PASTORALISM ON THE HORNS OF A DILEMMA: IS THERE A VIABLE FUTURE FOR THE MAASAI?

by

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Abstract

Discussion on the future of pastoral populations in East Africa has been subject to swings of opinion due to drought and political pressure. For the Maasai, images of "the noble savage" and "disaster" have given currency to radically different prescriptions for their future. This thesis focuses that discussion in terms of the hard evidence concerning a variety of changes in Maasai pastoralism.

There are a number of external pressures on the Maasai to move more towards commercialization. However, at the core of the thesis are the internal demographic pressures of land, livestock and people. Demographic analysis demonstrates that there are too many animals and people on the rangelands either to sustain a sound environment or provide subsistence for the existing population. This thesis examines these problems and the calculated alternatives and possibilities open to the Maasai as well as data which will become increasingly important as the Maasai move to determine their own future.

Résumé

Les courrants d'opinion concernant le future des populations de pasteurs nomades de l'Afrique de l'Est ont varié selon un cycle conjoncturel ou l'importance de la sécheresse alterne avec les impératifs de la raison d'état. Pour les Maasai, le cliché du "noble sauvage" et celui de "victime" de la famine en Afrique, ont donné lieu à des recommandations divergeantes concernant leur avenir. La question du futur du pastoralisme africain est ici abordé à partir d'études tasées sur un certain nombre de changements intervenus chez les pasteurs Maasai.

Des facteurs externes poussent inexorablement les Maasai vers un type de pastoralisme subordonné aux rapports marchands. Cependant, le présent Mémoire aborde la situation à partir des facteurs démographiques, accroissement de la population humaine et celle des troupeaux, qui ont un effet négatif sur les pâturages. Une analyse démographique démontre qu'il y a sur exloitation des pâturages qui ne peuvent plus assurer les besoins de subsistence des pasteurs et de leurs troupeaux. Cette thése considére ces problémes et les solutions calculées ainsi que les possibilités qui sont ouvertes aux Maasai, de même que certaines données dont l'importance s'accroîtra à mesure que les Maasai avancent en vue de déterminer leur avenir.

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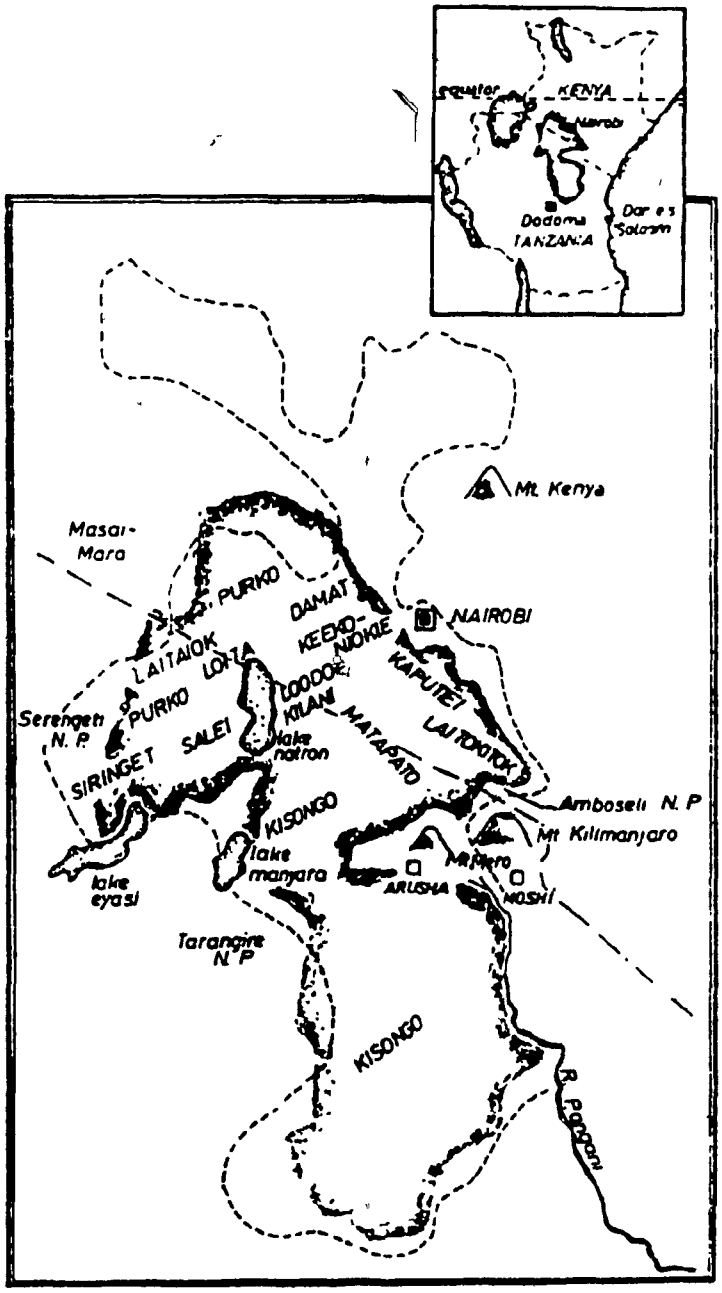

Map 1. Geographical distribution of the pastoral Maasai.

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> They do not want to be forced to accept changes that would destroy their life-style, but they are not unthinking conservatives. They do not want to be treated as museum specimens to be preserved for display, but they wish to be respected people who can plan and make their own choices. They oppose the project in so far as it shows them no respect, forces them to accept what they have had no chance of considering and forces them to give up features of their life which they regard as vital" (Salisbury writing about the Cree, 1972:8).

> The fundamental problem of education with pastoral people, judging from the experience of my own Maasai, is changing their attitude by creating something they believe in. Most pastoral people are not looking for a handout; such an attitude is repulsive to them. What they want is something they can really paricipate in as their own, right from the beginning ... it's the whole attitude, the whole approach toward pastoral people that's wrong. People begin by assuming these people will never change. And so they bring in things, sometimes consciously, sometimes unconsciously, that completely antagonize the people and stop them helping themselves (Mpaayei quoted in Galaty 1981b:195).

CHAPTER ONE - THE PASTORALIST MAASAI SITUATION

1. Introduction

Thousands of pastoralists in East Africa find themselves on the horns of a dilemma. One option open to them (which in itself is almost illusory because over the years it has diminished as a true option) is to continue to hold on to their traditional way of life making no changes, but then to see large lumbers of their kinsmen gradually squeezed entirely out of a pastoral existence. This would occur as a result of a number of factors beyond the pastoralists' control, not the least of which is the continual loss of their good grazing lands. Another option is for pastoralists consciously to adapt their traditional way of life to the changed circumstances, demands, and pressures of their new nation states and attempt to find their own way into the future, by the use of what may be called "new adaptive strategies". This thesis is an attempt to use an anthropological analysis of what might be some of these new adaptive strategies for one pastoral group, the Maasai of southern Kenya.

The Maasai of East Africa are probably one of the best known groups of the whole continent of Africa. Numerous documentary films, glossy picture books and National Geographic articles have popularised these people and their nomadic way of life. Various images of spear-carrying warriors who hunt lion and buffalo have served to "romanticize" the Maasai way of life in the minds of

many people. In reality, their life is harsh, demanding, and is becoming increasingly more difficult as a result of various pressures and imposed constraints.

The Maasai are a people who pursue transhumant pastoralism which means that they must attempt to find dry season pasturage for their animals. There are 241,395 Maasai in Kenya (Kenya 1981) and appproximately 90,000 Maasai in Tanzania. Their social and economic life centres around cattle, sheep and goats which together form the basis of their subsistence. Historians have demonstrated past reliance on a grain trade (Bernsten 1976; Waller 1985). Their diet was traditionally milk, meat and blood, but in fact agricultural produce frequently supplements their current diet especially during the dry seasons and in time of drought. However, cattle mean far more to the Maasai than merely food and economic security. The entire social system is geared to herding and to the demands of a transhumant mode of subsistence.

> In an ecological perspective Maasai society is designed to strike a viable balance between man, livestock and the physical environment - water and pastures (Arhem 1985b: 12).

The Maasai see themselves as being "people of cattle" and this is important to any understanding of the "meaning" which they attach to their economy, their culture, and their very lives. The Maasai will only be able to see themselves as people of cattle as long as there are cattle and the resources available to support them. Maasai refers, then, to that self evident body of persons who bear the name, and who are coterminous

> with the membership of a set of subtribes or sections (iloshon) each with its own territorial association .... The core image Maasai hold with respect to themselves is that of iltung'ana loo ngishu (people of cattle) or entalapu (those who are under cattle; or those who are suckled)"(Galaty 1977:4).

One of the pressures impinging upon the Maasai life-style is the gradual and continuing diminution of their land-base both absolutely and in per capita terms. If there is insufficient land for the Maasai herds, then some Maasai may have to leave pastoralism. But, even if there is sufficient land many may still wish to go. Those development planners who use the ecological arguments to speed up the pace of the changes affecting the Maasai do so perhaps without fully appreciating that ecological arguments are only part of the total argument about change and development involving the Maasai. There is a difference between the ecological constraints and the economic constraints, though the two are closely related. People "adapt", they do not passively "conform" to the constraints. Even if the ecological situation could be finely balanced (resources, population projections and range preservation) we would still have to face the question of the possibilities, the desirabilities, and the probabilities of changes affecting the lives of some or many Maasai, and how they adapt their lives to the ecology.

The challenges facing the Maasai centre particularly on such questions as: Can the Maasai hold on to their traditional way of life in the face of the tremendous pressures being brought to bear upon it? What would be necessary to ensure the viability of

this way of life for all those who want it to remain viable? What are the alternatives open to the Maasai who do not wish to continue in the pastoralist way of life? Is this transition to be haphazard or planned for and directed? Who is to do the actual directing: the Maasai, large or small International Agencies and missions, or the Government? How are the pastoralists to prepare themselves to move out of pastoralism and/or to rely less on livestock and more on other sources of income and food? Do existing data or facts support or invalidate the viability of the Maasai pastoralists' way of life? A moral stance of indignation and an insistence that it should be allowed to survive is not sufficient. We need to know if it is possible for it to survive and to know the conditions that will enable it to be viable. What amount of land will support what numbers of people, what is the real livestock capacity of the existing land, what are the ways open to the Maasai of holding land tenure presently and in the future, etc? These are some of the points relevant to this issue of viability which are addressed in this thesis through an examination of the Maasai pastoral way of life and of questions of continuity and change among the Maasai.

The subsistence transhumant pastoralism practised by the Maasai is an extensive system of land use and is under pressure because of population increase, land limitation and land loss, and various production constraints. Calculations indicate that annual and seasonal livestock capacity has already been exceeded. I shall demonstrate this in a later chapter comparing the Government projections and the actual figures recorded in the

1979 National Census (Kenya 1981). Therefore, changes are taking place now which perhaps had not occurred before because of lack of pressure. These changes were historically slow to begin possibly because of Maasai reluctance and the lack of government encouragement, but now there is evidence that they are accelerating in such domains as:

a) education,

b) wage employment,

c) commercial beef production,

d) diversified production and consumption in agriculture,

e) the use of shops and purchased commodities,

f) the development of small-scale industries.

The Maasai are neither living as they did before the seventeenth century, nor have they lost many essential elements of their culture. They have accepted - over centuries of limited contact with non-Maasai - tools, methods of travel, health services, education, wage employment, diet, and other features of European or African life. Though they have been able to incorporate these elements into their own distinctive life-style, admittedly they have done so guardedly and with some reservations. This has been the Maasai approach to project planning and innovations in general.

We propose to approach these issues by looking at the pastoralist way of life in its own terms and at how "development" has affected it for particular groups, particularly the Maasai of Kajiado District in Kenya. If indeed the pastoralist way of life

is viable, and its meaning can be preserved for the Maasai, then we can start to say what the "costs of preserving meaning" for one ethnic group are for the nation of Kenya (or Tanzania) as a whole.

Assuming that there is justification for the preservation and continuance of the pastoralist way of life and for the cultural and moral survival of specific groups, such as the Maasai, at least as a valid option for those who may wish to make the choice in the future, I would like to look at the context within which this way of life is being threatened or is adapting itself. I would also like to look at the factors of production and reproduction within that way of life. We shall look at some of the new adaptive strategies which are being employed by some Maasai to safeguard pastoralism as a way of life, and we shall consider other "adaptive strategies" which they might adopt.

This thesis is based on the belief that it should be possible to enhance the standard of living or conditions of life of the Maasai pastoralists living in their own areas. If there are more productive uses of the land, then the Maasai should be given the means to achieve this. It may well be that traditional Maasai pastoralism will eventually be one of the residual options open for those who may wish to choose it. However, the point is that the Maasai who may wish to make this choice should be able to make it freely and there has to be something left for them to choose or to opt for - namely, adequate resources to sustain a number of people and animals. This option is fast becoming less

of a feasible possibility because of the population growth of the Maasai themselves and the incursions of non-Maasai onto their land with the subsequent loss of grazing resources and access to water.

To assess the sustainability or the viability of the social and economic life of the Maasai, this thesis will examine the available information on livestock offtake rates, the annual and seasonal livestock capacities, the Maasai population, and the size and composition of the herds of the Maasai living in the District of Kajiado, Kenya. The thesis relies heavily on published material (especially that of David Campbell); Government publications, including the 1979 National Census figures (Kenya 1981); as well as on personal observations made over a number of years living and working among the Maasai. One of the realizations which has emerged from these readings and observations is that little research has been undertaken to analyze the economic and political importance of the numbers of educated Maasai and those who have left for wage employment in the urban areas, the amounts of money going back into Maasailand, and how this money is being spent by Maasai living in the range areas, etc. The non-availability of this data will be reflected to some extent in the thesis. We do have some information on household expenditure for the Maasai living in some Group Ranches in Kenya (Metson 1974; Meadows and White 1981b). This information, however, needs to be examined carefully, e.g. the expenditure of those Maasai living on the Kaputiei Group Ranches could well be affected by the fact that Kaputiei has more hoteli

(small cafe type businesses) set-up within that particular Group Ranch than others. The presence of these small businesses is, however, not basic to the concept of the Group Ranch.

In posing our question about "the Maasai way of life", we deliberately do not first adopt the approach of those who give priority to the national development of Kenya and the national benefits to all Kenyans, and who see the Maasai only as a source of increased beef production. We take the position of considering the pastoralists first. We seek data on the benefits and costs of the pastoralist way of life to see if it is a viable way of life for those who wish to opt for it. Only then can we say what the costs are to them of being producers for the national economy and so compare these costs with national benefits. The secondary question is the extent to which Maasai can serve the nation. It is true that the Maasai are the major beef producers in the country, and so measures that can add to their capability in this field, e.g. improved stock, better pricing and marketing systems, etc., should also lead to an improvement in their own welfare.

A comparison of these benefits should take into account the meaning people attach to their own lives - and it should take into account the cost of sustaining that meaning and those values either in terms of the small community itself or in terms of the nation at large. There may have to be a certain calculus of pain (Berger 1976), or a give-and-take on the part of the Maasai and on the part of the Kenya nation! Development projects need to be

more people-centred and possibly a little less resource-centred if they are to achieve this "meaning": it should be less "livestock development" and more "Maasai development". As one anthropologist working for the United States Agency for International Development lamented: "Cattle rather than people are treated as the target populations"(Hoben 1979:25). We shall return to this aspect of development projects in Chapter 2. Even during the colonial period, great efforts were made to protect the settler industries by inhibiting the improvement of Maasai production and when increased Maasai marketing was required it was achieved through direct extraction rather than through any form of "Maasai development".

This thesis accepts the fact that the Maasai are not living in total isolation and affirms that there is no point in attempting to construct "a wall" around them to protect them from influences which will expose them to change, etc. It is not easy to accept the type of sentiments expressed by such comments as "education is an invasion that will poison their minds and destroy their culture", nor is it easy to accept value-statements such as "out-migration will undercut their family life and value system." The position taken in this thesis is neither a unique nor particularly original standpoint in anthropology and is based upon the fact that

(a) there are threats of one kind or another to pastoralism;
(b) the Maasai will solve their problems by some form of adaptation;
(c) knowledge is required for the presentation

of the best choices possible; and that

(d) anthropologists can help the Maasai (and the other interested parties) to acquire this knowledge.

A major example of this "anthropological help" that comes to mind was that given to the Cree nation in northern Quebec. This was an attempt to describe and support the collectivity of the Cree as they faced massive transformations in their way of life as a result of major alterations in the way in which land was being used in northern Quebec. Various images were held concerning the Cree Indians of northern Quebec at the time when a proposed new hydro-electric scheme was to alter dramatically their traditional lands and their usage. There were at least two extreme images about this group of people: one depicted them as a band of happy, carefree Indian hunters living at one with their environment with never a care in the world. Another image depicted them as a group of obsolete or culturally extinct hangers-on. Neither of these extreme images, of course, depicted the true picture of the Cree as they really were.

A "predictive model" was employed which involved a census-setting of the different ways-of-life practised by the Cree, a factoring-out, and a projection of what it would take to sustain different forms of Cree life, in terms of urban wage employment, trapping, fishing, etc., and then a planning of the available resources to support, as far as possible, the diverse images of the future that the Cree could have (Salisbury et al. 1972, 1977). There was also a commitment to the idea that the

Cree themselves would have to discuss those situations where it did not appear that any realistic plan might be able to sustain any of the images -e.g. those situations where the unrealistic desires or wishes of the group might not be sustainable or made viable because of inadequate resources.

This model has not been confined to the Cree alone, it has been and is still being used to assist some Indian groups in Latin America, the Aborigines of Australia, and the Lapps of Scandinavia. It looks increasingly like the kind of model that social scientists everywhere who follow a "bottom-up" model (as opposed to some form of a "blueprint" or "top-down" model) will be employing on a predictive basis for future development progammes and projects. The Cree model is based on hard facts combined with the moral claim of a people to the defence of their land and culture. It is a question of admitting that there are some positive elements there with which to work - land, people, data, visions, rights, etc.,- and it is a question too, of being prepared to find out what the people themselves want to do with all those elements. "Maasai development" must be based upon facts as well as the moral claim of the people to the definition and defence of their land and culture.

There are a number of factors which must be weighed carefully if any realistic discussion is to take place about the future for the Maasai. Part of the problem has been the inadequacy of available information - the data and the facts - regarding certain aspects of the changes occuring within

Maasailand. One example of this was the set of Maasai population predictions which formed the basis for so many development projects, etc. Once the 1979 Census figures became available (Kenya 1981) these predictions were seen to be well wide of the mark.

The discussion to be presented will examine major resource needs for retaining pastoral production. It will also examine alternatives to pastoralism. The fact that 30,000 Maasai in Kenya already live outside Maasailand indicate that at least 12.5% of the total Maasai population in Kenya, according to the 1979 Census (Kenya 1981), have already found such alternatives, though we do not have any clear information on what those alternatives actually are. We have some information on household expenditure for Maasai but we need much more information on where the Maasai get their money and how they spend it, if effective development stategies are going to be produced for the Maasai areas. There is too, the need to integrate the demographic information and knowledge obtained from the latest Census into future Maasai development perspectives e.g. family sizes, boma sizes, the number of live births, deaths, etc.

In the second chapter of this thesis, I shall deal with the inability of some previous major development projects to assist the Maasai to adapt, change, or become integrated in the wider social, political, and economic groupings of the emerging nation-state. The third chapter, taking the Maasai (and the non-Maasai) of Kajiado District in Kenya as the sample, discusses

the most important factors concerning the land and the demographic pressures on it, the livestock and the human populations: First of all, there are issues of human and animal population growth which include such elements as present and projected populations of the Maasai and the non-Maasai,as well as the wild and domestic animal populations to be grazed in the Maasai areas; second, there is the important question of the available land and water resources, together with the livestock capacities during the wet and the dry seasons; third, there is the pressure that is arising from various forms of encroachment.

In the fourth chapter, I shall deal with some of the factors affecting the Maasai and their ability to respond to possible alternatives to pastoralism: differential access to education leading to greater employment opportunities within and outside pastoralism, as well as access to the local and national political fora; the interesting and, I fear, underestimated influence of the in- and out-migration of the Maasai for wage employment in the cities; and the increasingly intrusive element of consumerism, particularly where this interacts with, or impinges upon, the diet of the Maasai family.

There are commercial alternatives too, which are related to the pastoral herds: there are the possible herd composition changes which could lead to beef production streams within the pastoral herds; there are livestock related enterprises such as dairy produce, hides and skins, leatherwork, etc.; and there is the whole interesting topic of a symbiotic relationship between

the Maasai pastoralists and the local farmers in some form of compatibility between agriculture and pastoralism. These factors are all important in any discussion about the future of the Maasai, their culture and their way of life, and they have to be taken into account if our model is to be transferred and applied to a pastoral setting (as opposed to the Cree hunting/fishing setting).

The fifth chapter attempts to respond to the question: Is there a viable future for the Maasai? The tentative answer is affirmative to the extent to which the Maasai will be able to adapt themselves to the changing situation around them (both in Kenya and in Tanzania) and affirmative to the extent that we have up-to-date information and data on what the current situation is among the Maasai in terms of pressures and changes, etc. The fact is that we do not have this up-to-date information and data on the current situation nor do we have a complete picture on the pressures and changes affecting the Maasai today. The chapter suggests certain areas which could benefit from further research where there is an inadequacy of information and data, and makes some suggestions with regard to increased or changed emphases in terms of development stategies which could well weight the balance in favour of the Maasai and their ability to enter the twenty-first century.

Inevitably, when one is attempting to look at the issues, factors, constraints and possibilities within the realm of development, there will emerge dilemmas, predicaments, paradoxes

and even apparent inconsistencies. This is part of the "agony" of making development decisions. It is relatively simple to decide to follow one ideological line of thought and development and this may seem to make the paradoxes and inconsistencies disappear at the blue-print level - but at the level of living and involvement with the wider networks of social, economic, and political relationships, the dilemmas and paradoxes may still remain, as do the issues which still need to be addressed.

We have already pointed out that a pastoralist production system does not exist in a vacuum. It is involved in a wider network of relationships with other production systems which are external to it. It is also embedded in the national and regional social, economic, and political framework of interests and pressures. Thus, there is a political issue, an issue of competition for the land with the agriculturalists, and there is the issue of the pastoralists' lack of effective political clout. There is too, the question of how they actually go about acquiring this effectivity within the nation state: defending themselves, or acquiring the ability to defend themselves, in the face of other politically powerful groups.

II. Images of the Maasai

There are a number of issues or problems which tend to aggravate discussions about the development of the Maasai, their cattle and their land. Part of the problem is the wide range of

visions or images associated with the pastoralists themselves, their way of life, and their problems. There are a variety of images available: there is the image of an impending ecological crisis; there is the image of the independent nomad, or of a people being forced to change in spite of themselves; and there is the image that such incredible encroachment is taking place that the whole pastoralist system is on the verge of total collapse.

There is another image too, often implied within some anthropological literature, which gives the impression that things are not quite as bad as some people would like to make out. The impression given is that the pastoralists have survived for a long time and they have been able to adapt themselves and to continue this long in spite of predictions to the contrary made more than thirty years ago. This being the case, there is no real reason why they will not be able to persist and survive for another thirty years - perhaps there is no real crisis after all. However, to counter this complacency perhaps one can assert that just because the crises were misconceived or misunderstood in the past, does not necessarily mean that there is no crisis now.

There is also a major difference in the attitudes of the post-colonial governments towards the Maasai pastoralists, their cultures, their rights, and their land. (Arhem <1985a> has demonstrated that there is still quite a degree of "prejudice" towards the Maasai of Tanzania and a degree of what he refers to

as "internal colonialism".) All of these images can be reduced to the dichotomy between the romantic images of the Maasai, on the one hand, and the real situation of the Maasai, on the other hand. The images need challenging with hard facts and data.

Fortunately, there is within Anthropology, the tradition of defending a people's right to determine their own future and to preserve their way of life and their culture (Aronson 1981, Goldshmidt 1981a, Marx 1981, Salzman 1981a). There is, for example, the Cultural Survival group based around Harvard University which keeps a close watch upon infringements of human rights where these are concerned with the cultural identity of peoples around the world - often this is human survival as well as cultural survival. This is not to say that anthropology defends a culture merely for the sake of preserving something rather quaint and picturesque (a "cultural zoo" mentality) nor does it mean that anthropologists see value in attempting to force survival on a people that may have collectively decided to discard their culture and to struggle instead for assimilation into a larger group. Insofar as the people knowingly and deliberately set out to follow a path of integration in the face of dwindling resources, this diminution could affect both human and cultural survival. To a certain degree we have to distinguish here between these two - human and cultural survival - which are not quite the same thing even though they are closely related. If there is no human survival we can hardly speak of cultural survival.

The Maasai have the right to choose their own future as a collectivity, and they have the right to express, in one form or another, a collective defence of their rights to their homeland and their culture.

> Everyone has the right to freedom of movement and residence within the borders of each State (Universal Declaration of Human Rights art. 13 No. 1).
>
> All people have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development (International Covenant on Economic, Social and Cultural Rights, Part I, Article I, No. I).

An assumption has to be made that the Maasai will be able eventually to influence the patterns of development and change operating in their territory, and that they will be able to choose, in some meaningful way, what their own future will be. At the moment they appear to have little or no choice other than to accept, or unsuccessfully oppose, the decisions made by the local authorities (many of whom are themselves Maasai) in virtue of the powers vested in them by the national governments. Unless the Maasai can settle among themselves their disparate opinions and ambitions, and can reconcile their different interests, and look to the future development of their lands and their people with some degree of unanimity at the district planning levels, no Maasai is likely to regard any development projects in the area as something which has taken into account his or her opinions and wishes. This state of affairs is much the same as existed prior to and during the "Cree Project" in Quebec (Salisbury 1972). This question of speaking with one voice is not going to be very easy for the Maasai because there is a lack of cohesiveness or

homogeneity among the Maasai themselves - some are more opportunistic and more commercially oriented than others, and some are quite prepared to manipulate and scheme in order to succeed, even at the expense of other Maasai. The Maasai do not present a united front, nor do they speak with one voice - not all the Maasai are "helpless victims". More participatory democracy needs to be introduced. If this does not happen then the present situation of polarised opposition to almost any project is likely to continue.

The future of the Maasai has been seen too often in national economic terms, but should be seen more in cultural terms too, since the Maasai have this moral right to pursue their system of pastoralism including all the moral and symbolic commitments these entail.

> Social development requires the assurance to everyone of the right to work and the free choice of employment. Social progress and development require the participation of all members of society in productive and socially useful labour and the establishment, in conformity with human rights and fundamental freedoms and with the principles of justice and the social function of property, of forms of ownership of land and of the means of production which preclude any kind of exploitation of man, ensure equal rights to property for all and create conditions leading to genuine equality among people (United Nations Declaration on Social Progress and Developement Part I, Article 6).
>
> Emphasizing the interdependence of economic and social development in the wider process of growth and change, as well as the importance of a strategy of integrated development which takes full account at all stages of its social aspects (United Nations Declaration on Social Progress and Development, Preamble).

This vision may not be accepted wholeheartedly by development

planners, nor may it have much immediate impact. Nevertheless, it may be beneficially cathartic in the long run insofar as it may help in surfacing Maasai aspirations and needs as well as exposing national governmental attitudes towards the Maasai themselves.

CHAPTER TWO - DEVELOPMENT PROJECTS AMONG THE MAASAI

I. Introduction

A pastoral production system involves a human population and a livestock population; it also involves a biotic environment which affects, and is affected by, both populations; it also involves a social, political and economic framework which affects human activity and which is based on interaction with other production systems. Some of the above aspects of pastoral production systems have consistently been under-stated and under-appreciated in the context of development projects drawn up for the Maasai pastoralists. Higher productivity will produce benefits to the Maasai, whether through market or home consumption, but one major question is the relative costs of the inputs - the issue of offtake is another question. Almost all Maasai would welcome better veterinary services and medicine which they see as contributing towards higher productivity in their herds.

The dynamics of each of the components of the pastoral production system are complex, which means that the production systems based on their interaction are even more complex. This is why the appeals for an interdisciplinary approach to development have been so important (Dillon 1973). More recently, the ILCA Report of 1978 called for an interdisciplinary approach and this call seems to be bearing

some fruit and to be more widely accepted. But it has still not been put into practice by many development groups. Minimally, lip-service is paid to the role of the social sciences, and anthropology in particular in the whole process of problem identification, implementation and evaluation, but there is a long way to go yet before there is a truly integrated and systemic approach to development among pastoralists (Sandford 1981, 1983; ILCA Report 1984). There is a danger that an "anthropological approach" alone may overemphasize the isolation of pastoral systems from the wider societies of which they usually are a part (Dyson Hudson and Dyson Hudson 1980) but this difficulty has to be met and is probably better dealt with through an interdisciplinary and holistic approach to pastoralist development. Some development teams have been interdisciplinary, but this is not enough. There has to be a sensitivity to the rights of the "target populations" and they too should be involved right from the very beginning of the project.

II. Failure of Livestock Development Projects in General

More than US$650 million have been spent on various livestock development projects (LDP) in Tropical Africa during the past twenty years (ILCA 1980,1984). Unfortunately, the results have proved disappointing, and this has been due, in part, to the fact that many projects were designed and implemented with a very limited understanding of the internal

dynamics and the objectives of the very production systems which they were supposed to improve (Baker 1975, Hoben 1979, ILCA 1980, USAID 1980). The actual planning and evaluation of pastoral projects has been seriously handicapped too, by the shortage of relevant factual information on the complex pastoral systems themselves.

> "Research on the behaviour of livestock herders in Africa is about at the same point where research was on the economics of crop production some 20 years ago ... many assertions and sparse supply of facts"(Eicher and Baker,1982 cited in ILCA 1984:3).

In fact, one anthropologist stated that,

> "The picture that emerges (from this review of livestock development projects) is one of almost unrelieved failure. Nothing seems to work, few pastoral peoples' lives have improved, there is no evidence of increased production of milk and meat, the land continues to deteriorate and millions of dollars have been spent" (Goldschmidt,1980:39).

This section of the thesis is intended to indicate briefly why these projects have not been successful. rather than to take "pot-shots" at the development projects among the Maasai and to discard them as total failures. All too often,

> development economics has been tied to regional, national, and international level planning, with the elements of local economics and social systems being considered as so much inert raw material ... to be rearranged and used for more effective higher level systemic operations (that is, to produce beef, or hides, or foreign exchange for the Nation (Aronson 1984:74).

The cultures of various pastoralist groups were overlooked in favour of what they could contribute towards the economic needs and future of the nation. A clear distinction should have been made between livestock development projects which emphasize <u>beef</u>

production for marketing and those which favour dairy production or dairy related production. An examination of the documents can show that this was not sufficiently stressed or developed. The main reason these projects have failed, according to Arhem (1985a), is because they have been imposed without any understanding of pastoralist societies, and imposed to achieve objectives which have little to do with the objectives of those societies (cf. the epigram to this thesis). African decision-makers are as much outsiders in terms of pastoralism as are western or northern "experts". The leaders of the governments, in a number of countries having nomadic pastoralists, come from groups which are not only not pastoral, but which have historically viewed pastoral people with ambivalence at best, and often outright hostility (Arhem 1985a).

III. The Problem of Change and Development Planning in Maasai Pastoralist Society

Livestock development projects among the Maasai have not been more successful than livestock projects elsewhere (Halderman 1972a, 1972b, 1978; Devres Inc. 1979a, 1979b; Hoben 1979; Sandford 1981; Goldschmidt 1981b). These projects stem from some outsiders' view, vision, or perception that "something is wrong" or "inadequate" or "inefficient", and the blueprint is drawn up, presented, and executed as an attempt to remedy this "negative" situation. One of the major and obvious reasons, why these projects failed is precisely because they did not start from the

Maasai perceptions of what they have (their "meaning") and where they want to go (their "vision"). The Maasai perception of what they see as being "wrong" or "inadequate" may not be the same as that of the government or the development planner.

The failure of a number of LDP has been due to this tension between the objectives of the pastoralists themselves and those of the government or development agencies involved. These conflicting objectives are probably best expressed and exemplified by the difference between the "people-based" and the "resource-based" perspectives (Aronson 1981). National economic objectives and the objectives of the Maasai may not necessarily be the same. The governments of both Kenya and Tanzania see the pastoral resources as national resources to be used and developed in accordance with "national perceptions of utility". However, the Maasai do not share this same perception of their lands as part of the national resources which are to be made available to other people. Naturally, they see their lands as belonging to the Maasai to be used by them for their cattle - in fact, the Maasai see all grazing lands (all grass) as belonging to the Maasai. They have tried unsuccessfully to halt the expropriation of their lands. In Tanzania this has been doubly difficult because unfortunately

> (t)he Interim Constitution of Tanzania does not contain a Bill of Rights, although the subject has been raised at different stages in the country's constitutional history (Martin 1974:39).

This means that the Maasai, along with other groups in the country, have no rights and are unable to appeal any decision

made by the Government concerning land tenure or land rights. It has also meant that development projects have been applied to the Maasai without any social soundness analysis (Aronson 1977, Bourgeot 1981).

The policy making groups, in both Kenya and Tanzania, have drawn up the national economic plans including the Maasai as commercial beef producers (cf. ILCA 1984). Livestock development programmes have been seen as the means of achieving this end, sometimes within a regional economic perspective (Galaty et al. 1981a). In both Kenya and Tanzania, development for the Maasai has been presented to them in the form of various Livestock Development Projects and Programmes (LDP). Numerous planners and politicians have discussed the Maasai "situation", and many schemes and projects have been designed as positive responses to what have been seen as negative situations. An examination of their justifications and activities will demonstrate how they have become part of the problem, and not the solutions.

The governments had visions of what should be done to remedy what was wrong in the livestock sector of the Maasai way of life. An analysis was made of what needed changing, and then steps were taken to bring about these changes. It was felt that if the Maasai were to become more sedentarized then this would facilitate a more responsible exercise of Maasai land and resource control. Thus, sedentarization, in one form or another, was one of the changes which both the Kenyan and Tanzanian governments wished to effect. Development (as a set goal) has

been depicted as the more intense participation by the Maasai in the national economy, and more especially in the production of beef for the domestic (urban) and the international market (cf. Evangelou 1984). However, I do not think that development for the Maasai can be viewed in these narrow economic terms, nor do I think that it can be viewed only in ecological terms, i.e. land and water as resources for the pastoralist economy. Development for the Maasai has to be seen holistically, in other words, taking into account the local, regional, and national economies, the ecological situation, and the total cultural context of the Maasai pastoralists themselves.

A realisation of the existence of this framework is crucial to an understanding of the strengths and weaknesses of almost all development projects, not only pastoralist projects. The problems of projects among the pastoralists cannot be divorced from such issues as price policy, the role of the parastatals, the public and private sectors, land policy, access to and integration in external markets, administrative structures, etc. This is the reality of the total development context within which the pastoralists' future will be decided; if it has not already been decided.

One example of how national policies' emphasis can impinge upon the lives of the Maasai and enter into regional planning is contained within a statement of the Arusha Region: Development Strategies and Priorities for the next 20 years:

> As a consequence of rapid population increases and resulting land pressures, competition for land will increase and traditional livestock management will be modified. More than likely, the nomadic practices will have to yield to enclosed, land intensive range management and production methods. While such a change will be difficult, it could be tremendously beneficial to the Region and to the primary producers, by reducing land conflicts and deterioration and leading to significantly higher production and incomes (Regional Commissioner's Office, Arusha, 1981).

Bearing in mind that this is more of a prediction pertaining to Tanzania rather than a definitive policy statement, similar constraints to these, or similar rationalisations about the need for change/development and planned interventions in the pastoralist sector, can easily be found in the Kenyan literature. For example, in the 1950s, the administration saw land degradation as being a result of overstocking, and so compulsory destocking was usually the first step in development schemes at that time. Unfortunately, short-term efforts in rangeland management development contributed to long-term resource deterioration and culminated in a disastrous famine in the early 1960s because the extension of the surface water facilities plus the extensive use of bore holes etc., had brought about massive concentrations of cattle in limited areas with all the consequent problems to the environment. The district commissioner for Kajiado reported that the earlier stages of erosion created by overgrazing was worsened over the years by drought seasons. Wrong types of "water development" schemes had preceded the drought and probably made its effects much worse for the land, humans and animals (Prole 1967; Talbot 1972; Sindiga 1984).

Cost-benefit analysis has often been the yardstick for development efforts among the Maasai, and development has been measured in terms of improved liveweight at sale as a result of improved veterinary services or more efficient transport, etc. The move towards cost efficient commercial beef production among the Maasai has not been successful largely because it conflicts with the interests of the people - their chief concern is survival in a milk-based subsistence economy (Halderman 1983; Hoben 1979). There has been a general inability to incorporate effectively the pastoralists into the projects at the planning and execution levels and this

> constitute(s) a case study in the basic deficiencies or misconceptions of the 'project' approach to structural economic and social change in the developing countries - and especially of the attempt to convert migratory pastoralists into sedentary livestock producers of beef (Bennett 1984:104).

Allan Hoben (1979) recommended that the United States Agency for International Development seriously consider making the well being of pastoralists, and the ecologically sound management of the resources on which their present and future well being depends, the primary project objectives. This had not been the case up to that time. Such a change in emphasis would have meant that the pastoralists rather than the livestock would be the direct beneficiaries of the projects, and this would mean that the projects would only be identified after an assessment of the problems faced by particular groups, e.g. by herders without livestock, or by women. Socio-economic feasibility studies would focus on understanding pre-project production systems and income

strategies, rather than on constraints to beef production and marketing alone. Future project interventions would be broadened to include the provision of human services or consumer items which are locally desired and which groups would support. In the past, livestock production and land-use management, rather than the nutrition, health, security, or income of pastoralists, had become the project objectives. In addition, the primary focus of livestock projects had invariably been cattle, rather than sheep or goats, and beef production, rather than dairy products or hides. Economic and financial analyses tended to be narrow and centred on beef production and range management, rather than on relations of production and improved pricing and marketing in the pastoral production system.

The Institute for Development Anthropology was well aware of the above-mentioned deficiencies when, in 1980, it organized its "Workshop on Pastoralism and African Livestock Development":

> The priority objective for development at this time should be the reinforcement of the pastoral subsistence base, to provide the herding populations with surer means of sustaining themselves. While recognizing the claims of the domestic urban populations for low cost meat and the needs of the state to improve foreign exchange positions by increased exports of livestock and livestock products, it was argued that the sequencing of action should focus first on improvement of subsistence, income, and quality of life of herders via ecologically sound interventions (USAID 1980;19).

Nonetheless, as recently as 1984, some economists were still pressing for livestock development among the Maasai pastoralists to be geared principally towards a beef-producing market-oriented economy providing for the meat needs of the nation:

> unless conditions constraining livestock production levels in pastoral areas such as Maasailand are overcome, the required supply of live-stock will not be forthcoming, and projected meat deficits for the nation will become a reality (Evangelou 1984:13).

There have also been a number of economic predictions based on incorrect assumptions confusing increased productivity with the different issue of price response. Improved prices and the Maasai response to them is not the same as the question about productivity. Price response, as one among several factors, does not seem to bear on increased productivity, which could enhance Maasai welfare apart from commercialization and could result in enhanced income for the Maasai. But the underlying assumption here is that they would decide offtake rates on the basis of motives of economic gain (1). This is not the case in reality. Maasai pastoralists make decisions about offtake on "the basis of a great many social, cultural, and economic factors, many of which have no relationship to monetary gain" (Bennett 1984:86).

Some clarification may be necessary here concerning the issues regarding price policy and improved land//animal/labour productivity. The question of prices paid to producers for their (often unprocessed) products is seen as critical by many observers for levels of marketing and/or forms of investment in rural economies. The argument suggests that insofar as parastatals or other means of monopolizing marketing keep prices reliably low, there will be less incentive for peasants (or pastoralists) to market more products, thus encouraging shortages and stimulation of a blackmarket, as has occurred in Tanzania.

As producers have less return, they are less able to reinvest in their own domestic economies and thus rural economies tend to stagnate. With higher prices, there will be more positive incentives to sell animals and more funds for improvement of conditions of production, including higher quality animals. One partial counter argument is that peasants only have finite cash needs, and thus higher prices will only allow them to meet those needs sooner, by selling fewer animals. It is more than likely that both price responsiveness and non-responsiveness occur, the latter establishing limits to marketing based on household subsistence and herd reproduction, the former shifts in marketing within minimum and maximum constraints (Galaty 1985b).

Productivity, on the other hand, is a theoretical notion depicting comparative output to input, and can be generally used to describe the nature of labour, given the existing level and type of technology. Essentially, "economic development" implies shifts of productivity in one of these three areas, and entails getting more for less; without shifts in productivity of some sort, economic change is merely an exercise in futility. While in some economic domains, impressive improvement in productivity has proven possible (genetic innovations, new tools, fertilizer, etc.), in the pastoral area the cost of such innovations (fencing, water development, veterinary care, genetic improvements, etc.) often proves higher than the returns, or the innovations themselves prove faulty (game destroy fences, dams silt up, borehole pumps break down, upgraded animals die, etc.). In the settler community, control of many factors and government

subsidy allowed for the development of a more productive form of animal husbandry than pastoralism, but it is not clear that these conditions exist in the rangelands. Many development schemes attempt to introduce technical improvements, but many of them simply produce a context in which marketing of animals will increase, which is increased productivity if animals sold is the measure of output. But the critical innovation of most schemes is altering parameters of household/herd movement; by anchoring families to given "Ranches", they will theoretically make more "productive" use of their resources (at least this is what the planners hope will happen). Unfortunately, this invariably results in lowered productivity for the herd, which undermines the transformation at the outset (Galaty 1985b).

Now the issues of animal and labour productivity are somewhat different from those posed above which pertain largely to land. Improved breeds often produce more milk or yield more or better meat, but unless marketed represent poor returns on capital, especially since many of them do not thrive and require many more inputs. Improving labour productivity is difficult unless a Ranch is fenced; the most significant change is taking manpower out of the system through education, making the use of more skilled labour necessary for the same tasks previously carried out by the lesser skilled (elders for child labour), and often for the same output (thus lowered productivity of labour). This may not matter much until the point of hiring in labour occurs, at which time it is more costly and perhaps produces lower returns - hired herders are often less concerned about the herds

than the children of the herd owner.

There are a number of points to be borne in mind in this discussion about price and productivity. Too much development emphasis on the sort of technical inputs which alters productivity is not sensible, given that they often fall short and returns never match investments. As often as not investments aimed at improving productivity do no such thing (animals die, fences are knocked down, etc.). Another point is that increased productivity does not justify the capital investment, as when a small increment in milk yields result from quite expensive breeding programmes. All too often, technical investments which might alter productivity tend to be to the benefit of the more wealthy and educated herders (more "progressive" perhaps?) and thus do not alter the conditions of production or standard of living of the average herders, who may thus have missed out on alternative investments of development aid in social services, welfare, etc.

The main question here in this issue of prices and productivity is not so much that of the desirability of productivity itself, but rather that of the costs involved. The economic "jargon" must not be confused with the desired outcome - every herder wants more milk, meat, water, money, for relatively less input of land, capital and labour.

Perhaps as a result of this confusion of jargon and desired outcome, the directions of change taken by the Maasai themselves

are quite different from those of the large-scale projects funded by the international agencies. These projects have failed, by and large, and they have little relationship to what is now happening to the Maasai in both Kenya and Tanzania. They have made little or no impact on the general attitude of the Maasai towards change, integration, or even towards a genuine and realistic appraisal of themselves in relation to their resources and their future. The strategies adopted by the Maasai in the face of change seem to be chosen in spite of these projects and not because of them.

IV. Maasai Group Ranches in Kenya

The most important genre of project among the Maasai, supported by the Government of Kenya, international donors, and even some Maasai, has been the Group Ranch programme carried out in Kenya's two Maasai Districts. A Group Ranch consists of a demarcated area of rangeland which provides grazing for certain herds of livestock owned by traditional pastoralists such as the Maasai. These pastoralists have official land rights as a group. If rights are held by individuals, the projects are termed "Individual Ranches." In Kenya, the introduction of the Group Ranch was the means by which the government hoped to solve, to some extent, the "pastoral dilemma" - how the traditionally transhumant Maasai pastoralists were to continue subsisting off the products of their herds in the face of a dwindling resource base.

A range development policy was inaugurated in Kenya shortly after independence in 1963. Group Ranches were established in Kenya in the mid 1960s during that country's land tenure reorganization programme, and the plan was regarded as one possible form of land consolidation appropriate for the pastoralist areas. The concept of the Group Ranch had evolved out of the efforts by the British Colonial Administration, dating back to the 1930s, to control grazing on the Leroghi Plateau in Samburu district, Kenya (Spencer 1978; Oxby 1982). Subsequently, even the Ranches among the Samburu were rejected by them as inadequate for their needs (Helland 1980b).

In Kenya, by the end of 1964, over 8,000 ha. had been adjudicated as individual holdings in the area of Ngong; these were small farms located on the higher potential slopes of the hills. The fact that the land involved was only 8,000 ha. should not cloud the fact that this was high potential land and therefore its value to the Maasai lay in its use during the dry season and during drought. In some cases, land had been set aside as Individual Ranches by the leaders and government officials among the Maasai themselves. These individuals proceeded to divide and sell or rent the land to immigrant farmers who then refused the Maasai access to the land during the dry season.

This form of land adjudication was originally intended to encourage the Maasai in sound range-management practices and in this way the government hoped to maintain the rangeland in good

condition and to provide an incentive for the Maasai to change their mode and means of production. But, "the ecological viability of range use by pastoralists depends on a great many factors in the social and management sphere, and not only on the tenure factor" (Bennett 1984:119). Apparently, there had been very little properly organised and conducted sociological investigations made by the UNDP/FAO Range Management Project prior to the formation of the pilot area, the Kaputiei Maasai Group Ranch, and what little had been done was disregarded. Consequently, the Group Ranches' "sociological groupings" did not correspond to the basic social units which the Maasai themselves recognise as territorially, politically, or economically important (Hedlund 1971, Halderman 1972b, Goldshmidt 1981b).

There were a number of reasons for the emergence of the Group Ranches, among them the following three:

(1) Pressures from major <u>international donors</u> who insisted that without some policy of the gradual privatization of land-holdings and

> without the certainty of ownership and the clear right of the group to exclude outsiders, which is provided by (land) registration, no agency would be prepared to lend money for range development (Galaty and Doherty 1982:21; cf. also Swynnerton 1954; Okoth-Ogendo 1976).

(2) There was too, the <u>"ecological image"</u> of the Maasai overgrazing and damaging the rangeland. It was felt that if individuals or small groups were given the legal responsibility for a particular piece of land, they would exploit it in an

ecologically sound way - which meant increased meat production for the national economy and fuller integration of the Maasai into the national state.

(3) Another reason for the emergence of the Group Ranches was the Lawrence Report of 1966. The Group Ranch was devised as a way to provide the Maasai with legal land title without further carving up the district into Individual Ranches. Initially, there had been a number of Maasai Individual Ranches carved out of the district, but without legal title to the land (Hedlund 1971). The creation of 19 initial Group Ranches with registration of land title in Kaputiei took place rapidly, probably because the Maasai feared that they would lose their land to Game Reserves or to the neighbouring agriculturalists, the Kamba and the Kikuyu.

The adjudication of Maasailand, in Kenya, also seems to have encouraged the development of classes and factions among the Maasai (Hedlund 1979; Galaty 1980). Bourgeot has observed the emergence of this "livestock bourgeoisie" in those nomadic areas undergoing development, and he predicts that

> any development effort conscious of this reality and contributing to it provides the engine for a machine eliminating nomadic societies (1981: 165).

There has been the emergence, among the pastoralists, of a new "wheat elite", i.e. those who have rented or leased their land to the Kikuyu or Kamba for wheat production, and who have then built up their herds on the monies received from this leasing (Doherty

1979a). Individual entrepreneurs among the Maasai have used the land for their own gain and advancement, sometimes at the expense of the larger community (Galaty 1980). In spite of all this, the Group Ranches were seen by some Maasai as an improvement on the Individual Ranches into which the land was initially being subdivided. Collective freehold was considered a better way of trying to keep the land in Maasai hands, and the Maasai saw the Group Ranches as a means of stopping the appropriation and subdivision of their land (Galaty 1980).

In their implementation, the Group Ranches contained within themselves the roots of further problems. They were not based upon any traditional units or boundaries, contrary to the recommendations of anthropologists who were included in the design teams (Fallon 1962; Jacobs 1963). Some of the ranches did not include sufficient dry season pasturage for the numbers of livestock involved; and the process of registration of individuals for different Group Ranches seemed to have been haphazard.(2)

As Fumagalli (1978) has observed among the Samburu, even though Group Ranch boundaries were based there on social units, insufficient consideration had been given to climatic and ecological factors. In the case of the Maasai, the Group Ranches were based neither on correct Maasai social units nor on ecological units with adequate land and water resources. The Utah University team (1976) has pointed out that prior to the implementation of the Range and Ranch Management Project there

had been a dearth of data and information on such vital topics as rainfall patterns etc., which gave rise, ultimately, to the formation of inadequate grazing blocks elsewhere in Kenya. The fact that the Maasai no longer had adequate access to wet and dry season pasturage within the confines of their own Ranches meant that they were obliged to seek dry season pasturage elsewhere. In fact, there is, even today, a great danger that the migratory patterns of the pastoralists, which have been a primary feature of their adaptability in the past, will be disrupted, and they will be confined to units of land which are, in fact, sub-economic, and in no way able to support the expected human or cattle populations (Hopcraft and Reining 1977). What remains to be explained is why the government and the development agencies seemed to disregard the advice and the recommendations of their own experts who were often aware of the inadequacy of the Group Ranches as they were designed.

There has been no evidence that the Group Ranches have implemented either of the two production innovations which the planners had envisaged - namely stock and grazing limitations. There has been evidence that stock management was directed towards herd increase and that efforts to reduce stock and to limit grazing have been unsuccessful (Halderman 1972b). So far, there has been no evidence that stock numbers have been reduced except by the migration of some stock owners and their animals outside the confines of certain Group Ranches (Oxby 1982). The "surplus" animals are not being slaughtered, as the planners had envisaged, but are increasing the pressure on the available

pasture resources. There is also evidence, which we shall discuss later, that the increased capital is being reinvested in new stock. The planners argued that there were too many animals, and the Maasai argued that there were not enough for the numbers of group ranchers who needed milk.

The non-residence of numbers of herd owners has also created problems on the Group Ranches. Certain decisions about management need to be made on the spot. As Doherty (1979b) observed on the Rotian Olmakongo Group Ranch in Narok District, 24 out of the 80 members did not live on the ranch at all. This situation has been paralleled in other Group Ranches and has created problems there also. However, in spite of these difficulties, the Maasai saw some benefits arising from the adoption of the Group Ranch Schemes in Maasailand though the only real value of the Group Ranch scheme for the Maasai seems to have been to ensure land rights in the face of large-scale encroachment by many different groups.

> Many see any type of adjudication, subdivision or demarcation of land as undesirable, since the common and God-given right of Maasai to move freely into pastures is being qualified. It is the very process of turning "pasture" into "land" which is seen as the root of the threat against the Maasai way of life and the major threat to their collective existence. The Group-Ranches are not seen as helpful since they do not alter the fundamental need of the Maasai for grass and rain, and the fact that they were imposed upon the Maasai is resented. Many others see the Group Ranches as desirable in comparison with the Individual Ranches into which the land was being subdivided until the new plan was adopted. (Galaty 1980:165).

There are a number of important consequences resulting from the introduction of the Group Ranches among the Maasai. One

example of this is to be found in the loss of status and power of the elders holding traditional offices (virtually none of whom were elected to represent their respective Group Ranches). These men were regarded as representatives of 'tradition' and lacking in formal education (Hedlund 1971). Because the Group Ranches were not based on any traditional units and because the registration was haphazard, members have little identification or commitment to the Group. Whenever there is a shortage of pasture, especially during the dry season, numerous Maasai will simply move their livestock elsewhere - on to another Group Ranch if needs be. If the main purpose of the Group Ranch was to give responsibility for the land to a group of Maasai pastoralists in order to make the best use of it ecologically, then it has not been a successful experiment or project. The Group Ranches have generally proved not to be viable ecological units. Halderman (1972b) noted that even the pilot scheme at Poka in Kajiado District, was unviable in bad years and that it was unreplicable since conditions there were better than on the other Group Ranches.

There is considerable movement, even today, across the boundaries of the Group Ranches, and this even after the granting of legal title to the land. In many senses, the Maasai are not really "ranchers" at all, but use the ranches or the range as the need arises. There have been a number of works describing herd movements outside of Ranch boundaries (Davis 1971; Halderman 1972a, 1972b; Galaty 1985b).

Despite this form of "land tenure" in the form of the Ranches, the land is still being taken away from the Maasai in what amounts to an ongoing "land grabbing" process (Jacobs 1973; Galaty 1984). This is not the same as saying that land is going out of pastoral use by means of Group and Individual Ranch land allocation. The situation that we are concerned with is that the dry season pasturage (i.e. the land that is best watered, and still provides grass in the dry season) has been divided up into various types of "Ranch" hardly any of which are capable of sustaining the Maasai if they restricted themselves merely to the grazing within those adjudiated areas. Near the Maasai Mara, the Mau, Ngong, and Narok, stretches of adjudicated Maasai land are being taken up and used for wheat schemes, etc. These represent important losses to the Kenyan Maasai in terms of high potential dry grazing areas but, because it is ongoing, we do not possess any adequate statement of just how much land has been lost by the Maasai. According to some reports, very little of this is happening in Kajiado, outside of Ngong and Loitokitok (Galaty 1986, personal communication). As we shall see later, the Maasai can ill-afford to lose such valuable areas for whatever reasons.

V. The Maasai Livestock and Range Management Project in Tanzania

The major development project found in Tanzania was the Maasai Livestock and Range Management Project funded by the United States Agency for International Development. The Agency funded a study in 1962 which formed the basis of the Range Management and Development Act of 1964. By the end of 1975 there

were 8 Ranching Associations in various stages of development in Tanzania. The average association covered some 300,000 acres, had 500 families and 200,000 Livestock Units (Hoben 1976). Once registered, the Ranching Association would have been entitled to rights of occupancy and certain water rights. However, by 1976, only 3 of the Ranching Associations had been granted rights of occupancy, and the legal status of even these rights was being held in question by the end of that year. This tenurial insecurity sounded the death knell for the whole Ranching Association programme, since the Tanzanian Maasai wanted above all to feel secure in the possession of their lands just as the Kenyan Maasai wanted to obtain tenure over their territories. Bennett has astutely observed that the Maasai approval of the "Ranching" scemes (in both countries)

> was predicated not only on the land issue, but also on the fact that acceptance of a group ranch entitled them to receive benefits they had always sought: animal health measures, breeding stock, and extension services (1984:121).

This whole Tanzanian Project started from a very similar perspective on the part of the government and planners as did the Group Ranches in Kenya - namely, an "ecological" model. However, in Tanzania there was also a very strong element of the "beef producing" model as part of the general ideology or theory behind the Associations right from the beginning. Some indication of this can be obtained from the stated goal of the project:

> to assist the Government of Tanzania to achieve its objective of self-sufficiency and an exportable surplus to earn foreign exchange in the livestock sector (Utah 1976:5).

The measurement of this goal was to be twofold: (1) Imports of livestock meat products would be eliminated, and (2) domestically produced livestock meat products would be available in adequate supply and be properly marketed and distributed to meet total national demand. Even further insight into the economic motives of the project can be gathered from the following stated purpose of the project, which was:

> to achieve a sustained high level of livestock offtake in the Maasai District consistent with proper resource management and Tanzanian development goals (Utah 1976:6).

This purpose was to be measured in terms of achievement by means of seven different changes in herd management: 1) an increase in annual offtake; 2) an increase in average slaughter steer liveweight; 3) an increase in calf drop; 4) a decrease in calf mortality; 5) an increase in the effective calving rate; 6) a reduction in the average age of slaughter steers; and 7) a reduction in the average age of females at first calf. From the stated goal and purpose of the Project, one can hardly fail to appreciate the type of model from which it arose, nor can one miss the underlying attitude towards what was "wrong" or "broken" or "inadequate" in the pastoralist production system. Hess (1976) observed that the primary objective of the first Ranching Associations in Tanzania was to obtain an annual average market offtake rate of 12% or more per annum (which seems to be somewhat optimistic if not unrealistic). Technological innovation and improved animal and range management practices were regarded as

> absolute prerequisites for attaining project goals ... the primary factors inhibiting change and delaying the transformation are basically cultural and sociological rather than technical (Utah 1976:29 quoting the original 1969 project paper).

The culture, and especially the decision-making processes, of the Maasai were seen as major obstacles to the goal and purpose of the project. In fact, in its implementation, the inhibiting factors turned out to be technical ones on the part of the Project Team and the Tanzanian Government officials, rather than the social and cultural considerations which they had envisaged. The Maasai readily adopted those technical imputs which benefited the growth and the health of their herds.

> In fact, rather than demonstrating a closed system vis-a-vis inputs, the Maasai demand some technical improvements which cannot be provided fast enough (Hatfield and Kuney 1976:5).

But the Maasai had little economic incentive to sell more cattle. The overall effect was an actual increase in stocking levels. The Ranching Associations which were supposed to control the stocking levels, coordinate marketing, etc., never really got off the ground. Hoben (1976) suggests that one reason for this, among others, was the fact that the Maasai never obtained any secure rights of occupancy, nor were they able to stop encroachment through participation in the Ranching Associations. Sometimes too, the Tanzanian Government policy of villagization engendered conflicts with the Ranching Associations concerning such topics as boundaries, functions and jurisdiction.

By the end of 1975, some progress had been made in terms of

surface water projects and bore-holes, and in some areas the establishment of livestock development centres. Eight Ranching Associations (out of a proposed twenty-one) had begun to be established. However, no progress had been made on establishing any monitoring system for range conditions or stocking levels. In fact, the District Livestock Development Officer in Monduli estimated that the livestock tripled in less than a decade (Hoben 1976).

When it came to evaluations of the Project, almost all feed-back stated that the Project was a failure (notably Devres Inc.; Nellum; Utah State University; USAID). The Utah-AID team placed a lot of the burden for the failure of the project on the Maasai attitude towards marketing. So long as the Maasai view their animals as their most desirable possession, marketing will be sporadic and unlikely to provide the level of offtake desired - this was the view of the Utah team. This opinion is an important statement of what a number of development personnel feel about the Maasai. Whether it is true or false is important for development policies among the Maasai in the future.

Evidence does not support the view that the Maasai do not buy or sell. (A number of Maasai had even said that they would use the money obtained from the sales of the compulsory 10% offtake programme imposed by the government to purchase fresh stock). There is a tremendously active unofficial market situation throughout Tanzanian Maasailand, and across the border with Kenya. One author estimated that approximately 100,000 head of

cattle crossed over the border illegally every year (Hoben 1979).

Some of the more obvious negative results of the Range Management Programme could possibly have been minimized or even avoided altogether if more cognizance had been taken of the initial warnings and observations of the project's first "rural sociologist". This person, James Hamilton, was, in fact, a social anthropologist who had worked in Thailand and among the Kuria in Tanzania. His frustrations and difficulties were eloquently expressed when he wrote:

> It was not clear to anyone what I was expected to contribute to the project. Indeed, I was considered excess baggage by some. Both the Tanzanian and American governments saw me as a salesman or miracle worker in transforming Masai social customs, and they were disappointed when I could not produce immediately. USAID was ambivalent concerning my desire to do additional research in a control area, where no project work was being carried on. The Tanzanian officials believed such research unnecessary since they "already knew all about the Masai"(Hamilton 1972:127).

The Evaluation Report on the Maasai Range Management and Livestock Development Project in Tanzania asked the following question: "Will the Maasai be the victim of or the beneficiary of change, (since) change he must?"(1973:79) This was neither a fruitful way of posing the question nor of facing the problem since both aspects made the Maasai the objects not the subjects of change. This is not a mere quibble in semantics; it represents a basic prevalent mentality which sees the Maasai pastoralists as objects or pawns in a game of national development economics. A further example and expression of this comes from the Sector Goal of the Maasai Range Management and

Livestock Development Project (MRM and LDP) in Tanzania which was:

> To obtain the highest national beef production possible with environmental conservation and improvement. Increased production and offtake will permit higher per capita protein consumption along with greater foreign exchange earnings from imports (1973:2).

The beneficiaries were to be the nation as a whole and little or no mention or consideration was made of the pastoralist primary producers themselves.

Perhaps too, the following "Table of Contents" from the Evaluation of the Maasai Livestock and Range Management Project in Tanzania, will give some indication of the areas of failure of that ten year project:

> inadequacy of base-line data; drought; TanGov policies of villagization and decentralization; changes in the US foreign policy; Wildlife Conservation Act; unfavourable balance of payments; dissolution of the East African Community; the withdrawal of World Bank support for the bull ranches; National Service obligations; failure of the Tanzanian Livestock Marketing Corporation; the Ugandan war; lack of capable leadership within the project; insufficient technician time in the field; lack of follow-up on problems identified in evaluations and appraisal reports; unsatisfactory working relationships with counterparts; limited home office support; supply, procurement, and repair problems; inadequate staffing on the part of the TanGov, together with insufficient funding, inadequate project records, political pressure and lack of adequate support for the Near East Foundation technicians; inadequate management on the part of the USAID, plus unsatisfactory work coordination and implementation between the TanGov, the USAID and the NEF; lack of follow-up on recommendations made in prior evaluations; technical assistance problems; range-management inadequacies; water-development inadequacies; inadequate resource use; dipping program failures; etc.(Devres 1979a).

The goals of the Project were extraordinarily ambitious

considering the actual range conditions and the management practices of the Maasai themselves. The overriding economic purpose of the Project - to convert the Maasai herds to commercial beef production - was ambitious and in itself would have taken a lot longer than the ten years allowed for the Project. The whole Project did not address itself adequately to the necessary changes in the social structure, values and attitudes of the Maasai which will have to take place before there will be any change in the range management practices of the people.

> This situation in northern Tanzania underscores a fundamental feature of the livestock development program affecting pastoralists: the concentration on animals and economic matters and relative neglect of the social infrastructure. While most project documents for all countries mention the 'benefits' to the human communities, little or no investment was made in these facilities, nor was research accomplished which might have described the necessary social adaptations required for a shift to commercial production on a ranching basis .... Most economic development projects made the assumption that once the economic and production structure was changed, the human community would follow along. This is often the case, but it requires facilitation (Bennett 1984:125).

Today, no individual title to land exists in Tanzania, which asserts national ownership of all land. Game Parks, towns, cities, airports, army camps, wheat fields, and large scale commercial beef ranches (often held by non-Maasai) all occupy vast stretches of land held by the Maasai less than 100 years ago. The attitude towards the land is that it is there to be used by the nation for the nation, and current emphasis on land productivity only serves to canonize the land-grabbing that is constantly taking place in many parts of Maasailand, both in

Kenya and Tanzania.

One of the major areas of Maasai vulnerability is in land tenure. This has now become more stabilized in Kenya than in Tanzania, where the Maasai have no official tenure to their lands. The two nations are admittedly different in this regard. The current erosion of land rights in Kenya is actually because the Maasai obtain title and then lease the land or even sell it. The Group Ranches were conceived as one way to prevent this sale by the Maasai and so to protect the resources. The Ranches have failed in this regard, and the Maasai are still losing land. Essential resources are becoming increasingly more inaccessible to them. The hopes that development planners had about the benefits for the Maasai from these two forms of livestock development have not materialised.

These projects among the Maasai have failed because they demonstrated weakness - generally in the direction of a need to move the Maasai too quickly into commercial beef production and away from dairy subsistence, and in the direction of seeing the land as an underproducing national resource which should be better utilized. Group Ranches did not correspond to the patterns of actual Maasai groups. The land demarcated all too often was inadequate for dry season pasturage, and the Maasai did not feel constrained to remain within the confines of the Ranches. In a certain sense, they felt little or no loyalty to the concept or to the reality.

Group Ranches still exist and are the major unit of land-holding in Kenyan Maasailand. The situation is rapidly changing and is perhaps leading to sub-division within the Group since the constituent members of the Ranches are not finding it possible to satisfy their grazing needs, especially during the dry season, utilizing the adjudicated resources.

Though Group Ranches and Ranching Associations are different development schemes, they do have similarities, e.g. in structure, and in having increased livestock sales as goals. However, historically they are different -- the Ranches were seen as a way to divide Maasailand into manageable units, the Associations were much more of a commercial operation. The projects failed basically because they did not correspond to what the Maasai and their way-of-life is all about, and this was an almost inevitable deficiency since they were drawn up by non-Maasai and virtually no Maasai were consulted in their preparation.

CHAPTER THREE - LAND, LIVESTOCK AND PEOPLE: SOME DEMOGRAPHIC CONSIDERATIONS

I. Introduction

An imbalance between the human population and the resources which support them gives rise to what scholars term "rural population pressure" (Anzagi and Bernard 1977). There are a number of factors which affect this balance between land, livestock and people in herder districts. One of the most important is that of land encroachment especially into high potential dry season grazing areas, i.e. those areas which are recognized as capable of bearing various types of agricultural crops. These are usually the areas which have good rainfall patterns and ones which the Maasai would normally resort to for dry season pasturage. This land encroachment has continued over a long period of time with various degrees of severity and levels of repercussion on the Maasai pastoral economy. (1)

A useful project which has not yet been attempted, would be a current inventory of Maasai lands, or put another way, a clear listing of the total amount of land lost by the Maasai to Ranches, farms, Development Centres, Projects, National Parks, Conservation Areas, administrative centres, missions, schools, clinics, industrial zones, airports, etc. Not surprisingly, there is little factual information available in either Kenya or Tanzania with regard to this rather important issue.

Another variable closely related to the land question is the actual livestock carrying capacity of the land available to the Maasai. The size and composition of herds is also important, as is the question of the implications of changes in herd structure for increasing either milk or beef production. Because the livestock production system functions first of all to support a given population of pastoralists, the existing and projected populations which have to be supported on a given amount of land with limited resources, are relevant and important to the discussion. In this chapter, I shall attempt to show that the available land base, shrunk as it has been up until now, will certainly not be capable of supporting the populations projected through 1990 into the year 2000 A.D. Some specialists are convinced that it would not be sufficient, even today, were it not for the fact that the Maasai, generally speaking, do not rely on animal products alone.

II. Land Resources: Encroachment

In terms of resource use, large scale land alienation has affected in the past, and will continue to affect adversely livestock productivity in the traditional pastoralist sector primarily by its effect on animal distribution and seasonal use. This has occurred through a reduction of the total available area, and therefore of livestock/land ratios, interference with traditional patterns of resource use, and alienation of key areas, the loss of which constrains resource use over a much

larger area. This latter is an effect which is quite disproportionate to the actual size of the areas alienated, e.g. highland reserves, water sources, etc. (cf. Peterson and Peterson 1980).

The Maasai traditionally control land as communal property and this means that the ultimate rights to the land are vested in some collective body. It does not mean that individual herdowners do not exercise "considerable right over particular tracts of land under particular circumstances or at particular times"(Bennett 1984:15). Beneath this system of communal use, all the pastoralists in East Africa have a highly complex and an adaptively changing system of customary usufruct rights concerning land at the local level. These invisible systems of tenure become visible, and often become the source of new disputes, "when new nations abrogate unwritten tenure rules, e.g. as in the nationalization of all agricultural land in Tanzania and the Sudan"(Bennett 1984:16). This became the case in both Kenya and Tanzania with the abrogation of the traditional tenure rights of the Maasai in favour of the governments and the "needs of the nation". I shall now briefly recapitulate the history of Maasailand relevant to a demonstration of how various losses have occurred.

A. The colonial and post-colonial periods

Maasailand originally stretched from central Kenya (including the highlands and the central Rift Valley floor) to Ugogo and Uhehe in central Tanzania (Arhem 1985a). They acquired this land by migration and by the assimilation of pastoral and non-pastoral peoples with whom they came in contact. However, with the passage of time this area has been reduced and today the Maasai occupy less than two thirds of their former territory (cf. Map 1). Although the actual amount of land lost is disputable, it is clear that what the Maasai have lost have been the wetter or higher potential areas and this loss, even though small in terms of total land area, has serious repercussions on the ability of the rest of the land to sustain the Maasai pastoralists.

The Kenya/Tanzania border cuts across Maasailand for 300 km from West of the Mara River to the eastern slopes of Mount Kilimanjaro. The process whereby the Kenyan Maasai were deprived of much of their best land and restricted to a diminished section of their land (called the Maasai Reserve) by the Treaties of 1904,1911 and 1912, is well documented elsewhere (Great Britain 1934a, 1934b; Huxley 1961; Mungeam 1966; Leys 1973; Campbell 1979; Sindiga 1984; Arhem 1985a, 1985b). In the "first Maasai move" of 1904, the Kenyan Maasai had been confined to 2 separate reserves: one to the south of the Kenya-Uganda railway, and the other to the north of the railway on the Laikipia Plateau. In 1911, these 2 reserves were combined into one extended Maasai Reserve in the southern Rift Valley - this was the "second Maasai

move". The Maasai lost land around Lakes Naivasha, Elementeita, Nakuru and Baringo, together with the grazing along the banks of the rivers flowing into them - areas which provided the dry season grazing for the Maasai herds in those districts (Sindiga 1984).

High potential, dry season pastures and water resources play an indispensable part in allowing the entire yearly cycle of Maasai transhumance. These are the areas for which there has been, and still is, the highest competition. The establishment of commercial ranches by colonial settlers, in these very areas, marked the beginnings of the expropriation of Maasailand, something that has continued over the years. As Galaty has pointed out, the colonial formation of commercial ranches, in the Rift Valley and in northern Tanzania, represented only the initial erosion of Maasai access to these areas - a process which is still continuing both in Kenya and in Tanzania.

> The regions of Ngong and Loitokitok contain well watered and fertile land and thus were obvious targets of agricultural expansion ... Maasai gained individual title, land values escalated, and appreciable land was sold to outside cultivators with greater market sophistication and awareness of the future value of those regions. Today, Kikuyu and Chagga control much of Loitokitok, effectively removing these regions from pastoral use, as well as from Maasai hands. Similarly, wheat schemes were formed on high potential lands in both Kajiado and Narok Districts, commercial ventures now dominated by agro-corporations which bring capital into the region, but at the expense of pastoralism (Galaty 1980:162).

Between 1911 and 1945, the Game Parks also began to take their toll of Maasailand, for example, the Nairobi National Park, the Tsavo West National Park, and the Amboseli reserve. By

independence, the "Maasai Reserve" had been divided into the two districts of Narok (16,115 sq.km.) and Kajiado (19,605 sq.km.). These two areas comprise the land currently available to the Maasai - a reputed total of 35,720 sq. km. (1979 Census, Central Bureau of Statistics, Kenya 1981). It is a "reputed" figure because land is still being sold, rented, leased, or absorbed by agriculturalists and this figure of 35,720 sq.km. obviously over-represents the real amount of land actually available to and being used by Maasai pastoralists.

After Kenya's independence, many government officials, who were invariably non-Maasai, cleared areas within the pastoralist zones and invited their relatives to join them. This encroachment especially affected the wetter areas around the Ngong Hills and the slopes of Mount Kilimanjaro (Mbithi and Wisner 1972). The Maasai and non-Maasai composition of the two districts of Narok and Kajiado may be ascertained from an examination of the figures for Kikuyu migrants in the districts. Between 1962 and 1969 the Kikuyu constituted 53.6 and 44.9 per cent of all immigrants in the two areas respectively (Rempel,1974; Migot-Adholla,1981). The proportion of the total population in Kajiado District counted as Maasai had decreased from 78%, in 1962, to 62.8% in 1979, and this despite an increase of the Maasai population by 75% (Kenya 1981; Evangelou,1984).

The Tanzanian Maasai also have a long history of land losses. By the beginning of the seventeenth century the Maasai were occupying the Serengeti Plains and the Ngorongoro Crater and the

surrounding area. By the 1930s they had lost some of their lands including one of their most sacred areas, oldoinyo loo'lmoruak, the hill upon which some of the age-set ceremonies normally took place (the olng'esher ceremony). This land was alienated (under Farm 312, which was then in Monduli District) as a way of containing the Maasai, and preventing them from coming into direct contact with the white settlers;

> the Maasai being no respectors of land rights, there was always the possibility of friction and trouble arising. (File 17/3, Tanzanian National Archives)

In 1931, when the Administrative Officer of northern Maasailand appealed, on their behalf, for the return of this land sacred to the Maasai, the negative reply of the District Officer, Moshi, was both unequivocal and revealing:

> (I)s it sound and right that they should be given land ... which can be put to greater economic use by Europeans, for no better reasons than the preservation of barbaric customs; which should in my humble opinion be persistently, steadily, and gradually discouraged ....No, for the sake of the Maasai, peace and tranquility, let us keep the Maasai where they are. We cannot establish good ground for resisting the alienation of these farms. (TNA 17/3 quoted in Ndagala 1978:225)

An interesting observation made in 1942, by the Chief Secretary to the Legislative Council concerned the fact that in Maasailand (59,570 sq. km.):

> a large proportion of the area is unusable for other than pastoral purposes, owing to the unreliability of the rainfall, and for the same reason the bulk of the highlands included form an essential reserve of grazing for periods of drought....In Government's opinion, the Maasai make the fullest economic use of the land ... and would not, in the conditions which prevail, be able permanently to maintain their present herds on an appreciably lesser area. (File 23075,TNA)

This was an enlightened comment about the relationship between the Maasai herds and the amount of land needed to maintain a subsistence production system. (2) However, in spite of this comment, even further alienation had taken place by 1949 - Monduli Mountain ridge, as well as Mount Landekenya, the Sanya Corridor, five farms at Olmolog (an important dry season grazing area), and the whole of the Oljoro area. In other areas of Tanzania, like the Sinya, Ngare, Nanyuki and Longido plains, where they lost their dry season reserves in the highlands around Mount Meru and Mount Kilimanjaro, the Maasai were forced to settle in the low potential areas which were normally only used for wet season grazing. The Maasai even lost some lower potential areas in what is presently Arumeru District, including Oljoro, Kisongo and Oldonyo Sambu (Parkipuny 1975, Peterson and Peterson 1980). As Arhem has pointed out:

> In order to compensate the Maasai for the heavy losses of land and to remedy some of the disastrous effects of the new land policies, the Maasai Development Plan was launched in 1950. The aim of the programme was to modernize the traditional pastoral economy by providing improved services - pipelines, dams and boreholes - and by combating the tse-tse. The programme collapsed in 1955. Its most lasting effect was a notable resource depletion (Arhem 1985a:35).

Arusha Region, in Tanzania, comprises 82,423 sq.km. of which 59,782 sq.km. are grazing lands in the three predominantly Maasai districts, and 4,135.7 sq.km. (5% of the total land in the Region) are classed as agricultural land (Arusha Region Today:1981). There are six districts in the Region, three of which are pastoral and three are mixed-farming. The three pastoral districts of Monduli, Kiteto, and Ngorongoro, do not

represent the total area which the Maasai had occupied prior to colonialism or independence. Their land in Tanzania has been greatly reduced - largely as a result of the encroachment of agricultural groups, the National Game Parks, and the land given over to local government installations and local administration settlements which effectively are villages made up of non-Maasai civil servants. These villagers have proceeded to develop agriculture in the vicinity of their centres, for example, at Monduli, Kibaya, Kijungu, Loliondo, Wasso, Simanjiro, and Malambo.

By 1967, there were 106,900 people living in Tanzanian Maasailand of whom 78,000 (or 72.96%) were Maasai (Ndagala 1978). This meant that 27% of the total population were non-Maasai. The 1978 populations for the three pastoral districts were as follows: Kiteto - 59,800 (of which 4.4% were urban); Monduli - 68,900 (of which 3.3% were urban); and Ngorongoro - 47,000 (none of whom were urban). It is not easy to ascertain ethnic differences in population groups in Tanzania since the National Census deliberately does not set out to gather such "divisive" or "differentiating" information. Regardless of the actual ethnic mix in the districts, it is estimated that the land resources available to the Maasai per caput, in 1964, were approximately four times greater in Tanzania than in Kenya. (Hoben 1976: 17). However, the grazing land in Kenya, though smaller, is probably of higher potential than that of Tanzania. It remains to be seen in the future, whether or not the Maasai of Tanzania will be in a stronger position than the Kenyan Maasai in terms of the

viability of their way of life - since future viability is closely related to the availability of resources. The major problem for the Maasai of Tanzania is to secure their land boundaries and to obtain some form of legal land tenure.

B. Encroachment and the pastoral production system

Unusually for pastoralists, the Maasai in both Kenya and Tanzania do have land that can be used profitably for agriculture. Though such small portions of their total land might prove, in the long run, to be more productive as farm land than as grass and browse for livestock, the taking out of pastoral use of these small areas may have very deleterious effects on the use of the much larger range available to the people (Goldschmidt 1979; Jacobs 1973).

Allan Hoben's comment sums up the plight of the Maasai in both countries in terms of the continuing reduction of rangeland resources available to them which has

> created increasing ecological stress and set in motion a process of environmental degradation that has altered their herding systems and diet, and threatens them with a slowly accelerating descent into absolute poverty (Hoben 1976:15).

This comment was made ten years ago, and the "threat" has accelerated as the demographic pressures for land have increased. The continuing reduction in the available resources (especially, dry season resources) per person, together with the resultant

degradation of the environment because of this dwindling base and the increase in the human and herd populations, is one of the major problems facing the Maasai today, and is crucial to any understanding of development efforts among these pastoralists. Hoben has noted that once the available pasture per livestock unit decreases, herd quality follows suit and families living near the subsistence level are forced to augment the number of their livestock in order to obtain the same level of production,"not out of misplaced sentiments but because of the hard realities of their situation" (Hoben 1979 quoted in Sena,1984:5).

Jacobs has made the very important point that it is not necessarily agricultural encroachment per se which is the real threat to potential land loss and degradation in Maasailand, but rather it is the encroachment of the mixed farming communities that pose the greatest threat to the land (Jacobs 1978). This is because of the high concentrations of livestock in confined areas, and especially on hillsides and the sides of valleys. These concentrations result in over-grazing and the sloughing of the top-soil. Eventually these processes lead to soil degradation and erosion. These negative effects of "mixed farming" communities' grazing patterns were also reported by Homewood and Rodgers (1984). The degradation caused by this mixed farming is certainly borne out by both the maps and the figures presented in the report of Ecosystems Ltd. to the Tanzanian Government,'Livestock, Wildlife and Land Use Survey, Arusha Region, Tanzania'(1980).

> Soil erosion is widespread, especially in the heavily settled, central parts of the Region. The south of the Region is relatively free from erosion.... The densities of mabati (Swahili for corrugated iron) and thatched houses are strongly associated with the heavily eroded areas (Ecosystems, Ltd. 1980:32).

Evidence based on the history and pattern of desertification in the Sahelian region suggests that agricultural expansion into marginal areas, specifically the pastoral agricultural transition zone, increases the vulnerability of both groups in periods of drought (Jacobs 1978; Campbell 1979a, 1984).

The areas into which subsistence and mixed farms and larger commercial operations have expanded, and continue to expand, are not empty unused lands. They are the homelands of pastoral people and include their grazing areas, watering places, and human settlements. When agriculturalists move into these areas:

> Both groups compete for land, and the range deteriorates because of overgrazing by the herds kept by the sedentary agriculturalists. Range deterioration in the dry season endangers the collapse of livestock systems and causes crop failure. The ensuing decrease in productivity, coupled with the continued population growth, leads to movement into new areas, which are again marginal for crop cultivation, and the cycle spirals deeper and deeper (Arusha Region Today:1981:12).

This "vicious circle" has become more of a reality in the Maasai areas since independence (in both Kenya and Tanzania) and is still continuing as more and more agriculturalists seek land. This unrestricted agricultural expansion into grazing areas adversely affects the land-use practices of the pastoralists already living there.

C. Large-scale commercial enterprises

As we have already noted, there is not a great deal of information available on the actual amounts of land in Kenya which have been taken over since independence, and which are still being taken over, for large scale commercial enterprises such as wheat schemes, dairy farming, etc. One of the difficulties is that a number of individual Maasai, and even groups of Maasai, are involved in land transactions where the land is hired out, leased or sold outright to various farmers or land speculators (Campbell and Migot-Adhola 1979). In this way, the land is often being divided up for purposes other than pastoralism, e.g. the large wheat schemes of Narok. Sindiga (1984) has reported that the Kenya Government is committed to arable farming in the high potential land in western Narok district and the adjoining areas (Kenya 1979).

> When the planned Narok Agricultural Development project is completed, some 320,000 hectares of land will be brought into commercial farming use. The project will also open up 13,000 hectares of new land for wheat and barley production. Virtually all the high potential land in Narok district will be covered in this program.
>
> Cultivation in Narok appears to be profitable and will likely increase in acreage in the years ahead, but it should be noted that land adjudication in Maasailand has created a real estate market with a potential to further reduce the dry season herding resources, interfere with seasonal movement of stock, and even turn some Maasai into a landless class. Already the role of the Maasai in wheat production is often that of leasing the land to individuals or group ranches or to complete outsiders.

In Tanzania, the pastoral lands alienated for various large scale agricultural production during the colonial period include the highland reserves on West Kilimanjaro (where 16,000 Ha. of

land was adjudicated as farm land - and thus lost to the Maasai); the slopes of Mt. Meru; tracts on Monduli, Lepurko and Essimingor Mountains; as well as the lower potential areas in what is presently Arumeru District, including Oljoro, Kisongo, and Oldonyo Sambu (Peterson and Peterson 1980). Alienation of pasture has also occurred through large leases granted for seed-bean and wheat farming. A typical example of these large commercial leases was the one granted for a private cattle ranch straddling sections within the two Maasai "grazing" districts of Monduli and Kiteto. This was earmarked to take up 153,783 ha. (380,000 acres) of prime wet season grazing-land, and took away land from the people of Mboret, Loibor Sirret and Kipilondo. It also took away the traditional wet season grazing lands at Ngaserai. This whole plan had been arranged without any consultation with the Maasai elders within the two Districts and only came to light when the parties concerned attempted to obtain even further land leases near Soit Sambu and Loliondo (Peterson and Peterson 1980). This second land grabbing attempt failed. (3)

D. Wildlife and encroachment

In addition to white settlers and farmers, the encroachment of the Wildlife Sanctuaries has alienated vast stretches of land from the Maasai. The wildlife sanctuaries within Kenya have been responsible for taking away extensive sections of land from the Maasai of that country. In 1945, the Nairobi National Park was gazetted and this land was lost to the Maasai; then, in 1948, Tsavo West National Park on the eastern boundary of Loitokitok

Division in Kenya was also gazetted and the Chyulu Hills and Amboseli areas were all designated as Reserves.(4) These moves particularly concerned and annoyed the Maasai because a number of very important watering points were enclosed within the Park's areas. The Maasai, even though they had access to the Reserves, were gradually denied access to the water and grazing resources of the Tsavo National Park. During the major drought in 1948, the Maasai were permitted to water their livestock in the Park (Kenya 1949), but when they repeated the request during the dry period in 1953 they were told that they could water their animals only if they paid a fee. Needless to say, the Maasai did not avail themselves of the 'opportunity'. In 1974, the Amboseli was gazetted as a National Reserve, and the Maasai were excluded from it a few years later, in 1977, when it became a National Park (Campbell 1979a, 1979b).

Tanzanian Maasailand is comprised of the three pastoralists' districts in the Region of Arusha. This part of Maasailand also suffered land losses in favour of the wild animals: there are 3 National Parks (from which the Maasai have been excluded) which cover 2% of the Region, and there are 13 Game Controlled Areas covering 46% of the Region, and there is the Ngorongoro Conservation Area, which covers a further 8% of the Region.(5) This means that 56% of Arusha Region has been set aside for wild animals. But one half of the world-renowned plains actually lie outside the Parks (especially the Serengeti). This massive concentration of millions of wild ungulates spends, on average, six months of the rainy season every year outside the boundaries

of the Park sharing rangeland resources with the domestic herds of the Maasai (Parkipuny 1983).

Ecosystems Ltd. (1980) put the number of migratory ungulates at over 3 million, of which the wildebeest population is approximately 2 million, increasing at the rate of 14% per annum.(6) The presence of these animals outside the Park gives rise to a grazing problem because of the limitations on pasture and because of the danger to the Maasai herds of developing bovine malignant catarrh which is related to the pastures used by these gnu during their calving season. Unfortunately, these animals calve outside the borders of the Park and this means that the Maasai cannot use these open range pastures for some months because of the danger of disease to their cattle. The Maasai had to move from an area 1000 kilometres square on the eastern boundary of the Serengeti because the wildebeest changed their migration patterns - South of Loliondo - during the period 1969-80.

The presence and the migratory habits of these wild animals are important factors in the land issue for the Maasai of both countries since there is competition for grazing between the wild and the domestic animals. Nairobi National Park (7) covers an area of 117 sq.km. and yet wild herds "continually use land outside the Park" (Thresher 1973:2) and seasonally migrate over an area covering more than 2000 sq. km. This means that even the land which is nominally or officially available to the Maasai is not always available in reality. This factor is very

important in the question of the total livestock carrying capacity of the districts under our attention. One of the recommendations of the Devres Report (1979) was to encourage research to determine the extent and the full effect of wildlife grazing on rangelands; their competitive use of feed and water, and the extent to which they are responsible for the transmission of diseases.

A major difference between the present situation facing the Maasai, and that which they had to face in the past, lies in the fact that the Maasai have now been squeezed into smaller areas and they are unable to graze in what were formally their traditional dry season pastures. These have been taken over by agro-pastoralists, wild-life sanctuaries, conservation areas, etc. This means that the livestock and human capacities have been dramatically reduced as a result of the reduced land base. Not only has the land resource been diminished, but also the actual land left for pastoral use is of an quality inferior to the land which has been expropriated.

III. The Seasonal Livestock Capacity of the Land: Wet/Dry Season Pasturage

We have looked at the amount of land available to the Maasai, in general. Now, taking Kajiado District as a sample of one of the five Maasai districts, I shall attempt to show that by the year 2000 A.D. the district will not be able to support its projected populations of animals and people, even at a

subsistence level, under present ecological conditions. This state of affairs will be exacerbated and hastened if there is any further loss of land and water resources from the pastoralists' holdings. In fact, I shall use the 1979 Census figures to show that theoretically and statistically it should not be able to support even the present population (and probably would not be able to do so if it were not for the fact that the Maasai are relying more and more on a non-pastoral diet).

The critical variable by which resource sustainability is usually measured is "carrying capacity" which is the measure of the capacity of the land to support livestock. To project carrying capacity is somewhat risky: for one thing, it assumes that technology will remain stable. Second, we must distinguish seasonal and micro-regional variations in carrying capacity. If we relied only on the annual average livestock carrying capacity then it would fail to show the most important aspects of the semi-arid grazing environment, namely the major seasonal differences in available resources.

According to "ecozones", as commonly defined by Kenya land-use analysts (Pratt and Gwynne 1978, Campbell 1978, Campbell and Mbugua 1978) the country may be divided into a number of eco-climatic zones:

Climatic zone I = Afro-Alpine climate (high altitude)
Climatic zone II = Tropical climate; humid to dry sub-humid
Climatic zone III = Dry sub-humid to semi-arid
Climatic zone IV = Semi-arid

Climatic zone V = Arid

Climatic zone VI = Very arid

(Source: Pratt and Gwynne 1978:44)

Table 1 shows the percentage of land in Kajiado District according to ecozone, the number of hectares required per Standard Stock Unit, and the maximum number of Standard Stock Units (SSU) each ecozone can carry.

Table 1. Total hectares in each ecozone; the percentage of each ecozone; the number of hectares required per Standard Stock Unit by ecozone; and the carrying capacity of each ecozone in Kajiado District (in SSU)

Eco-zone	Total hectares (a)	% of land in the Dt. (b)	Ha. required per SSU (c)	Maximum SSU able to be carried (d)
II	22,050	1	0.8	24,699
III	13,900	1	1.6	13,125
IV	783,072	36	4.0	186,000
V	1,390,578	62	12.0	105,900
Total	2,209,600	100		329,724

Source: own compilation after

(a) Campbell (1978)

(b) and (d) Kenya, Ministry of Economic Planning and Community Affairs, 1979, Appendix X, Table 6.

(c) Pratt and Gwynne (1978)

One Standard Stock Unit = 450 kg.liveweight
= 2 Zebu cattle.

Because ecozones II and III comprise only 2% of the land in the district, I shall omit these zones from the Tables and the discussions on the following pages. It should make it easier for

the presentation of the material and for the discussion if we restrict ourselves to ecozones IV and V (which comprise 98% of the land in the District). This is also more realistic since much of the good land in ecozones II and III has already been lost by the Maasai. However, these two areas of high potential land should not be left out of the reckoning completely since they do include 11.5% of the carrying capacity of the district, and their importance is increased during the dry season and during drought.

The capacity of a pastoral area to support human beings is primarily a function of the productive capacity of the land itself, together with other factors such as the rainfall during particular seasons, the milk yield capabilities of the animals being grazed, etc. To be able to discuss the Maasai future, we need to calculate as closely as possible the actual livestock capacity of the amount of land in question (in terms of the number of animals, male and female, young and old); its varied capacity depending on the seasons; the particular ecozone in which it is classed; the productivity of cows at different seasons; and thus the number of people that this amount of land is able to provide food for in those various seasons. To do this we shall look at different calculations:

The first calculation is that presented by the Kenya Government itself (cf. Table 1) - that the carrying capacity of ecozones IV and V is 291,900 Standard Stock Units (Kenya 1979).

The second calculation is based on Pratt's estimates (Table 3) for the annual livestock capacity of the two ecozones in Kenya (Pratt and Gwynne 1978). One conclusion to be drawn from Pratt's figures is that zones IV and IV together have an annual livestock capacity of 311,649 SSU (which is not much greater than the Government's figure of 291,000 SSU).

In contrast to the preceding figures computed as annual livestock capacities, Campbell argues (1979b) that the different livestock capacities of wet and dry seasons are critical to any discussion of human support capacities. The dry season is the critical constraint that has to be taken into account in any meaningful analysis of the livestock capacity on a seasonal basis. Again, if we restrict ourselves to Kajiado District as a case study area, then there is, approximately, a half year of rainy weather, and a half year which may be regarded as dry (Norton-Griffiths 1977). Thus, a better and more reliable concept would be that of the "seasonal livestock capacity" (utilizing only zones IV and V) - 219,613 SSU during the dry season and 544,991 SSU during the rainy season (Campbell 1979b:3). We shall return to a discussion of the significance of these differences shortly.

It is also not sufficient merely to regard the district as a unit only capable of being divided according to the eco-climatic zones. There are variations within the district in terms of the zones and their geographical positioning. Therefore, following Campbell, we can further divide Kajiado District into three

separate areas - West, North, and South - because these three contain the ecozones in different proportions and therefore have different livestock capacities at different times of the year. The northern part of the district has no good grazing land (zones II and III) and has a large proportion of arid and semi-arid land (zones IV and V). Similarly, the southern part of the district has very little good grazing (zones II and III) but a very large area of arid land (zone V). These differences stand out clearly in the livestock capacities for the geographical areas and their respective ecozones (Table 2).

TABLE 2. Annual livestock capacity by Unit and Ecozone, District of Kajiado (in Std. Stock Units)

Unit		IV	V	(all zones)
West		84450	43217	156105
North		72275	21017	93292
South		39043	51648	98504
District	(a)	195768	115882	347901
	(b)	(186000)	(105900)	(329724)

Source: (a) Pratt and Gwynne, 1978:43.

(b) The figures in brackets are the maximum number of SSU supportable in each ecozone, according to the Report of the Ministry of Economic Planning and Community Affairs, 1979, Appendix X, Table 6.

We can now bring together some of the concepts we have encountered and begin to see the total environmental picture emerging. (Table 3) These figures presume that all the land is accessible and productive. In the seven years since they were drawn up, even more land has been lost to various enterprises, wheat schemes, peri-urban encroachment, etc. According to Pratt (1968) zone IV requires 14.0 ha.per person (in terms of the relationship between the cattle needed per person and the amount of land available) i.e. 4 ha. per SSU x 3.5 SSU per person = 14 ha. per person. But zone V requires 48.0 ha. per person i.e. 12 ha. per SSU x 4 SSU per person. These figures would refer to situations where the people involved would be relying solely upon livestock products. We can estimate from the known size of each zone what each one can support by way of animals and humans. Zone IV is 783,072 ha. and zone V is 1,390,578 ha. and if we divide these figures by the number of hectares per SSU then we obtain the average livestock capacity of the zones: Zone IV = 195,768 SSU and Zone V = 115,881 SSU. (Cf.Tables 3 and 4) We can also estimate that zone IV can support a maximum of 55,933 people and zone V can support 28,970 people. There is a discrepancy of 19,749 SSU between the figures arrived at by the Kenya Government (186,000 SSU and 105,900 SSU) and those of Campbell (195,768 SSU and 115,881 SSU). These two sets of figures were arrived at from independent measurements and this may account for the differences shown.

TABLE 3. Relationship between ecological zone, livestock capacity and maximum population density under subsistence pastoralism(Kajiado District)

	Ecoclimatic Zones	
	IV	V
Ha. required per SSU	4.0	12.0
Maximum number of SSU which can be supported (a)	195,768 SSU	115,881 SSU
Ha. required per head of population	14.0	48.0
SSU required to support 1 head of population	3.5	4.0
Maximum population which can be supported	55,933	28,970

Source: Own compilation after Pratt and Gwynne 1978:43.

(a) Figures obtained by dividing the total number of hectares in each ecozone by the number of hectares required per SSU.

The figures in the Table presume that all the land is accessible and productive; if actual population density under subsistence pastoralism even approaches these estimates of Pratt and Gwynne then serious overpopulation is indicated. Higher populations may only be supported if the pastoralists derive a substantial part of their subsistence from vegetable foods, collected, grown or obtained in exchange for livestock or dairy products (cf. Pratt and Gwynne 1978:43). The maximum population which can be supported under subsistence pastoralism conditions, according to the Table, is 84,903. This figure has already been exceeded, according to the 1979 Census, and six years ago stood at 93,560 Maasai in the District.

The actual calculation of excess capacity, or "capacity deficit", is based upon the measure of carrying capacity which indicates the average annual capacity to support livestock. In semi-arid areas which have seasonal rainfall patterns it may be more appropriate to calculate the seasonal livestock capacity as a measure of the seasonal ability of areas with different potential to support livestock.

> Such a measure reflects the seasonal adjustments of the livestock distribution by the Maasai herders in response to seasonal differences in the availability of pasture and particularly water (Campbell 1979b:9).

Table 4 presents the two capacities (annual and seasonal) and gives some indication of the differences in terms of hectares required per SSU between the figures for the two major ecozones IV and V which together contain approximately 98% of the total land in the district.

TABLE 4. Comparison between the number of hectares required per SSU according to the annual livestock capacity and seasonal livestock capacity (Kajiado District)

Hectares per Standard Stock Unit			
	------- livestock capacity----------		
Zone	Annually	Wet Season	Dry Season
IV	4.0	2.5	5.5
V	12.0	6.0	18.0

Source: own compilation
after Pratt and Gwynne (1978)
Evangelou (1984) and
Campbell (1979b).

In zone V, 18 hectares are needed per SSU during the dry season as opposed to 6 hectares per SSU during the wet season. Such a difference is of considerable importance when one is attempting to ascertain the numbers of animals that may be supported in a particular area during each season. The carrying capacity concept would only indicate 12 hectares per SSU, whereas, in reality, a further 6 ha. per SSU would be needed during the dry season shortages, and 6 ha. less (than the 12 ha.) during the wet season.

However, if we take our analysis further, following

Campbell's notion of the seasonal livestock capacity, then it is interesting to compare the two different seasonal livestock capacities by unit and by zone and this gives a different idea of the total annual livestock capacity of the district. The figures are obtained by dividing the total number of hectares in each zone by the different totals for the wet and dry season livestock capacities (cf. Table 4). This new data is presented in Table 5.

TABLE 5. Wet and dry season livestock capacity by zone and by geographical area (in SSU), Kajiado District.

	Zone IV Season		Zone V Season	
	WET	DRY	WET	DRY
West	135,120	61,418	86,433	28,811
North	115,640	52,564	42,033	14,011
South	62,469	28,395	103,296	34,432
District	313,229	142,377	231,762	77,254

Source: Own compilation after Campbell 1979b.

Table 5 indicates the seasonal livestock capacity of Kajiado District and shows that the dry season livestock capacity is lower than the wet season livestock capacity and much lower than the annual livestock capacity (shown in Table 2). This dry

season livestock capacity is a strong limiting factor to any form of development that may be envisaged in the district. A comparison of the two types of capacity under different grazing situations is given below in Table 6. According to Campbell (1979b) the dry season capacity for zone II is 36,750 SSU, and zone III is 11,583 SSU.

TABLE 6. Comparison of the annual livestock capacity (all zones), with the total dry season livestock capacity (zones IV and V), Kajiado District

Total annual livestock capacity (in SSU)	Total dry season livestock capacity (in SSU)
All Zones grazed	Zones IV and V only grazed
West = 156,105	West = 90,229
North = 93,292	North = 66,575
South = 98,504	South = 62,827
District 347,901	219,631

Source: Own compilation after Campbell 1979b, Pratt and Gwynne 1978.

Even if the other two Ecozones (II and III) were to be added to the above figures, they would only increase it by approximately 48,333 SSU. In other words, this would still only give a total

seasonal livestock capacity of 267,964 SSU (219,631 + 48,333 SSU) for all zones and this is considerably less than the more commonly presented carrying capacity figure of 347,901 SSU.

If the land in ecozone II is not available to the pastoralists then an estimate of 231,214 SSU is the highest that can be supported during the dry season in Kajiado District (West = 101,812 SSU; North = 66,575 SSU; South = 62,827 SSU) since the inclusion of zone III to our reckoning does not add any more grazing capacity for the north and the south. This is a decrease of 13.7% from the 267,964 SSU that could be grazed if zone II were to be available to them (Campbell 1979). At a ratio of 1 head of cattle to 1.3 shoats (Campbell's survey of Kajiado District 1977) and assuming that 1 SSU is equivalent to 2 cattle and 20 shoats, then 231,214 SSU is equivalent to 367,000 cattle and 954,000 shoats.

Evangelou (1984:31) has demonstrated from Kenya Government sources that Kajiado District will only support a total of 329,724 Standard Stock Units. This is a lower figure than the one presented by Campbell, but both are in excess of the <u>real</u> figure supportable on available range grazing during a <u>regular dry season</u> in the district - 219,631 SSU.

Basing ourselves upon the figures presented in Table 1 we can now draw some conclusions about Kajiado District from the different figures and assumptions (by dividing the total hectares in each zone by the number of hectares required per SSU):

1. The Kenya Government:

annual livestock capacity (IV and V) = 291,900 SSU

2. Pratt and Gwynne:

annual livestock capacity (IV and V) = 311,650 SSU

3. All zones grazed (II - V):

annual livestock capacity = 347,901 SSU

All zones grazed:

(dry season) livestock capacity = 267,964 SSU

4. Campbell:

wet season livestock capacity (IV and V) = 544,991 SSU

dry season livestock capacity (IV and V) = 219,631 SSU

This would still mean that the dry season livestock capacity is just half that of the wet season capacity (if only ecozones IV and V are grazed). These are important differences in terms of numbers, in terms of what is implied by annual livestock capacity as opposed to the seasonal livestock capacity, and in terms of what number of animals the land can support over the course of the two seasons. The figures also demonstrate the inadequacy of the Government figures which do not take into account the dry season paucity of grazing. We should also bear in mind here our observations on the amount of land used during the migrations of the wildebeest in Kenya, seriously limiting the amount of usable grazing left to Maasai herds in competition with the wild ungulates. Unfortunately, the wild animals have an advantage over the cattle insofar as their calving grounds have to be left ungrazed due to the presence of the wildebeests' discarded placenta. In the next section we shall look at the actual

livestock population of the District.

IV. The Livestock Population

The East African short-horned Zebu forms the mainstay of the pastoral Maasai livestock holdings. This breed is renowned for its longevity, hardiness, sturdiness, and adaptability to arduous semi-arid range conditions. Its qualities are measured in terms of its ability to trek long distances, survive on meagre food and little water, and its resistance to high temperatures and to tropical diseases. As a breed the Zebu is probably the most suitable for the range conditions with which it has to contend in Kenya and Tanzania. It is also accepted by the Maasai as the animal most suitable for their subsistence economy, i.e. where low productivity is an accepted norm weighed against all the other environmental factors. These animals are kept for milk production since fresh or curdled cow's milk forms the bulk of the Maasai pastoralists' diet. (8) Unfortunately, the milk yield is low. The Zebu has a low genetic potential for high rates of weight gain and early maturity, important elements of high productivity in livestock production (Parkipuny 1975). This low genetic capability ceiling has led to efforts to improve the breed. Presumably, higher milk yields, higher fertility rates, and higher slaughter weights would help subsistence as well.

Cows are rarely slaughtered (except old and barren ones which are used for sale, trade, and slaughtering). Steers were

traditionally raised mainly for communal ceremonial feasts. Three methods of cutting down the size of the herd are practised - sale, trade and slaughter. The Kenya, Central Bureau of Statistics, 1979 census, set the figures for the District at 600,000 to 650,000 cattle and 701,000 small stock. Meadows and White estimated the number for 1978 as being 547,000 - which is reasonably similar to the above figures. This indicates that already the livestock capacity had been exceeded in the district for the dry season grazing areas. by approximately 430,370 head of cattle alone, not counting the further 701,000 small stock in the District. Figures for the annual sales offtake rate among the Maasai herders of the Ngorongoro Conservation Area (as one example of the Maasai practice) have recently been calculated at about 8% (Homewood and Rodgers,1984).

We have seen the annual livestock capacity and the seasonal livestock capacity of the land available to the Maasaiin Kajiado District, and now we shall look more closely at the size and the composition of the Maasai herds. Later, we shall look at the human populations supported by the land and the livestock. This statistical comparison should underline the argument that the Maasai livestock and human populations cannot be adequately supported on the diminished (and still diminishing) land base left to them under present technology.

A. The size of the herd

The principal unit for the management of the herds among the Maasai is the homestead enkang' consisting of a man and his wives and children. These homesteads, inkang'itie, often join together for any of a number of economic, or social reasons to form what is referred to as a boma (the more widely used Swahili word for the multi-homestead encampment). This is a collection of homesteads surrounding the principal cattle kraal or corral. Each boma may consist of 6-8 families, i.e. some 30 to 80 persons. In a favourable locality with available water and grazing there may be up to 20 of these bomas. Using the ratio of 3 SSU per person (Pratt and Gwynne 1978:38) such a locality might have up to 4,800 SSU. This number would vary according to the severity of the climate, more being needed in semi-desert areas, (3.5 SSU to 4.0 SSU), and less in areas of high rainfall and regular milk supply (2.0 SSU to 2.5 SSU) (Pratt and Gwynne 1978).

The actual size (and composition) of pastoralists' herds, in East Africa, has been well researched and documented by numerous scholars (notably Spooner 1973; Baker 1976, Dahl and Hjort 1976, Pratt and Gwynne 1978, Dyson Hudson and Dyson Hudson 1982, Behnke 1983, King et al. 1984). According to Spooner,

> (the) ability of the herdsman to control the animals in any given topographical situation is a major factor determining the maximum size of the herd. The requirements of the family or other grouping that subsists from the herd are a factor determining the herd's minimum size (1973:9).

Thus the maximum size refers to the effective management of herds, whereas the minimum size pertains to livelihood. The "minimum size" of the herd depends on dimensions of non-pastoral activities and incomes, in many cases, and is also, therefore, of a variable character (Khazanov 1984). Herd size varies from family to family, and estimates of the total cattle population are invariably inaccurate from one year to the next. Twenty five years ago, a sample of Kisongo Maasai possessed on average, 14 head of cattle per person; a typical family of 8-10 persons owned 125-140 head of cattle, of which 57-60% were adult milch cows (Jacobs 1975).

"Shoats" are kept mainly for meat, not milk, and for trading off to acquire more cattle. A typical family of 8-10 persons might have an average of between 150 and 120 shoats. Dahl and Hjort (1976) consider the minimum herd size for the "reference family" as a cattle herd of 50-60 head, or 28 camels, or more than 100 head of sheep and goats, assuming total subsistence on animal products.

V. The Human Population

The next step in hypothesizing whether present Maasai pastoralists and their descendants can continue a viable life on the rangelands must come from an estimation of how many people can be supported by existing herds. Then we can begin to discuss the gap between the potential human support capacity and actual

numbers of people presently or projected to be in the rangelands.

The 1969 Kenya Census figures were the basis for the population projections and development strategies of the Kenya Government and various development agencies during the 1970s. What is interesting is that some government documents, for example, Kajiado District Assessment Report 1980, were still basing themselves on the 1969 Census figures, even though the projections contained there for the year 2000 had almost been reached already. Due cognizance of the actual 1979 figures would seem to be essential prerequisites for future development programmes for the Maasai. The 1979 census' figures only became available in 1981, and these showed alarmingly that the projections for 1980 based on the 1969 figures had been exceeded. In fact, the actual figures for 1979 have almost reached the projections made for the year 2000 AD and thus these figures identify new demographic pressures. Population projections were based on an annual rate of increase of 2.2% p.a. for pastoralists and 3.3% p.a. for farmers (Schaffer of the African Medical and Research Foundation, Nairobi cited in Campbell 1979b). There has been great in-migration of farmers into the Maasai District (Campbell 1979b) and therefore 7000 Adult Equivalent farmers had been included in base population projections for 1980 (this was to allow for the increase in the population from sources other than the population increase by birth-rates alone, i.e. the 2.2% and 3.3% increases). (Table 7)

TABLE 7. Maasai population projected to the years 1980, 1990, and 2000 AD.

(Kajiado District)

Unit	1980	1990	2000
West	25858	32144	39958
North	24478	30429	37827
South	17467	21713	26992
District	67803	84286	104777
	(62927)	(78225)	(97242)

Source: Campbell 1979b.

The figures in brackets are projections from Kenya, Ministry of Economic Planning and Community Affairs, 1979,Appendix X, Table 3, are in Adult Equivalents and are based on the 1969 Census.

Rate of population increase assumed to be 2.2% p.a.

Units expressed in adult equivalents (AE).

One adult = 1 AE; one child = 0.67 AE

If we accept a growth rate of 3.3 per annum among the subsistence agriculturalists, and if we further assume that the average farm size is about 3.5 ha., then there will be a shortage of land for the projected agricultural population as well as for the Maasai pastoralists.(9)

The Central Bureau of Statistics (1981) gives the actual

District figure for 1979 as being 149,005. This represented an increase of 73.5% over the 1969 figure, and a growth rate of 5.66% p.a. (Kenya Population Census 1979, Volume I, 1981). The Maasai numbered 93,560 AE (62.8% of the total population) and the non-Maasai 55,445 AE (37.2%) of the total population.

There is a startling difference of 49,423 AE between the comfortable prediction of Campbell and the number recorded by the 1979 Census. There is an even greater difference between the Kenya Government's projection for the year 1980 and the real figure - a discrepancy of 55,086 AE. The figures projected for the year 2000 AD have almost been achieved already - 20 years ahead of time. The actual rate of increase (currently at more than 73% of the total population over the ten year period since the last 1969 Census) for whatever reason, will present difficulties in the coming years in terms of the available resources and the rapidity of the exhaustion of those resources. This figure of 73% means that the population of the District is almost doubling itself every ten years - rather than after the expected twenty years. This is particularly so in the northern part of the District which includes Kaputiei, Ildamat, Dalalekutuk, Purko and Matapato. Campbell's population prediction for these areas for 1980 was 24,478 and his prediction for the northern area for the year 2000 AD was 37,827. This latter figure had almost been reached by 1979 when it was 36,477 (Kenya 1981). The Kenya Government's predictions for 1979 based on the 1969 census were also wide of the mark. These projections for 1980 for the District were 62,927 whereas the real figure for

1979 was 93,560 (Kenya 1981). In fact, this real figure is already beyond the government's prediction for the year 1990, which was 78,225 and it approaches the predicted population for the year 2000 AD which was set at 97,242.

VI. Land, Livestock and People - The Future

Campbell (1979b) has stated that the majority of the Maasai pastoralists remain confident of the continued viability of their way of life. They recognize that cultivation and the creation of National Parks have reduced their access to dry-season resources but do not envisage any critical shortage, and the most commonly stated precaution against future drought is to increase the size of the herd.

> But among younger Maasai there is a realisation that the pastoralist economy will have to adapt to altered conditions and they see the Maasai as needing to diversify their economy to reduce their vulnerability to any future drought (Campbell 1979a:54).

What is clear is that many Maasai realize that they cannot live by their livestock alone in the changing circumstances in which they find themselves, and in fact many of them no longer attempt to do so.

We can recall here the figures from Table 6. Even if all zones are grazed, the total seasonal livestock capacity would only be 267,964 SSU which would still be below the figure required to support pastoralists at a subsistence level - 366,719

SSU.This projection itself is well below the real figure because the human population projection for 2000 AD was based on the 1969 Census figure. As we have already observed this projection for the year 2000 had already been reached almost twenty years ahead of time.

What is important here is the relationship between the land, livestock, and population in Kajiado. In ecozone IV, each SSU requires 4.0 ha., and 3.5 SSU at a minimum are required to support each person. One SSU equals 450 kg liveweight. In Maasailand, this would mean about 2 head of cattle, i.e. approximately 7 cows per adult (Campbell 1979b) therefore the minimum number of Standard Stock Units required to maintain the 1979 recorded pastoralist population at a subsistence level would be as follows:

93,560 Maasai would need (at 3.5 SSU per person) 327,460 SSU
which in turn would need 81,865 ha. for grazing.

Again, the same number of people would need
(at 4.0 SSU per person) 374,240 SSU.

We know that 219,631 SSU is the dry season livestock capacity for zones IV and V (Table 6) and thus it is clear that an almost impossible situation aready exists in the District.

Comparing these figures with the figures presented previously in Tables 5 and 6, we can see that the land during the dry season is not able to support the minimum numbers of animals required to

maintain this Maasai pastoralist population at a subsistence level (without heavy overgrazing). The capacity has already been exceeded. This must mean that the Maasai have already begun to find alternatives to dairy products in terms of their diet and nutritional intake, and are relying on other inputs or income sources. Sometimes reading some of the literature on the Maasai one is left with the impression that this is understood yet never actually stated. On the other hand, the current studies being undertaken by the ILCA teams do move in the general direction of ascertaining the actual dietary changes and the amounts of money being spent in certain selected Group Ranches on non-traditional foods etc.

Table 8 gives Campbell's projections for the livestock needed to maintain pastoralist subsistence for the years 1980, 1990 and 2000 AD (and this on the presumption that this "subsistence" is dependent upon primary dairy products).

Table 8. Minimum livestock numbers required to maintain pastoralist subsistence in SSU (Kajiado District). (Projected to 2000 AD)

Unit	1980	1990	2000
West	90,503	112,504	139,853
North	85,673	106,502	132,394
South	61,135	75,996	94,472
District	237,311	295,002	366,719

Source: Campbell 1979b.

The minimum total of livestock units required to support the pastoralists at a subsistence level by the year 2000 A.D. would be 366,719 SSU. But the dry season livestock capacity for the district, grazing only ecozones IV and V is 219,631 SSU. This short-fall of 147,088 SSU is a figure based on the present condition of the dry season pasturage and upon its acreage. If the size diminishes or if its condition deteriorates, then this figure of 147,088 SSU would be an under-estimation. The dry season livestock capacity is 219,631 SSU (Table 6), and so, at a minimum of 4.0 SSU per person, that would mean 54,908 persons (or 62,752 persons at 3.5 SSU per person). But, by 1979, there were already 93,560 Maasai in Kajiado District. The land neither supports enough cows to feed the people throughout the whole year and is overgrazed, nor are there less cattle in the dry season than are needed. The fact is that the Maasai resort to other

foods.

The presence of this number of Maasai with their animals in the District meant that the livestock capacity for the area had already shrunk to 5.87% by the year 1979 (and this grazing all zones, at least theoretically). This figure is arrived at by using the annual livestock capacity figures of Pratt and Gwynne (1978) found in Table 2, and using the population figures from the 1979 census. (10)

$$\% \text{ Surplus capacity} = \frac{\text{l'stock capacity - population demand x 100}}{\text{livestock capacity}}$$

Therefore the annual livestock capacity for all zones:

93,560 AE x 3.5 SSU = 327,460 SSU

required for total Maasai population

District livestock capacity = 347,901 SSU - 327,460

= 20,441 SSU (surplus)

$$\frac{20,441 \times 100}{347,901} = 5.87\%$$

These figures mask the plight of the northern part of the District for the annual livestock capacity (grazing all zones). The 1979 population of the northern part of Kajiado District was

36,477. Using the same method of calculating the surplus capacity, we find that in 1979 the northern part was already -36.85% beyond or above its capacity.

The figures are even more disturbing when we look at the dry season grazing capacities for the District as a whole, and for the northern section (cf. Table 6):

The dry season livestock capacity (zones IV and V) for the District allows for 219,631 SSU. The population is 93,560 AE (x 3.5 SSU) needing 327,460 SSU. There is therefore a deficit of -107,829 SSU.

$$\frac{-107,829 \times 100}{219,631} = \text{a shortfall of } -49.1\%$$

This means that the district as a whole in the dry season was nearly -50% beyond its capacity by 1979 and the dry season livestock capacity for the northern part was -91.8% by the time the census was taken in 1979.(11)

The number of adult equivalents that can be supported at a rate of 3.5 SSU per AE during the dry season is only 76,561 if the whole district is available for grazing activities, which of course it is not. This figure had already been exceeded by 1979. The deficit in the grazing capacity together with the excessive numbers of pastoralists to be supported do not augur well for the future of the District.

According to the Kenya Government, Ministry of Economic Planning and Community Affairs (1979), the maximum number of pastoralists capable of being supported in Kajiado if all the land is available to them is 94,207 AE (Table 9). But this capacity had almost been reached by the year 1979. According to these predictions, the land would be capable of supporting various population projections of Maasai. However, I think these projections are flawed because they were based on the 1969 figures, even though they only appeared in 1979. The 1979 Census figures show conclusively that the population is already well beyond the estimated numbers.

These projections indicated that the District of Kajiado would only be capable of supporting 83,400 pastoralists if they are excluded from ecozones II and III, and there would seem to be this exclusion at the moment where zone II is already under intensive cultivation and there is more and more encroachment into zone III and zone IV. (Table 9)

TABLE 9. Maximum number of pastoralists supportable under different land restrictions, and year by which the pastoral carrying capacity will be exceeded.

(Kajiado District)

Land Restrictions	Maximum pastoral population supportable	Year pastoral population will exceed capacity
	(A.E.)	(year)
All land available	94,207	1999
Restricted from Zone 2	87,160	1995
Restricted from Zones II and III	83,400	1993

Source: Kenya, Ministry of Economic Planning and Community Affairs (1979) Appendix X, Tables 7 and 8.

Based upon 3.5 livestock units per Adult Equivalent.

I would hazard to suggest that the predicted years given in Table 9 and in the Appendix Table 2 are no longer valid, because of the new knowledge that we have from the 1979 Census figures.

If the rangelands will not be capable of supporting the numbers of animals necessary to provide subsistence for the population of the future (or the present for that matter) then what are the alternatives? We know that the pasturage set aside for the Group Ranches is not adequate for the Maasai herds. Supplemental feeding is used to a very limited extent on a few Ranches, and is not practised on any of the Ranches on a regular basis, and on most not at all. (Peterson and Peterson <1980> reported that fodder crop production was practised very little, if at all, in subsistence mixed livestock and crop systems in Arusha Region, Tanzania.)

The fact that there are still people moving into the district from outside and practising various forms of agriculture and mixed farming has put tremendous pressures on the Maasai pastoralists. Apart from in-migration, the population growth of the farming population, via fertility, is 3.5% p.a. and this is higher than that of the pastoralist group. The occupation of zone II land by the farmers reduces the dry season grazing resources available to the pastoralists. High potential areas, e.g. zone II, assume greater importance in the dry season only when the quality of the water and grazing in zones IV and V declines.(12) More and more land is being taken over by "peri-urban spread" and light industrial expansion as well as agricultural encroachment in the whole district. Since most of zone II is already under cultivation there is now some encroachment even into zones III and IV.

The requirements of an ever increasing population of both farmers and pastoralists would outstrip the capacity of the land by the year 2000 AD and would seem to point to the need for a greater move away from subsistence towards some form of commercialization. The district will not be able to provide for the needs of its total population if the people are entirely or even primarily dependent on their own agricultural or pastoral produce for subsistence. Perhaps what is indicated is a need either to transform the technology of production or simply to sell more animals, in addition to other forms of diversification. In the next chapter we shall examine some of the possible changes within and alternatives to pastoralism.

CHAPTER FOUR - CHANGES IN PASTORALISM

I. Introduction

We have investigated the historical circumstances affecting livestock production among the Maasai and the changes in their resource base. The Maasai cannot be reduced (as a people) merely to their cattle, nor can they live by cattle alone. There is, as Galaty (1981), has correctly identified, "a dialectic of change" within the lives of the Maasai of both Kenya and Tanzania, as opposed, for example, to a unilateral process of change or a whole plethora of changes. They are not living in two worlds, as some would have it, but are in process within the one world - a world of pressures and change. It is not as if there has been some kind of "quantum leap" from the traditional to these changed patterns of living, implying some kind of breakdown or deterioration - rather there has been an on-going dialectic, a continuous process of change. This "breakdown" image is based on an assumption made by a number of authors (Ferguson 1979; Konczacki 1978; Dahl and Hjort 1979).

The Maasai seem to be making their own on-going adjustments to the various pressures weighing upon them and at the same time they seem to be holding on to what they regard as the essential elements of their traditional way of life. In this way, the "past", or the "traditional", is a mode of creation in the "present" (Levi-Strauss 1966; Sahlins 1976; Stiles 1981), as the

Maasai create conditions which will allow them to exercise their own innate capacity for responding to the challenges which face them.

Clearly the Maasai, in both countries, are in transition, employing what Bennett (1984) referred to as "adaptive strategies" in order to survive, to hold on to what land is still remaining to them, and to preserve their cultural heritage at the same time as they take their place in the new nation states. One classic example of this is to be seen in the adaptive strategies employed by the Kenyan Maasai vis-a-vis Group and Individual Ranches where they have used the Group Ranches and the Individual Ranches to their own advantage (Davies 1971; Hedlund 1971; Halderman 1972a, 1972b; Galaty 1980). When the need arises they just cross the boundaries and take their cattle outside the confines of their own ranches. (1)

Now we shall look at some of the changes in pastoralism as practised by the Maasai (to various degrees), such as: education, migration for wage employment, additional incomes, the question of supplementary animal feeds and refined breeding in the herds, shifts in diet (e.g. towards more grain - either home grown or purchased), and commercial options, such as small livestock related industries, etc. We shall also look at some of the historically-based factors which have limited the economic diversification of the Maasai and their integration within the wider and more complex economy. This is both part of the historical background to an analysis of the present changing

situation in Maasailand, as well as being part of their 'future' in terms of the options open to them.

In reviewing these changing "strategies" or "processes" being embraced by the Maasai themselves, we should not lose sight of the fact that there is a tremendous need for government and development planners to establish and consolidate the institutional structures which would encourage desirable ends such as higher family incomes or better quality of life. Government determined structures play an important role in the dynamics of these changes.

II. Differential Access to Education: Political Encapsulation

The educational facilities available to the newly independent African nations in the very early 1960s were limited and unequally distributed between various geographical areas, both regionally and locally (Hedlund 1979). In the case of Kenya, the problem of regional imbalance in the distribution of educational resources and opportunities "originated in the economic mode of colonial development, the location of missionary activity, and the pattern of local self-help activity" (Court and Kinyanjui, 1980:1). As the need arose for local people to fill positions in the expanding administration, so the emphasis grew for secondary and higher education for those who were already in the education system at the time of independence. Invariably these were not the pastoralists.

Generally speaking, the colonial administration had "benignly neglected " the pastoralists, and had thus safeguarded them from the effects of any of the major changes which were taking place within the neighbouring agricultural societies and groups:

> While Ministries of Education were involved full-time in attempting to meet popular pressures, little attention could be given to those groups within the populations of many African states who had never seen the attributes of formal schooling (King 1972:389).

Schools in most societies are the main channels of social mobility, but in Africa they are the almost exclusive means of access to wage-paying occupations and elite roles in the 'new' society. Unfortunately, pastoralists occupy only peripheral socio-economic and political (and often geographical) positions in their respective countries. This means that they have little influence on the policies and programmes decided by central government, for their areas. In the case of the Maasai, this marginalization or peripheralization is linked closely to differential access to education in both Tanzania and Kenya.

Kenya particularly has given more and more emphasis to the importance of academic achievements as expressed in exam results. As the public sector assumes greater importance, so does the need for educational qualifications to assure the person of a position in the emerging bureaucratic administration. As a result, the distribution of higher-level education has become a means of access to future status and security, and schools have become "the arena for important political competition .... (The) demand for regional equality is the demand for more schooling" (Court

and Kinyanjui 1980:5).

A. Primary education

In both Kenya and Tanzania, the critical examination which actually determines access to secondary education is the Certificate of Primary Education (CPE). Like all such exams it tends to favour or benefit the students of the better endowed schools and to disfavour or disadvantage those from rural or poor urban schools. Because of this, the Maasai in both countries have found it very difficult to compete for secondary school places with the students living in the urban areas or in the administration centres.

In Kenyan Maasailand there were 62 primary schools by 1970 which had been established to attract and to serve Maasai students. There were 5 secondary schools set up within the two Maasai districts. In Tanzanian Maasailand there is not yet one secondary school which may be said to serve the Maasai specifically, although there are 10 secondary schools in the Region (almost all of which are located in the town of Arusha). There are currently nine Full Primary Schools within the three Tanzanian districts of Maasailand. But these schools do not serve primarily the Maasai pastoralists. A number of the schools have been established in or near the local government administrative centres, e.g. Loliondo, Kibaya, Kijungu, Wasso, Nainokinoka, Malambo, Soit Sambu and Endulen. It is mainly the children of the local government and Party officials working in

these administrative centres (together with the children of their relatives) who attend these schools.

It is not easy to assess the implications of the rate of Maasai participation in education as compared to highly motivated farming communities nearby or other pastoral groups. However, there has never been much enthusiasm among pastoralists for sending their children, especially the girls, to school (2) and therefore it is not surprising that in the early 1970s there were still a number of districts in Kenya which had less than two-thirds of their primary school age population enrolled in school. This two-thirds percentage is not at all a high figure compared to the enrolment percentages of the other districts nor is it a significant figure truly representative of the actual numbers of Maasai children attending those primary schools because the momentum for educational growth in Kajiado in more recent years

> has come mainly from the population which has migrated into these districts from Central and Western Provinces, with the result that these districts have had the highest rate of growth in primary education in the country (Court and Kinyanjui 1980:23).

In the colonial era, three districts in particular (Turkana, Samburu and Maasailand) were relatively deprived of educational possibilities, but

> in recent years, these areas have also been penetrated by people from the developed districts who have settled on some of the high potential lands in these districts. Furthermore, the movement of children from the more developed districts to these educationally backward districts is a common phenomenon so that public funds expended on education in a particular district may not just benefit the children of that district (Court and

Kinyanjui 1980: 25-26).

It is for this reason that the statistics given for the Maasai districts and presented by the governments of both Kenya and Tanzania do not adequately represent the situation among the pastoral Maasai of the five Kenyan and Tanzanian districts involved. For example, the number of children in school as a proportion of projected 6-13 school age population in Kajiado District rose from 45% in 1971 to 69% in 1975; for Narok, the percentage rose from 26% in 1971 to 50% in 1975 (Ministry of Education Annual Report 1971 and 1975: Kenya Statistical Digest cited in Court and Kinyanjui 1980:21). Without further details, the increase in the growth of primary education could be taken either as an indicator of the increase in Maasai participation or as an indicator of the rise in the population of "outsiders" whose children have been attending these schools in the heart of Maasailand. Thus, in the Rift Valley, because special facilities have not been accompanied by ethnic quotas, they have only served to intensify the regional differences which have persisted over the years and to continue the imbalance by providing additional opportunities for these outsiders from areas which were already reasonably well endowed with educational facilities and opportunities (Hunter 1966; King 1972,1974; Van de Laar 1973; Annual Manpower Report,Tanzania 1975; Gorham 1977; Court and Kinyanjui 1980).

The practice of "repeaters" within the primary school system has made it difficult for Maasai students to obtain places in the

secondary systems of both countries - but especially in Kenya where the repeaters in the region (sometimes as high as 75% of the total number of students in Standard VII) may well have come from some of the more progressive regions in the country rather than from the Maasai region. For example,

> the Kipsigis colony in the Kilgoris division of Narok District now control 60% of the double stream entry to Narok Secondary (King 1974:141).

This gives some idea of the magnitude of this practice and how it is affecting the opportunities open to the Maasai for educational and political advancement.(3)

B. Secondary education

In Tanzania, in the 1950s, there was still only one Middle School for the whole of the Monduli District, and even this was closed in 1965. The first Tanzanian Maasai graduated from secondary school in the early 1950s, and since then the actual number of Maasai graduates does not seem to have gone up very much atall. Parkipuny was able to say, as late as 1975, that the figure has "never actually been larger than 4 annually in the preceding years" (Parkipuny 1975:58). The figures for the period 1968-74 in Tanzania indicate that the Maasai student intake into Form I of secondary education was then quite low (for all the Maasai students eligible for admission into any of the secondary schools in the whole country): the intake for 1968, 1969, 1970 was 1, 4, and 3 respectively; it was 0 for the years 1971 to 1974 inclusive (Table 10).

TABLE 10. Secondary Education:
Form 1 intake and numbers of Maasai
in Monduli District, Tanzania (1968-74)

Year	No. of Pr. Schools	No. of pupils in Class 1-7	Form 1 intake	Maasai in Form 1 intake
1968	na	na	22	1
1969	28	3,090	31	4
1970	33	4,585	18	3
1971	38	5,081	11	0
1972	41	5,949	10	0
1973	47	6,402	50	0
1974	52	6,520	39	0

Source: Files of the Education Department at Monduli
cited in Parkipuny 1975: 58.

It is easy to see that the statistics given by the Annual Manpower Report to the President, 1975, concerning education in Tanzania, and more specifically vis-a-vis the proportion of selected pupils to secondary schools, cover the fact that the number of Maasai students selected must have been minimal compared to the students from the other primary schools in the Region. The statistics indicated that out of a total of 6,261 students enrolled in Standard 7 in September 1975, only 387 were selected for Form 1 in 1976.

In 1963, 30% of all secondary schools in Kenya were in the urban areas, and these catered mainly for the Asian and European communities, which together only made up about 3% of the total population (Court and Kinyanjui,1980:16-17; Anderson, 1970). This situation changed somewhat after independence with a limited number of primary and secondary schools being found in the two Maasai districts. The number of children between the ages of 15 and 19 in Central Province was 153,000 and these were served by 70 maintained secondary schools. The Rift Valley Province (in which the Maasai Districts are placed) had 227,000 children between the ages of 15 and 17 years, but it had only 47 maintained secondary schools (Court and Ghai 1974).

There is obviously a difference between Kenya and Tanzania with regard to educational opportunities. There are proportionally more Kenyan than Tanzanian Maasai secondary school leavers and graduates. King (1972) records 85 Maasai secondary school leavers from the Narok School in Kenya during the years 1966-70 of which 27 were employed in the District and 47 were employed outside the District.

Since independence, participation in education has dramatically increased in Kenya, and to a limited degree even in Tanzania. I would not lay the blame for low participation entirely at the door of the Maasai, though there are factors arising out of the Maasai pastoral economy which militate against allowing the younger children, especially the boys, the opportunity of an education. School directly competes for the

labour of children and influences the domestic production process. There are daily herding labour needs among the pastoralists which involve the boys of both primary and secondary school age. The fact that almost all of the secondary schools available to the Maasai would involve boarding the students away from home also tends to discourage secondary school attendance.

There are other reasons too, which enter into the low participation of many Maasai families. The circumcision ceremonies and the period of moranhood for the boys, the clitoridectomy ritual for the girls and their subsequent marriage, impinge upon the availability of the younger Maasai men and women for secondary and tertiary education. In a culture where young women are married at the age of fourteen or fifteen, the possibility of continuing with a secondary education is somewhat limited. Another reason for the low numbers of Maasai students attending primary school is that few parents will allow their young children to walk excessive distances in the late afternoon in areas which are game sanctuaries and thus be exposed to attacks. These few observations are not intended to be an exhaustive list of the reasons why there has been such a low degree of Maasai participation in the education system, but they do represent valid reasons why the Maasai in the past did not flock into the school system, and why so many of them left school prematurely.

III. Outmigration: Education and Labour

The second "solution" or "adaptation" to the problem of the inability of the land to support an increasing Maasai population in subsistence pastoralism is linked to education and wage employment in areas outside Maasailand, e.g. Nairobi or Nakuru (Dyson-Hudson and Dyson-Hudson 1982). There are some recent statistics available giving some indication of the actual numbers of Maasai who have left pastoralism for other forms of employment in the rural areas or in the urban centres. The 1979 Kenya Census gave the figure of 241,395 Maasai living in Kenya; there were 93,560 Maasai in Kajiado, and 118,091 in Narok. This meant that there were 29,744 Maasai living outside the two recognized Maasai Districts. Though this may not seem an unusually high number, it does represent 12.3% of the total Maasai population who for one reason or another (not necessarily migration) are no longer living in the two Maasai districts, and many of whom may no longer be practising pastoralism. A high percentage of these "Maasai of the diaspora" were still living within the Rift Valley Province (19,475) but a further 10,269 were living in the other Provinces (Kenya 1981).(4) There are differences of opinion about the actual occupations of these dispersed Maasai, but the point is that we do not have any surveyed data on what they are doing for a living. We do not know, for example, if the Maasai living in other districts of the Rift Valley Province are involved in pastoralism, agriculture, or other wage employment. Nor are there any available statistics on the educational attainments of these Maasai living outside the two districts. This information

would be most useful as would some knowledge of what those Maasai men and women are doing in the other Provinces of Kenya.

The fact that the educational system has not attracted many Maasai secondary school students could be interpreted either as a disadvantage or as an advantage depending on one's standpoint. If more young people had been attracted into the school system and had been given a secondary or tertiary education, then more of them might well have left the Maasai districts for "other pastures". On the other hand, if more had been given this opportunity, then it is possible that the future of the Maasai pastoralists might well look better than it does today if for no other reason than there would have been more educated Maasai in positions of responsibility in national and local government.

If pastoralists and farmer-herders are increasingly being attracted by employment outside the sector, this could well be another expression of the new adaptive strategies of the Maasai; the involvement of a good number of Maasai who have left home to work elsewhere and either send money home or buy animals and return to improve their herds. There are quite a number of young Maasai men who are now "champing at the bit," desirous of a secondary education, but they are not able to achieve it. This is partly due to the fact that they are not in control of their own financial resources, depending upon their fathers, uncles, or brothers to provide them with the money needed for a secondary education in either Kenya or Tanzania. A few actually make it, generally through the help of Western patrons, friends or

missionaries. Though we have no clear indication of the actual numbers of Maasai men and women who have opted out of pastoralism in Tanzania, (5) nevertheless we can say that, at least, there is some definite movement due to a number of factors - secondary education, wage employment, pauperization (due to loss of pastures or cattle), marriage, etc.

Needless to say, those who have left have not only been the educated ones looking for other employment and livelihood. There have been tremendous cattle losses in various parts of Maasailand, both in Kenya and in Tanzania. A number of Maasai have not been able to sustain their losses or to reconstitute their herds and have had to leave pastoralism for other forms of subsistence. Though historians have referred to the sloughing-off of pastoralists in every epoch, there may well be a case to argue that the pressures are such nowadays that more are being sloughed-off due to the diminished ability of the general group to help them over the difficult period. The pauperization of some of the Maasai seems to be taking place more frequently these days (Arhem 1985b). In fact, in at least one boma in northern Tanzania, the Maasai have decided not to attempt to rebuild their herds (after repeated cattle-raids and deaths due to disease) but to continue as long as they are able with goats and sheep only. Admittedly this is an exception, but at least it is some indication of the pressures under which some of the Maasai are living. Again, there are no reliable figures on this class of "impoverished" Maasai.

I have first hand knowledge of the existence of large numbers of pauperized Maasai (and Turkana) who have sought employment in the urban areas of Nairobi and Nakuru, Ngong, Kajiado, etc., as night-watchmen, house-guards or labourers. In other cases in the rural areas, Maasai work as herders and dairy-hands for other rich Maasai (for example, those working on the dairy farm of ole Ntimama in Narok) or for farmers from other ethnic groups. Outmigration has its advantages, for if the diminishing resources are not going to be able to support the total population of Maasai, then it may be to the advantage of the "remnant" to enjoy the resources which may be left to them in the future (Evangelou 1984; Campbell 1979b). A certain "off-take" may not be such a bad thing even for the human population.

A few rich Maasai tend to have "a foot in both camps". A number of these entrepreneurs maintain herds and homes in the range areas or adjudicated Ranches, and, at the same time, they run small businesses (shops, dairy farms, bead-work outlets, cattle-trekking groups, etc.) either in the rural or peri-urban areas. Some educated Maasai, whether rich or otherwise originally in terms of cattle and small-stock, have left pastoralism completely, become attached to government departments or to non-government development agencies, and have gone to live and work in the urban centres. In one sense these are part of the "new bureaucratic elite" and sometimes they are in positions which favour their advancement in terms of becoming rich (comparatively speaking). These stated involvements obviously do not represent an exhaustive list of the various strategies being

adopted and exploited by many modern Maasai. However, they do give some indication of the range of alternatives.

IV. Cash Flows: Consumerism/Commoditization within Pastoralism

There are already producer "class" differences among the Maasai of Kajiado District - some are recognized as large, medium, or small producers (King et al. 1984; ILCA 1984), and the structure of their herds may reflect their openness to beef production. It will be valuable to look at some of the differences in the herds managed by Maasai employing various alternative strategies. In addition, the contributions of these Maasai living and working outside the pastoralist economy are pertinent to the question of the cash flowing into and out of the pastoralist areas. Needless to say, this is only one possible source of income since sales of products must also outweigh remittances, but it is an important source and one which is often overlooked or underestimated.

A. "Output": An analysis of the totality of livestock products

Using one of the group ranches in Kajiado District (Olkarkar) as an example, ILCA (1984) has tried to quantify both the source of "output" and its division into subsistence and livestock production, including stock accumulation. The researchers discovered that in aggregate, 46% of total annual output (in

terms of value) was used for subsistence living, and 54% reinvested in livestock production. Milk, for home consumption, represented 26% of the total annual output; meat, for home consumption, represented only 5% of the annual output. Sales of livestock and livestock-products to help finance household consumption expenditure constituted 15% of the total output. The corresponding rates for financing livestock production expenses accounted for 9% of the total output. "The remaining 45% of total annual output was reinvested in the production system in the form of stock build-up" (ILCA 1984:89).

This information is relevant to the issue of the carrying capacity of the land which is affected by the reinvestment and remittance practices of Maasai engaged in wage labour, livestock marketing or trade. The implications of this become clearer when we look at the three levels of producers and their reinvestment percentages. Small scale producers in the sample spent 63% of their output on subsistence living and only about 30% for stock build-up. Medium scale producers spent 56% of total output for subsistence, whereas the large scale producers in the sample spent only 39% of the total output for subsistence - which meant about 60% was left for reinvestment (ILCA 1984). This is an immense capital investment ratio and may imply lack of knowledge, lack of alternative investment opportunities for diversifying the risk of herd loss in time of drought, or intelligent investing in something which the Maasai know represents a reasonably "safe" investment. The point is that market flows from <u>outside</u> did have an influence on the Maasai subsistence behaviour and economy and

on the whole question of reinvestment in that economy. The Maasai pastoralist production system is not a closed system operating within an economic vacuum - it is open to outside influences and it responds to them and in an opportunistic way uses them to its own advantage.

B. The purchasing of consumer goods by the Maasai

It should be of interest and value to social development planners and others to know just how much money is going into Maasailand from sources outside the districts, and how much is being generated from sources within the districts themselves. There are exchanges within Maasailand and with the outside. However, what has not yet been adequately researched are the sources of Maasai income and the full range of uses to which that income is put. The relationship between earnings from wage employment, cattle and small stock sales, and expenses for children's schooling, medicine, veterinary services, clothing, travel, etc., has not been researched for the different parts of Maasailand - though Meadows and White (1981b) have done a considerable amount of research on five Ranches in Kajiado District. Unfortunately, there are not yet any comprehensive statistics, covering wide areas and different groups of Maasai, on these vitally important areas of knowledge (athough ILCA is now attempting to collect and to analyse such data (cf. ILCA Bulletin 16, 1983).

Meadows and White (1979) also did a survey of the money being

spent within the District of Kajiado in 1977. They found that the population of the district was spending up to Kenyan Pounds 1,657,750 on food and drink (in 1977, 1 Kenyan Pound = 1.33 Pounds Sterling). The Maasai comprised 70% of the population of the District, according to the 1969 Census (by 1979 the Maasai were only 62.7% of the total population of the District being 59,000 out of 85,900). The two researchers worked on the assumption that the Maasai population grew "by about 2% annually and the non-Maasai by 5% - this would make the 1977 population 107,000, of whom 65% will be Maasai" (Meadows and White 1979:17). These authors also worked on the assumption that the Maasai accounted for two-thirds of this expenditure. This represents a considerable involvement in the cash economy of the district.

We know that the average price of cattle sold in Kajiado District in 1977 was Kenyan Pounds 50. Thus, in order to finance their expenditure on food and drink (as presented by Meadows and White), the Maasai would need to sell 33,000 head of cattle. This would be the case if the money was to come entirely from internal cattle sales. In fact, the recorded cattle sales were 32,000. But there was also money obtained from the sale of milk, ghee, hides and skins - these monies are often overlooked in income estimates for the Maasai - as well as the money coming from the Maasai living outside Maasailand.

Because we do not have any clear idea of the kinds of work Maasai living and working outside the pastoralist economy are engaged in, we have no idea of the amounts of money flowing into

the Maasai families from these 'outside' sources. Meadows and White's research does give us some data on the household expenditure of certain groups of Maasai living in Group and Individual Ranches in Kajiado District. This survey of income and expenditure makes no statement of the possible unknown sources of income just mentioned, deriving the budget of Ranch families from Ranch activities alone. The researchers discovered that the average annual household expenditure over the survey period ranged from Kshs. 10,603 to Kshs. 32,343 (of which Kshs. 9,409 of higher figure comprised livestock purchases), and on a per caput basis ranged from Kshs. 739 to Kshs. 2,121 (or Kshs. 1,778 excluding livestock purchases) (Meadows and White 1981b). However, little or no indication is given of the supplementary food obtained from their own agricultural activities nor does the study deal with incomes derived from outside Maasailand and the specific Group and Individual Ranch system.

It appears that the Maasai are now eating non-traditional foods more regularly than before. These changes include the eating of wild animal meat (which the Maasai traditionally did not eat) as well as various grain foods consumed at different times of the year. It is also true that the Maasai have been trading for maize with neighbouring agricultural groups since (or even before) the mid-nineteenth century (Berntsen 1979; Waller 1985), but there now seems to be greater use of grain foods especially during the dry season. Meadows and White (1981b) found that 30% of the annual food budget of their surveyed households was spent on maize.

Maasai not only buy grain, they commonly have small plots or shambas close to their encampments (Nestel 1982). In fact, I know from personal observation that hundreds of Maasai households in northern Tanzania and across the border in Kenya have small plots where they grow maize, pumpkins, and sometimes even tobacco. This development too, marks a change in the pastoralist's way of life and it is one about which we have only fragmentary data and information. There has been some research to find out how many households in Maasailand now rely on purchased maize, etc., but we have no clear picture of just how many households throughout Maasailand plant and harvest their own grain. The study by Metson (1974) found that 93% of households in Kajiado district purchased maize-meal weekly, 92% sugar, 52% tea, 31% fats, 22% potatoes and 13% rice. Of course, what we do not seem to learn from all this is how much non-dairy products people actually eat, or, put more specifically, what percentage of their total nutrition is now derived from these non-dairy products. If the "reference family" now needs only about 70% (for example) of its nutrition from animal products, then the human support capacity needs recalculating. This could mean that 40% more people on the same animal levels could be supported given that 30% of the nutrition may be derived from outside direct dairy production. Change in diet and nutrition could, and should be, the subject of extensive research in the near future.

This inadequacy of our knowledge about the diets of Maasai households also means that the whole set of assumptions based on the Maasai being subsistence dairy producers for whom 80% of the

diet is milk should we do not know what milk requirements exist, we do not know how many cattle are required. But we do know that 60% of the Maasai households in the South Kaputiei Ranches in Kajiado District successfully harvested maize, beans, and pigeon-peas during 1981 (Meadows and White 1981b).

Maasai use of money concerns not only what they buy in the local shops, but also their use of the various "services" offered to them, such as schools, clinics, veterinary services, transportation, etc.(6) Figures on this use are not easily available but are needed for any serious discussion of the future of Maasai pastoralists. Discussion must also take into account alternative sources of income which are related to the pattern of migrations.

As the resource base diminishes and population pressures increase, the "hidden economy" - not manifested in the data and the statistics of the government censuses or enumerations of cattle, milk, hides and skin sales - will play an increasingly important role. This black-market operates continually within Maasailand, across the regional boundaries and across international borders. This trade now includes such items as soda ash (from Lake Natron), wildlife trophies, and food and goods purchased in Kenya (with money obtained from illegal cattle and hide sales) for resale in Tanzania. This hidden economy is also one of the reasons why the whole range of projections made by economists based on the "overt" economy may be suspect or, at least, open to doubt. The international Kenya/Tanzania

black-market has not yet begun to be taken into account in economic analyses and predictions. This aspect of the real Maasai economy can probably be seen as one of the alternative strategies employed by them to cope with the pressures arising from a diminishing resource base and the population increase. It has certainly been used by the Tanzanian Maasai to obtain better prices for their animals and to purchase at non-inflated prices basic commodities not available in their own country.

V. The Alternative of Commercial Livestock Production

Some planners envision the transformation of rangelands into zones of commercial beef (and other meat) production, which in their argument would diminish the number of livestock carried per unit of range, increase aggregate output (in part through upgrading animals), and would secure incomes for rangeland producers, thus helping them to diversify their diets. Most pastoralist development programmes include goals and means of commercialization among their objectives, but none has been an unqualified success in part due to lack of project consultation with local people, the inclusion of many other (and sometimes contradictory) goals in the same projects, and the continuation of interests which compete with commercialization. Other constraints, such as price, infrastructure, etc., still exist.

In fact, radically altering pastoral systems to commercial systems is probably not in pastoralist interest, because of

intrinsic differences between them: commercial systems often substitute capital inputs for labour, becoming profitable by increasing animal and labour productivity; while they are aimed at producing meat and other animal products, they do not serve to sustain relatively large human populations; further, they benefit from centralized management, which is antithetical to the dispersion of production units and decision-making in pastoralist systems.

However, making it possible for pastoralist households to act less as large-scale commercial operations and more as small-scale peasant economies with access to markets for their livestock may simultaneously serve to supply meat and to sustain human populations. This is, in fact, happening, and would increase if there were more reliable sources of grain foods, higher prices offered for livestock, better marketing systems, and better facilities for banking and credit, etc. Some of these goals have been served by the Group and Individual Ranch programmes.

Thus, paradoxically, improved marketing and increased commercialized livestock production may actually serve to secure the basis for a society based on pastoralism insofar as this is animal production, and insofar as such forms of diversification are now necessary. This process of commercialization may then be positive, while the theoretical transformation of pastoralism into large-scale commercial production - through centralization of land-holding, provision of a few ranchers with capital, and stimulated exodus off the land - would not have been.

There would seem to be little or no likelihood of the Maasai being given back any of the land which they have lost. There seems little likelihood, too, of a halt to the continuing loss of land. Therefore, assumptions must be made on the basis of either the present land available to them, or on the basis of even greater land losses. Campbell (1979b) estimates that about 4,000 jobs will be required by the end of the century if the district is to support those unable to provide for their own subsistence needs at that time. This estimate was made on the basis of the 1969 census figures and Campbell's population projections for the year 2000 AD. On the basis of the population increases which have actually occurred and the fact that the diminishing resources are going to force more and more Maasai out of pastoralism, I would estimate that even more jobs are going to be needed and I would put the figure closer to 8,000 or more. This necessity for massive job creation was one of the points made by Behnke (1983) when he wrote about the number of pastoralists who would be forced off the land because of the unavailability of resources, and as a result of the commercialization processes at work among the pastoralists.

There are a number of economic or commercial alternatives for improving the pastoralist standard of life - more use could be made of pastoralist owned tourist lodges, wildlife utilization fees, etc. There could be changes in herd composition, possibly reflecting a move towards beef production and greater control over the processing of the products of the livestock economy, and there could be reduction in the size of the herd by <u>regular sales</u>

(this would enable them to save cash for the purchase of other food stuffs in the dry season, or to purchase new stock) and the growing and storing of crops (which would reduce, to a limited degree, their dependence on outside sources of food). However, "regular sales" do not necessarily reduce herd sizes, since "regular increase" is also taking place. There could also be an emphasis on increased milk sales during the wet season and the saving of the monies to purchase grain for family use during the dry season. Such alternatives could help to sustain more Maasai on a decreased land base.

A. Herd composition: Subsistence or beef?

Despite many minor variations in the herd composition, most analysts agree that Maasai herds (a) have remained stable in composition over the years, and (b) have a consistent percentage of milk cows (ILCA 1980, Meadows and White 1981a, King et al. 1984, Evangelou 1984). Jacobs made one of the earliest counts and composition analysis of the Maasai herds, in both Kenya and Tanzania. Basically, his figures indicated that on average the adult cows numbered 57% of the herd, bulls were 6% of the herd, bullocks 14% and calves 23%. This could indicate that sale or slaughter of males was very high even in the early sixties.

During an extremely good rainy season the number of cows needed to sustain one adult human may be as low as 2-3, but this figure may rise during the dry season when it may need as many as 10-15 lactating cows. During exceptionally dry periods of

drought this may even go as high as 25-30 head of cattle needed to obtain sufficient milk for one adult male (Jacobs 1961). Jacobs' figures represent unusually high estimates for the dry season (and are even higher than Dahl and Hjort's "reference herd" to which we have just referred). These days, the Maasai no longer rely entirely upon milk during the dry months and therefore they can afford to have fewer animals since their diet includes, among other things, maize porridge.

Meadows and White developed a model to gauge the structure of the herd and determinants of offtake rates for Kajiado District between 1962 and 1977. Their hypothetical herd was based on available figures of the cattle population in the district from 1947-77 and on the figures for the annual cattle sales for the period 1953-77. As a result of these figures they were able to hypothesize its most likely composition and growth from 1962 to 1977. They estimated an offtake rate of 16-17% with an accompanying growth rate of 7-8% initially (after a severe drought) slowing down to 5% as the grazing pressures increased. They estimated 5.8% as the average offtake of cattle sold for slaughter within the district of Kajiado over the period 1962-77. The total offtake of cattle and calves from the herds was estimated by these two authors for the same period, and the average was 18.2% (this includes sales, slaughter, and other "disappearances" from the herd).(7)

There are some interesting up-to-date figures on herd structures available from King et al.(1984) for livestock

holdings in three of Kenya's Group Ranches. These figures represent three different producer classes, within the Group Ranches - those with large, medium sized, and small herds. The following is a breakdown of their statistical tables:

TABLE 11. Cattle herd structures by producer class as per cent of the total herd.
(3 Kenyan Group Ranches)

	female				male			
	cows	heifers	calves	%	bulls	steers	calves	%
Large	35.8	19.9	9.3	65	5.0	23.1	6.9	35
Medium	34.7	23.5	10.8	69	6.3	14.3	10.4	31
Small	40.7	18.4	10.7	69.8	5.7	16.1	8.4	30.2

Source: Own compilation after King et al.(1984).

At first glance, the proportion of cows appears lower than that found by Jacobs. But if Jacobs' figure of 59% cows specifically referred to "adult" females then King's figures represent a considerable drop in this number throughout all three producer samples. However, it is likely that "heifers" were included in Jacobs' category of adult females - otherwise heifers do not appear in his calculations at all - and this means that the figures are comparable and compatible.

From King's figures we can see that the rich producers in the

sample have more males (35% : 30.2%) and in particular more immature steers (10% : 4.2%) and therefore less females (65% : 69.8%) than the smaller producers. This could indicate that they are capable of producing beef as well as subsistence dairy products. King et al. (1984) concluded from their analysis of herd structures that

(1) the Maasai do not normally keep steers beyond finishing weight which is about 300 kg.,and that,

(2) in spite of development efforts, herd structures still retained the characteristics of a subsistence unit with milk as the primary output (ILCA 1984:45).

While variations among species and sex-age proportions do exist by ranch and wealth stratum, nevertheless in the Kenyan Group Ranch sample: "the herd and flock structures fundamentally imply non-commercial objectives" (Evangelou 1984:136). This may also be related to the fact that the richer producers need less milk than the subsistence pastoralists because they are able to purchase other foods. The subsistence pastoralist has to maintain a higher proportion of producing cows because that is all he has to live on. These are mere speculations since we do not know why the richer Maasai in the sampled Group Ranches tended to have more immature steers.

The herd composition figures of King et al.(1984) are not so different from those of Meadows and White (1981) nor are they very different from Jacobs' figures (again presuming that heifers were included in his enumeration of "adult females"). Meadows

and White's figures indicated that two Group Ranches respectively had 42% and 46% cows, 18% and 16% heifers, 16% and 17% males of +1 year, and 24% and 22% calves.

Though the figures seem to indicate that there has been no radical change to the pastoral subsistence herd composition over the past 20 years, in spite of development efforts to change it, nevertheless, the 23% for the rich producers of the Group Ranches does seem to indicate an increase in steers. This might indicate better market conditions and more of a beef orientation. The figures support the assumption that the Maasai are still very concerned with maintaining milch cows and are less concerned, in general, with the development of steers for commercial beef production. What it could indicate is that there is evidence to show that different levels of producers are more likely than others to move into beef production; witness the extra males in the herds of some of the rich producers. A number of these producers are also moving into other areas of entrepreneurship, e.g. the employment of women to make bead necklaces, etc.

B. Livestock related enterprises

At the present time, Maasailand is the primary producer of a number of raw materials which are processed elsewhere, e.g. meat, hides, and milk. Any move towards a fully integrated livestock industry which would include such activities or processes as slaughter, tanning, meat-dressing, leather-craft workshops, etc., might be an incentive to a number of Maasai to stay in the Maasai

Districts and to move into a more diversified economic structure. As it stands at the moment, some of these activities are performed on the perimeter of the Maasai areas, e.g. Ong'ata Rongai and Ngong', which serve as Maasai way-stations for the Nairobi markets, however they are not exclusively run by Maasai but more by Kikuyu, for reasons at least partially due to the Maasai responses to such activities.

Again, we lack real information on the prevailing attitudes towards some of these "industries" which traditionally were regarded as demeaning. Cultivation too, was regarded as demeaning in the past, but more and more Maasai are turning to cultivation as a basic survival strategy to supplement their economy. Even in the more recent past many Maasai in Kenya possessed shambas but never actually cultivated them. Others did this work either because they had leased the fields or because they were being employed by the Maasai owners.

Bearing in mind the changes in attitude which are currently prevailing in Maasailand, one can foresee that slaughtering (Maasai fashion), butchering, and leather-crafts, etc., may also eventually be more acceptable to the Maasai and especially to the women (in the case of the leather work) and they may begin to take over some of the existing industries and even create new ones. The meat demand in Maasailand is low compared to that in Nairobi, and I think the Maasai will eventually see the market potential of Nairobi for their dairy goods, and will take over more and more of the middlemen positions currently occupied by

non-Maasai traders

One possibility to encourage further diversification would be the encouragement of some of those secondary activities mentioned previously - based on the livestock resources and labour skills of the Maasai. Jacobs, as far back as 1978, suggested the production of skimmed milk and ghee, meat powder, blood meal and bone meal. This might encourage some of the Maasai to leave subsistence pastoralism and to opt for wage-employment in livestock-related industries or at least involve themselves in a more diversified economy. The growth of this non-subsistence economy might further encourage the development of various tertiary activities. The emergence of these livestock related enterprises may enable some of the Maasai to stay on the land as herders (and eventually work in tanning and leathercraft) and may encourage some of the others to diversify or to leave and use their skills elsewhere.

Quite a number of hides and skins are exported from Kenya, and a number of these come from Maasailand (and from the Sonjo of Tanzania who cross the border and sell their skins and hides in the markets at Narok and Kajiado). If there are 650,000 cows in Kajiado District, and 701,000 shoats - according to Meadows and White (1981a) - or if there are 602,000 cows and 1,254,000 shoats in Kajiado - according to the Kenya Ministry of Economic Planning and Community Affairs (1971) - then there is the basis for an excellent local industry processing skins and hides. At the moment the Maasai produce only second- or third-rate hides

because they do not process them properly on drying racks, etc. but leave them pegged out to dry in the sun. Nowhere in Maasailand will one ever see a drying rack - at least not in the range areas of the transhumant Maasai.

There is also a "condescending" attitude on the part of the Maasai towards those who work with hides and this may have restricted the development of this particular craft industry. Nevertheless, the number of hides and skins available in Maasailand could point to the development of a small tanning industry (especially for the women who traditionally take care of the hides and skins).

Working on the basis of an annual offtake rate of 15% this would give us the following:

Kajiado = 97,500 hides and 105,150 skins per annum

Narok = 90,300 hides and 188,100 skins per annum.

If 75% of these hides and skins are purchased as raw material for tanning etc.,

then we have:

Kajiado = 73,125 hides and 78,862 skins

Narok = 67,725 hides and 141,075 skins.

If we assume that 90% of these items are suitable for tanning then we have:

Kajiado = 60,750 hides and 70,795 skins per annum

Narok = 60,952 hides and 126,967 skins per annum.

Alternatively, on a weekly basis we would have:

Kajiado = 1,215 hides and 1,420 skins per week

Narok = 1,220 hides and 2,540 skins per week.

These figures would mean that up to 750 - 800 people could be employed in this small industry of tanning and leather working if there is sufficient demand for such items. Even if the Maasai did not enter into the production of leather-goods, they could still be involved in the processing - most hides are sold after some processing. If one included such support activities as slaughtering, dressing, meat preparation, and by product processing, then perhaps as many as a further 200 people could be employed. (8) Thus there is still scope for increased employment and greater diversification in the economy.

C. Locally based (wet-season) dairy industry

If there were to be an emphasis upon a locally based dairy industry, at least during the wet season when milk is a little more abundant, this would imply certain things. Transportation would be required, a network of small-scale milk trucks which would pick up milk locally; thus entrepreneurs and better road networks are implied. Most critically, a dairy industry might well take away milk from the household economy and deliver it to towns (with serious implications for the nutrition of children) and probably move economic control over milk from the domain of women to that of men. In spite of these dangers, an emphasis on dairy products might well prove less disruptive for the Maasai

pastoralist economy than a more radical change to beef production. It is not likely that a viable year long milk industry could be built up in all parts of Maasailand using the traditional Zebu cows, while upgraded animals could thrive only in certain Maasai regions with other capital inputs (Mokinyo's ranch south of Kajiado is one successful example).

A cost-benefit analysis of the improvement of road and transport services would be relevant to the establishment of a dairy-centred development programme. There are structural problems concerning a milk industry - financing, storage, transport, competition with other milk producing groups, the lack of good milk productivity of the Zebu cattle, etc. - but these are not insuperable difficulties. Many parts of Maasailand have an abundance of milk during the wet season, but this is the time of year when access to the outlying areas is most hazardous. Many of the road networks traversing Maasailand are more for the benefit of the tourist industry than for the benefit of the Maasai (Sindiga 1984). This would have to be altered if the roads were to serve the development needs of the Maasai in the future. There would have to be some sound analysis too, of the total costs involved in storage and handling, as well as these transport costs. These are merely observations (and possible suggestions) since, to the best of my knowledge, there is no plan yet to commercialize milk production - though Meadows and White have recommended just such an endeavour:

> The long term future of the Zone IV areas of Kajiado lies in dairy-ranching. Fodder crops such as napier grass could be grown in favored sites and used to supplement dry season feed. Consideration should be given to setting up a pilot milk collection scheme, for example, around Kajiado Town, from where road and rail communications to Nairobi are good. (1981b: vi)

Dairy-ranching differs from beef-ranching which would require a major change in livestock composition and in the process of pastoral production. Many Maasai in both countries have rejected breeding interventions in their livestock management practices and in the composition of their herds. They have indicated repeatedly that dual purpose animals do not seem to be adaptable to the normally harsh range conditions to be found throughout most of Maasailand. Also they have expressed a dislike of the change in the quality of the milk yielded by non-Maasai cattle which have been introduced at different times into their herds. This attitude could probably be more accessible to change than could their resistance to interventions directed more towards beef production.

D. Supplementary cattle feeding

Another of the alternatives sometimes suggested revolves around the feeding of cattle throughout the year, in a cost effective manner. In other words, are there economic ways of providing animals with fodder through the dry season? There is little evidence that grain-feeding would be an economical use of grain. What imported feeds (e.g. byproducts) from other areas would assist the livestock through the dry season and at what

cost? In other words, for how many months could the livestock be supported by imported feeds and at what level of feed and ultimately at what cost to the pastoralist producer? One would also need to know here how much fodder would be needed by the local cattle breeds, and how much would be needed by each herd owner. These are questions for which there are no available answers (or data in some cases).

In terms of a cost-benefit analysis for the introduction of grain fodder, one would also have to bring into the analysis the cost of improved road and transport sevices within Maasiland - especially within Narok District where the road surfaces are particularly treacherous during the wet season and are left in bad repair during the dry season.

In the early days in the American West and in Quebec, herders grazed their animals, fed them hay, or rented pastures owned by other farmers. In these pastures the herders grew hay and then stored it for the winter. More recently, in much of the western United States, the Taylor Grazing Act (1934) has allowed ranchers to graze National Forest areas in the summer and to store hay from their own land for winter feeding. This access to other land for pasture or for haymaking allowed them to support more animals than their own land would have allowed, and in a cost effective manner. Some planners ask if it is possible that this practice be extended to the Maasai situation. In response, we can say, tentatively, that there may well be some possibility of an alternative method of feeding and sustaining the pastoralists'

herds during part of the dry season. (9) But subsistence pastoralism (i.e. non-commercial herding) itself cannot support haying, and the transport costs of bringing in fodder from elsewhere could be too great.

E. Compatible agriculture

Perhaps some form of land use zoning could be inaugurated whereby a symbiotic relationship between the farmers and the pastoralists could be developed as is found in the Sahel (cf. Delgado 1978). The land could be zoned for the seasonal use of the farmers during the wet season, and for the pastoralists during the time when they would most need it - the dry season. In this way, land could be agriculturally productive and the animals could later graze on the stubble remaining in the fields and on fallow lands. Herders would obtain grazing rights and farmers would gain the manure which animals would leave in fields (Van Raay 1975; Campbell 1979). This might well prove to be one of the most feasible and acceptable of the proferred alternatives and one which need not necessarily require a great deal of bureaucratic organization since it could arise as a private arrangement between the farmers concerned and the pastoralists. The one drawback to this kind of spontaneous contract arising is the ongoing antagonism between the farmers and the Maasai about land and water resources - it may not now be such an easy relationship to establish since the resources are in such short supply and the relationships between the farmers and the pastoralists are at a critical point.

The cultivation taking place in zones IV and V is in areas near swamps or along the valleys of perennial streams, e.g. at Kimana and Namalok swamps where irrigation agriculture is practised. In terms of compatible agricultural practices and pastoralism, there is an obvious possibility here of those agricultural communities producing some form of a forage crop, or allowing the Maasai to graze their herds there during the dry season. This may well be happening, although I have no information one way or the other.

The maximum population of the District under compatible conditions (i.e. farmers and pastoralists counted as using the same land, and especially zone II) is 106,000 AE = 66,000 herders and 40,000 farmers. If the land use could be compatibly arranged so that the farmers produce during the wet season and allow the herders access during the dry season then Kajiado could support a much higher population of herders - perhaps as many as 76,500. This presumes of course that there is stubble, i.e. standing grass, of sufficient nutritive quality to make feasible an arrangement between the two groups. There is little or no evidence of this compatibility taking place - rather the opposite, pastoralists and farmers are constantly disagreeing about the animals grazing in the fields. There is also widespread use of fencing now in many parts of the district to restrict the grazing of the pastoralists' animals. Compatible practice, if it were to arise, would also alleviate the stress caused by the agricultural encroachment into zones IV and V which is beginning to take place.

F. Maasai cultivators?

Cultivation is possible in a number of swamp areas during the wet season, but the importance of access to these places for livestock is increasing as the farmers encroach upon the traditional dry season pasturage on the hillsides. A more flexible land use system of cultivation in the wet season, with herding access in the dry season, would maximize the use of the available land resources and could assist the pastoralists to supplement their diets and income through the simultaneous development of agricultural and pastoral activities (Campbell 1979b). If the Maasai themselves began to cultivate the land with agricultural potential, then this would act as a form of break to any further encroachment by others, and would permit them to do all of the above for their own benefit. However, even if the Maasai were to do this, the major problem would still exist, and these attempts would only serve as short term solutions.

VI. Adaptation and Change as a Survival Strategy

Activities are indeed changing. Galaty and Doherty (1982) documented the various strategies of some of the commercial ranchers in Kenya - the businessmen, the cattle-trekkers, those involved in the informal sector, and those in wage-employment elsewhere. But as those authors have noted these are only "symptomatic of stress" produced by the whole lack of any

well-planned and directed development, and of the strains being put upon pastoralists within the limitations which we have pointed out. There has also arisen that type of "contradiction" referred to by Hedlund (1979) in the peripheralization of the Maasai (though his attack is largely concentrated on "western education") which is part of the dilemma to which we pointed in the first chapter. This contradiction has appeared as external ideological influences which threaten to disrupt the old social practices of the Maasai but which have had to be accepted in order to secure the reproduction of the Maasai society. It seems that many of the younger Maasai are adapting and changing because they see these as strategies for future survival in the face of diminishing resources and the distinct possibility of future droughts.

There is an agonizing decision to be made by new Maasai elders. They know that they are marginalized. This was the way their fathers wished to remain - on the edge of the nation state where they were able to maintain their independence, left to pursue their transhumant way of life. On the other hand, these new elders also now know that if they remain marginal or peripheralized entirely, then they will eventually lose the possibility of continuing that transhumant life-style. Thus many see that partial assimilation and some form of "compromise" is crucial to the future of the Maasai as "people under cattle".

The facts indicate that the Maasai themselves are adapting and changing. More and more are seeking to get an education; are

out-migrating to engage in wage employment outside subsistence pastoralism; are entering the market arena as cattle-trekkers and salesmen; are obtaining cash from sales of cattle and small stock and are both saving and using this cash; are purchasing commodities and changing their diet; and are engaged in what amounts to subsistence agriculture (maize growing). These avenues should all be taken into account when the development planners consider future plans for the Maasai districts. These new directions should be included in any future strategies - but in a planned and holistic way, not haphazardly or without planning. It could well be that there is a paradox here too. Perhaps some of these alternative strategies are working for the Maasai precisely because they are neither planned nor controlled changes in pastoralism.

CHAPTER FIVE - WHAT ARE THE FUTURES FOR THE MAASAI?

I. Introduction

The core of this thesis is the process of commercialization, though the substantive core is the section on demography and the inter-related pressures of land, livestock and people. We have looked at a number of issues such as the government sponsored development initiatives which have aimed at increased commercialization (particularly beef sales). These, generally, have been ill-planned, poorly executed, essentially misguided and sometimes detrimental to the well being of the land and the Maasai. Substantively, demographic analysis shows not only that there are far too many animals and people on the rangelands either to sustain a sound environment or to provide subsistence for the existing population, but that the crisis is even worse than was imagined in previous predictions.

We have pointed to a number of directions of change as alternative strategies within pastoralism and outside it to which the Maasai are themselves turning as a means of surviving. There is a form of "commercialization" occurring, since diversification and non-pastoral inputs are obviously necessary to sustain the projected population. The differential access to educational possibilities and the outmigration of numbers of Maasai

particularly for wage-employment are also part of these alternative strategies.

Perhaps more of an emphasis should be placed upon pastoral households (or small groups of households) as units capable of producing livestock for local markets, to sustain both the pastoralist and urban populations. One of the major needs is for improved "service" organisation to improve production, provide higher prices for livestock, better marketing systems, access to markets, better and more accessible facilities for banking and credit. To achieve these improvements, changes will be necessary in existing schemes.

There are changes taking place among the Maasai which did not occur in the past. Historically, one may say that these changes were slow to begin because of tne resistance of the Maasai and the lack of government facilities, e.g. education, wage employment, beef production, diversified production, shops, small scale industries, etc. But all these avenues are now being pursued by the Maasai much more readily, especially because of pressures on their production system. These areas of change imply the diversification of the Maasai economy and may provide for the support of more people, both within Maasai pastoralism itself, and outside pastoralism in other fields. Consolidation of these areas may assist a number of Maasai pastoralists to maintain their way of life and to provide an identity for those other Maasai who, for one reason or another, move out of pastoralism and become assimilated into the national economy, but

may wish to be known as the people of Maa - a people under cattle.

II. Which Direction?

The Maasai, as a group, have to find a place in the emerging national social, political and economic systems. They have to be considered in the contexts of employment, income levels, standard of living, socio-economic class and power positions, job training and skills, and education. As we have already pointed out, education is one major factor in this social and occupational advancement process, and the pastoralists are increasingly disadvantaged for a number of reasons in this whole area of education (Nkinyangi 1981).

A. Education and Change

The Maasai have reached a similar point in their history to that of the Cree at the time of the James Bay Agreement (cf. Salisbury et al. 1972). Not all the Cree wished to continue a hunting economy, nor was it a question of lamenting their departure from the hunting bands to work in forestry. On the contrary, the time had come for some of them to make the decision, voluntarily, about a change in occupation. They still remained as much Cree as their hunting brothers and sisters, but had moved into a more diversified economy. The key to their integration and insertion into the new economy was planned

education and enhanced training possibilities. Educational planning had to be envisaged well ahead of time (ten years ahead) if the Quebec Government wished to employ Cree workers on the proposed hydro-electric scheme when it would be completed - or even during its actual construction (Salisbury et al. 1972). The potential earning capacity of those "Cree-to-be-educated" also had to be taken into account in development plans.

In the future, any increase in educational possibilities would increase the range of options for Maasai, and would enable some of them to take up alternatives other than subsistence pastoralism. As it stands at the moment, the paucity of educational possibilities, for whatever the reasons, also gives rise to a paucity of options and outlets. The Maasai are faced with a number of possibilities which appear to range between, on the one hand, subsistence pastoralism, and on the other hand, ranching for beef production (as a Government supported alternative). However, a number of Maasai seem to be reconciling and combining these options and are finding a middle path. Some young men are turning to commerce - as shopkeepers or cattle traders (Galaty and Doherty 1982), some have opted out of pastoralism for a variety of reasons, e.g. young men seeking urban wage employment, etc.,and others have been forced out of pastoralism, have not found employment, and have become "urban paupers".

Of those Maasai who wish to leave pastoralism, many are often ill-prepared for the national labour market, lacking basic job

skills and marketable expertise. All too often, they end up as night-watchmen or house-guards in the urban areas with very little pay and even less security of health and position. Again, we have scant researched information on these people as regards their "mobility" in the towns or in the country as a whole. Even if the land base were sufficient to support a given number of pastoralists, many of them might wish to leave pastoralism. An emphasis on education now within Maasailand would prepare them for that future and would allow those who wished to make other choices the opportunity to do so.

It can be argued that the more exposure the Maasai get to "the nation" and all that it has to offer them and to their children, the more will be the likelihood of future development projects having meaning and proving fruitful. This outcome is plausible because the more educated Maasai there are, the more the likelihood of a diversified economy developing in Maasailand, and the more the chances are for the "remnant" to be able to remain as Maasai pastoralists. Though there is an apparent contradiction involved in advocating education and subsistence pastoralism, since it is the educated Maasai who are actually pressing the others into greater and greater change. The political influence of educated Maasai can be an asset to the group but the major struggles in Maasailand over development are not only government versus the Maasai, but are educated versus non-educated Maasai. Education on a wider or broader scale may well reduce this tension and bring about a more broad vision of what "development for the Maasai by the Maasai" may well mean.

B. Maasai-centred projects

A number of development projects among Maasai pastoralists have tended to be more resource-centred rather than people-centred. As Aronson has observed, in a resource-based attitude towards development, it is often "change" that is pursued and not "development", which, in many cases, is:

> an applied weberianism: it consists of the integration of a given population into national participation by means of the elaboration of bureaucratic mechanisms of control, and it seeks the specialization of the economic function of the group (for example, meat production) within the national organism (Aronson 1981:43-44).

We may assume an air of scepticism when confronted with development projects and programmes which discuss various forms of land specialization and animal breeding practices (and changes) with scant attention paid to social data on the people in whose lives these interventions will take place. Some form of secure land-tenure is vital to development among the Maasai, and possibly some form of Group or Cooperative Ranching system, properly researched and constructed may well be the best method of acquiring this security. Tenure has to be inserted into the existing social system, including institutions of property ownership and transmission. If there are going to be modifications to the existing Group Ranch system or programme, then no "Ranch" should be demarcated or decided upon until detailed research on property rights and institutions has been conducted and analyzed (Bennett 1984). This may seem a little late in the day vis-a-vis Group Ranches in Kenya, but there is a distinct possibility that the programme may be revised to make

some of the Ranches more viable as units. The land tenure programme in Kenya has already meant that Maasailand be divided into Ranches. However, tenure or land rights was the critical issue dividing Ranching Associations and Pastoralist Villages in Tanzania for a long time, and the whole problem has not yet been resolved in that country where the Maasai are still losing their land.

If development projects were more "Maasai-centred", this would enable them to solve their perceived problems and to achieve their own goals more rapidly and with less constraint than has been the case in the past. Development would be more of an "attempt to respond sensitively to basic human needs beyond calories and shelter" (Aronson 1981:46). The Matonyok Rural Training Projects of Mpaayei go some way towards this Maasai-centred approach (Sena 1985, Mpaayei in Galaty 1981b). This is not to say that livestock development is unimportant. The way to the Maasai is through their animals - they are "people of cattle", and if they were able to obtain more income from their cattle, some of the possibilities mentioned in chapter four would follow more quickly and more easily. Livestock development - especially in the area of better marketing and pricing - is a form of economic diversification, complementary to other forms previously mentioned.

Following as a development principle, "do what is best for the poorer rural dwellers (here pastoralists) rather than an abstract Nation", we have looked at problems and calculated

alternatives and possibilities from the Maasai point of view. That is why it is illuminating to see that Kenya's own national planning often persists in viewing rangeland from the point of view of the national livestock needs. The Kenya Government document, the Development Strategy for Kenya's Livestock Sector (1983) makes little or no mention of Maasai producers, and under the heading of "Livestock Development Goals" says:

> livestock development is to be geared towards:-
>
> - improvement of nutritional requirements of Kenyans by increasing the production of animal protein,
> - fuller utilization of the nation's rangelands,
> - intensification of production systems in the higher potential areas,
> - provision of raw material for dependent agro-industries
>
> (Ministry of Agriculture and Livestock Development, Kenya,1983).

Elsewhere in this document we read that one of the national objectives is the "promotion of rural development by increasing the productivity and market access of pastoralists and small farmers" (1983:1). However, even this statement could hardly be called "people-centred". Merely to increase pastoral productivity without speaking of who benefits from this increase or how they benefit, or what the pastoralists are to do with any increase in the returns - in money, herd growth or nutrition - made available to them through increased productivity, is not to address the major issue of what development means for the Maasai, of which increased productivity is only a part.

C. Dairy ranching: Increased milk production

The Development Strategy calculates that if milk production is increased from the 150 litres per lactation for Zebu to 1,000 litres for dual purpose animals then this would reduce the number of animals required to satisfy the pastoral family's nutritional needs. But these calcualtions are based on zones II and III which are already out of the control of the Maasai. The possible improvement of the milk yield is much less for the more arid zones IV and V. It is unlikely that the yield can be increased tenfold using Zebu and the survival of dual purpose animals is also unlikely under the existing range conditions in which the Maasai live. We know that, even if productivity is increased by 25%, the land will still not be able to support the number of animals involved in production for the projected human population (cf. Appendix Table 2).

Talk of "making fuller use of the rangeland" has been shown not to recognize the intense use - even to overstocking - already made by the Maasai and limited mainly by encroachment of agricultural non-Maasai. A true pastoral ecology of pastoralism that takes into account the larger economic structure (Hjort 1982; Little 1985) must not neglect the core element of that economic system; pastoral production itself. But if the implication is that the Maasai reduce the large number of milch cows and substitute for them a smaller number of beef animals - what is proposed is a <u>reduced</u> use of rangeland. As Sindiga has stated:

> a strategy which calls for direct substitution of commercial ranching for traditional pastoralism cannot succeed in the long run because it involves the displacement of many people from the land and requires heavy capital investment (1984:36).

Improvement of herds has failed where it has been a matter of the introduction of exotic animals which cannot live outside the "hot-house" environment of the "model ranch" or "project". More attention could be paid to an improvement of the milk yields of local Zebu. Better breeds may well result in fewer animals with the same or even increased production. In the past, many of the

> projects were designed to transform traditional pastoral self-sufficiency production systems into commercial, market oriented production.... Failure to recognize livestock producers' objectives relative to product and species mix has been a key shortcoming. For example, pastoralists' principle production objective is more milk. It is the basis of their desired diet - essentially, their survival. Yet, past development efforts have not stressed increased milk output, but rather beef production. This divergence between national project objectives and those of individual producers has slowed development of the industry (Development Strategy for Kenya's Livestock Sector, 1983:4).

However, I do not think that increased milk yields or increased animal productivity for beef, or even increased prices at the markets, <u>alone</u> are going to solve the problems which are arising concerning the ability of the increasing numbers of people to live off ever-diminishing land and water resources. The issue is a much more fundamental one. These other points are similar to a "moving the deck-chairs around on the Titanic" strategy of desperation. I think it is much more important to look at the human population first and only when that has been clearly analyzed and understood to look at the livestock development

issue as such.

III. Conclusion

Accelerated presssures of education, wage employment, commercial beef production, diversified production and consumption of agricultural products, the use of shops and purchased commodities, and even the development of small-scale industries within the pastoral setting, can all have both positive and negative results for the continuance and viability of Maasai pastoralism.

If one wishes to continue a labour intensive pastoralism, i.e. the Maasai as a "people-under-cattle", the way one can do this with a diminishing land base is to substitute the type of government supported and encouraged commercialization with that of the Maasai supported and initiated forms of "mini-commercialization." In order to afford the many inputs necessary for any form of commercialization there has to be some money circulating within the system. The Maasai, without throwing in their lot completely with those forms of commercialization which will dramatically change their way of life, have given limited support to other forms of commercialization which will assist them to acquire sufficient money to be able to purchase certain inputs which they have seen as beneficial to them. There are certain pressures towards commercialization which arise internally, i.e. within the Maasai

pastoral system itself, in order that money be generated and be circulated within the system.

There is a difference between encouraging, on the one hand, some form of small scale dairy industry during the wet season, or a skin and hides industry throughout the year, and giving, on the other hand, whole hearted and enthusiastic support for a rapid and major transition of the Maasai dairy-based economy to a highly commercialized beef-producing economy. The former need not necessarily imply too rapid a transition in the social, political and religious lives of the Maasai through radical intrusions into and changes of their economy; the latter could well mean just that. Short term support <u>now</u> for dairy-related industrial activity does not necessarily exclude the long term hope that <u>gradually</u> the Maasai themselves will make the decision to make further changes in their economy and in their diet.

One of these radical changes could, for example, be the move from dairy subsistence to commercial beef production. Such a change may also entail the development of two streams within the Maasai domestic herds - one for beef sales and the other for the Maasai families' own dairy requirements. I am inclined to think that this has already begun to happen in the herds of a number of Maasai in both Kenya and Tanzania where they are responding to the economic stimuli around them.

Factors of differential access to education, outmigration, wage-employment, commoditization/consumerism, dietary changes,

health services, household expenditures, diversification of economy, etc., are more important issues that should be addressed before one gets involved in economic analyses and predictions concerning "beef production" pursued per se, though all these issues are linked closely to animal production. The notion of "beef production" as an ideal type is somewhat of a red-herring drawn across the development trail, since it will not happen. There is much more of a likelihood of the Maasai getting higher revenues from better animals marketed for higher prices. This is the change which would make the biggest difference in Maasailand; an increase in prices paid to Maasai for their animals. Efforts should be made to strengthen the pastoralist mode of production to benefit, first and foremost, the Maasai themselves. The Maasai are producing beef already and it is in the national interest to strengthen the subsistence base of the Maasai, as well as giving it the opportunity to be broadened and diversified. Integration within the national economy need not entail the total loss of ones's economic mode of production, ones's homelands, or one's cultural identity.

So far we have examined various Maasai strategies from subsistence dairy production onwards. We have found that the biggest problem is the "take-over" of the best grazing, of the political roles, and of school places and farmland by non-Maasai. Unless Maasai ownership of land is supported by government and courts, there will be a crisis. Group Ranches (and Individual Ranches) are one way to limit land take-over. Maasai are using them as ways to affirm land rights (and exclude foreigners). The

Group Ranches are not successful though. They are not working in a European way, but in a Maasai way, as an adaptive strategy. We have shown that the possible other options open to the Maasai - mixed farming, education, cattle sales - suggest that the Maasai are not relying exclusively on "ranching" or "subsistence" strategies to meet their problems. Though the figures are unclear, we have extracted data which expresses the desirability of getting better data on some of these issues. We have clarified some of the major issues though we have not solved the problem. This can only be solved by the Maasai themselves. More data is needed on what the Maasai are actually doing themselves in terms of the changes within pastoralism and more is needed before their adaptation is facilitated amd made more effective - at least to hold on to the amount of land that they still possess.

We have argued that the nation's rangelands are fully utilized - even over-used. What may be impeding fuller rangeland use is land alienation /expansive agriculture. The Maasai are not able to support themselves totally from dairy products because their subsistence land base has diminished. Those Maasai with assured tenure do invest, add steers to their herds, and in some cases do produce agricultural goods. Milk is fitted with purchased food items, with migrant labour, and with part-time agriculture. If the national government encourages some of the Maasai adaptations which we have discussed, then the national aims will ensue.

The Maasai are involved in these adaptive strategies and they are proving effective for them. More and more Maasai are seeing education and out-migration for wage-labour as a "way-out" for their children and as a "way-in" eventually for supplementary cash and consumer goods. There is too, the strategy involved in choosing alternative food and food sources especially during the dry season. However, they are doing all this in spite of, and not because of, the general thrusts of the development processes so far initiated by the government and the planners. It would be much more beneficial for the Maasai, perhaps, if their attempts at "alternative strategies" be recognized and encouraged.

The question too, of the integration of the Maasai into the national economy often has a one way reference - that they should produce milk and beef for the national and international markets. However, it appears that, in both countries, there is a real inadequacy of integration from the other standpoint, i.e. in terms of how much the "nation" or the "state" is doing or could be doing for the Maasai, by way of education, health facilities, provision of foodstuffs, veterinary services, etc. This is the role of government, and, as part of the "cost of meaning" that we spoke of earlier, could well be seen or weighed in terms of domains where the state could do more, especially in :

- returning some of the land which has been taken from the Maasai and which is being used for other purposes (for example, important dry season pastures);
- drawing up land tenure agreements and land title guarantees for the Maasai (in Tanzania, since this has already been

done in Kenya);

- intervening to stop the selling, freehold leasing, and general carving-up of Kenyan Maasailand;
- providing more schools in Maasailand, and particularly secondary schools in the case of Tanzania;
- providing more employment opportunities and job training facilities both in the private and public sectors, possibly on a quota basis;
- establishing better pricing and marketing structures for the pastoralists' products;
- spending more money on the road and transport facilities throughout Maasailand; and
- extending and improving the health services in Maasailand, both human and animal.

In Kenya and Tanzania, a number of Maasai are leaving pastoralism through outmigration. This can be assessed in two ways: One is to see it as unfortunate, and attempt to make it better for the Maasai pastoralists to stay in pastoralism rather than to leave it. The other response is to see the move less as a loss, and to look at it more positively as an independent exercise of choice or as a statement to the effect that, "I can have a better life outside this system." Until the pastoralist economy can be made to sustain larger numbers, it may be for the good that an increasing number of pastoralists be encouraged to seek education and wage employment elsewhere.

Those Maasai who live outside pastoralism actually form a

kind of bridge between the economic and the cultural, within which the Maasai can make their own decisions. Those still inside the system can give some base for the others to return, either physically, culturally, or emotionally, identifying themselves still as "Maasai" and "people of cattle". An economic analysis of pastoralism can easily overlook these important contributions of the Maasai living inside and outside the "cultural, economic and social system". Arhem with great insight succinctly stated this:

> What is economically necessary is emotionally charged and symbolically invested (1985:13).

Even if the viability of the rangeland were to be guaranteed for the future, there will always be the question of the relative psychological attraction of remaining in pastoralism or going to the "big city". The future is not solved by keeping the production system going if this does not keep up with other sources of income and "prestige". There are psychological rewards and in the face of wages many times higher than they would get from pastoralism many Maasai may still choose pastoralism as a psychologically rewarding form of labour. This has to be taken into account if we are to speak realistically about viability. In other words, some Maasai pastoralists will still choose to remain within pastoralism even if the financial rewards of other employment are made as attractive as possible. I would hazard to suggest that somehow or other the psychological attractions of subsistence pastoralism have to be outweighed by some other psychological attractions of education, out-migration, or wage-employment in other sectors if the demographic pressures

are to be defused realistically. Ultimately, however, the final choice has to remain freely and definitely in the hands of the Maasai themselves.

FOOTNOTES

Chapter Two

1. Increased prices need not necessarily be an inducement to the Maasai to sell more animals. Although producers may seek the highest priced markets, sometimes they may present a negative supply response to price, because an increase in price will enable them to sell fewer animals to meet their cash needs and at the same time will enable them to maintain larger herds (even buying more animals with the new wealth).

   There are two different points here: (a) increasing market prices for animals may involve selling fewer rather than more animals; and (b) increasing animal (and labour?) productivity through genetic and technical innovations, which implies higher returns in the same inputs. Thus, measures aimed at increasing animal productivity cannot be expected automatically to induce herders to keep fewer stock. This is not to suggest that there should be no livestock improvements - but the planner should be prepared to witness no immediate response on the part of the Maasai to increased prices, etc. Increasing production will enable larger herds to be developed, not only because the stock will multiply faster, but also because only a smaller proportion needs to be sold to meet the pastoralists' cash needs (cf. Meadows and White 1979).

2. Pastoralists were told to remain in the area in which they were residing at the time of the registration, and they were told to sign for that particular group ranch. Most of the Maasai did this, because they were being asked to register during the time when there was good grazing in those particular areas.

Chapter Three

1. The issue of encroachment and political encapsulation is not a new one in the history of Maasailand. In the past, agricultural encroachment has often been encouraged openly in other nomadic pastoral areas, e.g. in Karamoja in Uganda where the government moved Kiga agriculturalists into the Karamojong's western rainy season grazing area "with the objective of undermining the Karamojong pastoral system" (Sena 1984:6; Baker 1975).

By 1915, the Maasai of Kenya could not use 51% of their Reserve - 30% was too arid, 8% had tsetse fly, 3% had East Coast Fever, and the Magadi Soda Company had possession of 10% (Sindiga 1984). In addition, nearly all the perennial streams were under the control of the Europeans (including the Kiserian and the Ngong).

2. At the end of the war, the Maasai herds were relatively small, since many animals had been bought by the government

for the army and many more had died during the severe drought of 1943-46. Sales during the war were high, 66,333 head of cattle, which accounted for a ratio of 75% of the herd being males over 3 years of age and these sales were undertaken by the Maasai in spite of the drought of 1943-46.

3. In fact, this second plan was thwarted only because of the complaints about and the publicity given to it by a number of missionaries working among the Maasai. Photostat copies of the documents granting the lease were obtained and sent to the President's Office. An enquiry took place and a number of officials were called to account for the transactions. Nevertheless, the initial land was taken over for commercial use. The second land deal, however, was never pursued.

4. In terms of the land taken for Game in Kenya:

Name	Area (km.sq.)
Maasai Amboseli Game Reserve	3,248
Maasai Mara Game Reserve	1,671
Olorgesailie National Park	-----
Nairobi National Park	117
Kitengela Game Conservation Area	583
West Chyulu GAme Conservation Area	368
Tsavo West National Park (not presently within Maasailand boundaries, but it includes areas	---

which were formerly used by the Maasai)(Sindiga 1984)

5. There is a certain irony in the fact that the Tanzanian Government has been urging the Maasai pastoralists to settle down and to begin cultivating. Yet, in the Ngorongoro Conservation Area (which has been home to 18,000 Maasai pastoralists and their herds) this is a forbidden activity. Those Maasai who wished to engage in some form of limited subsistence cultivation have been ejected from the Area.

This ironic predicament was paralleled in 1968 by the case of the Maasai in the Narok District of Kenya. Wheat schemes were initiated there and these not only produced surpluses to an extent that the government could not dispose of the grain profitably and lost large sums of money in subsidies, "but the Maasai were then prevented for the next two years from replanting, and they were urged to return to full-time herding, while their fields remained idle and non-productive (Jacobs in Monod 1975:419).

6. The wildebeest remain in the Serengeti and Ngorongoro Conservation Area during the wet season (Nov.- April), then they migrate into the Serengeti woodlands in the early dry season (May-July), and move north into the Masai Mara Game Reserve in Kenya in time for the late dry season (Aug.-Oct.). Once the rains begin in November they move south again onto the Serengeti Plains.

7. Wildlife viewing in Kajiado District contributes approximately Ksh.70.6 million to the Kenyan economy, yet little of this goes to the ranchers on whose land these wild animals have grazed (Thresher 1973:3).

8. Jacobs estimated that the milk portion of the diet was 80% (1975:408) and a UNESCO/FAO Report also gives this figure. I am inclined to think that this has not changed much, during the wet season, over the past ten years. Though there have been some changes in the Maasai diet, due partly to the recurrent droughts in the area. The Maasai in Tanzania have become somewhat more accustomed to the use of grain during drought and the dry seasons in general. Meadows and White found in their 1979 Kenyan survey that a household of 10 persons consumes 1 kg of maizemeal per day for 6-9 months of the year i.e. 168-252 kg. of maizemeal per year (1979:19). Nevertheless, this does not represent any radical or massive change in the almost entirely milk diet of the Maasai.

9. The Kenya Government's projections for the population of Kajiado District in the years 1980, 1990 and 2000 AD were based on the 1969 Census and were 62,927; 78,225; and 97,242 respectively (Min. of Economic Planning 1979, Appendix X, Table 3). These estimates were smaller (by approximately 5,000 each time) than those of Campbell. The projection for the agriculturalists in the District was 30,992 AE by the year 1980 and the projection for 2000 AD was 61,667 AE needing 33,268 ha. of land.

10. The figure is actually lower if we use the Kenya Government's (1979) carrying capacity estimates. The Government figures (Table 1) allow for 329,724 SSU (grazing all zones). This would mean that by 1979, using the Census figures, the District had already reached 0.69% of its carrying capacity.

Here capacity (following Campbell 1979) is measured by the surplus capacity as a percent of the total livestock capacity:

$$\text{percentage surplus capacity} = \frac{\text{livestock capacity - population demand x 100}}{\text{livestock capacity}}$$

All zones annual livestock capacity (Kenya Government):-

93,560 AE x 3.5 SSU = 327,460 SSU required for the total population.

Livestock capacity = 329,724 SSU - 327,460 = 2,264 SSU (surplus)

$$\frac{2,264 \times 100}{329,724} = 0.69\%$$

This is 5.18% less than the estimates based on Pratt and Gwynne's carrying capacity figures.

11. Campbell (1979) gives some predictions for the livestock

capacity of Kajiado District under various situations:

APPENDIX TABLE 1.

Capacity to meet the grazing demand for the Maasai. 1980 - 2000 AD (based on the Dt's livestock capacity).

	annual livestock capacity		dry season capacity all ecozones grazed		dry season capacity less ecozone II	
	1980	2000	1980	2000	1980	2000
West	42.0%	10.4%	29.4%	-9.1%	11.1%	-37.4%
North	8.2%	-41.9%	-28.7%	-98.9%	-28.7%	-98.9%
South	37.9%	4.1%	16.5%	-29.0%	2.7%	-50.4%
Dst.	31.8%	-5.4%	11.4%	-36.8%	-2.6%	-58.6%

Source: Campbell 1979b.

The exclusion of Zone II from grazing, especially during the dry season, means that the northern section of the district remains unaltered in terms of its inability to meet the grazing demands by the year 1980 and 2000 (-28.7% and -98.9% respectively). However, the other two areas drop considerably in their capability to meet the grazing demands by the year 2000.

West = -37.4%

North = -98.9%

South = -50.4%

District -58.6%

Even if productivity increases by 25% or even 50%, the resources will still be unable to support the projected populations as Appendix Table 2 demonstrates. This is relevant to any discussions about increasing the productivity by the use of imported fodder, changes in the herd composition to higher productivity, etc.

APPENDIX TABLE 2.

Year by which the pastoral carrying capacity will be exceeded under different stocking rates, levels of technology, land use, and population growth rates.

(Kajiado District)

		Land Availability and Level of Technology					
		All land			Zone II unavailable		
Stock ratio	Pop. growth	Current capacity	+25%	+50%	Current capacity	+25%	+50%
SSU per AE	%	year					

3.5	2.2	1997	2008	2017	1994	2004	2013
	2.5	1996	2006	2014	1994	2003	2010
	3.0	1995	2003	2010	1993	2001	2007
2.0	2.2	2024	2035	2043	2020	2031	2040
	2.5	2020	2030	2037	2018	2037	2034
	3.0	2017	2025	2031	2015	2022	2028
		Zone II and III unavailable			Zone II and III, and 1/4 of Zone IV unavailable		
3.5	2.2	1993	2002	2011	1985	1995	2003
	2.5	1993	2001	2009	1984	1994	2002
	3.0	1992	1999	2006	1984	1994	2000
2.0	2.2	2018	2029	2038	2010	2021	2030
	2.5	2016	2025	2033	2009	2018	2026
	3.0	2014	2021	2027	2008	2016	2021

Source: Kajiado, District Environmental Assessment Report, 1980, Table 5.1.

12. The impact of this loss means that the dry season livestock capacity in the total district is reduced by 13.7% from 267,964 SSU to 231,214 SSU which is the difference in the livestock capacity once zone II is taken out. Zone II = 36,750; zone III = 11,583; zone IV = 142,377; and zone V = 77,254;thus the total capacity, in SSU, for the district, using all the land = 267,964 SSU during the dry season.

These figures are derived from the data given by Pratt and Gwynne (1978) and Campbell (1979).

The maximum population that can be supported at a level of 3.5 SSU per adult is therefore 66,061 AE. This is a figure which has already been exceeded. The 1979 Census figure gave the Maasai population of the district as 93,560 AE and these were being supported on the basis of 4.0 - 4.4 SSU per person. This represents an even greater strain on the resources than the support of 66,061 people at the rate of 3.5 SSU per person.

Chapter Four

1. In the nine samples of Individual Ranches selected by Evangelou (1984), only one Ranch had provided sufficient grazing such that the cattle remained there for the whole year - three spent the whole year grazing the cows outside the ranch boundaries, two spent half the year outside the ranch, two spent four months of the year engaged in off-ranch grazing, and one spent three months of the year outside the Ranch. Though these figures are for Individual Ranches they do give some idea of the amount of grazing outside the confines of the established Ranches - probably more for the Individual than for the Group Ranches.

2. Parkipuny (1975) gives a very interesting reason why some Maasai elders sent children to school. It seems that the

parent chose the dullest or the son of the wife with whom he was out of favour; "the reason behind the choices is that, in case the boy later gets spoiled and goes astray i.e. opts to stay in town away from his people, then the loss is sort of not most severe" (Parkipuny 1975:56).

3. Somerset writing in Court and Ghai (1974) estimates that nationally (in Kenya) between 35-40% of the CPE candidates repeat the examination in the following year (1974:152).

4. The other significant areas were:

Nairobi - 2,500 males and 925 females,
Central Province - 1,213 males and 637 females,
Western Province - 1,115 males and 1,017 females, and
the Coast Province - 875 males and 634 females.
(Source: Kenya Census 1979)

The figures for Nairobi would indicate that there are many males in that city residing there for purposes of employment, etc. The imbalance between the numbers of males and females would suggest that they are not families, but rather single men. This imbalance is also indicated in the Maasai residing in the Central Province where there are nearly twice as many men as there are women again giving the impression that the men are there without their families and are engaged in some form of rural labour.

5. Kamuzora reported that fot Monduli District at least,

"outmigration to urban areas is negligible"(1981:13).

6. There are some figures from ILCA which give some indication of the total household expenditure for two group ranches in Kenya:-

	Mbirikani Group Ranch	Olkarkar Group Ranch
Mean Household Expenditure (food items)	86%	74% of total
Mean Household Expenditure (hotel food and drink)	14%	26% of total
Total	100%	100%
Mean Annual Expenditure non-food consumer items	K.sh.84	K.sh.79

7. Offtake for Meadows and White also includes disappearances from the herd for a number of reasons, including sales for slaughter, subsistence consumption, or mortality. Sales comprised an average offtake of 4.5% of the herd numbers over the period 1953-64. Also it must be borne in mind that the Kajiado herds fell from 630,000 in 1960 to 200,000 in

1962 as a result of the extensive drought.

8. In the tanning sector, four persons can easily process sixty skins and thirty hides weekly. Therefore, we can estimate that if a large item = 2 hides or 1 hide + 2 skins, then one person can do 1 article in three days. Again one person can process 2 hides and 4 skins weekly and therefore the industry can occupy 600 persons per week with a possible 760 persons being employed throughout the industry. Campbell made some projections (500 new jobs) basing himself on information from the Administrator of the Maasai Rural Training Centre at Isinya, and especially on information from the Tanning Unit of the Centre.

9. What is not commonly known is that the Maasai have for generations used the pods of the Acacia spirocarpa as stock fodder in the dry season because the grass alone at that time of the year has a low nutritive content.

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