to an audience that was largely Turkana. Due to taboos and secrecy surrounding sexuality and the perception of HIV-1/AIDS as an urban illness or that of outsiders, the Turkana themselves should play an active role and assume full ownership in the design and delivery of preventive programmes. Sex education is needed, through social networks in the community, on the types of sexually transmitted infections, their symptoms and signs, effective therapy, and means of prevention. Advocacy for change of behaviour can only be successful if it is constructed and executed within the social structure, while recognising the priorities of the local community. The HIV-1/AIDS educational messages should address the day-to-day concerns of the people, such as lack of food, poverty, and drought.

There should be an attempt to integrate HIV-1 education and counselling with tuberculosis' DOTS sessions. The people should be educated that having a cough / TB does not mean that you are HIV-1-infected. Likewise, having a HIV-1 infection does not mean that you are TB-infected, but could be at high risk of contracting tuberculosis.

Since people of the same age and occupational status influence each other's behaviour, peer education should be developed among marginalised herders. Young men often get sex education from peers. Through this, some of the marginalised herders would be reached. Locally trained educators must be willing to adopt a nomadic type of livelihood. They should be equipped with knowledge and skills related to HIV-1/AIDS, sex and sexuality, and reproductive health, and with communication skills. It is ironic that Turkana is the only place that did not boast of the roadside billboards and condom promotion posters that are common in other parts of Kenya. Such posters are definitely needed in Turkana to send a clear message to people at large that HIV-1/AIDS is a problem in this area as well. The lack of HIV-1/AIDS activities and campaign infrastructure that are witnessed in other parts of Kenya perpetuates the myth that HIV-1/AIDS is not a problem in Turkana.

Education should target institutions of learning, rural communities, urban populations, and Lodwar prison. Lodwar prison is a potential source of HIV-1 for the rest of the population. They are overcrowded, and prisoners in Kenya often tell of the prevalence of sexual assault and homosexual liaisons in prisons. Efforts should be aimed at devising ways of preventing HIV-1 transmission in prisons through better education and the protection of inmates from sexual assaults. Similarly, contextualised education designs should be formulated for schools, rural populations, and urban populations. Education on HIV-1/AIDS should be done through mass communication programmes, mobile clinics, provincial administration (assistant chief, chief, DO, DC) and political *barazas*, relief distribution centres, herding congregations, churches, etc. School-based intervention among school-going children, aimed at increasing people's knowledge, and at promoting change in behaviour and attitudes would be cost-effective in resource-poor settings. Endowed with knowledge, it is hoped that the youth would have the necessary communication skills to negotiate for safe sexual practices, including the use of condoms. The video halls should be monitored so that under-age children are not exposed to

pornography. In addition, they should broadcast HIV-1/AIDS messages at the beginning of every show.

In Turkana, there are various community-based organisations already in existence that focus on various income-generating activities. Some of these women groups indicated that they do educate their members on HIV-1/AIDS. There was, however, no empirical evidence for this, apart from one women's group, some of whose meetings I attended. Every time seminars and training sessions were offered by the Nawoitorong Women's Group for their members and other women's groups, HIV-1/AIDS formed an important component of the sessions. These women's groups could play a great role in HIV-1 prevention, especially through the empowerment of women through collective responsibility and action. The Nawoitorong Women's Group is a good example of how such an entity could have income-generating activities like the conference centre, lodgings, a bakery, etc., which provides employment opportunities to the members. The leader of the group indicated that infected and affected members would be guaranteed psychosocial and financial support. However, many poor women, like the single mothers, sex workers, and illicit alcohol brewers, the most vulnerable sections of women, are typically not members of these groups. Efforts should be made to incorporate or encourage them to form or join other women's groups and community-based organisations. There is need for the formation of many community-based income-generating organisations. Such women's groups would be ideal structures for the formation of community-based counselling programmes with members trained as counsellors. Counselling programmes would focus on communal dialogue, self-awareness, and the mobilization of communal resources. The behavioural change initiatives would rest with the community. One behavioural change envisaged would depend on the willingness of the community to take an active role in the direct care of people living with HIV-1/AIDS, a role that is presently performed by only close relatives. Community counselling programmes would be expanded into schools where teachers and school children would be exposed to information about HIV-1/AIDS and sexual behaviour.

The government should have the courage to develop family life education that is acceptable to the church. Since about 80 percent of the education facilities are provided by the church, such an education programme introduced without their blessings will not be

implemented. In addition, the church plays an indispensable role in socio-economic development. However, the role of family life education and general health education in the prevention and control of HIV-1/AIDS should be given considerable prominence. Though the socio-cultural considerations are as important as epidemiological ones in selecting behaviours for health education, insisting on issues, like morality, obfuscates the real problem. Human sexual behaviours have proved to be the most difficult to influence in the history of mankind as they are enshrouded in taboos, secrecy, and social pressures. Most parents in Kenya do not discuss, and dread discussing the subject of sexuality with their children. This is why family life education puts this responsibility in the hands of teachers who are trained to pass on information to pupils in a professional way. The targeted group are children, the most vulnerable to HIV-1 infection, and yet are the future of the prevention of HIV-1. They are the ones that need saving through inculcating in their minds the idea that grave danger lurks in sexual intercourse. Teaching them early about the dangers of AIDS and how to avoid contracting the virus may not be a panacea, but at the moment, it is the best vaccine. Family life education will complement the behavioural change programme run by the Catholic Church.

12:3:2:5 Home-based care

The HIV-1-infected could be provided with both home-based and community-based care through counselling and psychosocial support within a nearby cluster of communities based on community-based organisations (CBOs) modelled on socio-cultural structures. The program would be built upon the existing socio-cultural structures and organizations. The AIDS Care and Prevention Programme would support diagnosis and counselling for infected and affected individuals, provide resources for home-based care, education, and counselling for the communities, and strengthen food production and economic security. The programme would work with and within the communities, and design programmes to include their concerns, fears, resources, and interests. The home-based care would establish community counselling programmes as modelled on indigenous caring practices, thereby legitimising socio-cultural norms and practices leading to a reorganisation and mobilisation of valuable resources within the community. The contemporary issues

surrounding the prevention and transmission of HIV-1/AIDS and the care of its victims are to be modelled into cultural structures and community processes.

Home care or community-based care, though unsafe due to the limited biomedical and social services offered, is the only available option. Quite often AIDS patients are seen as bed blockers that should be discharged prematurely and as soon as possible from the hospitals. It is a way of telling people, after testing them anonymously without their consent, 'sorry, you can go home and die'. I witnessed how a HIV-1/TB infected patient was being cared for by her under-age daughter in the hospital. Currently home care is very unsafe as informal caregivers are not equipped with knowledge and equipment. In such cases, barrier nursing is needed through the use of protective devices as basic as gloves, and infection control equipment as rudimentary as disinfectants. Most households could not afford these ingredients for safe and proper care. Even in the hospital environment, those who care for their relatives put themselves at great risk. For instance, in Lodwar Hospital, a child desperate to care for her dying mother was obviously exposing herself unwittingly to the risk of contracting HIV-1. The little girl did not have gloves and as a result had contact with her mother's body fluids with her bare hands. She neither knew that her mother was HIV-1 infected, nor that she could contract HIV-1/AIDS through these methods of care. Passing the patients to the community or to the home, which are already overburdened, or to NGOs with no expertise or facilities, is a disservice to HIV-1/AIDS patients. Community based care or home-based care – the Hospices of the West, must have trained personnel and regular visits by doctors or nurses to help in case management³⁰¹. In the absence of this support, the HIV-1-infected are simply being sent home to die.

In addition, volunteers and family members should be trained in general and personal hygiene, and peer counselling. Patients should also be taught how to bathe, care for wounds, handle body fluids, and appreciate proper nutrition. Home caregivers would still, however, put themselves at risk of infection due to the lack of basic protective devices

³⁰¹ I had come across a report in the press on home-based care in Harare run by the British Red Cross in which volunteers visit AIDS patients at home to turn them over to prevent bed / pressure sores, change catheters, and bath them. (Rippon, A., 2002. 'When you hold a dying child in your arms, politics does not come into it' *The Independent on Sunday*, July, 28, 2002).

such as gloves and cotton wool. In Kenya, rudimentary home care schemes supported by the Kenya Network of Women with AIDS (KENWA) are already being offered in some parts of poor Nairobi slums. Home-based care, provided in the congenial home environment with financial and material support, could promote hygiene and nutrition, and provide for the emotional and other needs of the infected. Home-based care would reduce suffering and reduce the high cost of medical care. Most of the hands-on work would be carried out by trained relatives and volunteers who go to patients' houses to bath them and provide advice on nutrition and personal hygiene. The whole household and community would be involved. This would also reduce the burden of caring currently placed on children.

12:3:2:6 Promotion of condom use

With the high cost of and limited accessibility to HAART, the public health approach to HIV-1/AIDS still remains the most affordable and accessible method of HIV-1 prevention in Turkana. However, the use of condoms is still very low in the world despite its proven efficacy if consistently and efficiently used (Daly *et al.* 1994; Feldblum 1995). A completed review on the effectiveness of condom use in reducing the sexual transmission of HIV-1 found that consistent condom use is associated with an 80 percent reduction in the risk of heterosexual transmission of HIV-1 (Weller, 2001). Focused community level interventions, which promote consistent condom use at the population level, are currently gaining popularity as a way of influencing condom use behaviours (O'Reilly and Piot 1996). This project has indicated that there are both macro-level and individual-level factors that determine condom use among sexual partners.

It is noted that the availability and accessibility of condoms in developing countries presents the most fundamental barrier to condom use (Gilmour *et al.* 2000). In addition to these factors, low condom use in Turkana is particularly influenced by acceptability, the lack of education, and non-consistent distribution. The public sector condoms are made available at STD clinics, family planning clinics, and bars and lodgings, which are out of reach of people, most of whom have negative attitudes towards clinics due to the stigma attached to STIs and family planning. Condoms sold commercially in bars and pharmacies are out of reach of many people, as well.

The combination of non-consistent availability, lack of information, and experiential knowledge in townships compromise the consistent and effective use of condoms. Recent reviews have suggested that awareness of male condoms as a simple prophylactic device is closely tied to knowledge of HIV-1/AIDS, and other STIs, and, like knowledge of the transmission and contraction of these STIs, the knowledge of condoms as a prophylactic device to prevent STIs will follow (Gardner *et al.* 1999). This hostility is also attributed to the fact that condoms are perceived as a contraceptive device rather than as a prophylactic. This distinction should be made very clear, as it appears some people might be willing to utilise and discuss condoms openly if they are to be used as prophylactic devices against STIs including HIV-1 rather than as devices that limits the number of children they should have. These hostilities and misconceptions are only likely to be dispelled if condoms are consistently and aggressively promoted in conjunction with increased knowledge of HIV-1/AIDS and other STIs under the rubric of genitourinary (sexual and reproductive health promotion) health projects. Many people, especially among the semi-nomadic and nomadic populations, have never seen a condom. Associating condoms with disparate STD clinics and family planning clinics will further lead to the disenfranchising of the many Turkana who are hostile to family planning and perceive condoms as an attempt to prevent reproduction. It is also through consistent use that the perceptions that condoms slip, break, are lodged in the uterus, reduce sensation, and suggest a lack of love and /or trust, sexual infidelity, or infection, will be dispelled. Those who have never attempted to use a condom help spread some of this information. It is due to experience that commercial sex workers who use condoms consistently and effectively report low rates of condom slippage or breakage (Albert *et al.* 1995). Research on university students in South Africa has demonstrated that the lack of practical knowledge of / or experience with condoms represent a barrier to their consistent and effective use (Peltzer 2000). Such experience is still a long way off in Turkana.

In Turkana, there should be a consistent attack on other structural barriers to condom use, such as female empowerment and the economic imbalance that prevent commercial sex workers, homeless girls, child sex workers, and teenage girls from negotiating for safer sex. In most communities in sub-Saharan Africa, women are disempowered by socio-

economic structures and conditions of living, and cannot negotiate for condom use in their sexual relationships (Abdool Karim *et al.* 1995; Susser and Stein 2000).

I would not advocate the use of condoms in rural nomadic communities at this stage. They are very hostile and this could lead to a rejection of the whole HIV-1/AIDS prevention programme. I would rather strongly suggest the vigorous promotion of condoms in urban centres and settlements, most of which are along the main road and in the refugee communities. If the urban populations learn to use condoms consistently and efficaciously, rural and nomadic Turkana would be protected. Even if a nomadic herder buys sex from a woman after selling his livestock, if the woman insists on the use of a condom, he would be protected from contracting any STIs. During a workshop, some bar and lodging managers suggested that commercial sex workers and barmaids should be adequately informed of the importance of consistent use of a condom, and then proper use of the same. If they all insist on the use of a condom, their clients would have no alternative but to use condoms, as there would be no commercial sex worker willing to have sex without a condom. In fact, settings where high-risk sexual activities take place such as bars, lodgings, and hotels should be consistently stocked with condoms. Such venues could be used as areas of condom distribution. It is hoped that knowledge of condoms and condom use will trickle down to the semi-nomadic and nomadic communities.

In Lodwar, and in other townships like Kakuma and Lokichoggio, high quality condoms are sold at subsidised prices using retail and wholesale channels. This would, however, be ineffective among the poor like the Turkana. Currently, there is a perception that free condoms in government institutions are of low quality, or are adulterated with either contraceptives or HIV-1 and 'good' condoms sold in the shops are expensive. Even in developed countries like the USA, it has been found that there is a low uptake of low-priced (subsidised) and free condoms (Cohen and Farley 2004). Due to this experience in developed countries, it is hard to justify asking for people in poor countries to pay for condoms. Therefore, "the right price for condoms is zero (Cohen and Farley 2004: 13)". Since HIV-1/AIDS is 100 percent preventable, the acceptance and distribution of free condoms is one of the ways of prevention. Prevention will only be considered a success if the entire community benefits when individuals follow preventive measures, since mass

use would produce mass benefits. Could small pox have been eradicated by asking people to pay for vaccines? NO!

High-risk groups like commercial sex workers and truck drivers should be constantly offered condoms. Army barracks, police posts, and prisons should be well stocked with condoms accompanied by vigorous education. As well as promoting abstinence among sexually active adolescents, it is pertinent that they are given a choice through accessibility to condoms. Abstinence is highly disregarded and this is evidenced by high teenage pregnancy rates, an early sexual debut, and a high level of HIV-1 prevalence among females. In Lodwar township, the *kaada* brewing and drinking places should be bombarded with HIV-1/AIDS messages and information on condom use. Later, following acceptability and agreements with kiosk and *kaada* brewers and sellers, condoms should be made available in these places.

The government needs to build the confidence of the population regarding free condoms, which are often perceived to be of substandard value. The rejection of free condoms among a poor population that cannot afford to consistently buy condoms has many implications for the control of HIV-1/AIDS and other sexually transmitted infections. The local population's perceptions that condoms break very easily could be true. Turkana is very hot during the daytime, and this requires proper storage of condoms. However, the condom dispensers are made from iron sheets located on the walls outside the bars and lodgings in direct sunlight. Condoms dispensed under this environmental condition would be brittle, thus susceptible to breaking or bursting with ease. Proper storage and distribution of condoms should be a priority.

In Turkana, CSWs form a critical mass of people in the fight against HIV-1/AIDS. They rarely use condoms and they have sex with transient populations who have travelled from areas with a high HIV-1 prevalence. Commercial sex workers selectively use condoms for commercial sex but not for multiple 'private' sexual unions, which are equally full of risks. The decision about who to use a condom with could also be influenced by the motive for sex: sex with men who pay is meant for money (income), while that with a regular partner(s) is (are) meant for pleasure and the expression of affection. In the latter instances, condoms would be rejected because latex barrier creates a psychological

barrier to sexual satisfaction. There is misconception amongst both CSWs and their patrons that anal sex is safer, and does not require condom use. They should also be taught that anal sex has a higher risk of HIV-1 transmission than vaginal sex as more bruising of the epithelial anal layer is likely to happen due to friction and the lack of lubrication. Anal intercourse is associated with a high probability of transmission per sexual act (Royce *et al.* 1997). CSWs also face a higher risk of contracting HIV-1 than the male client. In the absence of HIV-1 tests, CSWs lack the necessary skills to diagnose one who is HIV-1 infected, as symptoms of AIDS often appear much later after infection. The assumption that one who looks healthy without apparent AIDS symptoms is clear of HIV-1 is false. As CSWs cannot be taught how to diagnose a client who is HIV-1 infected, the surest way of not contracting HIV-1 is to use condoms all the time despite the client's appearance. The symptoms they look for, like emaciation and rashes on the body, only appear on those with advanced AIDS. They should understand that most people who are infected appear just as healthy as anyone else. More knowledge should be imparted on HIV-1, and how it is different from *lokwake!*. The myth concerning condoms should be dispelled vigorously. This is a group of people that do not have a choice, as they will not be monogamous due to the fact that they earn a living from multiple partnerships. The rationale and philosophy of commercial sex work is that the more men you have sexual intercourse with, the more money you would be able to make.

Since the Catholic Church provides over 60 percent of health care services and over 80 percent of educational services, it is pertinent that they play a significant role in HIV-1/AIDS prevention, or they are brought aboard by the government and / or other NGOs. The church, in addition, plays an indispensable role in socio-economic development. Their infrastructure is vital for HIV-1/AIDS prevention. Moreover, whatever activities they do not sanction are likely to meet a brick wall. The Turkana religious leaders need to emulate countries like Brazil and Senegal where religious leaders agreed not to promote condom use but at the same time do not down play its importance or initiate campaigns against its use. The Catholic hierarchy should adopt the emerging curial thinking on HIV-1 prevention that draws a distinction between *the condom as a prophylactic device* that could be used to contain the spread of HIV-1, and *the condom as a contraceptive device*. In addition, the promotion of prevention through condoms must draw a paradigmatic distinction between

prevention (attacking a problem at its root) and *containment* (interventions to lessen the impact of a problem) (Saundeu 2000). The condom, as a prophylactic device, is one of the ways to contain the sexual transmission of HIV-1, that is, to limit its transmission. Perhaps condoms would prove to be more popular in the Catholic Church and among the Turkana if their past association with family planning is significantly de-emphasised. It is unfortunate that condoms were initially invented, manufactured, and promoted as family planning devices.

However, we know that the effective solution to the containment of HIV-1/AIDS should be two-pronged, that is: through changes in sexual behaviour, such as a commitment to sexual abstinence until marriage and conjugal chastity after marriage; and the attack on the ecosystem factors that viciously predispose the population of sub-Saharan Africa to HIV-1 infection and rapid death due to AIDS. As Saundeu (2000) pointed out, containment does not eliminate the root cause of the disease as HIV-1/AIDS cannot be stopped with condoms alone. Though condoms can be distributed to commercial sex workers, their clients, and other groups of people that are constrained by the factors of the ecosystem to engage in sexual relationships that wittingly or unwittingly increase their vulnerability to HIV-1, the prevention of HIV-1/AIDS must be more than this; it must be moved to another level and the true social, economic, political, and moral roots of the epidemic must be attacked.

12:3:2:7 Provision of adequate nutritious food

Nutrition plays an important role in the health of all human beings. Nutrition is therefore a better investment for those who are infected with HIV-1 or those who already have AIDS than drug therapy. As indicated by the Turkana leaders and informants, HIV-1/AIDS sufferers require care at home, a good diet, counselling, a reduction of stress, adequate rest, increased exercise, and a reduction in smoking and drinking alcohol. The state of helplessness, worthlessness, and hopelessness that engulfs HIV-1-infected individuals interferes with the activities of daily living, including the capability to attain adequate nutrition. HIV-1/AIDS is already exacerbating malnutrition among infants in Turkana. For instance in November 2006, the seven out of 10 children admitted to a nutritional

rehabilitation centre at the Lodwar hospital over a one month period were found to be HIV-1 positive³⁰².

The respondents cited the importance of nutrition in preventing early death among the HIV-1 infected. As they noted, 'if you do not worry, and eat good food, you are likely to live for long'. They value the importance of a good diet in the management of AIDS. In Morogoro township, Tanzanian commercial sex workers noted that eating nutritious food (bananas, meat, fish, and beans) helped maintain their immunological status and so protected them from contracting sexually transmitted illnesses including HIV-1/AIDS (Outwater *et al.* 2001). The Turkana, like most resource-poor communities, lack the ingredients of HIV-1/AIDS management through good diet. This country is often ravaged by famine and the lack of nutritious food. In the course of this research, Turkana was under the influence of such cyclical forms of drought and hunger leading to a high prevalence of protein-calorie-malnutrition. The provision of famine relief food, comprising mainly beans and maize, was often inadequate. While the nomadic and semi-nomadic communities are likely to revert to pastoralism or subsist on livestock products after drought and famine, or combine relief food and livestock products, the majority of the settled populations had no option but to rely on inadequate famine relief. After the NGOs that distribute relief food have decamped, they are left to fend for themselves, prolonging their suffering due to protein-calorie-malnutrition. Such families would experience famine throughout the year, as in the absence of livestock and any source of income, there is no way they could buy food from the shops and markets. Settled communities, who are also at greater risk of HIV-1/AIDS, need help with the establishment of income-generating activities so that they can have enough income to invest in good protein-calorie-nutrition.

In the absence of antiretroviral therapy, and with no hope of getting these drugs in the near future, the resource-poor communities' only hope is proper nutrition. This is more cost-effective than attempting to provide HAART to a few without proper infrastructure. Food strengthens the immune system, thus preventing the early onset of opportunistic infections that lead to AIDS. HIV-1 attacks the body's immune system and weakens the defence mechanisms consequently opening the way for opportunistic infections causing

³⁰² Plusnews, 2006. 'Kenya: HIV exacerbates malnutrition among infants in drought-prone Turkana' Available from: <http://www.pronutrition.org/archive/200611/msg00002.php>. Accessed on: July 17, 2007.

AIDS. Major symptoms range from chest infections, fever, herpes outbreak, general weakness, muscle and joint pains, fungal infections, skin rashes, and enlarged lymph glands among others. AIDS shares some of these symptoms with tuberculosis, which also leads to emaciation and general body weakness.

Borrowing from the experience of the Mama Mzungu Foundation (see below), a feeding project should be established for the HIV-1 and TB infected while they are in the hospital. The state of food in the Lodwar District Hospital is appalling, with the meals consisting of non-Turkana indigenous foods. The nutritious food that the foundation provided every Tuesday and Thursday was very vital for the recovery of the emaciated patients who were on powerful chemotherapeutic regimens. In addition, the Foundation provided vital drugs for other opportunistic infections, which the hospital could have instructed the patients to purchase. It would not be too much to ask the government to provide nutritious food in the hospitals and free drugs for opportunistic infections, especially when an HIV-1 infected person is already burdened with tuberculosis. With proper nutrition combined with prevention and prompt treatment of opportunistic infectious illnesses, the HIV-1-infected can live for a long time without HAART.

Mama Mzungu Foundation: a model of care for TB/HIV-1/AIDS patients in Lodwar township

Veronica, a Dutch philanthropist, came to Turkana in 1998, with her anaesthetist husband. Though the husband returned to Holland after voluntary service in the Lodwar District Hospital, she remained in Turkana to carry out charitable work. She formed a local charity, the Mama Mzungu Foundation, and raises funds from her country, the Netherlands. The Mama Mzungu Foundation aims at the provision of comprehensive care to TB and HIV-1 infected patients. She provides balanced, nutritious meals to TB patients in the TB Manyatta and in the isolation wards twice a week.

The foundation meets the costs of drugs for other infections suffered by TB patients. In addition, upon discharge she pays for their transport home. The Mama Mzungu Foundation rejuvenated the TB isolation wards by painting the

walls, refurbishing the nursing office and medication room, providing new curtains, and buying forty-five mattresses and mosquito nets. She also fenced the hospital grounds.

The foundation's activities also aim at tackling poverty in Turkana through the provision of assistance towards the construction and purchase of equipment for primary and secondary schools. It goes further by sponsoring Turkana girls in various secondary schools, training institutions, and colleges.

She was of the opinion that a NGO should be formed to facilitate the provision of home-based care for AIDS patients in Lodwar. Such a NGO would also facilitate the provision of care to the ever-mushrooming population of orphans.

In the absence of antiretroviral therapy, the resource-poor community's only hope is proper nutrition. Food strengthens the immune system, thus preventing opportunistic infections. Borrowing from the experience of the Mama Mzungu Foundation, people undergoing tuberculosis treatment with obvious nutrition deficiencies, as most cases in the TB Manyatta and isolation wards had, would benefit from supplementary meals to build their immune system previously impaired by hunger, poverty, and of course, the disease. People might think that from the moment they test positive, access to HAART is the only answer, forgetting that they can combine treatment with nutrition. HAART, combined with poor nutrition, is equivalent to fighting a losing battle. In the same manner that TB patients were struggling with drugs, if HAART were to be available, the HIV-1-infected patient would need to struggle to overcome the adverse effects of the drugs in the absence of proper nutrition.

There are reports in Kenya that people are "using ARVs to fill their empty stomachs"³⁰³. First, those who have access³⁰⁴ to ARVs cannot afford to buy basic food. Therefore, they adversely take drugs on empty stomachs. Secondly, patients register at more than one treatment site so that they can receive ARVs twice: they utilise one set from one site, and then sell the other set from the second site so that they can use the money to buy food.

³⁰³ Inter Press Service, 2006. 'Using ARVs to Fill Empty Stomachs' allAfrica.com. Available from: <http://www.allafrica.com/stories>. Accessed on: July 6th 2006.

³⁰⁴ From June 1st 2006, the government 'widened' access to ARVs through the waiver of fees in government facilities, which had been about US\$ 1.40.

Others registered in only one site sell off some of their drugs in order to afford food. Dangers, therefore, lurk in the unsupervised use of antiretroviral drugs. This means that people who take these drugs may stop at any time, leading to the development of diverse, drug-resistant viral strains that they could transmit to the non-suspecting population. As an unemployed man explained: "[US\$ 7] is not much, but at least it helps me purchase some basic food so that I do not take the medicine on an empty stomach. It can be dangerous.... [Before] I thought of the trade, I would take the medicine ... [with] porridge alone. I nearly died. I got so weak; I developed ulcers, which have not healed well until now"³⁰⁵. It follows, then, that people who have not been tested, but suspect that they have HIV-1 opt to buy these drugs anonymously. Secondly, the poor would not comply with the treatment regimes for a number of reasons. In some cases, they need to sell part of their supply of drugs for money. In other cases, they do not have sufficient resources to travel to treatment sites, or they skip doses to reduce the side effects that might be exacerbated by poor nutrition or the lack of food. Good calorie-protein-nutrition should be part of the ARV package, especially among the people who are structurally entangled with poor social living conditions. The quality and sustainability of the ARV service in poor countries is definitely in doubt. Therefore, the provision of HAART without meeting basic needs first is turning out to be a case of misplaced priorities.

³⁰⁵ Inter Press Service, 2006. 'Using ARVs to Fill Empty Stomachs' allAfrica.com. Available from: <http://www.allafrica.com/stories>. Accessed on: July 6th 2006.

12:4 Biomedical interventions through highly active anti-retroviral therapy (HAART): the case of a 'cure' for HIV-1/AIDS in Turkana

12:4:1 Introducing HAART

In this section, it would be useful to discuss the history of the introduction of HIV-1/AIDS therapy in Kenya. The significance of therapy only became obvious during the fourth and present phase of the response to HIV-1/AIDS in Kenya. It became apparent to the population that AIDS could not only be prevented, but also 'cured'. During my fieldwork in Turkana (2000/2001), the debate over antiretroviral therapy was raging not only in Kenya, but also in the whole of sub-Saharan Africa and the developing world. I was told countless times during my interactions with the local population that there was a 'cure' for HIV-1/AIDS in Nairobi, though it had not reached Lodwar. It was rumoured that one HIV-1 infected nurse working at the Lodwar District Hospital had access to HIV-1/AIDS drugs from an international NGO based in Nairobi. The same NGO was at the forefront of the campaigns for the universal introduction of HAART. HAART is a group of antiretroviral drugs aimed at decreasing the viral count (load) in one's blood. The lower the viral load (measured from a blood sample), the less the HIV-1 circulating in the body, and the lower the chances of acquiring opportunistic infections and developing full blown AIDS, thus prolonging one's life span.

Before HAART, there were numerous reports of available AIDS therapies on the Kenyan market, some developed by indigenous Kenyan scientists. In addition, some Kenyan scientists, in collaboration with scientists from other countries, have been involved in the search for either a vaccine or a cure. The first medicine to be highly publicised in Kenya was *Kemron*, developed by the Kenya Institute of Medical Research (KEMRI) in 1993, which later failed rigorous efficacy tests amidst allegations of racism. The Kenyan government was accused of using it for political expediency and cheap populism. Notwithstanding the controversy, *Kemron* was used by hopeful, infected patients. Further

research, however, confirmed that *Kemron* was not a cure and was far from being an effective drug.

Beginning around 1996, Kenyans were bombarded with controversies and debates about a therapy developed by an American, Dr. Basil Wainwright and his infamous polyatomic aphaeresis, which involved passing rays of atmospheric oxygen through the body of AIDS patients. Dr Wainwright claimed that he could cure cancer, HIV/AIDS, and other infections. It was claimed that Dr Wainwright enjoyed political patronage to the extent that he was cleared by the then Director of Medical Services to set up a polyatomic aphaeresis treatment centre. In a letter dated 30th July 1996, which was quoted in the press during the controversy, in part read: 'It has been wonderful meeting with you and discussing early stages of what is likely to be a medical breakthrough in Kenya an indeed East African region. The setting up of a Polyatomic Aphaeresis Treatment Centre in Nairobi is greatly appreciated by the government of the Republic of Kenya. I would like to assure you of continued government support in assisting your fight against the many new, emerging and re-emerging diseases such as HIV/AIDS, and yellow fever'³⁰⁶. Even though Dr Wainwright was allowed to set up the centre, the controversies surrounding the clinic intensified when the Medical Practitioners and Dentists Board was opposed to the administration of polyatomic aphaeresis to patients.

Due to international press and the board's efforts in the quest for truth, the United States Food and Drug Administration wrote to the government of the Republic of Kenya indicating that Dr Wainwright was not only a fugitive on probation violation, but also that polyatomic aphaeresis was not medically approved in the US. Consequently the same Medical Services Director, who a year earlier blatantly approved the therapy, rescinded the same noting that Dr Wainwright was a conman. Dr Wainwright, however, saw the hand of politics and corruption in the ban. During this saga, it came apparent that the government, despite lacking a clear policy on HIV-1/AIDS treatment and research, was desperate to find a cheap therapy.

In 1996, another renowned Kenyan scientist who had earlier headed KEMRI when *Kemron* was developed, Prof. Arthur Obel, alleged he had developed a cure – *Pearl*

³⁰⁶ *East African Standard*, 19th July 1998, p12.

Omega, and claimed that 7 out of the 32 of his HIV-positive patients who took his new drug became HIV-negative after an 18 - month trial³⁰⁷. A year later, in 1997, it was noted that since 1989 when he started administering the drug, he had treated 77,000 people of whom 53,000 were Kenyans³⁰⁸. Prof. Obel, then a chief government scientist, was supported by the Assistant Minister of Health, Basil Criticos, who on April 24 told parliament that the government did not dispute the drug's efficacy and would carry out relevant clinical trials. However, the Pharmacy and Poisons Board went ahead and banned the manufacture and administration of the drug as the drug had not been subjected to standard clinical trials and peer review. On May 2, 1996, Health Minister Joshua Angatia stated that Pearl Omega was a herbal concoction whose efficacy had not been scientifically proven³⁰⁹. In this instance, even a Kenyan NGO, the Kenya AIDS Society, went to court to seek an injunction to stop the manufacture, distribution, and administration of the drug, even though the case was later dismissed by the Courts³¹⁰. Other leading doctors who opposed the ban argued that the manner in which the drug was banned was unprocedural and unscientific and was likely to ruin Kenya's possibility of ever discovering a cure for the disease³¹¹. They accused the government of politicising *Pearl Omega*, observing that it was unethical for a doctor to disclose the identity of his / her patients as the government demanded. In addition, some HIV-1/AIDS patients protested the ban, arguing that the drug was their only hope and gave the analogy of a drowning man who tries to hold on to everything in an effort to save his life and in the process he gets saved. After all, they argued, this was part of a wider neo-imperialism, since, if the drug were discovered by 'white people, they would have supported one of their own'. In 1996, Prof. Obel claimed that he was working on a vaccine within the scientific conventions that would wipe out AIDS by 2000³¹².

In 2002, KEMRI, the most famous scientific body in Africa, announced that one of its researchers had discovered a zinc-laden supplement, which he claimed had the capacity

³⁰⁷ Nduru, M. 1996 'AIDS-Kenya: New Cure or Old Story' *InterPress News Service*, Monday 11th March 1996. Available from: <http://www.aegis.com/news/ips/1996/IP90302.html>. Accessed on March 23, 2006.

³⁰⁸ *Kenya Times*, 25th April 1997

³⁰⁹ Anonymous, 'Kenyan who "discovered the cure for AIDS" taken to court' *AIDS Analysis Africa*, June 6(3)1-2, 1996.

³¹⁰ Anonymous, 'Kenyan who "discovered the cure for AIDS" taken to court' *AIDS Analysis Africa*, June 6(3)1-2, 1996.

³¹¹ *Daily Nation*, 12th February 1997.

³¹² Tindwa, P. 'Kenya-AIDS vaccine to be ready in six months' *PANA News*, 22nd May 1996.

to reduce the viral load in people living with AIDS³¹³. As expected, nothing became of it when the scientist was challenged to submit the drug for clinical trials, even though, as with all the others, the vulnerable AIDS victims continue to lose their valuable savings in search of an affordable cure.

The *Pearl Omega* debate brought to the fore the issue of patent and intellectual rights. Prof. Obel noted that these rights would be infringed upon were the drug's formula open to the wider world. This is a pertinent issue as in the recent past, Kenyan scientists have felt short-changed in the ongoing collaborative HIV/AIDS Vaccine Initiative, made up of researchers from the University of Nairobi and Oxford University. The Kenyan researchers on the team, to their dismay, had been technically excluded from the list of beneficiaries of the proceeds of the research results. However, the matter was resolved through the intervention of the government, with the outcome that all three partners would share equally in research proceeds³¹⁴. Prof Obel has been relentless in his quest for an affordable African solution to the HIV-1/AIDS pandemic. In 2004, he announced yet another development of another drug code-named Compound Q27, allegedly derived from *almunda canuta*, a tropical plant that is found in Kenya and many other parts of Africa³¹⁵. He said that the drug, administered in the form of a syrup or as an injection, was not just for managing AIDS, but rather a proven cure "that removed all traces of the virus from the entire body system, and not just the blood" and superior to all anti-retroviral drugs.

The efforts of modern medicine have been backed by indigenous therapists and spiritual healers who were, and still are, making claims that they can cure the disease. One herbalist even claimed that his drug, Blue Computer Drug, could treat AIDS among other diseases such as diabetes and cancer. According to this herbalist, patients need only take the drug for one week before they are cured³¹⁶. The rural dwellers and urban poor typically resort to indigenous healers in large numbers. In Turkana, there were claims that one herbalist had cured many who were allegedly suffering from AIDS, the symptoms characterised by extreme loss of weight. These claims are, however, not unique to Kenya

³¹³ Mungai, N. 2004. 'Obel tells of another Aids wonder drug' *Daily Nation*, 11th June, 2004. Available from: <http://www.nationmedia.com>. Accessed on: 21st January 2006.

³¹⁴ *East African Standard*, 13th August 2002.

³¹⁵ Mungai, N. 2004. 'Obel tells of another Aids wonder drug' *Daily Nation*, 11th June, 2004. Available from: <http://www.nationmedia.com>. Accessed on: 21st January 2006.

³¹⁶ *Kenya Times*, 14th August 1999.

as some other countries like Nigeria and South Africa have also recorded spiritual healers and herbalists staking a claim that they could cure AIDS patients by prayer and herbs respectively (Udo and Aimiemwona 2000).

In Kenya, the privately owned Institute of Herbal Medicine recently launched Virakil, a concoction that can be used as an antiviral, anti-fungal and antibacterial, as well as for the control of some opportunistic infections³¹⁷. It was claimed in a newspaper article that the product contains a combination of tropical medicinal plants, which contain properties that boost the body's immune system such as *Tinospora cardifolia*, *Artemesia annua*, *Azadirachta indica*, *Glycyrrhia glabra*, *Hypericum perforatum*, *Aloe forex* and pure propolis³¹⁸. There is no mention, however, of whether this concoction has been subjected to controlled clinical trials. The writer of newspaper article, a researcher with the institute, did not give any indication about the efficacy of the product. However, if the claims are true, then it would be a relief for HIV-1 infected who cannot afford the HAART. I should mention that these products produced by such bodies as the Institute of Herbal Medicine, which is profit oriented, would still be out of reach of the poor. There would still be a need for some kind of sponsorship for them to be available in Turkana. For instance, a nutritional supplement made from honey, VIUSID, boosts the immune system by increasing CD4+ cell counts and reversing the symptoms of AIDS; it costs about KShs 4000 (US\$ 6) for a month's dose³¹⁹. VIUSID is produced locally in Kenya by Metro Pharmaceuticals, a local agent of the Catalysis Company of Spain.

As can be seen, before the debate on the accessibility of HAART, Kenya was already awash in many therapies, including spiritualists who claimed that they could 'cure' HIV/AIDS. Therefore, Kenyans joined the debate and clamour for HAART with vigour as there was already an entrenched belief that AIDS could be 'cured'. Even at the communal level, there were claims by diverse herbalists and the populace that concoctions derived from monkey, baboon, and dog soups could cure AIDS.

As in most parts of the world, accessibility to HAART in Kenya is not only popular, but also a human need. It is estimated that by June 2004, there were 11,000 (15-49 years old)

³¹⁷ Njoroge, J. 2003. 'Nutrition key to managing AIDS' Horizon, *Daily Nation*, January 16, 2003.

³¹⁸ Njoroge, J. 2003. 'Nutrition key to managing AIDS' Horizon, *Daily Nation*, January 16, 2003.

³¹⁹ Olanji, W. 2001. Honey supplement reversing AIDS – KEMRI. *Daily Nation*, August 2, 2001.

people receiving antiretroviral therapy (WHO 2004). That marked a significant increase from 2002, when it was indicated that 2,000 of the estimated 2.2 million HIV-1-infected individuals were able to access HAART treatment, mostly through the private sector (Taegtmeyer and Chebet 2002). As of June 2005, an estimated 33,000-46,000 people were receiving HAART (12-17 percent of those in need, or 233,000 people) (The Henry J. Kaiser Family Foundation 2005). It was reported in 2007 that out of the 363,000 adults who require anti-retrovirals only 90,000 are getting them (Wakabi 2007). In addition, by December 2005, there were 200 sites providing antiretroviral drugs in Kenya (UNAIDS / WHO 2006).

It is argued that HAART can enhance prevention efforts by reducing the stigma. It reduces the illness burden among the HIV-1-infected, increasing the acceptance of, and demand for, VCT, resulting in a reduction in the transmission and contraction of HIV-1 (McNeil 1998; Farmer *et al.* 2001; UN 2002; Lamprey 2002). Without HAART, the HIV-1-infected would die within two to three years after the first opportunistic infection appears (Panos 2000). HAART reduces viral load thereby reducing the chances of HIV-1 transmission and contraction among HIV-1 discordant couples (Gray *et al.* 2001). HAART would lead to a reduction of HIV-1 transmission hence buttressing the most common method of HIV-1 intervention, that is, prevention.

The introduction of HAART on a mass scale would require an investment in healthcare infrastructure, the training of healthcare and community health workers, the sustainable and equitable distribution of drugs, heightened education and prevention, and treatment of opportunistic infections (Weidle *et al.* 2002). In addition, trained personnel to administer and monitor the drugs would be needed. Another obstacle to HAART is the fact that many people in sub-Saharan Africa have compromised immune systems due to malnourishment and the lack of essential drugs. They would therefore succumb to AIDS faster.

HAART will require functioning healthcare infrastructure including safe laboratories. There is a consensus in Kenya that HAART can only be offered in a few well-equipped hospitals and clinics, resulting in a limited public-health effect (Taegtmeyer and Chebet 2002). The Kenyan government's healthcare system is too weak to shoulder the burden of administering HAART, even if the drugs were to be provided for free (Hanson 2002).

There is need for a well-controlled system in order to avoid the anarchy and resistance that may accompany the widespread availability of HAART, and to avoid unsafe and ineffective practices. Laboratories would have to be staffed with trained workers and have appropriate and adequate supplies to diagnose common opportunistic infections such as common bacterial pneumonia, tuberculosis, salmonellosis, cryptosporidiosis, candidiasis, and cryptococcosis (WHO 1997). In addition, staff should be adequately trained and facilities equipped to monitor for adverse drug reactions using complete blood counts, and liver and renal function and amylase tests.

Limited programmes in countries like Haiti have proved that resource-poor settings can successfully implement HAART given that there are adequate personnel and a health care system that works, something that is rare in most sub-Saharan African countries. With the permission of the Kenyan government, many organisations and research bodies have commenced providing HAART on a limited basis (Taegtmeyer and Chebet 2002). However, they currently portend anarchy as each programme / project has their own selection procedures, centres, drug regimens, research agendas, and system of monitoring. This could result in the anarchy witnessed in Malawi where the HIV-1 infected accessed drugs haphazardly without monitoring (Harries *et al.* 2001). In Kenya, there is a potential for degeneration into uncontrolled access and poor control of outlets, possibly leading to the development of resistant strains. I envisage generic HAART following on the same path. In addition, I predict that unscrupulous government employees will steal these drugs and sell them in the open market to the HIV-1 infected. The Turkana noted that drugs from the hospital's pharmacy are openly sold in private clinics. Their knowledge of drug theft is supported by the press in Kenya that often reports on medical staff charged with stealing drugs from government hospitals³²⁰. In December 2003, the Minister for Health warned corrupt doctors and other health workers against selling government drugs³²¹. In Nigeria, an AIDS activist indicated that the government AIDS therapy programme was beset with problems, such as the dispensing of expired drugs,

³²⁰ Oduor, A. 2001. Kisumu doc on KShs 40,000 drugs theft charges. *East African Standard*, June 16, 2001.

³²¹ Oywa, J, 2003. Malaria, TB patients to receive free treatment. [online] *Daily Nation*, December, 10, 2003. Available from: www.nationmedia.com. Accessed on: December, 10, 2003.

discrimination, and demands for bribes before treatment³²². In addition, doctors and nurses often told patients that drugs were not available.

Sufficient data from clinical trials as well as cohort studies now exist to justify widespread HIV-1 drug resistance testing (Pillay 2002). However, can the HIV-1-infected individuals or the government meet drug resistance tests, which in the United Kingdom currently cost about £200-£300 (Pillay 2002)? A study in the United Kingdom indicated that over a quarter of the people newly infected with HIV-1 and not yet receiving treatment may be carrying mutant virus strains already resistant to antiretroviral drugs (Pillay 2002). This was due to increasing numbers of people on HAART who engaged in unprotected sexual intercourse. In another press report, it was indicated that the HIV-1 virus is fast becoming resistant to the latest drugs as HIV-1 positive people on ARV drugs are infecting other people with drug resistant strain of the virus³²³. Tests on 1,600 patients in Europe showed that one in ten who had never taken HAART drugs already had a resistance to at least one of them. A study in the USA, on a sample of 2,000 HIV-1-infected people in 33 states and in 30 cities and rural communities, found that 49 percent carried a strain of the virus resistant to at least one drug³²⁴. How will this be dealt with in resource-poor settings when HAART is introduced on a limited or mass scale? Since there is an erroneous perception that HAART drugs can 'cure' AIDS, will this not lead to the further development of resistance to available 'affordable' generics and donated brand-name drugs in sub-Saharan Africa as HIV-1 infected patients on HAART engage in sexual intercourse with non-suspecting partners?

In September 2001, a consultative meeting sponsored by Family Health International encompassing the Ministry of Health and the National AIDS Control Council, donor agencies, international NGOs, local interest groups and NGOs, and people living with AIDS, was held in Nairobi (Family Health International 2001). There were two camps at the consultative meeting. The first consisted of the pragmatists who acknowledged that HAART was already being used inappropriately and in a disjointed, adhoc manner in Kenya, raising the spectre of resistance and abuse. They indicated that there is

³²² Associated Press, Lagos, Lives at risk as HIV drug runs out' *The Guardian*, February 4, 2004.

³²³ Deal, S. 2003. HIV virus is resistant to latest drugs. *Metro*, July, 17, 2003.

³²⁴ Brown, D. 2001. 'Study finds drug-resistant HIV in half of infected patients' *Washington Post*, December 19, 2001 [online] Available from: www.washingtonpost.com/ac2/wp-dyn/. Accessed on: December 24, 2001.

inappropriate prescription and dispensing of HAART, with many people resorting to a short course of therapy dictated by the affordability and availability of the drugs. In addition, there is widespread poor adherence to treatment regimes. As the market becomes saturated with generic drugs, we anticipate that poor adherence, short course dosages, and intermittent use of drugs will be more common. The pragmatists, therefore, recommended standardised regimens, minimal monitoring requirements, and expanding access through government hospitals. While opening the same consultative meeting, the Public Health Minister indicated that the government could not afford the KShs 14 billion required for antiretroviral drugs for the 2.2 million infected Kenyans. On the other hand, the pessimists voiced the opinion that HAART raises unrealistic expectations in a poor country like Kenya, where the majority of the population does not even receive basic protein-calorie-nutrition and healthcare. They wondered how a HAART programme could be run in parallel to, or in conjunction with, the vertical TB programmes when currently the latter cannot cope with the increase in TB prevalence. In any event, projects and pilot interventions have never been scaled up to provide empirical evidence on how they would perform. In Kenya, there is currently no agreement on programme infrastructure, standard regimen, drug procurement and distribution, and monitoring systems (Taegtmeyer and Chebet 2002). However, this is not only a Kenyan problem, as even in the United Kingdom, despite the government's national strategy for sexual health and HIV-1, there is a lack of integration of treatment centres in the management of patients, and in the standardisation of the regimens used (Barton and Hicks 2002). Currently, every treatment centre has an individual treatment program encompassing diverse combinations of drug regimens at the discretion of individual physicians. Kenya will definitely need a national protocol for the effective administration of HAART. Considering the weakness of the government's healthcare infrastructure, the prevalence of infectious diseases, and the limited scale of HIV-1 prevention activities, the proposal by the government for a limited antiretroviral therapy programme is more realistic than a blanket nationwide programme (Taegtmeyer and Chebet 2002). Nevertheless, the target would still be to have at least one treatment centre in every district, preferably based in the district hospitals. With respect to this goal, a glimmer of light emerged when Kenya moved to the final stage of providing antiretroviral therapy in public hospitals in October 2003, with the country's Ministry of

Health awarded tenders for the supply of the medicines to various pharmaceutical firms³²⁵. Although details of the tender awards reported in the press were still sketchy, at least three representatives of multinational drug makers from companies such as GlaxoSmithklineBeecham, Bristol Meyers Squibb (BMS), and Merck Sharpe and Dohme (MSD) agreed to supply the government with the ARV drugs Lamivudine, Stavudine, and Efavirenz respectively. According to Ministry sources, the bulk of the ARV tender was, however, awarded to generic ARV makers, including an unnamed Indian generic manufacturer. According to NACC, the government programme would see an initial 3,000 people treated at public hospitals spanning over 33 centres at a subsidised cost of US\$ 20 per month³²⁶. The government would gradually raise the number of HIV-1-infected people in the treatment programme to 20,000 over the next two years.

HAART is definitely not a panacea for the AIDS pandemic in Kenya and other poor parts of the world since the drugs are very expensive and do not 'cure' HIV-1/AIDS. The public must not be led to believe that HAART is a magic bullet that would solve the problems of HIV-1/AIDS. However, I would still argue against those international NGOs who are only interested in the promotion of primary prevention through the use of condoms, which has so far not yielded replicable and long lasting results by reversing the increasing prevalence of HIV-1 infections. In the same vein, I would embrace the prospect of providing HAART to those who have HIV-1 but are living in conditions characterised by poverty, and squalor. I agree that at this point in time prevention alone is insufficient (Farmer *et al.* 2001) for it has so far failed miserably to stall the spread of infection in sub-Saharan Africa³²⁷. Mortality due to HIV-1/AIDS has dropped in developed countries because of access to HAART (Mocroft *et al.* 1998; Moore *et al.* 1999; Palella *et al.* 1998). In contrast, HIV-1/AIDS is emerging as the leading cause of mortality in all sub-Saharan African countries.

As is typically the norm with prevention programmes and development projects, most of them never move beyond 'experiments'. The programmes often end as soon as the donors and implementers decamp. Farmer and colleagues' (2001) pilot project in Haiti could not get funding for the expansion of the programme from international agencies on the

³²⁵ Kimani, D. 2003. 'Aids: Now Kenya Awards Tenders For ARVs' *Daily Nation*, October 6, 2003.

³²⁶ Kimani, D. 2003. 'Aids: Now Kenya Awards Tenders For ARVs' *Daily Nation*, October 6, 2003.

³²⁷ Even the once hailed success stories, like that of Uganda, are suggested to have been exaggerated to provide the international community with a success story of HIV prevention through a public health approach.

grounds that the cost of drugs were too high to meet sustainability. In addition, pharmaceutical companies are not willing to become involved unless international AIDS organisations are involved. Since Farmer *et al.* (2001) have demonstrated that HAART could be delivered in the same manner as WHO's TB management with DOTS, though with additional investment in institutional capacity building, its main obstacles in Turkana are the cost and the poor healthcare infrastructure. Even though the monthly retail cost of generic drugs such as Zidovudine (AZT), Lamivudine (3TC), Didanosine (ddl), and Nevirapine, all developed by Cipla, an Indian based pharmaceutical company, could be as low as US\$ 83 per month³²⁸, this is far beyond affordability in Turkana. State sponsorship would not be possible as the government would need about US\$ 1.3 billion for its estimated 2.1 million HIV-1-infected citizens³²⁹. In Kenya, it was reported in the press that the GlaxoSmithKlineBeecham Pharmaceutical Company offered 'Combivir', a key HAART drug for US\$ 0.9 (KShs 63) a day, down from US\$ 1.70, to be supplied to government hospitals, NGOs, and UN agencies as part of a wider not-for-profit pricing policy offered to all sub-Saharan African countries and other developing countries³³⁰. Combivir is a combination of two drugs and is normally taken with a third drug such as Nevirapine (made by Boehringer Ingelheim³³¹) or Stocrin (Merck Sharp and Dohme). Currently *Medicins Sans Frontiers* sponsors a model of treatment, which includes a single triple fixed-dose combination of three active antiretroviral drugs (stavudine, lamivudine, and nevirapine), all in one pill at cost of US\$ 270 (KShs 20,250) a year, about KShs 60 (US\$ 1) a day³³². In Cameroon, the cost of the generic fixed-dose combination is US\$ 20 per month, whereas the same combination with brand name drugs would cost US\$ 35 (Laurent *et al.* 2004), and six pills would have to be taken instead of two fixed-dose combinations. The combined three-in-one pill fixed dose is easier to use and cheaper to buy as opposed to importing all the three cocktails separately. In addition, it makes the treatment regime simpler in poor countries where the population is highly illiterate. Fixed-dose combinations would improve

³²⁸ McNeil, D.G., Jr. 2000. 'Selling cheap 'generic' drugs, India's copycats irk industry' *New York Times*, December, 1, 2000:1(A).

³²⁹ Kimnai, D., 20001 'Why EA Cannot Afford Even the Indian Offer' *The East African*, February 19-25, 2001.

³³⁰ Daily Nation, 2003. 'Government hospitals, NGOs and employers to receive supplies of vital medication' *Daily Nation*, May 18, 2003.

³³¹ Boehringer and Ingelheim offered Kenya free nevirapine for five years, beginning 2002.

³³² Otieno, J. 2003. New Aids cocktail cuts cost of drugs. *Daily Nation*, February, 20, 2003. [online] Available from: www.nationaudio.com Accessed on: November, 12, 2003.

concordance due to fewer daily dosages. In addition, supply, storage, and distribution would be made easier because the product range is smaller and cheaper.

The generic drugs available in sub-Saharan Africa are mainly manufactured and patented by Indian firms such as Hetero Drugs Ltd., Ranbaxy Laboratories, and Cipla Pharmaceuticals. HIV-1/AIDS has given manufacturers of generic drugs the credibility they previously lacked. However, there is already a fear that the USA might block the use of generics in its multi-million dollar anti-AIDS programme in sub-Saharan Africa by demanding a tougher review of standards, safety, and effectiveness for generic copies of patented drugs³³³. This prompted the Indian companies to send their drugs to WHO for evaluation and approval. Over seven ARV generic products, including fixed-dose combinations from three Indian companies – Cipla Pharmaceuticals, Ranbaxy Laboratories, and Hetero Drugs Ltd – have been pre-qualified and approved by WHO and endorsed by the World Bank (WHO 2004). The fixed-dose formulations are yet to be approved by major donors such as the US government's multi-million dollar PEPFAR (President's Emergency Plan for AIDS Relief Funding) programme for developing countries. This is compounded by the lack of clinical trials assessing their efficacy, safety, and quality at point of delivery. However, the few trials that exist have proved the short-term efficacy, tolerability, and safety of fixed-dose combinations, with a 99 percent concordance rate in developing countries (Laurent *et al.* 2004). An independent trial found that the mean nevirapine, stavudine and lamivudine concentrates in fixed-dose tablets used in Cameroon (though most common in sub-Saharan Africa) were 96 percent, 89 percent, and 99 percent of expected values (Laurent *et al.* 2004). The US government and multinational pharmaceutical companies, however, still dispute the safety and efficacy of these generics. This move has been interpreted by activists as an attempt by the US to use drug safety as a smokescreen to protect the profits of multinational pharmaceutical companies and also to buy drugs from them rather than cheaper generics. It is argued that up to four times as many Africans could be treated with life-extending drugs if the US permitted purchase of generic equivalents. A patient can receive a year's worth of generic AIDS drugs for as little as US\$ 140 compared with around US\$ 500 for patented brands.

³³³ Kelley, K.J. 2004. US Trying to Block Generics in Africa, Say Aids Activists. March 29, 2004. [online] Available from: www.nationaudio.com/News/EastAfrican/current/Regional. Accessed on: March 31, 2004.

Currently, the generic fixed-dose combination of Nevirapine, Stavudine, and Lamivudine manufactured by Cipla is the most frequently prescribed in African countries (Laurent *et al.* 2004). At present, it costs about KShs 1,283 (US\$ 17.81) to treat one Kenyan per month with a first-line generic antiretroviral regimen³³⁴. Using brand medicine, or separate tablets, would cost KShs 4,292 (US\$ 59.6). Currently, Nevirapine, which prevents mother-to-child transmission of HIV, costs KShs 152 (US\$ 2.11) a pack, while the original Viramune costs KShs 1,770 (US\$ 24.6).

Even if the cheap generics were made available, we have to factor in the cost of close monitoring of the patients' adherence to drug therapy, and regular measurement of the patient's viral load levels and CD4+ cell levels. In Kenya, such test costs between KShs 8,000 to 12,000³³⁵. In a university teaching hospital in Zambia, a CD4 count test costs US\$ 20 and a viral load test costs US\$ 70 (Panos 2000). The success of HAART needs to be confirmed by three monthly testing of viral load and CD4+ count (Panos 2000), which in 1997 was US\$ 100 for viral load testing, and US\$ 5 for blood cell examination per patient (WHO 1997). The cost of equipment installed in the laboratory would range from US\$ 150,000 and 300,000, and a yearly running cost would be about US\$ 10,000 (WHO 1997). The cost of training staff and of updates should be factored in as well. This is a great deal of money, indicating that countries are only likely to have one or two such laboratories, far removed from the villages, the epicentres of people succumbing to HIV-1/AIDS and in need of HAART. Plasma HIV-1 RNA measurement should be monitored at least 3 to 4 times per year as treatment may be wasted if the treatment does not lead to a reduction in viral load (WHO 1997). Viral load measurement is highly desirable to monitor the efficacy of ARV treatment in asymptomatic patients (WHO 1997). Apart from regular clinical assessment, access to the laboratory for the measurement of full blood counts and liver function tests is vital. Even if the cost of ARV drugs are reduced to levels affordable by the working class, the cost of treating opportunistic infections would still make the whole programme unsustainable.

³³⁴ Ngunjiri, P. 2006. 'Reprieve as Karua costs to keep Aids drugs cheap' *Daily Nation*, July 28, 2006; *Daily Nation*, 2003. 'Aids therapy: The real challenge' *Daily Nation*, May 18, 2003.

Despite political will, the lack of money and funding for health care facilities and trained staff remain the biggest obstacles to access to HAART. Though the second priority of the Kenyan National HIV-1/AIDS Strategic Plan is to provide treatment and care with a budget of KShs. 2, 700 billion (US\$ 35 million) for 2002-2005, in the 2002-2003 financial budget the government allocated a meagre KShs 100 million (US\$ 1.3 million), mostly targeting the prevention of mother-to-child transmission. This means that populations have no chance of accessing HAART through the public health service without donor support. In addition, many people will not be able to sustain treatment with HAART. In Zambia, it is reported that less than 40 percent of patients were able to continue with treatment after three months (Panos 2000). Most of them accessed HAART through private clinics using private resources. Such clinics would prescribe HAART haphazardly and intermittently. The intermittent use of HAART occasioned by adverse side effects or more likely by cost would lead to drug resistance and people getting sicker in the short term³³⁶. It has been reported that the Nigerian government's plan to provide cheap AIDS drugs failed mid-way through, threatening the lives of people who had been taking the drugs for two years, because the supply had run out³³⁷. More than 14,000 people signed up for the scheme launched in 2002 to receive anti-retroviral drugs from government treatment centres at US\$ 6.60 a month, compared with the US\$ 78.70 they would have paid at private pharmacies. As claimed by GlaxoSmithKlineBeecham, one of the arguments advanced by pharmaceutical companies against the indiscriminate distribution of drugs is the concern that the use of drugs in the context of ineffective health services would cause resistance, arising from breaks in treatment³³⁸. The lack of resources and a robust healthcare infrastructure would hinder the effective and safe provision of drugs. The charity, Action Aid, reportedly found that in Kenya, no public hospitals were monitoring their patients³³⁹. One report indicated that resistance to HAART stands at 10 percent in Kenya³⁴⁰. Treatment with HAART is life-long, though many people cannot tolerate the toxicity of the drugs nor comply with the large dosage of pills, poly-pharmacy, and complicated dosage

³³⁶ Reuters, 2001. 'Experts caution Against an AIDS Therapy' *The New York Times*, July 20, 2001. Available from: www.nytimes.com/2001/07/20/health/20AIDS.html?pagewanted=print. Accessed on: July 22, 2001.

³³⁷ AP, Lagos, 'Lives at risk as HIV drug runs out' *The Guardian*, February 4, 2004.

³³⁸ Gellman, B. 2001. 'Pharmaceuticals Enjoy Highest rate of Return in US' (Washington Post Service), *The East African*, February, 19-25, 2001

³³⁹ Daily Nation, 2003. 'Aids therapy: The real challenge' *Daily Nation*, May 18, 2003.

³⁴⁰ Okwemba, A., 2003, 'Kenya scores poorly on Aids care' *Daily Nation*, June 05, 2003.

schedules, which often leads to poor adherence (Harries *et al.* 2001). This is as true in the developed world as in the developing countries, as poor adherence to drugs is influenced by lack of accessibility, affordability, fear of side effects, lack of food, strict regimens, ignorance of drugs, lack of education, lack of monitoring techniques, the persistent occurrence of multiple opportunistic infections, lack of trained service providers, lack of functional hospitals and equipped laboratories, and other individual factors. Taking pills over particularly long periods of time is a nuisance, and more complicated when they are taken as a prophylactic. Typically, people believe that medication is only taken when one is sick, and not taken as palliative therapy that at times causes one to feel ill due to adverse reactions. Poly-pharmacy, exacerbated by situations where people have to take some other drugs for opportunistic infections in addition to ARVs, complicates adherence to medication regimes. In addition, the non-sustainability of HAART is like fighting a losing battle; it is a total waste of scarce resources that could be directed to protein-calorie-nutrition and improvements in the general living conditions.

The cost of generic HAART is down to a point where treatment makes economic sense. However, the cost is still beyond the reach of people living in conditions of poverty. The government has no national procurement mechanisms for HAART, like it has for other essential drugs. Instead, donor funding must be found to help the poor, like the Turkana, if they are to access this vital medication through not-for-profit and free-for-all mechanism. In the absence of free distribution, HAART will always remain inequitable, restricted largely to the urban elite. The introduction of pay-for-retroviral drugs will impoverish families further while forcing them to make inhumane and difficult decisions concerning who should have access to the drugs in a family where the couple and probably the children are infected. While prolonging the life of one member, possibly the bread winner who is most likely to be a man, the remaining members of the household would face deepening poverty and accelerated death as there would not be enough resources for nutrition and the management of opportunistic infections. In Turkana, the local population cannot even afford the cost of a syringe, and many infections like malaria go untreated. Furthermore, there is widespread delay in seeking therapy for TB because they cannot pay for a sputum test. This makes HAART, in either its current form or even the way it was piloted in 'poor Haiti', unattainable in poor Turkana without external benevolence. Moreover, it is claimed

that in Haiti the care was 'delivered with skill and personal attention comparable to that in American teaching hospitals' by a team of two American physician-anthropologists, Haitian doctors and nurses, and over 200 trained community health workers³⁴¹. With such a team and such resources, success was guaranteed. However in Turkana, the offer of medication will require combined efforts to build the healthcare infrastructure, and to remove significant barriers that stand in the way of poor people's access to HAART and effective healthcare. It is estimated that the cost of prevention, care, and HAART would be about US\$ 7.5 billion per five million people with AIDS symptoms annually. Attaran and Sachs (2001) point out that this cost could be afforded by the international community.

It is noted that only about 600 doctors work in public hospitals in Kenya, for a population of over 30 million people. The low number of doctors and other healthcare personnel would further hamper the delivery of HAART as effective HIV-1 therapy requires skilled medical supervisors. Due to the structural adjustment programme, investment in social and healthcare services has declined. In Kenya, the number of beds in the Kenyatta National Hospital in Nairobi fell by 30 percent between 1990 and 1995 and in the same period occupancy rose from 100 percent to 190 percent (Arthir *et al.* 2000). Beds are frequently shared in government health facilities across the country. The bed crisis impacts negatively on those with chronic infections like AIDS as they are often prematurely discharged. In addition, most of the beds are occupied by HIV-1 infected patients infected with chronic opportunistic infections.

The question remains as to whether quacks will take advantage of the availability of generic AIDS drugs and start selling them in the villages and market places. HAART drugs will add to other drugs, such as contraceptives, tetracycline and penicillin, which are commonly being sold by quacks and street vendors in towns and market places. Corruption and mismanagement will definitely divert the drugs and testing kits to the privately operated clinics where the sellers will reap profits. In addition, government laws governing prescription-only drugs are often flouted by pharmacists willingly to dispense prescription-only medicines over the counter. A good example is the first-line and second-line treatment anti-malarial drugs that are often sold without prescriptions (Siringi 2001)

³⁴¹ Hiatt, H., 2001. 'Learn from Haiti' *The New York Times*, December 6, [online] Available from: www.nytimes.com/2001/12/06/opinion/HIAT.html. Accessed on: December 8, 2001.

and many others, including antibiotics. Will the market not be saturated with fake anti-retroviral drugs, especially from India? Kenya is already saturated with counterfeited drugs, including analgesics, painkillers, antibiotics, tranquilisers, and antacids due to the widespread manufacture of drugs and counterfeit labelling³⁴². Are we not poised to have counterfeited ARVs that include the wrong products, have no active ingredients, or bear an insufficient quantity of active ingredients?

Though Farmer and colleagues have proved that it is possible to successfully implement HAART programmes in resource-poor settings, I would still be worried about the success of a mirror project in Turkana. First, poverty is relative. In this regard, Turkana is definitely poorer than the village in Haiti where the project was implemented. Moreover, in Haiti, the question of sustainability was not considered. I am pessimistic about the sustainability of HAART in Turkana. These factors leave me with no alternative but to assert that the sustainability of HAART in the resource-poor settings of Turkana, and sub-Saharan Africa as a whole is questionable. Modelling HAART on WHO's DOTS is a good idea that would work in resource-poor and illiterate communities where TB care is based on nomadic models. However, this presupposes that in Turkana the HAART drugs must be provided free, like the TB drugs, which are funded by donors. There would also be unequal access to HAART, which would ultimately pose questions of social justice. Many families with more than one infected individual would have to make difficult choices regarding which member to provide with HAART therapy. In addition, choices would have to be made concerning when to end treatment in the face of many other needs, such as food, school fees, transport, etc. These numerous choices would impact on the adherence to, and efficacy of, HAART.

12:4:2 A proposed biomedical intervention using anti-retroviral drugs in Turkana

In the previous section, I have discussed global, regional, and national issues related to HAART. In the following chapter, I will narrow the focus to the local scene in Turkana. I have outlined how biomedical intervention through a HAART programme *could* be

³⁴² Akoko, D. and Ondego, O. 2001. 'Pfizer to pull out of Kenya' *Daily Nation*, September 06, 2001.

implemented. In addition, with a joint intervention in mind, a TB/HIV-1/AIDS response is discussed. After a discussion of the prophylactic prevention of mother-to-child HIV-1 transmission, I have proposed a joint TB/HIV-1/AIDS intervention in Turkana, particularly Lodwar township. The proposed intervention, though based on these particular research findings, could be applied to other poor settings in sub-Saharan Africa.

12:4:2:1 Prophylactic prevention of mother-to-child transmission

Research findings provide support for the implementation of mother-to-child transmission interventions in resource-poor settings (De Cock *et al.* 2000; Dabis *et al.* 2000). Prevention of mother-to-child transmission is the most cost-effective antiretroviral programme and one of the most attractive interventions for prevention of HIV-1 (Grassly *et al.* 2001). Mother-to-child transmission can occur during pregnancy, delivery, and during the postpartum period through breastfeeding (Dabis and Ekpini 2002). Nevirapine would reduce the viral load in the bodies of HIV-1-infected pregnant women, thus reducing the risk of mother-to-child transmission. Nevirapine is given to mothers as a single dose within 72 hours of birth (Guay *et al.* 1999). A review of randomised trials has indicated that short course Zidovudine and single-dose Nevirapine are effective therapies for reducing mother-to-child transmission of HIV-1 (Brocklehurst and Volmink 2002). However, in resource-poor countries, Nevirapine therapy is more cost-effective. A review (Marseille 1999), indicates that Nevirapine is substantially cheaper than short-course Zidovudine and could lead to affordable and substantial health gains in resource-poor settings. The WHO and UNICEF continue to support the use of Nevirapine in the prevention of mother-to-child transmission of HIV-1 (WHO 2002). This should be the universal standard of care for HIV-1-infected mothers (or expectant women) in resource-poor settings.

A programme in Thailand that ran between 1998 and 2000 was instituted by the Ministry of Public Health to test and treat women for HIV-1; the programme reduced the risk of mother-to-child transmission by two-thirds, from 30 percent to 10 percent (Thaineua *et al.* 1998; De Cock *et al.* 2000). Pregnant women were offered the AIDS drug AZT a few weeks before they were scheduled to give birth. They were, in addition, given a year's worth of powdered formula for infants to prevent HIV-1 transmission through breastfeeding. Generally, in addition to reducing mother-to-infant HIV-1 transmission, such

programmes can improve voluntary counselling and testing services, reduce the sexual transmission of HIV-1, promote informed decisions about childbearing, and link HIV-1-infected persons to health and social services (CDC 2001).

Limited access to antenatal health care and to the public health infrastructure represents major challenges to the implementation of this programme in Turkana. Despite the availability of drugs to pregnant mothers provided by Merlin, a UK-based healthcare NGO, fear and stigma associated with HIV-1 means only few mothers volunteer for testing³⁴³. For instance, only four out of 19 mothers accepted the offer for testing during a seven-week period, and three of them were HIV-1 positive. Even if these women receive drugs and lower their chances of transmitting HIV-1 to their children, lack of formula milk means their babies are still at risk of infection. However, the nutritional, health, and social risk associated with the early use of formula milk are also potential threats to maternal and child health (CDC 2001). Breast-feeding is universally priced in Turkana, and refusal to breast feed may lead to stigmatisation, if not violence. In Turkana, the unsanitary environmental and poor personal hygiene would increase the risk of increased mortality and morbidity from malnutrition, diarrhoea, and respiratory infections (WHO 2000). However, there are reports that dangers of transmitting HIV through breast milk have been exaggerated in the fight against HIV-1/AIDS³⁴⁴. This gives hope to the poor whose only option is to breast-feed, and who, due to stigma, would struggle with not breastfeeding. If that is true, then the free provision of Nevirapine for prevention of vertical transmission of HIV-1 could feasibly be implemented in Turkana.

12:4:2:2 HAART in Turkana: a case of joint tuberculosis and HIV-1/AIDS intervention

The HIV-1/AIDS epidemic and the TB epidemic are locked in a vicious circle of mutual reinforcement. The rapid growth of the HIV-1 epidemic has breathed new life into the communicable (opportunistic) infections associated with poverty, the most lethal of which is tuberculosis. The rapid increase in the prevalence of HIV-1-related tuberculosis justifies the

³⁴³ Plusnews, 2006. 'Kenya: HIV exacerbates malnutrition among infants in drought-prone Turkana' Available from: <http://www.pronutrition.org/archive/200611/msg00002.php>. Accessed on: July 17, 2007.

³⁴⁴ Science in Africa, 2001. 'Free Formula: A Danger of Disastrous Proportions' [online] Available from: www.scienceinafrica.co.za/formula.htm. Accessed on: December 14, 2001.

implementation of a joint TB/HIV-1/AIDS programme. In 1998, about 50,000 people were diagnosed with tuberculosis, which indicated a rise of nearly 500 percent over a decade (UNICEF 1999). It is noted that about 60 percent of Kenya's 65,000 confirmed TB cases in 1999 were HIV-1 positive in 1999 (UNICEF 1999). The number is likely to increase in the future, considering Kenya has over 2.1 million HIV-1-infected people.

Though the linkage of a HAART programme to other vertical programmes like TB control has never been attempted, I would propose that it is a better option. I propose a joint intervention, that is, a combination of public health, biomedical, and ecosystem (multi-sectoral) approaches. As discussed earlier, the Turkana know that there is a link between tuberculosis and HIV-1/AIDS. The two illnesses are like a brother and sister or two co-wives. Interventions aimed at both infections must reflect this interconnectedness. In addition, a large number of TB-infected people were doubly infected with HIV-1/AIDS as well. Like in other regions of the world, TB has emerged as the most common opportunistic infection among the HIV-1-infected in Turkana. TB is the leading killer of those infected with HIV-1 in sub-Saharan Africa, and HIV-1 is the main driving force behind the current TB epidemic. The treatment of TB would prolong the lives of those who are infected with HIV-1/AIDS. A joint well-structured nation-wide programme comprising directly observed therapy with antiretroviral and TB drugs (DOT-HAART&TB) is the answer. At the district level, it must be structured well enough to cater to all sections of the nomadic, semi-nomadic, and settled Turkana populations. The viability of HAART DOT would be made easier by the availability of a generic fixed-dose combination of nevirapine, stavudine, and lamivudine. The self-administration of the fixed-dose would be easier for those who opt out of the DOTS programme or those who prefer to take their drugs privately at home.

The government already runs a TB DOTS and nomadic management programme in Turkana. Those patients that come from far are admitted in either the isolation wards or the TB Manyatta. Those who reside in Lodwar and are not in critical condition travel every morning to the TB clinic to take their drugs under observation. Such a programme could easily be expanded to incorporate the HAART management. What is needed is an expansion of the healthcare infrastructure, and better planning and design of the programme. Currently, there is lack of evidence-based knowledge and practice concerning the minimum required monitoring, the cheapest regimen, the essential proven regimen, the

storage of drugs, the tools required for monitoring and distribution of drugs, and the overall long-term cost of the programme. This long-term cost encompasses the burden of HAART on the healthcare system, the demand for counselling and testing (diagnostic tools), the control and monitoring of HAART, and the continued management of TB through DOTS.

The answers will emanate from a trial of this proposal in Lodwar township. The programme would require the establishment of diagnostic equipment for routine six-month blood tests for measuring viral load. This would be buttressed by structural linkages among hospital and the community, counsellors, and physical support group. The link among the Lodwar District Hospital, the mission hospitals, and the provincial referral hospitals would be established for efficient management of difficult patients, and for the sharing of data, experience, and information. Accounting for drugs using regular returns from treatment centres would be established. Resources would be required for constant supervision as TB DOTS and HAART DOTS are lifelong therapies. Drugs that interact with the TB drugs would be avoided (Ponziak, Miller, and Ormerod 1999). District hospitals and well-equipped mission hospitals delivering HAART would have efficient monitoring systems of all individual patients. Physicians and nurses would be trained on the monitoring of side-effects of HAART. The HAART and TB treatments must be supported by a functioning health and social system, which ensures adequate diagnosis and treatment of opportunistic infections, appropriate pain alleviation, and the appropriate use and adherence to ARVs and TB drugs to avoid the emergence of drug resistance and the transmission of resistant strains. Multiple pharmacodynamic and pharmacokinetic interactions are likely to occur between ARV reagents and TB drugs. For instance, rifampin, an essential regimen for TB, increases the serum levels of the rifabutins, thus increasing the risk for toxicity (WHO 1997). In addition, the government, in consultation with WHO and other research bodies, would choose the standard lines of treatment. This would take into account the anti-tuberculosis treatments as well, due to the high prevalence of TB among the HIV-1-infected. In reality, though, developing countries like Kenya have limited choice in choosing HAART regimens as they can only choose what is affordable or take what is given as donations by pharmaceutical companies and donor agencies.

In Turkana, the introduction of HAART would encompass emotional support and acceptance for the infected, provision of proper nutrition, palliative care for the relief of

symptoms, and therapy for opportunistic infections. There is no point providing an expensive HAART regimen for life to those who cannot have protein-calorie-nutrition. Though HAART would lower the viral load, nutrition is the best immune system booster. The HAART drugs, like those used to treat TB, are powerful and often have disastrous side effects that could be exacerbated by the lack of food and poor nutrition. Nutrition and mitigating the numerous infections like malaria, pneumonia, diarrhoea, etc. would form the first level of intervention.

The second level would involve securing long-term funding, securing drugs, establishing methods of distribution, training personnel (who would diagnose, prescribe and monitor progress), establishing adequate laboratory and testing kits, cooperating with community-based organizations, forming association of people living with AIDS, and cooperating with donors and other NGOs. The TB programme in Kenya is largely funded by donors who could pull out at will. In 2001, citing corruption and a lack of transparency, the Dutch government indicated that they would pull out of funding the TB programme. This programme enabled the government to provide free DOTS to all confirmed TB patients attending government and mission hospitals. The treatment for TB cost about US\$ 30 per person for eight months of therapy with rifampicin, isoniazide, pyrazinamide, and ethambutol drugs followed by a six-month course of isoniazide and ethambutol. The retail price for the whole therapy would be about US\$ 1,200 at commercial drug stores, putting treatment out of reach of patients.

The modelling of HAART in Turkana following Haiti's project would be hampered by the cost of drugs. The healthcare infrastructure, especially in the Lodwar Hospital, would require improvements. This would require new wards, a functioning laboratory, diagnostic equipment, more nurses and two physicians trained in HIV-1/AIDS and TB management in conjunction with other infections. In addition, community health workers would have to be trained in monitoring the HIV-1-infected patients on HAART. Already, a social worker in Nakwanamoru monitors HIV-1 patients when they present at the Mission Health Centre with opportunistic infections. This should be replicated in all hospitals and possibly in all communities. In addition, it would require huge structural support including the provision of shelter, food, children's school fees, and the management of opportunistic infections.

A structured framework is needed to ensure the regular procurement and distribution of drugs, good patient management and monitoring, and assessment based on the DOTS has been successfully used in Haiti (Farmer *et al.* 2001). Arguments for a joint programme in sub-Saharan Africa has been advanced (Harries *et al.* 2001), though none has been implemented. TB programmes already have structure and experience in the delivery of therapies and in monitoring. In addition, we know from the previous decisions that HIV-1 drives the TB epidemic. Local populations know that there is a link between TB and HIV-1. The reasons advanced in the previous chapter should convince policy makers to take this option. It would lead to the efficient use of resources by combining the available TB nurses and clinicians with additional staff, thus reducing the cost and number of personnel required for parallel programmes. One joint programme would ensure that the side effects of any drug interactions are managed efficiently. This will further de-stigmatise HIV-1/AIDS and TB as the treatment for both illnesses would be accessed together. Harries and colleagues (2001) argue that an integrated tuberculosis and antiretroviral drug programme is the best way forward; it is the most cost-effective way to build on the infrastructure already on the ground for tuberculosis control and to use the experience these TB programmes have gained in providing, monitoring, and supervising care through DOTS.

One encouraging finding is that relapse and resistance to drugs among TB patients in Turkana is minimal. So far, there was only one case of TB resistance and about 10 cases of relapse in the last three months prior to the interview. This portends well for the future of a DOTS administered HAART. A system similar to one currently in place in which those who default on TB treatments are traced by the community leaders and availed to the clinician at a cost of US\$ 1.20 would be extended to cover HAART as well.

The joint strategy would require a national programme covering all sections of the country, like the TB DOT programme, with a department in every district hospital. Accountability for HAART would be facilitated in the same way as is done with TB drugs. The HAART package would include VCT (as discussed above), home based care, palliative care, prevention and treatment of opportunistic infections, and nutritional support (Harries, *et al.* 2001; Farmer *et al.* 2001). Those who are infected would be counselled and assisted with proper nutrition to boost their natural immune systems. In addition, their opportunistic infections should be treated early and vigorously. Due to limited resources,

HAART would target, in the first instance, those who have symptoms of AIDS, with advanced viral loads and reduced CD4+ cell counts, those with WHO's (Harries and Maher 1996) definition of AIDS, and those presenting with symptoms such as tuberculosis, pneumonia, chronic diarrhoea, bacteraemia, or systemic fungal infections (Harries *et al.* 2001). All HIV-1 infected mothers should have access to Nevirapine. It is important that the government commit to the continuous provision of HAART and TB drugs, even if it must be through donor support. It is equally important that the government establishes standardised antiretroviral regimens with uniform administrations and monitoring throughout the country, though with room for regional modifications to suit the environment, patterns of life, and diverse socio-economic activities.

12:5 Conclusion

Like DOTS and TB, HAART will not eliminate HIV-1/AIDS, as the elimination will require a multi-sectoral approach. In fact, most TB DOTS that have been successful in reducing the incidence of TB have been sponsored by international agencies, WHO or the World Bank (Volmink, Matchaba, and Garner 2000). The same international community must be prepared to support the universal provision of HAART. The pharmaceutical companies cannot be relied upon as they will not donate the drugs forever. The Turkana must be taught that HAART is not a cure for HIV-1/AIDS. When carrying out this project, the local knowledge was that there were new drugs to treat HIV-1/AIDS, but they were not available in Turkana. During this period, MSF Belgium was carrying out a campaign for wider availability and accessibility to HAART. This gave the impression that there were effective drugs for HIV-1. The Turkana of Lodwar township have definitely received the wrong signals as they do not really understand how HAART works. I have also argued for the strengthening of the Turkana's nutritional base. The HIV-1-infected should be supported to acquire good protein-calorie-nutrition to boost their immune systems. Intervention should also encompass the mitigation of the ecosystem factors discussed above.

The aim of integrating TB and HIV-1 activities in Lodwar township would be to: increase the demand for voluntary counselling and testing for HIV-1 among TB patients; strengthen access for HIV-1-infected individuals to TB healthcare facilities; effectively and efficiently

use the available resources; and to strengthen and clarify the Turkana's local knowledge of the link between TB and HIV-1/AIDS.

The integrated targeted activities would encompass: joint annual planning of activities; integrated training for laboratory technicians; strengthening of the National TB Reference Laboratory to address people living with HIV-1/AIDS; sentinel surveillance of HIV-1 among TB patients; systematic referral of, and increased demand for voluntary counselling and testing of HIV-1-infected individuals to TB services; systemic referral of TB patients for voluntary counselling and testing for HIV-1; integrated supervision of the laboratory network; formation of joint TB/HIV-1/AIDS committees; the drawing up of a joint five-year plan; and the opening up of the access of HIV-1-infected individuals to TB health care facilities.

Conclusion and summary

The Turkana, primarily a nomadic pastoralist population, are under siege. Ecosystem factors such as a history of subjugation and underdevelopment, poverty, insecurity, cyclical drought, famine, a decline in livestock production, poor healthcare infrastructure, and sedentarisation have contributed to the vulnerability of the Turkana to infections. As many poor, dislocated Turkana settle in and around emerging urban centres, they become increasingly vulnerable to poor health and poor living conditions.

Using an ecosystem approach as its theoretical manual, this thesis has endeavoured to bring this broad perspective to the study of local knowledge of the social epidemiology of HIV-1/AIDS. I have argued that HIV-1 and other transmissible infections are not contracted and transmitted in a vacuum in sub-Saharan Africa, for numerous co-factors ultimately underlie their cause, transmission, and contraction. It is in an attempt to prove this assertion that I have retraced the present socio-economic and political environment of the Turkana from the colonial period. This has been followed by a systematic discussion and review of the literature on the factors of the ecosystem that influence the transmission and contraction of HIV-1 and the "cause" of AIDS, which endeavours to advance a broad perspective on the epidemic. I have argued for the utilisation of conceptual tools that are historically, politically, and socio-economically deep, and geographically broad, to analyse both the origin and the spread of HIV-1 infection in Turkana. The African HIV-1/AIDS pandemic owes its virulence and unique epidemiology to a number of factors including: colonial politics and economy; (under/mal)development; poverty; gender; mobility and migration; poverty-actuated commercial sex work; military conflicts and refugee crises; background infections; sexually transmitted infections; protein-calorie-malnutrition; and iatrogenic factors. All these factors are applicable to Turkana country. As I have demonstrated, the Turkana's history is replete with the negative consequences of the colonial government's interventions, which resulted in destitution, hunger, and famine that still reverberate today. Two Turkana researchers, Broch-Due and Sanders (1999), have concluded that both colonial and post-colonial interventions have succeeded in one aspect:

reproducing poverty that they first sought to alleviate, leaving Turkana land vulnerable to infections and famine. Currently, the problem with Turkana is that there are many neglected issues such as food insecurity, water, education and poverty that are more important to people than HIV-1.

This study has determined the factors of the ecosystem that influence the contraction and transmission of HIV-1. In addition, it has demonstrated how these factors not only influence the contraction and transmission of other sexually transmitted infections and tuberculosis, but also how HIV-1/AIDS is related to these infections. As the study has found, there are behavioural norms and cultural practices that put the Turkana population at risk of contracting HIV-1. Cultural practices and behavioural norms, like polygamy, wife inheritance, premarital sex, invasive curative practices, sharing chewed tobacco, and *kaada*, facilitate HIV-1 transmission and contraction.

This study has emphasised the gender dimension to the contraction and transmission of HIV-1. The ecosystem factors that predispose Turkana women to the risk of contracting HIV-1 are multi-factoral as they are linked to gender, poverty, and biology. The biology of the Turkana interacts with ecosystem factors to produce a compromised “body” that is susceptible to infections in an already “high risk ecosystem”. For instance, it emerged that poverty forces women to engage in unprotected commercial sex, which in turn puts their bodies at risk of being infected with HIV-1. There are gender-related factors, such as poverty-accentuated commercial sex work, violence against women, power imbalance, poor sexual health, and polygamy that also put Turkana women at risk of contracting HIV-1. In addition, women’s struggle to survive and feed their children in Lodwar township against deepening poverty, raids, the migration of men, hunger, and famine, while they endeavour to survive, at times put them at risk of contracting HIV-1.

The study has presented a body of local knowledge that concerns HIV-1/AIDS, other sexually transmitted infections, and tuberculosis. It is clear from the outcome that these infections are “seen to be” mainly physiological and naturalistic, being mainly contracted and transmitted through contact with body fluids, personal effects, anthropoids, monkeys, and changes in the ecosystem. As I hypothesised, the Turkana possess commonsense and empirical pathogenic explanations, with the predominance of naturalistic and physiological

aetiology. Green (1999) has authoritatively argued that researchers should endeavour to recognise the naturalistic indigenous causation theories, especially in contagious diseases, that is, what he calls "indigenous contagious theories", rather than placing undue focus on witchcraft. This research supports findings by Green (1999) that most serious infectious illnesses (such as HIV-1/AIDS, other sexually transmitted infections, tuberculosis, etc.) are diagnosed within the locus of impersonal and natural aetiology. Turkana illness and disease causation theories do not revolve elaborately around witchcraft, magic, spirits, wizardry, and sorcery. However, a few informants indicated that some forms of TB and STs could either be inherited or caused by 'evil eye'. In addition, healing procedures revolve around the removal of illness from the body through herbal and soup concoctions that cause purging through vomiting and urinating, and surgical procedures that lead to bloodletting. The Turkana also explain illness at the anatomical and physiological level, and this is evidently more clearly demonstrated through the nosology of tuberculosis. This analysis is also similar to that made by Sakumichi (1997: 239) who concluded that the Turkana "have rituals to dispose of the illness without causal or magico-religious explanation. The illness-coping [strategy] in Turkana is neither oriented to unfold an illness onto the disorder of social relationships, nor claim idiosyncratic interpretation..., illness is treated as what should be finished by regular procedure".

It emerged that local knowledge of symptoms of tuberculosis closely mirrored those of biomedicine. Accordingly, various types of tuberculosis that were mentioned by the Turkana are congruent with biomedical classification of various types of tuberculosis. The study has further demonstrated that there is a nexus between HIV-1/AIDS and other sexually transmitted infections, on one hand, and with tuberculosis on the other. In addition, local knowledge and popular discourse indicate that HIV-1/AIDS is inextricably linked to TB. This link mirrors that stipulated by biomedical knowledge and supported by research evidence. The Turkana likens this link to that of a man in a polygamous union, specifically, a man married to two wives, that is TB and HIV-1/AIDS. This means that once you have HIV-1/AIDS you cannot avoid contracting or 'relating' to TB as you share one 'husband' anyway. As I have discussed, this has wider implications for the control of HIV-1/AIDS and tuberculosis in Turkana. The Turkana know that when infected with HIV-1/AIDS, one may also suffer from many other illnesses. In 2001, the HIV-1 prevalence

among TB in-patients and those who presented at the STD clinic in the Lodwar District Hospital was 58 percent and 27 percent respectively. This indicates that having a background infection with a STI facilitates the contraction of HIV-1. In the same vein, TB is the most common opportunistic infection. If most infections, especially TB and malaria, are prevented and / or eradicated and there is a viable healthcare infrastructure for response to infections, those who are HIV-1 infected would be able to live longer before the onset of AIDS. This is why I have argued for the joint treatment and control of TB/HIV-1/AIDS for it makes conceptual, operational, and economic sense.

The study has demonstrated that most people have sexual intercourse while still infected with sexually transmitted infections. In addition, those who are infected delay seeking therapy, with many resorting to ineffective indigenous therapies and self-treatment. Informants who were infected engaged in sexual intercourse while still infected. These results indicate that sexually transmitted infections are spread between and before therapy. This has implications for the containment of HIV-1 since a background of sexually transmitted infections facilitates the efficient transmission and contraction of HIV-1. In addition, the Turkana region is characterised by poor female sexual health, and most of the sexually transmitted infections are ignored. This is compounded by the local awareness that sexually transmitted infections are asymptomatic in women, so would generally 'disappear' and reappear later in life, implying that there is no therapy for 'female sexually transmitted infections'. Such myths can only be eradicated through the provision of effective sexual health programmes through expansive genitourinary sexual health clinics. The prevention of HIV-1 will require the treatment and prevention of all sexually transmitted infections. I have argued for the provision of free, confidential, comprehensive, and gender-sensitive sexual health services. The sexual health services provided in private clinics should be subsidised so that they are more accessible to a wider population who prefer them because they offer prompt treatment and confidentiality.

It appears that new forms of nomadic pastoralism will influence the spatial distribution of HIV-1/AIDS. In addition, evidence indicates that HIV-1 will spread spatially from the emerging urban centres in Turkana, mostly along the Kitale – Juba highway into the interior. These urban centres have high population densities composed mainly of the poor, and are characterized by more dense social networks, and fewer inhibitions, which are

conducive to the spread of HIV-1. This study has indicated that the increase in the number of business activities, employment opportunities, the establishment of many international and local non-governmental organisations including United Nations agencies, and the creation of the world's largest refugee camp in Turkana will continue to influence the prevalence of HIV-1/AIDS in Turkana.

I have discussed the responses of the government, local and international non-governmental organisations, and church missions to HIV-1/AIDS in Lodwar township and the Turkana District as a whole. Current responses are highly inadequate, mainly adopting a public health approach with limited geographical reach, curtailed by resources, language, and insecurity. For now, the one million dollar question is: what could be done in Turkana to mitigate the spread of HIV-1/AIDS, and other infections such as tuberculosis and other sexually transmitted infections? We are presented with a very limited range of options due to the level of underdevelopment that exists in the Turkana District and the rapid pace of urbanisation leading to a high population density characterised by poverty and poor social living conditions. The prevalence of poverty and underdevelopment is more obvious in urban centres and large settlements in Turkana. Lodwar township, therefore, epitomises the Turkana's deprivation and suffering. Turkana country is, therefore, currently a fertile ground for the transmission and contraction of HIV-1 with a current prevalence of 11.4%.

The complexity of the pandemic requires the broadening of the response to encompass not only public and biomedical health approaches, but also broad-based responses aimed at the alleviation of poverty, since the pandemic has proved to be a hydra-headed, socio-economic development problem. The failure to stop the tide of the HIV-1/AIDS pandemic reminds us that social, economic, and health problems cannot be "cured" with vertical, isolated, uncoordinated, and un-integrated approaches or responses. As discussed in this thesis, this must truly be replaced with an integrated and long-term multi-sectoral response that incorporates broad-based socio-economic development, which encompasses:

- the development of healthcare infrastructure to contain opportunistic infections and other prevalent illnesses;
- a public health approach that includes education and condom promotion;

- the enhancement of socio-economic development via investment to alleviate poverty, lessen the socio-economic impact of HIV-1/AIDS, and to mitigate the social, cultural, political, and economic conditions that increase people's vulnerability to infections; and
- biomedical interventions, encompassing the treatment and prevention of numerous infections including TB, sexually transmitted infections, other infections such as malaria, kala-azar, and brucellosis, and the scaling up the provision of anti-retroviral drugs.

This broad approach is needed because HIV-1/AIDS, like all other numerous infectious diseases, is a symptom of the inequitable distribution of resources, the deplorable social conditions of living, an unfavourable world (capitalist) economic system, and a dysfunctional socio-economic development processes. This is why effective intervention should address situations of high-risk, conditions that are as great a factor in the spread of HIV-1/AIDS as individual behaviour. It is ultimately the high-risk conditions of social living that influence high-risk human behaviour that make people vulnerable to HIV-1 infection. In Turkana, we have found that it is the high levels of preventable illnesses, the low levels of education, the inadequate healthcare resources, poverty, the conditions of living, the decline in social services, *kaada*, social dislocation, rapid urbanisation, rapid social change, famine, drought, the decline in livestock production, insecurity, cattle raids, the condition of refugees, the lack of political power, migration, the growth of occasional or permanent prostitution, and gender imbalance, that facilitate the transmission and contraction of HIV-1.

This study is an attempt to follow in the footsteps of other scholars in order to bring into the fore the Turkana's situation and demonstrate how using a broader perspective shows how development and change in structural factors are key to the prevention of HIV-1 infection. HIV-1/AIDS must be integrated into broad-based development efforts that will not only reduce HIV-1, but also ameliorate the precarious conditions that put the majority of the world's population at risk. Interventions that focus solely on changing individual behaviour are not sustainable, since the risk situations that make the individual vulnerable in the first instance remain unchanged. The individual may learn and adopt new

behaviours, but the odds are against he or she sustaining these changes over the long term, particularly if the individual is poor and otherwise marginalised.

The development of prevention strategies controlled by women should be a major concern. Just as the government and the international community provide male condoms free, female condoms and diaphragms should be availed to the wider female population. Currently, women do not have the ability and power to negotiate condom use in their sexual relationships. Female controlled prevention strategies like condoms and diaphragms would empower women in making decisions concerning when and how to use them. The development and subsequent mass production and distribution of microcides should be a priority as well. The continued delay in the development and mass availability of female controlled strategies is tantamount to the subjugation of women, even when they are the most at risk of contracting HIV-1 and other sexually transmitted illnesses, often from their husbands and partners.

Currently, healthcare infrastructure is inadequate, and the existing government facilities are in a state of disrepair. The burden of treating HIV-1-related infections, including TB, is further straining the current meagre facilities. The effective prevention and management of both HIV-1/AIDS and TB, and their prevention, would commence with a healthcare system that is effective, accessible, and affordable for the whole population. The longevity of the HIV-1-infected person, as well as the general population, depends on their capability to treat the numerous opportunistic infections they would be exposed to. As Stillwagon (2001) argues, reducing HIV-1 transmission requires health education, availability of condoms, and a broad assault on malnutrition, diarrhoeal diseases, parasitic diseases, including malaria and schistosomiasis, and tuberculosis, among others. The efficacy of antiretroviral drugs depends on a vibrant health care infrastructure and effective management of other infections.

I have argued for the introduction of HAART, using the generic fixed-dose combination drug. HAART is particularly important for it could enhance prevention efforts by breaking the cycle of stigma and discrimination and the resultant abuse and violence against women, lessening the burden on the HIV-1-infected, improving acceptance of, and increasing demand for, VCT, and reducing the transmission and contraction of HIV-1.

Without HAART, the HIV-1-infected person would die within two to three years after the first opportunistic infection appears. HAART reduces the viral load thereby reducing the chances of HIV-1 transmission and contraction among HIV-1 discordant couples. HAART would lead to a reduction of HIV-1 transmission, hence buttressing the most common method of HIV-1 intervention, that is, prevention. As long as treatment is unavailable, many people will not be motivated to discover their sero-status as it would lead to discrimination, abuse, and violence. Widespread anti-retroviral therapy is a powerful tool for motivating people to seek out their sero-status. The prospect of a 'cure' or prolonged 'normal' life would change the way we look at the infected, who are today largely condemned to death. The introduction of HAART on a mass scale would, however, require enhanced investment in healthcare infrastructure, the training of healthcare and community health workers, the sustainable and equitable distribution of drugs, heightened education and prevention, the treatment of opportunistic infections, and the continuous appraisal and assessment of programmes.

The public health approach to prevention will remain the key to mitigating HIV-1/AIDS, now and in the future. The problem, however, is that most prevention programmes have been narrow in focus and scope. Since HIV-1 is predominantly sexually transmitted, there is an assumption that behavioural modification, especially through the consistent use of condoms, could prevent the rapid transmission of HIV-1. Sexual behaviour characterised by frequent partner exchange and sex with commercial sex workers underlies the implicit assumption behind current AIDS prevention policies and programmes, which are based on behaviour modification and condom use. The behaviourist explanations, tied to deterministic ideologies and notions of the eccentricity of African sexuality, have distorted the question of why HIV-1 prevalence is typically different in sub-Saharan Africa, portraying Africans as a special case, the 'social other'. A study by UNAIDS (1999, cited by Stillwagon 2001) found no correlation between rates of sexual behaviour and the prevalence of HIV-1. Change in sexual behaviour has not been successful in developed countries in relation to other sexually transmitted infections, and high rates of teenage pregnancy and abortion. There are serious epidemics of sexually transmitted diseases in the USA and Europe, such as Chlamydia, due to unprotected sex, yet their low levels of HIV-1/AIDS prevalence is a testimony to the fact that sexual contact does not necessarily explain the prevalence of

HIV-1/AIDS in sub-Saharan Africa. As Stillwagon (2001) indicates, among healthy, well nourished people in industrialised countries, heterosexual transmission of HIV-1 is relatively rare – about 1 in 1000 contacts between an HIV-1-positive female and an HIV-1-negative male, and about one in 300 contacts between an HIV-1-positive male and an HIV-1-negative female. This suggests the existence of factors of the ecosystem that influence the prevalence of HIV-1 in sub-Saharan Africa. HIV-1, just like other numerous infections, is nothing on its own, but ecosystem factors, specifically conditions of poverty, influence its prevalence.

Prevention of HIV-1 and the management of AIDS in sub-Saharan Africa require a refocus on health and socio-economic development. What we now know is that the ecosystem in which HIV-1 is transmitted and contracted in sub-Saharan Africa is different from that of developed countries. Just as communicable infections are more prevalent in poorer countries than in more developed countries, it is only natural that HIV-1/AIDS should follow similar paths paved by poverty, poor healthcare infrastructure, protein-calorie-malnutrition, and the prevalence of bacterial sexually transmitted diseases – factors correlated with HIV-1 transmission. HIV-1 is a virus that is difficult to start unless suitable ecosystem conditions exist. To emphasise the synergistic relationship among HIV-1/AIDS and factors of the ecosystem is not to deny that HIV-1 is mainly sexually transmitted and that it causes AIDS, it merely subjects it to a broader analytical framework that incorporates socio-bio-physical data, which can be applied to other non-sexually transmitted infections. Poverty creates the environmental and biological conditions that increase the susceptibility of communities to infectious diseases, and limits options for preventing and treating these infections. The effectiveness of HIV-1 prevention programmes will be immeasurably increased when they are combined with anti-retroviral therapy, investments in health care infrastructure and poverty reduction strategies, and improved accessibility to quality health care facilities for treatment of opportunistic infections.

According to the recent assessment by the UNAIDS chief, “response to AIDS cannot succeed if we continue to work on AIDS in isolation from mainstream development” (Piot 2006:529-530). Socio-economic development must work in conjunction with biomedical intervention, that is, the provision of ARVs, and, broadly, development of healthcare

infrastructure, improvement of the social conditions of living, and treatment and prevention of numerous infectious illnesses, such as tuberculosis, malaria, etc.

It would be wishful thinking to suppose that my position in this thesis, especially the proposed intervention, would control and prevent HIV-1/AIDS in Turkana or in any other resource-poor setting. However, it is a small contribution to the debate on HIV-1/AIDS. Further operational research is needed to determine how HIV-1 and AIDS could be primarily prevented and managed respectively in settled, semi-nomadic and nomadic communities, and in resource-poor settings more generally.

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Appendix I: Research Ethics Certificate



McGill

Professor George Wenzel, Chair
Research Ethics Board, University-1
Faculty of Graduate Studies & Research
Burnside Hall, room 728
Tel: 398-8882/ Fax: 398-7437

November 22, 1999

Mr. Owiti John Arianda
Dept. of Anthropology
Stephen Leacock Building, room 717
McGill University

Re: *Perceptions of Health, Illness, and Disease among a Semi-Nomadic Population: A Case Study of Turkana District*

Dear Mr. Arianda,

In accordance with the Tri-Council of Canada Guidelines on Human Research, University Research Ethics Board-1, at its meeting of November 16, 1999, reviewed your project submission and the REB unanimously approved ethics certification. Notice of the REB's positive decision will be sent shortly to Graduate Faculty and to Special Funds.

In examining your submission, however, the Board suggest that you: 1) orally inform participants of their right to withdraw from the research without penalty; 2) insure that participants' rights to confidentiality be maintained by your project assistants, perhaps by only employing research assistants from outside the participants' communities.

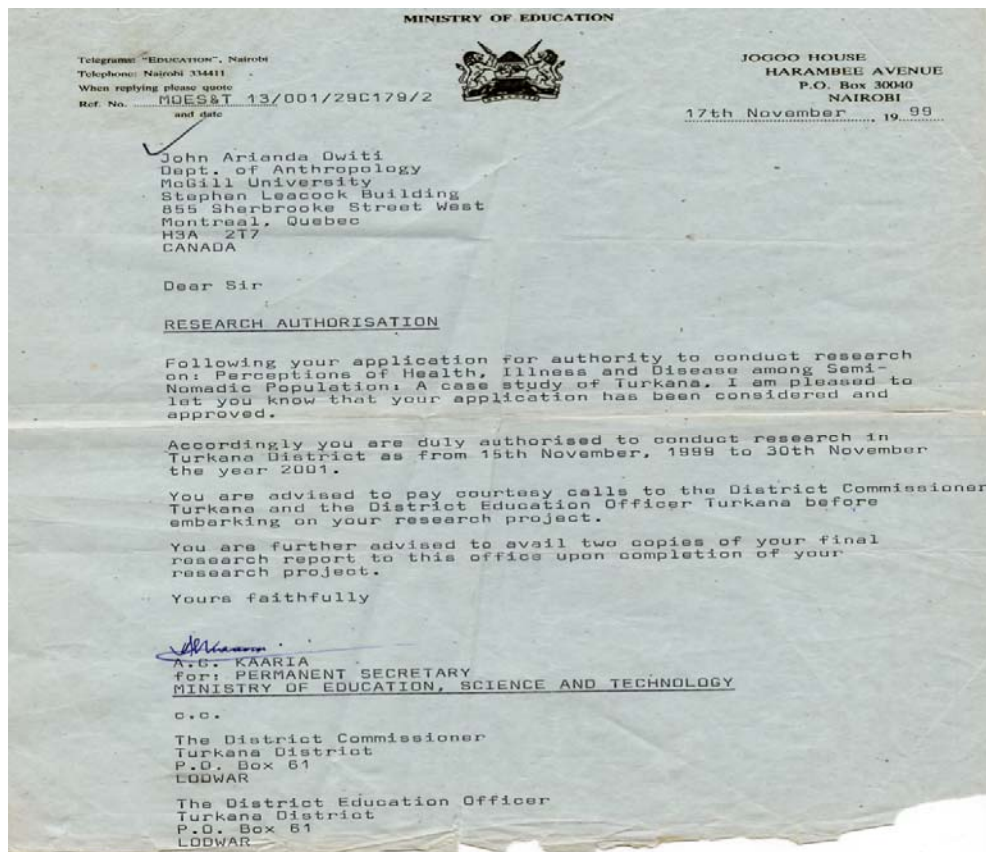
Sincerely,

Professor George Wenzel, Chair

cc: Professor J. Galaty, Department of Anthropology

Encl./

Appendix II: Research Authorisation – Ministry of Education, Kenya



Appendix III: Research Authorisation – Turkana District Hospital, Ministry of Health

MINISTRY OF HEALTH

LODWAR DISTRICT HOSPITAL,
P. O. BOX 18,
LODWAR.

REF: NO.P.10/VOL.IV/2000/206

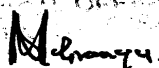
8TH DECEMBER, 2000.

TO WHOM IT MAY CONCERN.

RE: JOHN ARIANDA OWITI.

This is to confirm that the above named is a student doing research in Turkana District. He has the authorization from this office for the same.

Please accord him the necessary assistance.


MEDICAL OFFICER
OF HEALTH
TURKANA DISTRICT
P.O. BOX 18, LODWAR.
TEL: 0393.21008.
DR. JONAH MASWAI
FOR: MEDICAL OFFICER OF HEALTH
TURKANA DISTRICT.

Jm/lm.