"The land is getting smaller":

Changing territorial strategies of pastoralists in Tanzania

Olivier LaRocque
Department of Anthropology
McGill University, Montreal
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Abstract

This thesis is the result of fieldwork in Tanzania alongside pastoralists. Since mobility is a condition of pastoral existence, the study followed patterns of livestock movements in several sites, along seasonal migratory routes, and in areas where pastoralists have relocated permanently. Large-scale land alienation from their customary territory by the government and the encroachment of agriculturalists threaten the integrity of the pastoralists' livestock economy. Most pastoralists now farm to supplement their dairy diet. Since agricultural development secures a stronger claim on land, pastoralists also pre-empt outsiders' claims for land by expanding their own farming activities. However, the study suggests that the transformation of key seasonal pastures into large commercial farms and subsistence farm plots has a cumulative effect on the availability of pastoral resources. The chronic scarcity of dry season grazing resources exacerbates competition among pastoralist groups. Large pastoral territories are fragmenting into less sustainable pastoral management units and strategies of exclusion are replacing earlier arrangements based on reciprocity of access to facilitate livestock mobility. As a last resort, some pastoralists relocate in agricultural areas where prejudices against pastoralism run high and livestock mobility is further constrained. Altogether, political constraints now shape livelihoods from livestock more so than ecological factors. The loss of livestock mobility increases the vulnerability of herd-owners to occasional droughts, and stationary herds are more likely to cause environmental damage. Pastoralism is often deemed economically unsustainable and environmentally destructive, but the examination of political and social constraints helps understand better the current state of mobile pastoralism.

Sommaire

Plusieurs mois de terrain parmi des groupes de pasteurs en Tanzanie ont inspiré ce mémoire de maîtrise. Le but de l'étude était d'identifier les stratégies des pasteurs suite à la réduction de leurs territoires coutumiers. La mobilité des troupeaux étant nécessaire à cause de l'imprévisibilité du climat, les pasteurs sont vulnérables aux changements politiques qui réduisent leur capacité de mouvement. La recherche s'est déroulée à plusieurs sites afin de retracer les changements de routes migratoires saisonnières et de la mobilité pastorale en général. Le gouvernement a en effet confisqué une grande part du terroir pastoral et les agriculteurs ont aussi pénétré les espaces pastoraux et en ont cultivé une grande proportion. Suite à la réduction de leur cheptel, la plupart des pasteurs cultivent maintenant des parcelles de terre afin de supplémenter leur diète laitière. Comme la transformation des pâturages en terre agricole améliore la sécurité foncière selon les politiques gouvernementales actuelles, les pasteurs s'empressent aussi de multiplier leurs lots agricoles avant que les fermiers en fassent autant. Or les meilleurs pâturages disponibles lors de la saison sèche sont aussi les plus arables et la pénurie de cette ressource saisonnière aggrave dorénavant la compétition parmi les pasteurs. Ceux-ci contribuent donc aussi à compromettre l'intégrité de leur système pastoral. En effet, les arrangements territoriaux d'antan garantissaient la réciprocité d'accès parmi les occupants de différentes localités, cependant l'accès aux pâturages locaux est devenu de plus en plus exclusif; la mobilité des troupeaux en est d'autant plus réduite; la vulnérabilité aux sécheresses est exacerbée; et les troupeaux stationnaires dans des pâturages exigus les endommagent. Une autre stratégie pastorale est d'émigrer en permanence hors de leurs terroirs coutumiers lorsque les conditions sont déplorables. Or les émigrants pastoraux se retrouvent alors parmi des agriculteurs chez qui la mobilité des troupeaux sera bientôt proscrite par les autorités gouvernementales de la région. L'existence nomadique des pasteurs est d'orée précaire, parfois décrite comme bientôt insoutenable économiquement et destructive pour l'environnement, or le présent contexte de politiques foncières en Tanzanie risque de prouver ces prédictions malgré la valeur de la mobilité pastorale.

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Introduction

The original objective of my research in Tanzania's Maasailand was to find out how pastoralists perceive the impact of domestic herds on the landscape and whether herders devise their daily and seasonal mobility patterns according to ecological as well as economic considerations. Upon inquiry, however, pastoralists argued that their access to pastoral resources is now so limited that they cannot foresee coordinating grazing activities to optimize forage production on the long term. The government confiscated large portions of customary pastoral territories and declared them National Parks. From the perspective of pastoralists banned from their former pastures, wildlife and foreign tourists have more rights than livestock and herd-owners. I decided instead to study the political and economic constraints imposed on pastoralists, and to look into the strategies they devise to secure access to pastoral resources. It soon became clear that political interference extends beyond protected areas and land policies promote agricultural encroachment on the remainder of pastoral land. In effect, government administrators are in charge of land-use planning and monopolize the rights to allocate land throughout the country. Bureaucrats usually follow the advice of experts rather than consult land users, and thus dismiss the communal institutions which formerly regulated pasture use over large areas. At the national level, high-ranking officials convert vast tracts of pastoral land into conservation areas and large commercial farms. At the local level, village authorities allocate small private plots for agricultural purposes. Pastoralists must therefore apply for farm plots individually if they want to assert any right over land whatsoever. Land policies thus compel pastoralists to compete at the expense of their common resources, since plots of arable land are invariably excised from key communal pastures. Furthermore, competition for farm plots is fierce since few domestic groups

now own a herd large enough to support them, and pastoralists are eager to diversify their economy.

Politicians heralded the 1999 land reform as a breakthrough for customary right-holders, including pastoralists. The new laws purport to resuscitate communal decision-making in matters of land use, but the devolution of political power from national to local levels has yet to manifest in terms of security of access to pastoral resources for herding communities. The research investigates the cumulative effects of land alienation and the fragmentation of pastoral territories on the livestock economy. Since the causes of insecurity of access to pastoral resources are internal as well as external, the case studies illustrate the strategies of pastoralists coping with the chaotic process of land allocation, and examine the impact on the organization of pastoral territories of the participation of pastoralists in the race to privatize land.

General context of pastoralism in Tanzania:

Pastoralists have devised ways to live in arid and semi-arid areas where conditions are too harsh for most other economic endeavours. While pastoralists are not altogether self-sufficient, they produce much of what they require for subsistence and further contribute a surplus for the local market. In Tanzania, pastoralists, who constitute only one per cent of the population, generate nearly one quarter of the national meat production while utilizing vast marginal areas with little agricultural potential[1]. Their economic contribution is significant, considering that milk production for subsistence is their main concern. Nevertheless, pastoralists in Tanzania experience difficulty in sustaining their livestock economy.

Reasons given for the misfortunes of pastoralists are many. The Maasai of Tanzania, for instance, are allegedly too 'nomadic' and 'conservative' and they are reluctant to diversify their economy and participate in the market economy. Yet, most Tanzanian Maasai have small farms as well as livestock. They are also astute buyers and sellers. During my fieldwork, some herd-owners explained in detail how they calculate a

[1] Agro-pastoralists, who are much more numerous, generate most of the animal production, whereas the industrial sector, of private and state-run ranches, makes a nominal contribution, despite holding considerable estates.

gross margin analysis to ensure a profit from livestock. Instead, Maasai themselves suggest that their difficulties stem mostly from the insecurity of access to pastoral resources and competition for land from other pastoralists as well as from agriculturalists. Government land allocation and land use policies have undermined rather than strengthened the country's livestock economy.

Another common misconception about pastoralists in semi-arid areas is that, since they can make good use of areas unfit for most agricultural endeavours, access to marginal areas is a sufficient condition for their herds to thrive. In fact, pastoral use of marginal grazing areas is predicated on seasonal access to key resources such as reliable pastures during dry seasons and droughts, and permanent watering sites, all of which are also coveted by farmers. Unlike sedentary farmers who monopolize the most arable and well-watered sites in an area, pastoralists prefer using key sites as staging areas. The 'ideal' situation for a pastoralist in Monduli District, where much of my research took place, would follow a yearly cycle. At the onset of the rainy season, dusty plains transform into lush pastures and herders trek down from the highlands with their herds to take advantage of fresh forage and temporary water pools. They remain there until the plains become parched before returning to the highlands. Since water is available there, and a bank of forage has accumulated there during the rainy season, the herds wait out the dry season on higher grounds before resuming their mobile ways. Mobility is a condition of pastoral existence where the distribution of seasonal rains is not uniform in space and total precipitation varies widely from year to year. By using this transhumant cycle, pastoralists reduce the degree of uncertainty and optimize the use of vast marginal areas.

Competition for land now impairs transhumant patterns. Demographic pressure and competition for resources are not recent phenomena for Maasai pastoralists. In pre-colonial times, bloody wars regularly erupted between pastoral groups and losers were often annihilated. On the other hand, pastoralists and agricultural groups in Maasailand have long maintained trading relations and complementary forms of production. When European nations imposed a colonial regime, however, the available political means to sustain and defend the integrity of pastoral systems vanished. Over the last century, a coercive state administration has eroded the capacity of Maasai in Tanzania to assert their

territorial prerogatives. Colonial and post-colonial administrators both imposed policies that severely curtailed pastoral mobility. The customary communal land use regime over vast rangelands has dissolved and pastoralists must negotiate a transition to an increasingly exclusive regime of resource allocation.

Research Objective and Thesis:

The appropriation of key seasonal areas for exclusive agricultural use now threatens an entire production system. Pastoralists participate to the loss of pastoral land, partly to establish their own small farms, and partly to prevent outsiders from overrunning their territory. The goal of my field research was to learn how pastoralist groups dealt with the tension between asserting collective and private rights over land in the face of outside competitors, and how they negotiated access to pastoral resources far and wide. My research proposes that the strategies of pastoralists to improve their economic security and to protect their rights over land have detrimental consequences on their ability to continue transhumance, and other similar types of mobility. I visited several sites once it became evident that several factors conspire to elicit different pastoral strategies in specific villages. 'Villages' are the units of analysis of my case studies. In Tanzania, a village is a unit of administration as well as a large demarcated area, rather than a settlement. The strong arm of the government reaches its rural constituents through a vast bureaucratic network of government representatives, from the regional levels to sub-units within each village. At the village level, chairmen are elected while the government appoints executive secretaries. Together with other officials, they constitute the Village Council. Village councils have too often acted as agents for the government rather than spokespersons for villagers, but my interviews suggest that chairmen and councillors also frequently bend government regulations and directives to suit local needs and contain the influx of outsiders. My research suggests also that there is little coordination between village councils along migratory routes.

The study examines the effects of privatization of pastoral village land and other resources and its implications for the economy of pastoralists. Privatization is often construed in legal terms, as the provision of land titles, through freehold or leasehold

(Galaty, personal communication). It confers individualized or 'nucleated' ownership, which excludes "any possibility of others having simultaneous rights" (Okoth-Ogendo 1987:227). The 1999 Land and Village Land Acts confirm that all land in Tanzania is 'public land', but, to attract investors, the Tanzanian government retains the discretion to privatize land by allocating long-term leases over large tracts of land to 'private persons' such as individual commercial farmers or 'legal persons' such as Tanzanian or foreign companies. The government condones privatization on a lesser scale, since bureaucrats want to regulate current illicit land sales. The 1999 Acts make provisions for the trade of rights of occupancy over land, which in effect authorizes a land market (Wily 2003). The registration of Customary Rights of Occupancy actually grants title deeds for rights over land and will be another avenue to privatize land into the hands of individuals and corporations. The new land laws also sanction previous informal allocations of land plots granted to individuals by village councils. The latter process of *de facto* privatization has been ongoing for several years, and constitutes a primary focus of the study. In practice, privatization has taken place as a gradual shift in claims and entitlements arise 'from the bottom up' as well as from the top down. Altogether, the process fragments communal land and concentrates landholding in individual rather than collective hands. Furthermore, it converts usufruct rights into rights of ownership, thus freeing owners from the claims of others. The outcome of the movement towards the privatization of pastoral resources, and the forms it will take, is not yet known. In pastoral localities favourable to agriculture, the head of a pastoral household has usually farmed and, in fact, owns the cultivated area adjacent to his homestead. In the past, that same area was 'borrowed' from collective pastures. Now, the trend away from communal decision-making will likely increase since landholders can legally sell their rights over land to other Tanzanians or lease them to foreign investors, therefore alienating land from the community.

The fragmentation of pastoral territories is less radical in areas with marginal potential for agriculture. Instead, some village councils now contemplate managing their village land as communal pastures for the exclusive use of their members. The plans reflect the design principles for the effective management of 'common pool resources',

according to the 'new institutionalist' approach, in particular the provisions for clearly defined physical boundaries and social membership (Ostrom 1990:91). Also, in villages where pastoralists have recently immigrated, plans are underway to carve 250 acre parcels from communal pastures and register them as individual household ranches. Altogether, the enclosure of pastoral land, whether in the form of village territory or small ranches, sacrifices herd mobility to prevent unfettered access, regardless of the fact that pasture use was closely regulated in former pastoral territories, and that mobility is a function of economic security.

Controversy about livestock mobility in Monduli District:

Since pastoralists do not forsake raising livestock once they farm, problems inevitably arise as they adjust their patterns of herd mobility to a patchwork of private areas. The case studies conducted in Monduli District in Arusha Region indicated that Maasai pastoralists living in villages favourable for agriculture emulated livestock-owning farmers who had immigrated there to settle. Pastoralists appropriated as much land as possible in their locale to cultivate and thus converted valuable dry season pastureland into small farms or *shambas.* Nevertheless, these farming Maasai pastoralists send their herds to outlying marginal areas in the Rift Valley to graze for as long as possible and thus remain fervent advocates of communal access to extensive pastures unfit for agriculture. Maasai who reside in several of these outlying areas, however, often object strongly to the presumption of incoming brethren pastoralists who expected permission to graze but could not or would not reciprocate. Several Maasai villages from the Rift Valley are therefore laying plans to restrict access to their pastures within the bounds of their village and favour an informal 'ex'closure. They hope that, aside from severe drought events, whatever limited dry season resources are available locally will be adequate for resident herds to find sufficient forage and water on a year-round basis. Change in patterns of livestock mobility therefore reflect a transition in land tenure from a context of inclusive access to pastoral territory, founded on social membership in a broad community, to a context of exclusive access claimed by smaller social entities, whether villages, households, or individuals.

The grass is not necessarily greener elsewhere:

The control of pastoral land and of livestock circulation takes different forms outside customary pastoral territories. Pastoralist groups have emigrated from their customary territories to other areas of Tanzania since pre-colonial times, where they co-exist today with agriculturalists. Situated in the Coastal region, Bagamoyo District holds significant populations of Parakuyo, also Maa-speakers, as well as more recent Kisongo Maasai and Barabaig pastoralist immigrants. Because of a more generous precipitation regime, the availability of forage is less a limiting factor in the region than access to drinking water for livestock. Case studies there indicate that the control of access to natural bodies of water and the privatization of water dams are the favoured means to stem the flow of new pastoral immigrants and to control livestock mobility. However, water dams are built close to the main settlement, highway and market place, rather than in peripheral pasture areas. In addition, a Village Council in Bagamoyo District decided to subdivide village land into distinct areas for exclusive farming or grazing use. A regional government program also promotes the private control of land through the establishment of individual 'household ranches' which are gaining many adherents among Parakuyo.

Altogether, these initiatives reduce the range of livestock mobility but, with the exception of the 'household ranches', the impetus is internal rather than imposed by outside authorities. Furthermore, pastoralists are aware of the implications of reduced mobility on the sustainability of their economy, but, in the absence of a functional communal pastoral regime, they would rather ensure access to a limited and perhaps insufficient pool of resources than risk the precarious situation of unregulated access. Yet, the outstanding question is how emerging types of pastoral practices will adjust to the ecological constraints which have shaped earlier forms of pastoralism.

The above are sketches of the specific issues concerning access to pastoral resources in the various contexts encountered during fieldwork. Social mechanisms of reciprocity are still in practice, through kinship, friendship and clan networks. These ensure access to pastoral or agricultural resources at a distance, beyond newly imposed

village-land boundaries. However, there is also an internal breakdown of the customary authority framework together with the unravelling of the ethos of mutual social obligations that articulated earlier territorial access.

Pastoralist advocates wish for pastoralists to carry on with their customary territorial organization as homogeneous political entities and frequently evoke 'David and Goliath' scenarios that pit struggling pastoralists against insurmountable odds. Villains in the imminent collapse of 'traditional' mobile pastoralism originate invariably from outside sources: the state, conservationist interests, international development organisations, and many other interlopers in pastoralist affairs. Indeed, the alienation of pastoral territory is a hallmark of colonial and post colonial regimes in East Africa and the risk of destitution is perhaps higher today than in the past, and for different reasons. My thesis proposes that pastoralists also participate directly in the competition to privatize pastoral resources, and they exercise powers of exclusion among themselves, from plots of land or territories much smaller than their earlier extensive range. Herders must consequently undertake livestock mobility under different terms than those of earlier socio-political networks. In other words, Maasai pastoralists, for instance, are not only victims of predatory 'outsiders' but are also active political agents who sometimes manage to subvert problematic government policies and carve themselves a diversified economic niche.

The following sections of the thesis contain an overview of past territorial arrangements among Maasai, for comparative purposes with the current situation. It also identifies the conceptual tools for my analysis of ongoing social changes. A description of my field methodology follows. Subsequently, a brief review of historical and current political context of land tenure in Tanzania introduces my case studies of the strategies devised by pastoralists to ensure access to resources. A discussion also puts in perspective the implications of current practices on the sustainability of a livelihood based on livestock in a context of land tenure under the recent Land Acts.

Resource use in Maasai territory:

Although customary pastoral territories have no legal recognition in Tanzania, territorial arrangements from yesteryear retain a measure of currency among pastoralists. A cursory overview of Maasai territorial practices will put in perspective the current tension between customary and state authorities in matters pertaining to access to pastoral resources.

Maasai herders still claim that they can take their herds to graze anywhere in 'Maasailand'. Generalized access, however, does not entail unregulated access. Maa speakers, and people known as 'Maasai', were politically organized in 'sections', 'sub-tribes' or *iloshon* (sing. *olosho*) with corresponding territories where members of that section could expect to graze their livestock with impunity (Galaty 1980:159). Social membership in a 'section' remains an important distinction, but the loss of territorial significance of *iloshon* followed the imposition of administrative boundaries which impede the circulation of herds.

The Kisongo Maasai constitute a section that encompassed a large portion of Maasailand in Tanzania. Lesser groups are composed of Salei, Serenget, Loita, Laitorok as well as some Purko Maasai. An *olosho* territory usually contained a full complement of grazing resources. It included extensive pastures and intermittent water ponds for rainy season grazing, which are often situated in drier areas such as the Rift Valley. As the dry season progressed, most herds converged towards higher areas where a more generous precipitation regime ensures a bank of forage and permanent watering sites when these resources become scarce elsewhere. Thus herders followed regular patterns of 'transhumance', between different ecological zones, or, in areas where herds remained within the same ecological zone, patterns of herd concentration and dispersal, from key dry season sites to more extensive pastures where rain collects in temporary shallow pools over a large area.

Maasai herders took their livestock on daily rounds, or grazing orbits, but returned them to their night enclosure, or *boma* (Kiswahili; pl. *maboma*), which is also the residential site for a group of several Maasai households, or *enkang* (in *Maa,* the Maasai language). Entire households may travel during seasonal herding treks, but, more often,

young men of 'warrior' age, or *murran* (sing. *murrani*), took most of the livestock towards seasonal camps and temporary *maboma* (and still , leaving behind most household members and the necessary number of nursing cows. Maasai livestock herds were therefore consistently mobile, whereas Maasai households may be stationary or else nomadic. These practices are still current.

Sections were divided into localities, or *inkutot* (sing. *enkutoto*), each occupied by several household groups. Residents of a locality had the strongest claims on its resources. They were not entitled to exclude other section members, but, in addition to rights of use, residents held authority over the conduct of grazing activities on *enkutoto* land. Residents of an *enkutoto* consulted amongst themselves in regard to seasonal grazing plans, determined areas where forage may be set aside for specific times or for certain classes of livestock, and directed non-residents to locations where they could graze their herds.

Like grazing areas within a pastoral territory, large bodies of water, such as lakes and rivers, were not subject to appropriation. Localized and limited sources of water, such as springs or dug wells, belonged to specific local residents. The latter, however, asserted their private rights foremost through power of allocation, based on an acknowledged scale of priority among users, rather than as exclusionary power (Potankski, 1994). Once the production of dug wells threatened to falter during dry season, for instance, lower priority users must take their herd elsewhere.

In Maasai territorial conduct, the most exclusive rights exerted over land use pertain to the use of forage reserves or *olailili* [2] (Ndagala1992:55). Each homestead set aside the area adjacent to its *enkang* for an *olailili.* Also, the herd owners of a locality often selected a larger communal areas with prime grazing for dry season use by vulnerable and less mobile livestock such as calves and ailing animals (Galaty 1981b:69). However, these grazing reserves did not constitute land ownership for households or local communities. Rather, their exclusive status reflected sensible logistical arrangements and rational priorities in the allocation of territorial resources according to wise management

[2] These reserves are also called 'olopolili' or 'olokeri' depending on the regional context.

of livestock. The household units of an *enkang* occasionally changed long-term residential sites, and *boma* enclosures were regularly abandoned and rebuilt, without mobile households retaining residual property rights or without any claims left clinging to specific *boma* sites. *Olailili* privileges simply came as extensions of rights of occupation granted for a communal reserve by the council of elders of an *enkutoto* to residents of a *boma* or of a larger community. Maasai households could elect to change residential site, but again a council of local elders oversaw the selection of a new site for a *boma.* By convention, a *boma* and its adjacent *olailili* could not impede general herd circulation and resource use for the community. Overall, rights of use of individuals or households were subordinated to communal priorities in matters of territorial use.

Pastoral territories could be described as areas of communal cooperation in the utilization of pastoral resources. If actual land appropriation took place, it occurred at the level of the *oloshon,* where property in land was asserted collectively. But even social and physical boundaries at that level did not preclude livestock circulation and the inclusion of outsiders into social networks. Once compulsory formalities were fulfilled by permission-seekers, access would be granted to Maasai from other sections, should the current political climate be favourable to inter-section cooperation (Galaty 1993a:78; Potkanski 1994:18-9).

According to custom, pasture access in Maasailand is theoretically available to all Maasai herders, but a protocol system based on residency regulated the intensity and timing of pasture use, the circulation of herds and the allocation of rights of exclusive use. Infractions by newcomers entitled local herd-owners to deny access to non-locals. The decision process was communal, in the hands of age-group agents, or *ilaigwenak,* (sing. *olaigwenani),* who represent local interests. The priority of rights of use was ordered along a scale ranging from primary rights to secondary and tertiary rights (Potkanski, 1994; Cousins 2000:155-7; Leonard 2000:54). This 'order' and the authority to implement it are increasingly challenged. Local residents had primary rights to the surrounding grazing land. As secondary right holders, herders who regularly use seasonal routes and destinations expected their access to be sanctioned by custom. Finally, in the event of an emergency, herders from far and wide may secure access by appealing to

reciprocal obligations among Maasai. To improve their prospects, permission seekers resort to a variety of social networks, which Ndagala (1992) calls 'circles of rights in resources'. They may seek the support of fellow kinsmen, clan and age-set members, or seek support through residential networks. Herd-owners can also access remote pastoral resources indirectly by cultivating a network of stock-friends. The distribution of livestock in excess of immediate domestic needs served multiple purposes among stock-friends. It cultivated bonds of mutual reciprocity. Recipients may thus overcome a temporary deficiency in livestock numbers and, by dispersing their cattle inventory, providers could reduce their risks of ecological misfortune, epidemics, raiding, and other dangers. The delegation of livestock property to stock-friends reduced domestic labour requirements, and, once amalgamated to the recipient's own herd, 'gifted' or loaned cattle were automatically given higher priority in remote resource allocation (Galaty 1993a:77).

Whereas land was not the stuff of private appropriation, cattle are property for Maasai. Nevertheless, cattle property is divided rather than wholly owned. Heads of households have power of allocation and of disposal. Upon joining the domestic group, their wives receive a basic herd for their domestic use, which they hold in trust as future inheritance for their sons (Galaty 1981b:70). Sons also receive an animal at birth, and will not leave the homestead with cattle until their father deems them worthy of carrying on as a full fledged Maasai head of household. Of course, Maasai bridewealth is also composed of cattle. The initial number is modest at the onset of marriage, but the sharing of cattle wealth with a father-in-law continues as both bridewealth cattle and households reproduce (ibid). Hence, brides and cattle are not so much social currency as pledges of social alliances and embodiments of social obligations.

The function of cattle wealth retains considerable importance in the existence of Maasai pastoralists today. Territorial functioning, however, has come under threat, as a result of land alienation, agricultural encroachment and a constrictive administrative network. Nevertheless, customary territorial arrangements such as described above, have remained operative in areas under the jurisdiction of the Ngorongoro Conservation Area (Potkanski, 1994), partly as a consequence of recurring bans on farming. Earlier expulsions of Maasai from pastoral territories designated as Parks (Brockington, 2002),

however, suggest that recent lobbying by conservationist interests augurs the same fate for pastoral Maasai living in the Ngorongoro Conservation Area.

The notion of pastoral territory:

In Ingold's (1986) view, a 'territory' is a portion of landscape used in common during productive activities. The objective of territoriality is to optimize usage of scattered resources among multiple users. To do so, users share information about the distribution of resources as a means to achieve the pragmatic and rational organisation of resource extraction. The purpose of territorial organisation is to meet material needs through a series of arrangements between users (Ingold 1986:138). According to a typical territorial arrangement, residents of a territory give visitors who follow the proper formalities the permission to use their resources (ibid:141-3). The logistical nature of territorial arrangements is apparent in the coordination of grazing activities between occupants of different Maasai localities or *inkutot.* But social relations come into play at another level, since "territoriality is [also] an *instrument* of the appropriative movement [...] subsumed under the concept of tenure" (Ingold 1986:141). For Maasai, communal appropriation occurred at the level of 'sections', or *iloshon*, and access to sections was often defended. Nevertheless, access was also granted regularly between members of different sections, but a newcomer had to gain membership in the local section before becoming permanent resident. In addition, residency conferred the right to participate in the communal decisions about resource use. The pragmatic nature of 'territorial functioning' therefore parallels the social nature of tenurial claims over a territory. Territorial functioning is also apparent in the allocation of land for *olailili.* According to custom, domestic groups held the rights of occupation and had priority over the pasture land surrounding their homesteads, but they did not acquire exclusive tenurial rights to it. The nature of the claims over an *olailili* reflects also another important characteristic of the socio-economic priorities of pastoralists. Since the productive activities of pastoralists are foremost "organized by social relations which are materially embodied through the possession of livestock" (Ingold 1986:168), social arrangements pertaining to rights to land are framed within the economic imperatives of pastoral production.

Accordingly, claims to *olailili* areas did not interfere with, and, in fact, the allocation of *olailili* facilitated the rational exploitation of pastures by community members. The function of *inkutot* and *olailili* is therefore pragmatic, or territorial in nature, but territorial arrangements would not work if the community did not assert control over the section, or *olosho,* as a whole, and if visitors could do as they please. Territorial functioning and communal tenure over a pastoral territory are therefore complementary. The first ensures co-operation, so that herd-owners can move their herds according to the seasonal availability of forage (while following regulations) and individual claims to resources are not detrimental to the integrity of the territory. The second prevents outsiders from unduly interfering with territorial affairs.

Losing tenure over their territory is the key problem of pastoralists. With their authority gone, they cannot control the influx of intruders and enforce regulations. But, to track down the internal corrosion of territorial arrangements, my research attempted to identify the strategies of pastoralists that indicate, on the one hand, the breakdown of co-operation amongst the users of a pastoral territory, and on the other, a reversal of dominance in social relations such that "land replaces animals as the material embodiment of the claims and counterclaims that persons exert over one another" (Ingold 1986:170; see also Galaty 1981b:82). This substitution takes several forms: rights of exclusion over a bounded tract of land; the capacity to bequeath it; and the discretion to transform it for agriculture purposes, without consultation, and regardless of the implications for the local availability of pastoral resources. These forms would constitute clear indications that the integrity of communal institutions articulating the livestock economy of pastoralists is breaking down. Hence, commitments and obligations pertaining to land, and property rights in land, overwhelm similar social investments in livestock. Immobile property thus displaces mobile property as the principle of spatial organisation.

The notion of property rights in land:

The concept of 'ownership' encompasses a full range of property rights; its configuration constitutes a singular type of property which is familiar to western

observers (Bruce, 1993). Hence, as an analytical tool, 'ownership' is problematic in an African social context where the control of resources is not 'atomistic' or 'nucleated', and various rights[3] can be held over the same resources simultaneously by different persons (Galaty 1981b:70; Leonard 2000:29, 42; Okoth-Ogendo 1987:226-7). By contrast, a 'bundle of rights' conception (Grey, 1980; Schlager and Ostrom, 1992) helps clarify the variety of entitlements that are attached to resources, although Grey coined the term 'bundle of rights' in the context of an analysis of private property itself and the contractual permutations of private ownership (Scott C.H., personal communication 2005). To analyse changes in land tenure regimes, it is therefore useful to refer separately to the various property rights usually subsumed under 'ownership', such as rights of use, access, withdrawal, management, allocation, disposal, and, finally, rights of exclusion (Leonard 2000:10, 46-9; Schlager and Ostrom, 1992)[4].

Privatization, as it is conventionally understood in Western economic thought, signifies the implementation of 'private ownership', or a 'full' bundle of rights. Yet, the detrimental effects it has on communal land tenure and on the existence of pastoral territories do not stem from the introduction of private rights. As mentioned earlier, Maasai individuals, households or localities enjoy rights of allocation or use of resources. Individuals control the use of dug wells and retain primary rights of water use. Domestic groups and residents of localities hold exclusive rights to the forage reserves contained in their respective *olailili*, and wield the power to regulate grazing activities in their localities etc. Households could cultivate a plot of land for private use if the plot allocation was endorsed collectively and so long as communal rights of allocation superseded private interests and thus prevented the total area and the location of cultivable land from interfering with pastoral production. Therefore, customary Maasai rights did not give to their private holders any prerogative to operate outside the prevalent moral economy built around livestock property and territorial functioning. Property rights such as the power to exclude others permanently, to dispose of land, and to alienate

[3] In the present context, a 'right' is a socially sanctioned claim, or entitlement, to a 'stream of benefits'. Right-holders are protected by the duty of others to respect their right, and compelled by convention to fulfill the obligations attached to the socially acceptable use of the right (Bromley 1989).
[4] These distinct property rights will be clarified as needed in later context.

it outside the community were inconceivable. 'Privatization' as concentration of property rights in the hands of individuals or small groups was not a threat.

Demographic growth can overwhelm a communal tenure regime to the point where the regulatory power of its members collapses from internal dissent and an 'open-access' situation emerges (Bromley, 1989; Ostrom, 1990). However, regular collapses of human and of livestock populations in Maasailand have historically held demographic pressure in check. Pastoral populations also supply a consistent flow of their labor force outside the pastoral economy (Khazanov, personal communication, 2005). Demographic pressure from *outside* the pastoral economy, however, was exacerbated by decades of land tenure policies deleterious to territorial functioning and communal land tenure in general. The movement towards land privatization became possible once the collective rights of resource allocation were weakened by the power of the colonial and post-colonial state. Both pastoralists and agriculturalists saw their moral economy unravel as a consequence. Property rights thus did not evolve towards a 'private ownership' configuration endogenously; their implementation was instead a result of conquest (Okoth-Ogendo 1987:226-7, 2000:125-7; Shivji, 1988).

Historical background of land tenure in Tanzania:

German settlers first penetrated East Africa in the 1880s, before the German imperial government asserted sovereignty over Tanganyika (later to become Tanzania), Burundi and Rwanda colonies in the late nineteenth century. After the Germans lost their colonies during the First World War, the League of Nations gave the British a mandate to administer the Tanganyika and Zanzibar colonies. During the British administration, the right of ownership of all land was vested in the Crown, as it had been during German rule. The control and management of the land was expressly vested in the Governor, "rendering the public virtually powerless to assert the rights and protect their interests in the land" (Okoth-Ogendo 2000:125). Since customary rights, or 'deemed rights of occupancy', were permissive rather than recognized by law, the Governor (and later the President) could alienate land for public interest. Administrators distributed large

portions of pastoral territories to settlers who were more likely to make a contribution in agricultural goods to the regional markets and the metropolitan economy. The British adopted politics of containment towards Maasai in particular: arbitrary boundaries were drawn for 'Maasailand'; pastoralists were relocated and confined within the 'Masai Reserve'; veterinaries imposed protracted livestock quarantines; administrators planned Maasai resettlement in 'communal ranches', etc.

Trespass was a common occurrence despite substantial fines, but the colonial stranglehold on key pastoral resources gradually took a toll. By the 1950s, a succession of droughts had devastated Maasai herds. Nonetheless, administrators blamed the subsequent famine on the pastoralists' lack of foresight and chronic overstocking. Yet, Maasai were not allowed to farm even as a temporary measure: it ran counter to the colonialists' ethnic stereotype of Maasai and their policy of making Maasailand an 'ethnological and economic sanctuary' (Hodgson 2001:59).

Controversial incidences of land appropriation by the British were a key factor in the mobilisation of political resistance under the banner of the Tanganyikan African National Union (TANU). With Independence in 1961, TANU became the Party ruling government, with Nyerere elected as President in 1962. TANU ensured political hegemony by instituting constitutional one-party rule (Sundet 1997:27). The post-colonial regime was not kinder to pastoralists or to rural Tanzanians in general than its predecessor. Although his early rhetoric waxed lyrical about traditional African ways, Nyerere was dismissive of customary land tenure and practices. He planned instead to transform Tanzania into a modern state driven by scientific principles for economic development. The Arusha Declaration of 1967 set the stage for the rise of 'socialism and self-reliance', hence the demise of the capitalist farmers, who had been the backbone of earlier attempts of the transformative approach towards large-scale agriculture, and the eradication of '*kulak*' peasants. In the eyes of the members of the radical factions, the latter peasant entrepreneurs were poised to accumulate an inordinate proportion of agricultural resources. TANU nationalized Tanzania's principal means of production instead and gave its rural population no resort to assert rights to the land it occupied by custom.

Nyerere dreamed up and resolved to engineer a modern African nation through 'Ujamaa', a countrywide 'villagization' plan. The redeployment of the rural population in a constellation of planned villages would transform a disorderly peasantry into a network of productive communal farms (see also Scott, 1998). Tanzanians declined to cooperate, however, and resettlement became compulsory by the mid-1970s. The government dispatched contingents of agricultural technicians and administrators to the countryside with their express mission of reforming obsolete practices and carrying out policies of the TANU government and its political arm, the CCM Party (*Chama cha Mapinduzi* or Party of the Revolution).

The economic and political debacle of villagization is well documented elsewhere (Shivji, 1998; Sundet, 1997). The Tanzanian government had accumulated a large national debt by the 1980s' and its agricultural production had deteriorated despite massive injections of foreign loans and technical help. The financial support from other socialist states declined at the end of the Cold War, prompting other international lending organizations to pressure the government of Tanzania to 'liberalize' its economy.

Tanzania's economy already functioned as a state capitalist system although its political regime was socialist, but the adoption of more aggressive market-oriented policies gave an impetus to other economic players. Land and other resources became available to foreign investors, Tanzanian entrepreneurs and to the individual African peasant. 'Privatization' and ITR (Individualization, Titling and Registration) became the rage (Shivji, 1998).

The government did not abdicate radical title to land or its power of land allocation. All land in Tanzania remains 'public land' to this day. The government retained control in matters of land use and proceeded to concentrate large tracts of land in the hands of corporations and foreign investors, on the one hand, and fragment village land amongst small landholders on the other.

Although 'Ujamaa' had been reduced to an "impotent label for the national development ideology" by the late 1980s (Sundet 1997:79), a vast bureaucratic network was firmly in place to connect the central government with its constituents and extend its strong arm into village affairs. An inquiry into the failure of village collective farms

found that agricultural production soared in plots re-allocated to individuals (URT, 1982). With the Report's recommendations, a taskforce devised the 'Agricultural Policy' (Agripol) to liberalise allocation of land to private investors, large or small (Sundet 1997:63-4).

The 1985 policy vested 'village title' in Village Councils, which in turn had the authority to grant private plot allocations, or sub-lease, to individual villagers. Agripol was eventually consolidated as the 'National Agricultural Policy' in 1995, with many amendments. Regardless of the legal intricacies of policy-making and its implementation into law (the 1999 Land Act and Village Land Act), the latest land reform led to an outcome consistent with the country's history of land tenure: the power of land allocation today remains concentrated in the hands of the state; land use management is a top-down process; and bureaucrats, from the village level upward, are foremost accountable to a centralized body of decision-making (Shivji 1998, 1999; Sundet 1997).

Political implications for pastoralists:

The concentration of land in some hands (foreign interests, corrupt politicians, corporations and the state) and the fragmentation of village land amongst individual villagers have many implications for pastoralists. Pastoralists lost access to large tracts of pastoral village lands allocated to large farming interests. In theory, a Village Council is accountable to its Village Assembly (villagers over 18 years of age), but not in practice. Instances of corrupt councillors abound, and hundreds of thousands of acres fell in the hands of foreign investors behind the backs of villagers (Hodgson, 2001; Igoe, 2000; Igoe & Brockington; URT, 1992). Influential or wealthy individuals sometimes bypassed the village councils and received large private allocations from higher level administrators (Sundet 1997:67-8).

Despite the recent land reform's rhetoric of devolution, the Tanzanian state has no intention of losing its clout as a stakeholder in land. Although it was Nyerere's original intention to distribute all land to villages, government planners ensured instead that the demarcation of villages left considerable land outside village bounds, in the category of 'General Land' controlled directly by the government. Whether 'General

Land' encompasses a pastoral territory is immaterial; it is for the government to dispose of as it wishes; in the form of land allocations to foreign investors -- mining companies, large commercial farms, or for National Parks, Game Reserves, Forest Reserves, hunting leases, etc. Although the village titling programme never materialized for most villages, *de facto* as well as *de jure* private plot allocations have become common occurrence. The shuffling of rural populations during villagization had opened the door to many agriculturalists onto pastoral lands. New regulations allowed small farmers to claim land for private *shamba*; most Maasai, and many other pastoralists, eventually followed suit, since they had already diversified into agriculture. In pastoral villages, if a pastoralist did not apply for a particular plot of land, an agriculturalist would. Whether they were farmers or pastoralists, recipients were attributed rights to exclude other users. Private usufruct rights overrode collective prerogatives and undermined the functioning of pastoral territories.

Overall, pastoralists are particularly susceptible to the loss of grazing territory. From colonial times to this day, claims to grazing land have been plagued with 'development conditions' (Hodgson, 2001; Shivji, 1998; Sundet, 1997). But what is there for pastoralists to develop? A primary advantage of the pastoralists' economy is that it requires little infrastructural investment. In the absence of the technological trappings of conventional ranches, however, the economic value extracted through herding appears minimal to the development minded expert. Thus, government authorities do not hesitate to convert as much pasture land as possible into farms, especially if pastoralists will not adopt measures to maximise meat production. 'Unused' land is an obvious target for confiscation for 'public interests' (Wily, 2003). Pastoral utilization, however, is intermittent and large portions of grazing territory are not visibly occupied for extended periods of time. Most vulnerable are areas set aside for dry season pastures, drought reserves, and pastures accessible only at times when surface water collects. By contrast, a cultivated plot of land is readily demarcated and defensible. It lends itself to individual appropriation and control and cultivation is visible evidence of occupation, use and economic production. Mobile social groups with flexible membership are also problematic to administer, control and tax, whereas sedentary cultivators are more

predictable subjects. Therefore, official adjudicators usually favour the latter in the event of a land conflict.

For the above reasons, it is more expedient for individual pastoralists to appropriate plots of land, and they also gain benefits from economic diversification. Internal challenges to territorial functioning are thus inevitable: if the 'best game in town' is tailored to the individual, with government sanctions to uphold it, and if communal claims to territory are dismissed by the same authorities, why should the individual defer to the priorities of a common territory? How would elders, who are presumably already land-holders themselves, explain to *murran* that the little plot they covet does indeed impinge on communal pastures? Or that they should relinquish it later if the community foresees a better use for it?

Methodology:

My field study emphasizes the issue of concentration of rights of allocation, of land fragmentation and the effects of individual land appropriation on the social organisation of pastoral territories (see Berry, 1988). Once it became evident that these effects ripple outside village bounds, across an entire District and beyond, I elected to make inquiries in several areas rather than concentrate my research on a single site, with the knowledge that short stays exacerbate the difficulties of generating a comprehensive report. I attempted to capture a specific aspect across a rather vast spectrum of situations. Eight months of fieldwork provided glimpses on the ground of the political devices used by pastoralists dealing with a difficult transition made all the worse by recent tenure laws in Tanzania that exacerbate tenure insecurity.

I recruited research assistants to translate and help me find people to interview. Villages were selected that represented a cross-section within a specific 'pastoral system'; from the core of Monduli District towards its periphery, for instance. Interviews were at first unstructured, but, in time, followed specific thematic lines of inquiry. In Bagamoyo District, I designed a questionnaire, at the request of the livestock officer, and had it translated. But, during the sessions, I noticed how much influence was exerted on respondents by various 'interviewers' I had employed and decided against using the data. In addition, subsequent deliberations with one of the respondents indicated that the questionnaire contained several ambiguities, but this triggered discussions that helped focus my later inquiries. Also, on several occasions, people confided that they had been recruited to answer questionnaires in the past but had resented the process. At each village we introduced ourselves to the village councillors, which is a regular procedure[5]. Councillors readily described grazing patterns (perhaps an actual village grazing plan), the formalities of land allocation for domestic use, and were eager to explain the politics

[5] Incidentally, village formalities were far more pleasant than at higher levels. The Tanzanian bureaucratic machinery is for real; and each level must be consulted for access: national, regional, division, district, ward, etc. Besides, research in Tanzania is fraught with endless permit formalities that take months to obtain, residence visas and other permissions.

of resource access between villages. At each village, we also sought elders, *ilaigwenak,* and other herd-owners who were not as involved in local government politics, to compare views and inquire about local constraints on herd mobility and access to grazing resources. I have used details of the circumstances of some individuals or domestic groups as illustrations. On several occasions, I have accompanied herders and observed daily grazing patterns and formalities of access to watering sites. My fieldwork was lengthy enough that I could witness seasonal variations and observe contrasts between pastures with different seasonal purposes.

I audiotaped some early interviews but soon eschewed the tedious process of transcription in favour of note-taking during or after the interviews. I was also concerned that officials would be reluctant to be 'on the record'. Instead, I found that interviewees did not hesitate to criticize the government and shared their strategies to subvert its regulations, or, in other cases, the conventional rules among Maasai. I am told that, with the advent of a multiparty political system, the mood has considerably relaxed and people are less apprehensive about the Party 'listening'.

Interviews were rather informal. During the interviews, I inquired about local concerns and then focused on specific pastoral issues to pursue several themes across several situations. My eighteen year experience as a rancher and one year in Zimbabwe as range management consultant facilitated the process. Interviews often took place as exchanges between livestock owners concerned with the practical matters of grazing management. Besides pastoralists and farmers in villages, I interviewed District officials, agricultural extension officers, veterinaries, ranch managers, NGO representatives and other researchers, social scientists and ecologists. I was fortunate to become affiliated with the Institute for Resource Assessment at the Dar es Salaam University. Dr Sosovele in particular was very kind with his time and knowledge, and helped me benefit from the university facilities and library.

In the presentation of my field research, I chose Lashaine village as a starting point, to begin a sequence beginning in a former key resource area, now obliterated by farming plots and peri-urban development. The study sites unfold from the core of agricultural development towards the periphery of Monduli District , which has felt the

long-term effects of the displacement of livestock from the 'core' of the territory. The land closest to Monduli Town has lost its pastoral utility and has been converted into farm plots yielding more valuable crops, perpetuating a pattern of resource allocation that had brought Arusha agro-pastoralists to the area in the first place. As the latter intensified their agricultural methods on the slopes of Mount Meru, the livestock component of their economy was eventually displaced to the Maasai Plains, where they recruited livestock-friends to oversee their herds.

After a discussion about the territorial dynamics in Monduli District, the study shifts to Bagamoyo District where pastoralist groups have migrated over the last century, and where many newcomers are still bringing their herds from the pastoral hinterlands.

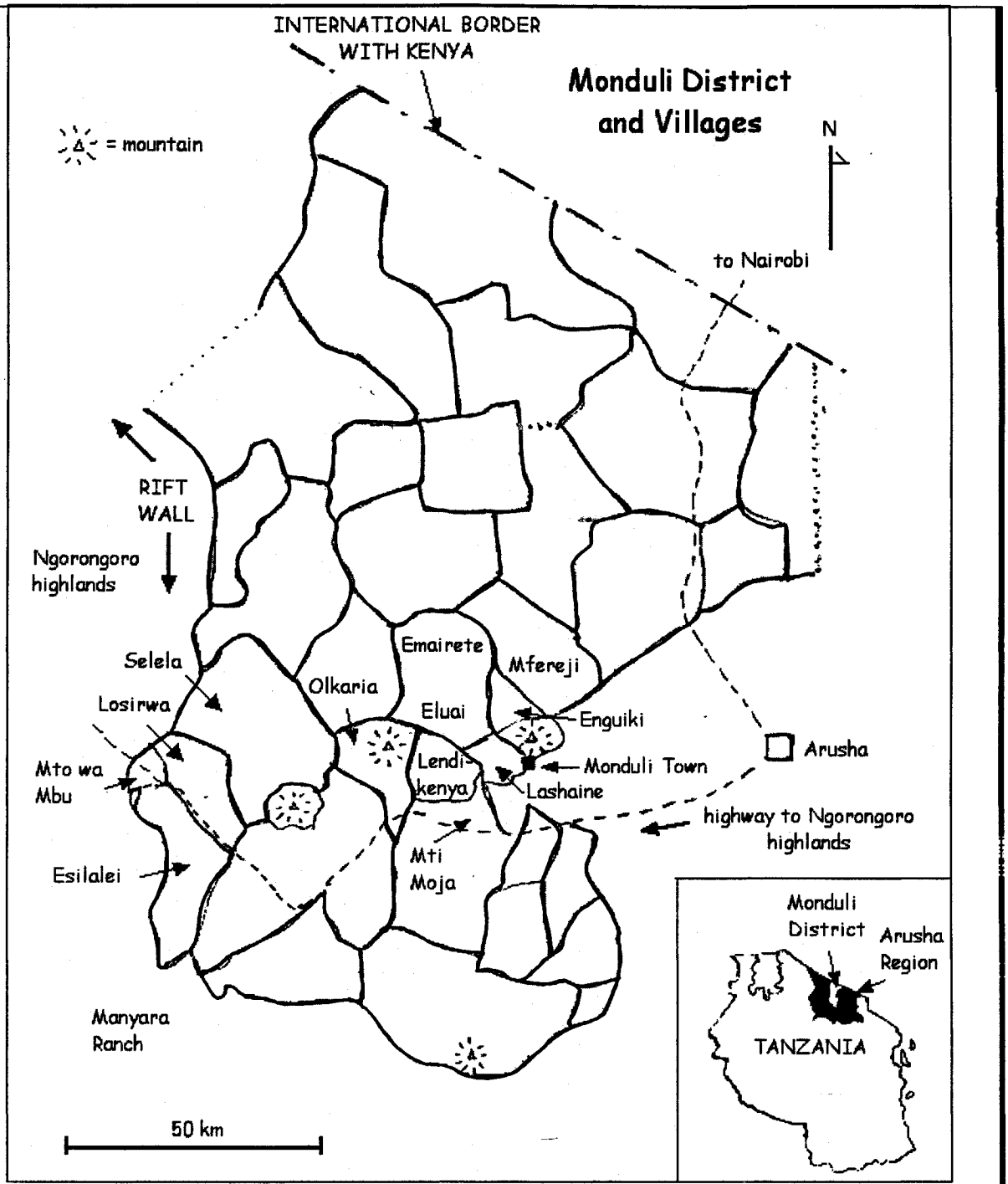
INTERNATIONAL BORDER
WITH KENYA
Monduli District
and Villages
= mountain
N
to Nairobi
RIFT
WALL
Ngorongoro
highlands
Selela
Losirwa
Mto wa
Mbu
Esilalei
Manyara
Ranch
Emairete
Olkaria
Eluai
Lendi-
kenya
Mfereji
Enguiki
Monduli Town
Lashaine
Arusha
highway to Ngorongoro
highlands
Mti
Moja
50 km
Monduli
District
Arusha
Region
TANZANIA

FIG. 1

Cases Studies in Monduli District Villages:

Lashaine Village:

Lashaine village is closest to Monduli Town (see Fig. 1). In fact, Lashaine village is so densely populated that one barely notices a transition between Monduli Town and the adjacent Lashaine village land. Concrete block houses in tight rows give way to more modest dwellings nested in gardens and *shambas* of maize and beans. Rutted roads become well trodden paths as a few clearings soon separate what appears as distinct homesteads, but these clearings are hardly 'pastures' and the formerly ubiquitous Maasai *boma* enclosures are not found until well away from town towards the last remaining communal pastures of Ardai Plains.

In what is now Lashaine and Monduli Town, dry season pastures and sources of water were so valuable that Maasai elders raised enough funds during early colonial days to buy the land back from a settler, who had acquired a large lease from the Crown (Hodgson 2001:57). Since then, Arusha agriculturalists, and also Chagga and Pare farmers from further away, flocked to the fertile hills of Monduli Chini, or 'Lower' Monduli, which surrounds Monduli Town. In the period before land plot allocation was formalized under Village Council authority, many Maasai villagers informally transferred their residential sites to the hands of outsiders before leaving. During the villagization era, the village councillors of Lashaine Village overruled Maasai interests in matters of land allocation, and many more pastoralists emigrated southwards to the Simanjiro Plains. Remaining Maasai residents are now limited to their small plots and have few options for remaining pastoral. They either 'poach' grass, and regularly run the gauntlet in the adjacent military zone to graze nightly or as surreptitiously as possible[6], or delegate their herds to nearby kin relatives and stay in Lashaine to mind their *shamba.* Educated Maasai who hold a government or NGO (non-governmental organization) job also reside there and maintain a herd in the hands of their country siblings.

[6] The military seized the best pasture land left in Lashaine to establish the Tanzanian Military Academy for officer training. Grazing was tolerated until recently, but military police now confiscate cattle from trespassing herders, impose fines or even slaughter animals for a feast.

Julius, Ezechiel and Miseyeki Ole Moongo are in that category of urbanized Maasai who keep concrete bonds with pastoral kin, enough to claim 'real' Maasai pastoral status. The first two work for the government and for a Maasai activist organization, and Ole Moongo is a respected *olaigwenani.* They each delegate livestock to a sister or another relative in nearby villages because their land plot is too small to hold livestock. Absentee livestock owners retain proprietary rights of disposal to the animals and their progeny, while the relatives make husbandry management decisions and are entitled to the daily domestic use of the animals for their *enkang* (group of domestic households).

Julius is in charge of rural census-taking for the regional Government, and has conducted countless interviews with pastoralists. He is keenly aware of the discrepancies between *de facto* and *de jure* land transactions, since colonial times. Before the proliferation of private plots, Maasai were quite unfamiliar with the long-term implications of alienating their *olailili* land to foreigners or non-pastoralists. Since then, informal rules for transfer of land plots within Maasai circles have gained currency. The legal registration process for the acquisition of land is reprehensible among Maasai, for an applicant is then suspected of contemplating alienating land to outsiders and pocketing the proceeds. The occupant of a plot retains the right to transfer land, a transaction which is brokered by an *olaigwenani* and witnessed by a village councillor and other villagers. The penalty for 'selling' a plot for money outside the community is that word will spread to wherever the Maasai 'seller' will attempt to relocate, and his future applications for residency will be turned down by Village Councillors in a predominantly Maasai village. However, these informal measures have taken place after there was no pastoral capacity left in Lashaine and most herds have been displaced. But as livestock owners, Lashaine Maasai are most concerned that *other* villages retain pastoral capacity, and that *their* livestock can graze there. As an *olaigwenani,* ole Moongo has mediated many conflicts over pasture access. He denies that sending cattle from one locality to another creates resentment among Maasai. Maasai herds have trekked across Maasailand forever, and it is the 'law of the land' that access cannot be denied.

Monduli-Juu village:

To reach Monduli Juu Village (see Fig. 1), (literally 'Upper Monduli') one follows a winding road from Town, up the slopes of Mount Monduli. The 'long rains' are more generous and consistent there than in the nearby Rift Valley and the area is also renowned for its dry season pastures. Monduli Juu is composed of three sub-villages: the sub-village of Eluai surrounds the village *olailili* and the large water dam in the middle, Enguiki sub-village rises above, while Emairete extends into the Rift Valley.

The pastoral vocation of Monduli Juu has changed radically. In the mid-1970s, 50% of Monduli Juu homesteads practiced agriculture. Once the construction of a dam attracted a large contingent of Arusha farmers, a later survey in 1980 indicated that the proportion had climbed to 95%, despite the village's designation as 'pastoralist-only' (Ndagala 1992:78). By the late 1980s, the average herd size of domestic groups in Monduli Juu barely reached subsistence level (30-50), but there was a large gap between poor and rich: in fact, most domestic groups had less than the minimum and the social mechanisms for re-distribution of cattle wealth were breaking down (ibid:83). Both poor and wealthy Maasai have diversified into agriculture in Monduli Village. The first for survival, the others because land wealth could be accumulated.

The following is a scenario for a domestic group with sizable cattle wealth in Monduli Juu in more recent years. Daniel Oltimbau's father emigrated from Ngongoro Highlands only ten years ago, following a ban on farming imposed in the Conservation area. At the time, he had 6 wives and now has 25 children; upon request, the village chairman allocated him 50 acres of land (a larger than average allocation) to meet the needs of Oltimbau's large family.

The Oltimbau homestead was successful, despite a few severe bouts with cattle disease. Now, with 300 cows, its herd is exceptionally large for Monduli Juu. However, the process of distribution of cattle- and land-wealth within the Oltimbau homestead is telling, and represents a microcosm of the village as a whole in terms of wealth distribution.

Upon circumcision and reaching *murran* age, young men have several alternatives. A few of Daniel's brothers pursued formal education and found work 'faraway', while retaining a nominal number of cattle, around ten head. The older brother from the senior wife is now married and leads some young *murran* of the homestead at the camps in remote Mfereji village; together with the bulk of the herd, they now reside in the Rift Valley for most of the year. Other sons, like Daniel, remained closer to the father's homestead to oversee farming activities.

Wealth is re-distributed unequally within homestead members. At circumcision age, Daniel's brothers who joined their pastoral siblings in the Rift Valley received 20 cows, but forsook the possibility of inheriting *shamba* land from the father's estate; alternatively, a son who stayed at home, like Daniel, received two cows and two hectares of land from which to harvest cash crops. Like the wives of the *enkang*, however, the latter only enjoys usufruct rights on the father's farm land. One of the youngest sons is most likely to inherit the father's land estate; and the oldest son will become the majority cattle owner. Sons 'in between' thus have incentive to strike out on their own. Daniel, for instance, is now 25 and struggling to 'make it' in the tourism business; now that he has amassed nearly enough money for bridewealth, he is expected to marry soon and move out of the *enkang* with his mother. At that time, he will forego the income from his plot of land, to the benefit of a younger brother or half-brother.

The full range of wealth enjoyed by Daniel's father will obviously not benefit his male progeny equally. Sons specialize, either in farming and pastoral pursuits, or outside endeavours. Besides his cattle wealth, the elder Oltimbau secured considerable land wealth from his adopted village; after delegating a total of 30 acres to his many wives, he still has 20 acres for his personal crops. At the time, he had a crop of barley seeded which will be harvested by a local expatriate commercial farmer. The latter will likely pay him on a per acre basis. The father pockets the cash from his crops as he does from the sale of the steers from his residual herd (the animal inventory over and above the number distributed to his wives and sons). Land accumulation beyond domestic needs puts him squarely in the category of small-scale capitalist entrepreneur, but such private pooling of resources is unattainable for most of his sons.

At the time of marriage, a man is expected to delegate 5 acres to his new bride, in addition to 10 cows for a domestic 'starter herd'. Daniel will therefore apply to the Village Council for the largest land plot he can get. He thus joins the ranks of many less fortunate young men who leave their father's *enkang* at the earliest opportunity: they now receive their father's blessing to get married at a very early age, since marriage is a condition for land allocation.

If wealthy enough, Maasai do not debase themselves with farm work, and hire Mbulu agriculturalists instead; but most young Maasai are less fortunate than members of the Oltimbau homestead, and have now learned to handle oxen and plough. In the absence of income from non-agricultural sources, *murran* from poorer households must 'hire out' to work in another *shamba* or rely on a fraction of the income from their own homestead's s*hamba* to collect enough wealth to apply for land in the first place.

Several factors combine to affect livestock mobility and the utilization of the village's resources: the reduction of most domestic herds below subsistence levels, the subsequent reliance on agriculture, and the capacity to accumulate land wealth for private purposes. Land around the homesteads that would normally be dedicated to *olailili* pasture is increasingly cultivated. The progeny from poor and rich households alike make application and receive land plots for a *shamba*, thus further reducing pasture land. While wealthy homesteads still send their herds on long treks seasonally, they nonetheless retain a core herd locally for domestic purposes, and poorer homesteads work their *shamba* rather than take their few animals to far pastures. Consequently, sedentary herds infringe on nearby village *olailili* and dry season pastures nearly year round. Village elders still claim that domestic herds are amalgamated and their movement is regulated, but animals of all ages nonetheless graze in scattered fashion on calf pastures and other areas at times when growing forage should be set aside. If confronted with the fact, elders dismiss the problem and attribute it to an unmanageable number of small herds.

The larger herds spend more and more time during the wet season in other villages such as Mfereji. In return, Mfereji cattle have been allowed to come to Monduli Juu during the dry season; that pattern was already set a few years earlier when a government water development project made Mfereji pastures available during the dry season. Herds

from all over the District soon flocked there, devastating pastures that had not been heavily used before (Hodgson 2001, Ndagala 1992).

An internally driven 'ripple effect' therefore compromises the integrity of the pastoral system in a village formerly rich in pasture; but, in addition, external factors precipitate the shrinking of dry season pastures in Monduli Juu. The government has allocated a large portion of village land to a brewery enterprise for barley crops. Other villages also send their herds to Monduli Juu for dry season pastures, once their own becomes depleted; the ripple effect of cultivation and pasture depletion occurs also from external sources.

Olkaria Village:

Maasai from Olkaria village regularly trek with their herds during dry season. Olkaria lies in between Monduli Juu and the western edge of Monduli District, in proximity to Lendikenya village (see Fig. 1). The destinations of Maasai herders depend on forage and water conditions at the time, and individual preferences concerning such matters. Herders from Olkaria, for instance, sometimes prefer the more mineralized water of low altitude Manyara lake area; or they may opt to graze the higher pastures of Monduli Juu, risking that livestock not conditioned to colder climes will drink cold water and (presumably) become ill, and also risking diseases (e.g. tick diseases) endemic to that area for which their cattle have little resistance. Regardless, cattle from Olkaria regularly leave the village during dry season, driven out foremost by the lack of drinking water. The current construction of a large water dam, however, will remove the incentive to leave as early. But the village chairman reports that forage availability is also a concern, and that matters may get worse with the new dam, since sharing water and grass "is the Maasai way".

Olkaria village has its own configuration of low altitude grazing-land and highland pastures, although on a more modest scale than in Monduli Juu. Villagers now hope that, with more reliable water, local herders will be more self-sufficient. But since water availability will prolong grazing occupations on village land, elders recognize that

the composition of pastures may change, since different types of pasture correspond to each seasonal grazing area, possibly as a result of the seasonal timing of grazing activities, as well as differences in altitude or soils. But changes in vegetation are a secondary concern; interviewees deplore rather that while the proliferation of private *shamba* is economically necessary, it encroaches ineluctably on communal pastures.

The village chairman has held Council office for over 13 years and reports that the village council allocated plots to 'outside' Maasai in earlier years, but the village will soon fall short of land for private agricultural plots, even for Olkaria's 'native' Maasai. Unless village leaders defend dry season reserves as a pastoral haven, communal land will also be consumed by private interest. The current village council has forbidden plot allocation on the plains, which are set aside for a communal grazing reserve, but the chairman speculates that the next Council may prove to be less circumspect: evidently, elected regulatory government bodies are more prone to convert communal pastures than a body of elders would: "chairmen come and go, but *ilaigwenak* stay..." And once land has been cultivated, the pastures are gone...

Social dynamics have also shifted towards more 'nuclear' groups; for instance, the size of *enkang* social groups has diminished, as domestic groups scatter each their own way:

> "It is 'self-awareness'. The value of land is increasing in their awareness. Staying together allows other land to be invaded. So they are spreading out. For example, if a mzee [an elder man] has 4 married sons, and they live together, then the sons will not have access to land. So they separate and they have more claim to the land. Because if the land is left idle, then someone else could claim the land" (Mepukori Ngiria, village chairman, Olkaria, March 12th 2004).

Pastoralists have thus adopted not only a more exclusive configuration of land property rights, but also less communal residential arrangements, and, in their discourse, an agriculturalist viewpoint of what constitutes 'idle' or productive land use.

The pool of pastoral resources in Olkaria is more limited and is under more demographic pressure than in Monduli Juu; current policies of allocation also vary slightly. The allocation of farm plots to young local applicants is contingent on the size of their father's estates. If the father's plot is modest, a young applicant receives a ten acre plot, for an *olailili* and a *shamba.* The day is near when sons will have to leave the

village in greater numbers. Yet there is little mention of limiting provisory watering and grazing access for outsiders, since the problem has not been significant in the past, and Olkaria herders have most often been permission-seekers elsewhere. However, applications for plots from outsiders (Maasai or anyone else) have been turned down for many years, on the grounds that the 'land is too small'. The proliferation of *shamba* plots lasted a scant 15 years, since 1980, before space most suitable for *shamba* became scarce and communal dry season pastures were encroached upon.

Mti-Moja Village:

Political strategies of village leaders in Mti-Moja contrast starkly with Olkaria's, although Mti Moja herders face similar predicaments. Mti Moja village is on rolling plains, an extension of the Ardai Plains, which are communal pastures for several contiguous villages, including Lashaine (see Fig. 1). Mti Moja, however, lies a day's walk from reliable domestic water supplies, which limits its development potential for domestic size agricultural operations, but did not hinder earlier large agricultural schemes[7]; its dry season livestock drinking water is therefore limited and herds must trek to one of several destinations, most likely in the Manyara Lake area, or Monduli Juu, for as long as available pastures last there. The village chairman claims that farming is discouraged in his village, but tractors driven by Maasai were ploughing large expanses on nearby hillsides, in Lendikenya direction; and young men were hooking up a span of oxen in his own yard. Pastoralist rhetoric aside, the chairman's allegations about the village being 'dry' may refer to the lack of domestic water rather than lack of precipitation for rain fed crops.

Herd owners from Mti Moja have also a unique pastoral resource available to them. Mti Moja is bordered by the busy highway between the Arusha city and the many National Parks to the South and West. Across the highway lies military land to which Mti Moja residents have privileged access[8]. Grass is exceptionally nutritious there

[7] The colonial government leased the Ardai Plains from the Maasai during WWII for a large wheat scheme, as a token of Maasai patriotism, but did not return the land to Maasai on the grounds that it had come under better management (Hodgson 2001).

[8] In contrast with the military academy nearby Lashaine, the military land nearby Mti Moja was allegedly seized without compensation, and a sympathetic administration allows grazing use.

between March and June when local herders take their herds there daily, to fatten and 'flush' nursing cows, namely to improve their flesh condition and thus bring them into oestrus. There are no formal arrangements to preclude grazing on military land by non-local Maasai; but exclusivity is ensured otherwise, through the concealment of information.

The sharing of information, or 'tracking' (Niamir-Fuller, 1998), is one essential feature of territorial etiquette amongst Maasai and other pastoralists; one that perhaps defines 'territoriality' (Ingold 1986). In Mti Moja, however, the confidential information received from military authorities is considered private: a private treaty which in fact secures exclusive access without the need for enforcement, since everyone else is unaware of the timing of military exercises with 'live' ammunition. Mti Moja herders are given a few hours notice to evacuate to their side of the highway, a manoeuvre which is routine since no temporary *boma* is tolerated on military land and Mti Moja herds return daily to their respective *boma* regardless. A few weeks before my interviews, however, non-local Maasai herds were caught in an artillery barrage and a dozen cows did not escape to safety.

One concern of the village leadership is to discourage the immigration of non-pastoralists. Chagga and Mbulu farmers in particular, who have infiltrated pastoral areas in nearby villages (in Lokisale for instance), along with Arusha, are deemed unwelcome. Government policies prohibit the selection of applicants on ethnic grounds. Economic criteria are therefore used to 'weed out' agriculturalists. Because of the privileged access to military land, there is a considerable communal *olailili* on Mti Moja village land; nevertheless, the 10 to 20 acre allocations made to successful applicants are subject to the condition that most of the surface must be dedicated to a domestic *olailili* rather than an oversize *shamba*[9]. Also, the lack of domestic water is a significant deterrent for agriculturalists. Therefore, even if a water development project would have many supporters in Mti Moja, the prospect of stimulating farmers to settle has been sufficient

[9] It is remarkable, however, that the landed estate of the council members, especially the village chairman, is of considerable size (and officially registered); and several spans of oxen were hard at work on their large *shamba.*

reason for the current village council to decline development 'aid'[10]. Furthermore, local forage reserves benefit from an extended recovery period, and Mti Moja herders rest assured that access to dry season pastures will be granted, with the knowledge that lack of water is a legitimate pretext for secondary and tertiary rights of access and withdrawal in Maasailand. Altogether, the Mti Moja village leadership takes many liberties with Maasai protocol: on one hand, it effectively excludes outside herders from pastures on military land, on the other hand, Mti Moja herders regularly trek to graze in other villages. As a result, however, Mti Moja herders conserve their pastoral resource inventory. They enjoy access to a considerable spectrum of pastoral resources and maintain considerable flexibility in terms of timing. When military activities prohibit grazing, herds can shift to the Ardai Plains, or the village *olailili*, or further afield. Mti Moja village leaders also strategize to keep agriculturalists at bay through 'non-development'. But their success is hardly a strategic template, since it is achieved at the expense of less cunning Maasai communities. If the latter eventually resort to similar exclusionary tactics, the playing field will even out, but the subsequent overall range of mobility may become highly constrictive.

Losirwa Village:

Incidentally, politicians had in recent years severed Losirwa from its adjacent sister village for political reasons (over an issue of electoral mapping, it was suggested), regardless of the ecological integrity of the resulting pastoral territories. Nevertheless, local elders deemed the improvised Losirwa pastoral system self-sufficient. Local herders were seldom motivated to trek towards the Highlands of Monduli Juu, but, in times of duress, elected instead to find relief for forage scarcity in other areas. Drinking water, rather than dry season forage, seemed to be the limiting factor locally; and this issue was the result of a conflict of resource allocation with the nearby town of Mto wa Mbu. The town stands within an agricultural settlement that dramatically expanded in recent years at the base of the Rift Wall, with the creation of an irrigation reticulation system (Arens, 1979). Mto wa Mbu subsequently attracted a mix of residents from across

[10] I interviewed other researchers who report similar instances of pastoralists and hunter-gatherers declining development funding for water development for fear that outsiders will flock to the area.

Tanzania and the settlement was excised from the surrounding pastoral villages. Plantations of banana, rice and many other crops now monopolize the flow from the substantial stream surging from under the Rift Wall. Pastoralists find little administrative support for their plight, and dare to divert water directly from the stream to replenish their dam only in the direst circumstances.

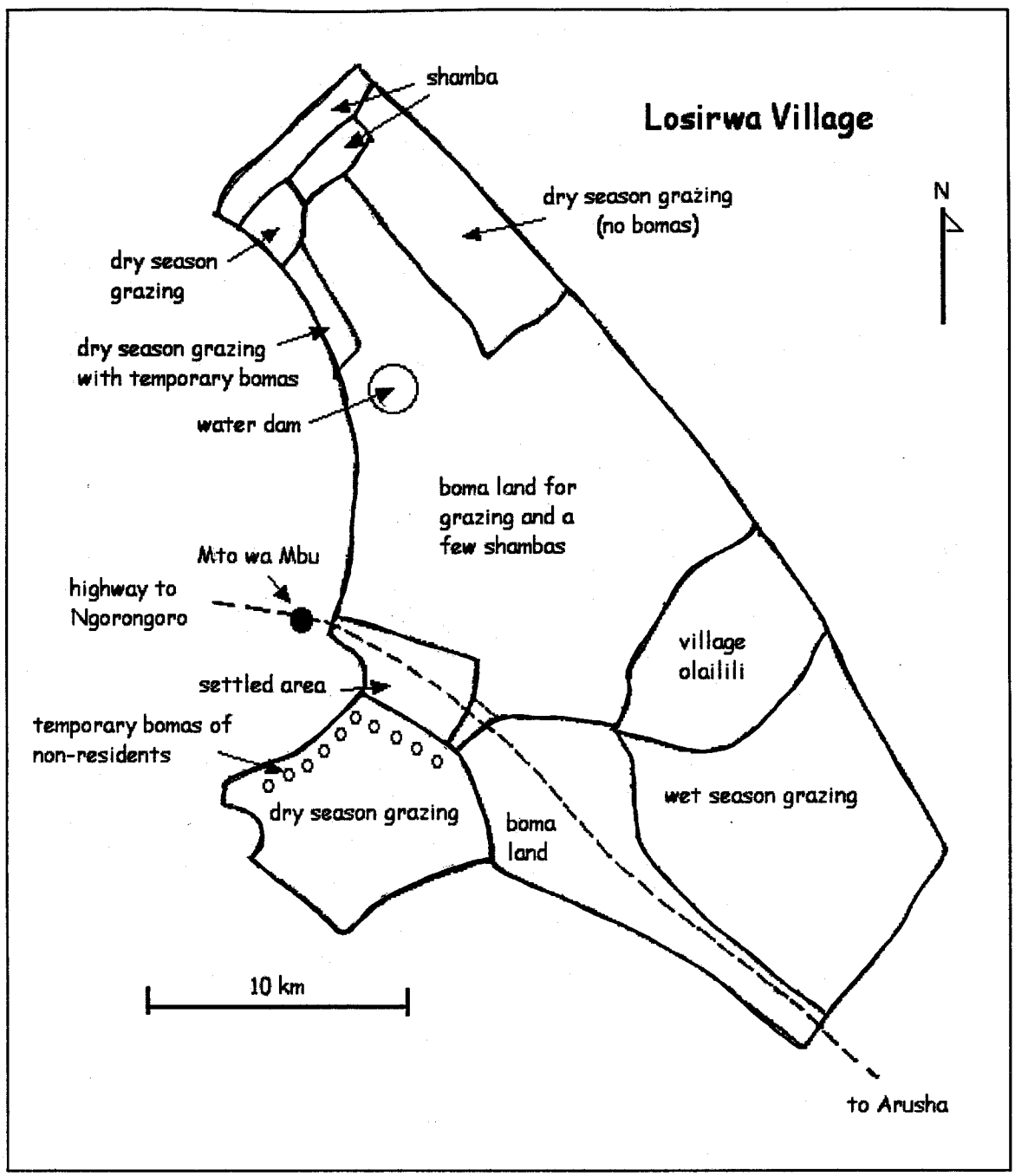
Losirwa Village
shamba
dry season grazing
(no bomas)
N
dry season
grazing
dry season grazing
with temporary bomas
water dam
boma land for
grazing and a
few shambas
Mto wa Mbu
highway to
Ngorongoro
village
olailili
settled area
temporary bomas of
non-residents
dry season grazing
boma
land
wet season grazing
10 km
to Arusha

FIG. 2

Apart from the ongoing water distribution conflict with irrigators, herd-owners found little lacking in their present pastoral system in terms of physical resources, but they wished for more political clout, since local village councils would hold further authority, not only over the application process for village residency and a permanent land plot, but also over the circulation of transient herders. The principal grievance targeted the yearly inflow, during the last eight years, of Arusha from various villages and Maasai herders from Mti Moja, in particular. Maasai from Losirwa and surrounding villages were well aware that these herders did not seek refuge as an emergency measure. Instead, intruders are currently too "clever", and plan instead to plunder resources set aside for internal use in villages other than their own, without any intention of returning the favour. A breakdown of reciprocity is arising at the inter-village level.

Tertiary rights, in the past, granted access to occasional 'outsiders' only in the event of exceptional and localized drought. During the last ten years, however, a new wave of 'outsiders' has claimed the equivalent of secondary rights or regular yearly access. The former balance between internal and external demand is now compromised. Hence, the considerable carry-over forage that formerly remained at the end of a usual dry season is now cleaned out before the non-residents evacuate, and local herders are compelled to migrate prematurely to village pastures earmarked for different purposes. This chain reaction has deleterious ecological effects on pastures 'adapted' to specific seasonal use and threatens the entire village organisation of grazing patterns.

Secondary rights, or reciprocal rights of use, are established over time through habitual use by specific users, and reflect the need for livestock mobility between pools of resources that ordinarily become available in different seasons (Potkanski 1994:18). Requests for access are not legitimate, however, if herders forgo the opportunity of using their own local resources and subtract instead from someone else's pool. That is a subversion of due process. Village leaders from Losirwa and Esilalei, for instance, claim that the village council of Mti Moja purposefully neglects to repair three breached artificial dams so that Mti Moja herders can claim a lack of livestock water to gain access to peripheral villages.

Nevertheless, local herd-owners fear that if they confront intruders violence would erupt which would invite further interference from the government into Maasai internal affairs. Political tension is therefore arising within Maasai ranks. Evidently, the preoccupations of Maasai Village Councils focus on a local pool of resources, given the scope of village authority. But while the authority of the Village Council is sanctioned by the state, the consensus across Maasailand suggests that the legitimacy of Village political offices hinges on the approval of customary Maasai leaders, the *ilaigwenak.* The source of authority for *ilaigwenak,* on the other hand, is their allegiance to Maasai 'law and order'; these elder representatives do not arise from a localized membership, but from an age-set organisation that spans an entire *oloshon.* Hence, *ilaigwenak* from anywhere in Maasailand can be called upon to arbitrate a volatile issue in any location; age-set loyalty remains powerful enough that an *olaigwenan* from Lashaine or Mti Moja, for instance, may readily sway another from Losirwa. Thus when fiery *murran* herders from different villages stand eyeball to eyeball over a life and death cattle issue, the objective of elder counsel is usually to appease them with calls for Maasai solidarity rather than to inflame sentiments of local allegiance. To make matters more convoluted, several *ilaigwenak* also hold village government offices in many villages, and must meet conflicting obligations, which only illustrates the internal conflicts of interest on a regional scale.

The allocation of land plots for successful applicants in Losirwa is also around 10 acres, most of which is *olailili* for the enkang. The *shamba* portion may be separate and situated in an area more suitable for agriculture, since most of Losirwa village land is too marginal for farming. The agricultural vocation of Losirwa is very limited, however, given the excision of land with irrigation potential by the settlement of Mto wa Mbu. The advantage of Mto wa Mbu and of the proximity of the tourist trade to service Lake Manyara, Tarangire, Serengeti National Parks and Ngorongoro Conservation Area is that young men can often find non-pastoral work. A small cattle inventory does not reflect poverty, as it does in Monduli Juu, for instance; young men use non-pastoral income to fulfil basic needs, and to accumulate sufficient cattle wealth to establish themselves independently.

Malunga is a junior elder in Losirwa. At 24 years old, he was locally the youngest of his age-set to leave his father's *enkang,* in 1990. With 10 cows of his and his mother's, he left to found a new homestead, taking charge of his mother, his very young brothers, and, of course, his bride. Malunga now delegates his pastoral workload to his brothers, and hires as a guide for one of the tourist lodges that overlook the Rift Wall, above Manyara National Park. Nevertheless, Malunga's self-identity is firmly Maasai and is anchored in Maasai pastoral ideology. He is foremost preoccupied with grazing matters on a day-to-day basis. Malunga thinks little of the many Mbulu agriculturalists who cultivate the land in the area, especially on the Rift bench, using oxen: "That is abusive, to make perfectly good cattle work when they should eat and get fat!" Yet he is also keenly aware that materially he could not manage without his parallel economic existence, which follows divergent imperatives: Malunga, for instance, is also a successful agricultural entrepreneur. He 'purchased' an irrigated farm plot in adjacent Selela village[11], for 400,000 Tsh.; he share-crops with a Mbulu farmer who plants and harvests two crops yearly, of maize and rice. For his share as 'land-owner', Malunga reaps about 100,000Tsh. worth of staples yearly. Malunga therefore hopes to have the land paid within four years. He wishes to purchase another plot, but lacks the capital at the moment. Malunga certainly would not put cash income in the bank, since cattle wealth generates better interest in the form of a calf crop or by growing purchased steers, but irrigated land also yields a secure flow of benefits and diversifies his sources of revenues.

In terms of impact on the village pastoral system as a whole, agricultural endeavours in Losirwa do not appear to compromise pastoral sustainability, according to the interviewed elders, but if Malunga's enterprise is an indication, the acquisition of agricultural assets by Maasai may not be altogether benign. Its pastoral implications, in the form of excisions of key pastoral resources, might be felt elsewhere.

[11] Land in Tanzania cannot be sold and bought, technically, as will be described later, but there is a land market nevertheless. Selela is a village at the foot of the Rift Wall, described later.

Selela village:

Selela village is adjacent to Losirwa, along the Rift wall. Its permanent Maasai settlement is relatively recent, starting about thirty years ago (Conroy, 2001; Rhode, 2001). Earlier, the pastures in the area were used by transient herders setting up camp mainly during the wet season. Streams welling from the base of the Rift wall irrigate a lush forest. Nearby sub-irrigated pastures have been ploughed, and villagers have also been slashing the forest cover and digging irrigation ditches to create a complex of very productive *shamba* plots.

Elders and the village councillors have few complaints about grazing demands from non-villagers. Selela herd owners sometimes exchange favours with Losirwa villagers by grazing there during severe dry seasons, while Losirwa herders may come to Selela when rains start there earlier. There are no set patterns between them. In the last years, Arusha herders, and Maasai from Mti Moja and the vicinity of Ardai Plains also have come to graze at the end of the dry season. This is a reversal of the conventional pattern of concentration and dispersal, whereby herds disperse in the Rift Valley during the rainy season, when surface water in ponds is temporarily available. Selela, however, has permanent water and attracts a specific 'following' of herders which illustrates again that grazing patterns are not only flexible, to adapt to changing conditions, but herders also tailor them to micro-environments (see also Potkanski 1994). As Dyson-Hudson & Dyson-Hudson (1969) and McCabe (1990, 1994) have demonstrated, general migratory patterns may be extrapolated from frequent trajectories, but the trajectories of specific herd owners, whose herd may also be subdivided into separate groups, take vastly different paths over the years, according to personal assessments of political risks as well as ecological factors.

Selela village also has a 'grazing plan' (see Fig. 3), and rules to help implement it. The village Council has no plan to limit pastoral use by outsiders. The internal demand for pastoral resources is not intense, apparently, although demand may be primarily for wet season use, since local elders report that dry season pastures are nearly all consumed by *shamba* plots. The cattle population in Selela has been quite constant, although it has

recently diminished slightly, due to high prices for acaricides and subsequent higher losses to tick-borne diseases. But cattle wealth has lost importance on the domestic front, and pastoralism seems to have taken a secondary economic role. According to village leaders, cattle numbers *per capita* have decreased significantly, although this has been the trend across Maasailand, and Maasai villagers in Selela covet an irrigated plot instead, for its income generating capacity far surpasses that of a small herd.

Local young men readily receive a plot for *olailili* and a *boma*, with minimal formality, but the allocation of a separate *shamba* in the fertile area along the Rift wall is another matter. In principle, a local applicant, whose father does not already own a large irrigated *shamba,* is entitled to an agricultural plot. Such grant carries permanent property rights over land as long as the land is used. Like in other villages, the Village Council receives applications for residency from non-locals and non-Maasai, but the demand for residence in Selela is considerable: hundreds of applications yearly.

The Village Council sometimes allocates as much as 200 acres of land yearly, but only a small fraction is *shamba.* It received 800 applications last year for a reduced availability of 100 acres, and, as usual, turned down every application from the outside with the exception of a few neighbouring applicants. Nevertheless, many Selela villagers were not successful in receiving their one acre *shamba* allocations. Not surprisingly, young men, with the consent of their father, hurry to leave the paternal homestead before the supply vanishes altogether.

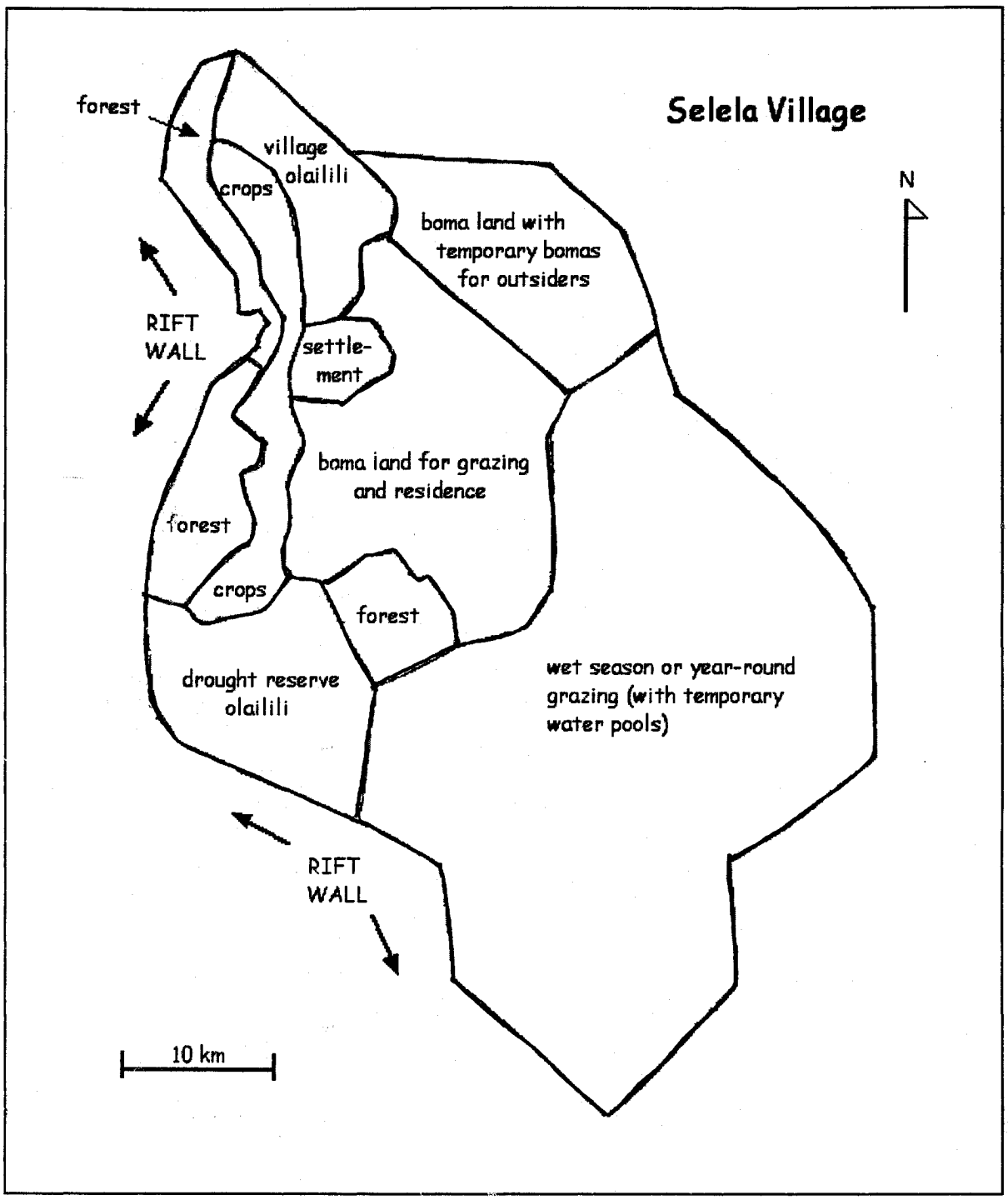
Selela Village
N
forest
village olailili
crops
boma land with temporary bomas for outsiders
RIFT WALL
settle-ment
boma land for grazing and residence
forest
crops
forest
drought reserve olailili
wet season or year-round grazing (with temporary water pools)
RIFT WALL
10 km

FIG. 3

Unless land sales are the exception (village officials loathe broaching the subject), land commodification has made inroads in Selela (Rhode, 2001), as Malunga's land transaction suggests. Perhaps the high productivity of its irrigated land fuels more investments in property rights, or else villagers in remote villages are perhaps not as savvy about the ephemeral nature of a cash windfall and the irreversible nature of a sales transaction. Also, a penalty for alienation, such as the prospect of ostracism promulgated in Lashaine, may not be as ominous if land is transferred to a familiar Maasai party as opposed to an Arusha or Mbulu, Chagga, etc.

Even without a land market accelerating the rate of conversion of pasture into crop land, one critical segment of the village's array of pastoral resources is now in scarce supply. Village elders deplore that internal demographic pressure contributes to the encroachment on dry season pastures. The village population has reportedly doubled during the last fifteen years, a phenomenon reported also in other villages. According to the village chairman, this demographic growth is internal since residency has not been granted to non-locals for over ten years. The dislocation of pastoral homesteads intensifies the demand for plots of land. Since the motivation is to acquire assets for commercial purposes as much as for subsistence needs, the proliferation of plots has no built-in limits. Certainly, livestock could graze crop residues, but the close succession of various irrigated crops precludes a specific harvest and fallow season, unlike rain-fed crops, when livestock can be turned out onto cropland after harvest without fear of damage. Furthermore, the forage value of crop residues from maize or rice fields is much less than the yield of a bank of sub-irrigated natural forage. In total, dependency on other villages for dry season grazing resources is increasing, and local herds will more likely converge on Losirwa, as they have before in times of drought.

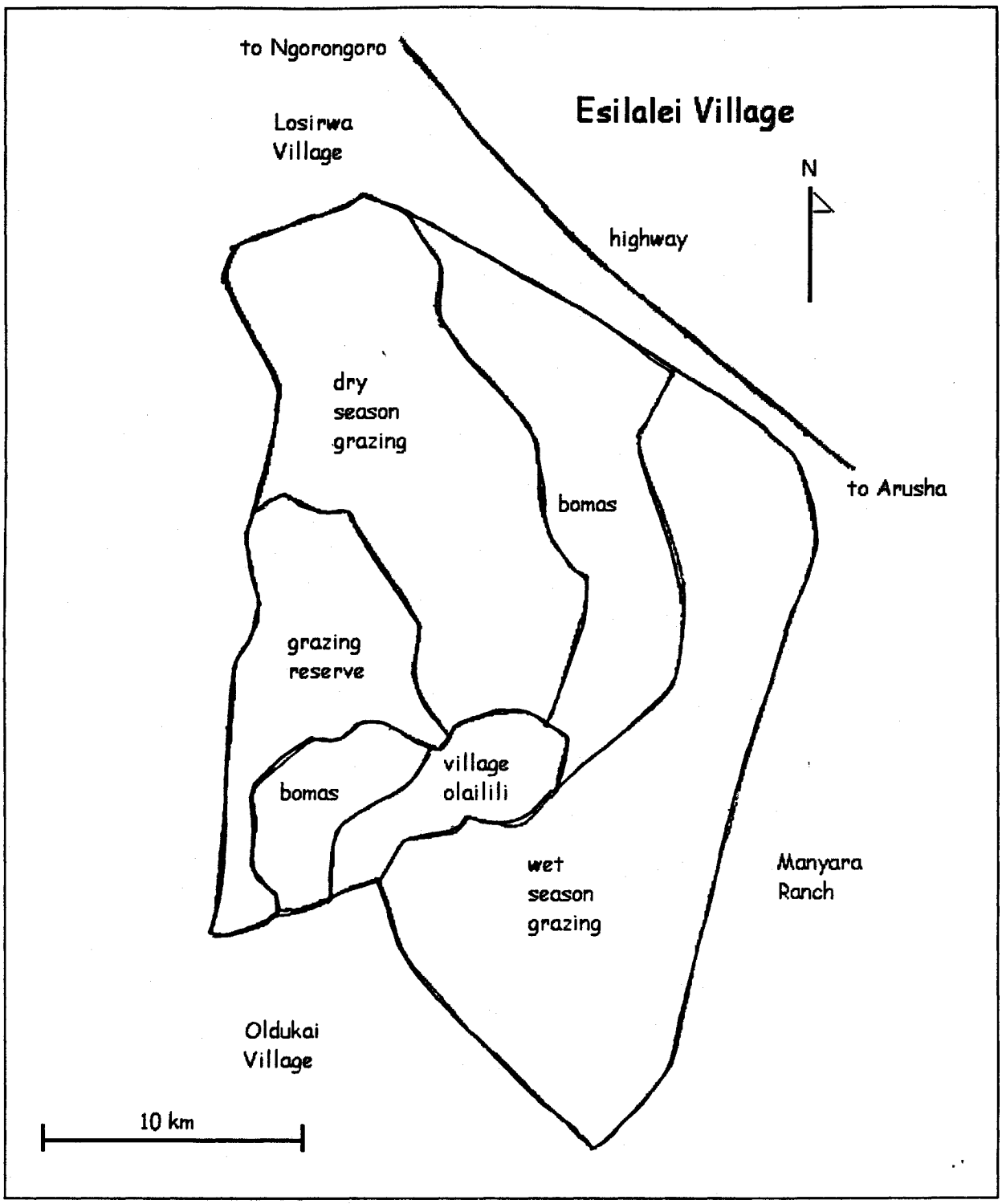
to Ngorongoro
Esilalei Village
Losirwa
Village
N
highway
dry
season
grazing
to Arusha
bomas
grazing
reserve
village
olailili
bomas
wet
season
grazing
Manyara
Ranch
Oldukai
Village
10 km

FIG.4

Esilalei village:

Esilalei is contiguous to Losirwa village and shares its southern border with Manyara Ranch. Like Losirwa, Esilalei is a predominantly pastoral area, although some observers report the existence of large farm plots (Conroy, 2001). Fields have been cultivated, but villagers found that the agricultural potential of their village is marginal. While the bi-modal regime of rainfall is prevalent at higher altitudes, closer to Monduli, in the Ardai Plains and Lendikenya, the short rains of November and December sometimes fail at lower altitudes in the Rift Valley. The total average rainfall is also less generous and more erratic (Conroy 2001:151-3; Meindertsma & Kessler, 1997). Crops in Esilalei (and non-irrigated crops in Losirwa) are therefore more vulnerable to the vagaries of rainfall. Furthermore, since the village land stands on the path of a major migratory corridor, wildlife does the harvesting rather than the villagers during favourable years. Nevertheless, like in other villages, young men hurry to claim a place of their own, for *olailili* purposes if not for farming. Consequently, homesteads are getting smaller.

More than the scarcity of pastures, livestock water is the principal limiting factor for local pastoralists. During the dry season, herders make extensive use of dug wells and 'boreholes'. Yet, Esilalei is a common destination for Arusha from across Monduli District and Maasai herders from Mti Moja, who often stay from the beginning of June to January, if the short rains fail in November and December. The period of grazing occupation of 'outsiders' is even longer than reported in Losirwa (August to December). Village leaders deplore that visitors do not leave once they gain a temporary foothold, at least not until word spreads that rains have begun elsewhere. The persistence of 'guests' to overstay suggests that the rights of primary right-holders over the use of dug wells (Potkanski, 1994) are not operational in Esilalei.

Esilalei herd owners never request their 'guests' to reciprocate: neither Arusha nor Maasai from Mti Moja are in a position to return the favour. Most of the land occupied by Arusha is now farmed, and the remaining pastures are chronically overused. Nonetheless, villagers in Esilalei have a key resource that their outside guests cannot

access. They share preferential access to the adjacent Manyara Ranch with herders from adjacent Oldukai village.

Manyara Ranch was excised from the Maasai in colonial times. The post-colonial government briefly returned it to Maasai, only to re-possess it again. It has since gone under the authority of the Tanzanian Land Trust and the African Wildlife Fund (AWF) now manages it as a wilderness corridor to facilitate wildlife circulation between protected areas. Esilalei, Losirwa and Selela villages sit in between Tarangire and Lake Manyara National Parks, to the south and west. Wildlife migrates between these areas and Ngorongoro Conservation Area (NCA) and the Serengeti Plains over the Rift Wall. Pastoralists resent that they were evacuated from the Parks in the first place (although some remain in NCA, where their rights of occupation are tenuous), and they are furthermore pressured by conservationists to make allowances for wildlife traveling outside the bounds of protected areas.

Manyara Ranch has become a flagship of international conservation 'with a social conscience'. Its current manager, Clive Jones, heads a committee composed in part of nearby Maasai village leaders. The ranch is purportedly held in trust for the Maasai people, and offers several benefits to the neighbouring villages of Esilalei and Oldukai. The Ranch employs 80% of Esilalei adult villagers and sells 'superior' breeding bulls from its domestic herd to the adjacent villages for a favourable price. During the dry season, from July to December, herders from Esilalei and Oldukai are allowed to trek daily with their entire herds to and from Manyara Ranch pastures. But while Esilalei herds graze on Manyara Ranch, non-local herds graze on Esilalei village land during the dry season. The Manyara Ranch manager deplores that Arusha 'intruders' indeed compromise the forage supplies for the village and increase Maasai dependence on Manyara Ranch. Last year, for instance, Esilalei herd owners asked for entry to Ranch pastures before the agreed turn-in date, because outsiders had depleted forage resources. The ranch management made an exception, but the exit date from the ranch was also set earlier. Consequently, Esilalei herders resolved to return to village land rather than compromise their access to Manyara Ranch which usually lasts until the onset of the 'long rains'.

Esilalei village leaders are vividly aware of their dilemma. Maasai custom, and the prospect of violent conflict, prevents locals from denying access to outside Maasai and Maa-speaking Arusha; yet dry season pastures and drought reserves are sacrificed in the process. Given the chronic abuse of rights and privileges, however, the village council of Esilalei now wishes to implement drastic measures of exclusion in the absence of a functional consensual process. Although the village councillors resent the power exercised by Manyara Ranch and its overseer AWF (African Wildlife Fund), whom they consider illegitimate owners in Maasailand, they would in effect emulate its exclusive regime if their interests were better served.

Discussion

Several themes stand out in the above overview of a variety of local situations in Monduli District: the adoption of agriculture, the concentration of property rights in the hands of individuals, the fragmentation of pastoral territories and the disruption of a communal territorial organization.

Are Maasai agriculturalists?

The appropriation of plots of land for farming has become a primary preoccupation for Maasai pastoralists. Cultivation is most intense closest to the Monduli highlands. Commercial farms monopolize large tracts of land, but household *shambas* proliferate as well. In more marginal areas, cultivation is concentrated in limited sites where growing conditions are excellent. Consequently, dry season pastures are converted into domestic crops.

The social relations of pastoralists, according to Ingold, are 'materially embodied through the possession of livestock" (1986:168). Consequently, their economic activities circulate around "the control and disposition of animal property" (ibid). The above case studies, however, suggest instead that the control and disposition of property rights over land are dominant preoccupations. A change in category from pastoralist to agro-pastoralist or agriculturalist is perhaps of academic importance, but in practice, it indicates that the advantages of agricultural production for an individual overrule whatever negative impact the establishment of another *shamba* may have on communal pastoral resources or on territorial functioning. Social and political strategies are also devised according to the best dividends possible in the current context of land tenure politics.

Maasai pastoralists as landholders:

The ascendancy of agriculture comes hand-in-hand with the strengthening of individualized entitlements at the expense of communal rights. The mitigated power of 'excludibility', characteristic of pastoral systems (Turner, 1999:97), has shifted towards more exclusionary powers. With powers of excludibility, holders of specific customary property rights wielded the discretion to retain first rights of use, but they did also have the obligation to share their resources according to an established order of priority. Even the use of *olailili* did not translate into permanent rights on the grounds, and remained negotiable. Non-members had the duty to refrain from using a homestead *olailili* or of a larger communal *olailili* during the growing season, but in times of drought or at the end of a prolonged dry season, the terms of access were re-negotiable (Potkanski 1994:24). Now that private *shamba* crops are grown on previous *olailili* grounds and other forage reserves, grazing access is of course forsaken (except perhaps for crop residues), and the establishment of a *shamba* carries the right to allocate private usufruct privileges (to a wife for instance), or rights to transfer or bequeath *de facto* land property (as in Lashaine village and the case of Oltimbau in Monduli Juu), and even alienation rights (as in the case of land sale in Selela). A cultivated plot of land, or *shamba,* conveys multiple rights: rights of use, allocation, management, disposal and exclusion, which in total constitute land 'ownership'.

The implications of becoming sedentary:

In the past, ecological factors influenced the level of household mobility. In the Monduli area, *murran* trekked with the bulk of the herds while other household members remained at the homestead. Maasai households were often stationary while the herds were highly mobile. But in the northern drier parts, closer to Lake Natron for instance, domestic groups were more mobile and often followed the herds (Ndagala, 1992). Regardless of ecological factors, domestic groups sometimes changed homestead because of internal politics within the *enkang.* In the event of strife, domestic groups often elected to leave a homestead for another, or perhaps to establish another *enkang* in a different locality (Ndagala, 1992). Furthermore, domestic groups became stationary for economic

reasons. When temporarily destitute, because of the loss of animals, Maasai undertook small-scale cultivation or joined agriculturalists groups temporarily, only to resume their mobile ways once they rebuilt their herds. Altogether, the stationary episodes of domestic groups in a particular homestead did not link them permanently to a specific site. As farmers and owners of property rights over plots of land, however, many Maasai have now become sedentary. In other words, their social relations are anchored in immobile property, land, more so than in mobile property, cattle. The size of most current household herds is so small that most Maasai now raise crops. To secure the right to cultivate land, however, individuals must now secure property rights over land, which include rights of transfer and disposal and even rights of alienation (Leonard, 2000) through sale or the sub-lease of derivatives rights (Wylie, 2003). They retain the said rights as long as they occupy the allocated plot of land, cultivate it or hire someone to do so. Once immobile property anchors people to that extent, the process of sedentarization is less likely to be reversible.

Village politics and territorial functioning:

To maintain a pastoral component in their domestic economy, the livestock of sedentary pastoral people are to must remain mobile, perhaps even more so if pastoral resources lay further away from the agricultural concerns of a livestock-owning homestead. However, collective claims to a pastoral territory compete with exclusive tenurial rights to plots of land.

The locus of collective appropriation within a pastoral territory was customarily the *enkutoto* or 'locality', and by extension the *oloshon* or 'section', which contained the full complement of necessary pastoral resources. The customary territorial configuration has come under attack under both colonial and post-colonial regimes. The politics of villagization were most disruptive. The government designed a series of resettlement 'Operations' to uproot communities from their familiar grounds and re-program them to fit the modernist mould of mechanized farmer or meat producing rancher. The administrative framework, which divided the land into 'villages', is the outstanding legacy of the ill-fated villagization social experiment. Now that village land use and

allocation is administered through Village Councils, Maasai have adopted village boundaries as a substitute for the former *inkutot*, and participate in village council politics (see Ndagala 1992). A parallel decision-making body in territorial matters therefore safeguards Maasai interests. But the transition from customary authority of *enkutoto* and *oloshon* organization to a pastoral organization bounded in village units is problematic. Their current co-existence is fraught with tension, particularly on a regional scale, since villages have developed different vocations (agricultural, agro-pastoral, pastoral) and have elaborated conflicting strategies.

Herds from intensively cultivated areas are delegated either to relatives or stock friends residing in more pastoral villages. Households from Enguiki in Monduli Juu may send herders to marginal villages, such as Mfereji, to reside almost year-round. Herds return to the highlands more infrequently and for shorter periods than in the past, since considerable pasture has been converted to farm land. Availability of forage is also organized around the agricultural schedule to concur with the end of harvest and avoid crop damage.

The customary flow of herds during the dry season is increasingly reversed, towards the periphery, where farming is less predominant. Peripheral villages, such as Losirwa and Esilalei, become 'hosts' at a time when dry season forage and livestock water are at a premium. Hosts, however, cannot expect the same favour in return. This flow could be withstood as an emergency measure which calls for accommodation among Maasai, but it has become an onerous asymmetry. To make matters worse, the scarcity of dry season forage and water appears deliberate. Not only do village councils allow an excessive proportion of pastureland to be cultivated, but the Mti Moja village council, for instance, declines the opportunity to rehabilitate its water dams. Instead, the council members strategize to transfer the burden elsewhere and send herders as 'guests'. This contrived pattern asymmetry generates resentment in villages such as Losirwa and Esilalei.

Monduli Juu, Losirwa, Selela and Esilalei villages have community grazing plans (Fig. 2, 3 and 4), and rules to match. It is not clear to what extent community grazing plans are the brainchild of administrators and international development agents since

many development blueprints have come across the desks of village offices for thirty years, throughout the villagization and post villagization eras. Each village plan purportedly contains a full gamut of seasonal resources but the demarcations of seasonal use areas neatly fit boundaries that have been defined in recent years for political purposes (except perhaps for Monduli Juu). Livestock can trek to almost any part of the village's pasture land within a single day. This minimal range offers little spatial flexibility to reach where rains have been more generous, or where water is permanently available, etc. Altogether, the configuration of community plans suggests that an administrative framework determines the range of mobility rather than local ecological constraints.

Nevertheless, the village councils in Losirwa and Esilalei hope to unilaterally exclude unwanted guests. Presumably, the enclosure of village pasture land for exclusive internal use would compromise the flexibility to move herds elsewhere during droughts or other calamities. But, in the absence of effective mediation from customary territorial authorities, ecological vulnerability is less costly than unregulated access.

The alienation of pastoral territory by the government, for commercial farms and National Parks and the conversion of pasture into *shamba* by Maasai have a cumulative effect with economic, social and ecological ramifications. The demand for key dry season resources far exceeds supply. Increased internal competition sabotages the functioning of communal institutional arrangements. Possibly, scant inventories of key resources will eventually be plundered, droughts may take an inordinate toll in livestock deaths, and social arrangements will likely be revamped to adjust to new conditions. But what of the ecological implications of a protracted adjustment process?

Ecological implications:

Evaluating the potential for range degradation of current changes in mobility would require an analysis that far exceeds the scope of the present thesis. However, the positive ecological changes that have occurred on Manyara Ranch merit some observation, in contrast to the condition of neighbouring Esilalei and Losirwa villages. I have included a short overview in the Appendix for that purpose.

Herd-owners report that chronic overuse of dry season pastures is apparent in Losirwa village as well as Esilalei: for ten years, very little carry-over forage has been left and the area occupied by transient Arusha herders shows very little re-growth well into the growing season. By contrast, other dry season pastures that are spared the overflow of 'guests' grow a considerable volume of forage. Nevertheless, local herders have often vacated dry season pastures prematurely for lack of forage. Herders drove their animals to wet season areas before new plant growth had a head start, enough to keep up with the demand. The season's production was consequently compromised. The overall effect is a flight forward, which unravels the seasonal grazing plans.

Although livestock severely graze dormant forage plants during occasional droughts, pastures recover readily once the rains return. But when severe grazing is chronic while plants are growing, or when dormant plants are consistently grazed until no litter remains (see Appendix), plant growth is less vigorous in successive years and highly palatable plant species gradually disappear, to be replaced by more resilient and less productive species. Several elders report this phenomenon. Generalizations are problematic, however, since the dynamics of forage plant communities vary considerably within heterogeneous landscapes (with various micro-ecosystems), and the variability of rainfall in arid and semi-arid is the primary factor for forage growth. Identifying changes in range condition attributable to grazing activities requires frequent and comprehensive monitoring over many years, to take in consideration short term fluctuations. Extricating animal impact from other factors is further complicated if long term trends in precipitation regime are also difficult to assess.

Miseyeki Ole Moongo is the esteemed *olaigwenani* (or age-group representative) and a resident of Lashaine. Miseyeki observes that the local pastures have lost

productivity under continuous use and unplanned grazing. Now that the large herds of yesteryears have scattered amongst many smaller homesteads, daily grazing activities are more difficult to coordinate. Nonetheless, Ole Moongo further explains that seasonal shifts remain necessary and *ilaigwenak* confer yearly to devise the best plans, after scouting various destinations. He has often mediated conflicts about pasture and water access, but he denies that herd mobility has created the kind of structural conflict observed in the above case studies, between areas which are 'pasture poor' and 'cattle wealthy', and peripheral areas with sufficient pastoral resources. He argues instead that it is the birthright of Maasai to own and graze cattle. Hence, if pastures become locally and regionally insufficient, Maasai have the option to migrate permanently to more promising areas, as far as Tanga on the Coast, or Morogoro, or further afield. The next question, of course, is how do migrant pastoralists fare outside customary pastoral areas?

Case studies in Bagamoyo District

The boundaries of Maasailand and other customary pastoral areas were a safe haven for cattle herds in part because of the threat of tsetse fly further south, and the deadly sleeping sickness it transmits to cattle and humans. However, throughout the nineteenth century, internecine wars amongst Maasai groups displaced losing parties to outside their territory. Kisongo Maasai expelled Parakuyo Maasai out of the Maasai Steppe in early 1820s. As the former advanced eastward for the next half-century, the Parakuyo retreated ahead of them (Spear 1997:37), eventually settling in the coastal area where they have co-existed with agriculturalists and learned to cope with endemic livestock diseases.

The first Parakuyo pastoralists migrated into present day Bagamoyo District over 150 years ago, after migrating along the coast from Tanga. In more recent years, pastoralists from the northern parts of Tanzania also drifted west and southwards where many pastoralist and agro-pastoralist groups who were previously sworn enemies - Maasai, Barabaig, Gogo, Sukuma, etc. - now share grazing resources in pockets of grasslands (see Galaty, 1980, Ndagala 1996). Pastoralists have even infiltrated across international borders into Malawi.

Our earlier case studies examined situations where agriculture and farmers encroach on pastoral territories; the following cases, however, explore instances of pastoralists making inroads in areas where cultivators were first established. Nevertheless, it is where the future lies for enterprising Maasai, according to many elders.

I have selected three sites in Bagamoyo District to conduct interviews and inquire about economic conditions and herd mobility. First, Chamakweza is a village populated mostly by Parakuyo and bisected by the highway between Dar es Salaam and Morogoro. Second, Mkenge is a sub-village due north of Chamakwesa, occupied permanently by WaKwele agriculturalists and seasonally by pastoralists; the third site lies two days walk east of Mkenge, and borders Ruvu River, at the outskirts of Bagamoyo Town. Pastoralists from the general area frequent these sites on a seasonal basis.

During the years of villagization or 'Ujaama', the Tanzanian government dedicated several villages to pastoralists. Chamakwesa village and Mkenge sub-village were among the selected settlements. Like many other villagization schemes, the specialization of villages according to economic vocation did not pan out in Chamakwesa or Mkenge. Pastoralists in Chamakwesa supplemented their milk diet with crops, and hired WaKwele cultivators to do their field work. WaKwele subsequently settled in 'pastoralist only' areas, and established their private *shamba.* In Mkenge, WaKwele now constitute the main body of permanent residents, clustered in one settlement beside the only permanent water dam on village land.

The precipitation regime in the coastal region is bimodal; 'short rains' fall in October and November, and the 'long rains' usually begin in March and last for a few months; altogether, considerable forage grows yearly and droughts are unusual. Grazing resources are therefore seldom a limiting factor in the region as a whole, although scarcity occurs locally, where herd owners have concentrated their residences. Drinking water for livestock, however, is a constant worry; only a few dams in the entire area offer a permanent supply.

Herd mobility normally follows a pattern of concentration and dispersal. Herds collect around permanent water during the dry seasons, and disperse when the rains fill temporary water pools scattered across the countryside. Herds thus converge towards the settlement of Chamakwesa when intermittent water supplies dry up. Relatively few herds remain in Mkenge because of conflicts around the water supply. The Mkenge dam is the only source of domestic water for the local farming community and herds tend to contaminate it if given unrestricted access.

The situation around the Chamakwesa settlement is further complicated by the proliferation of *shamba*; and conflicts arising from crop damage are rife. The Village Council has recently implemented a policy whereby the two sections of the village separated by the highway have different functions. Farming can only be practiced in one section and most pastoral homesteads are confined to the other. This solution, however, further constricts the range of dry season grazing. The recent inflow of pastoralists from the hinterland exacerbates the bottleneck for water access, and the local communities are

now raising a collective fund to match donor funding and build additional water dams which will become their exclusive property. Outsiders who will not have contributed to the building project will be charged hefty fees for water access, and locals hope that it will stem the flow of outside herders seeking permanent pastures.

My interviews have not revealed attempts to control village membership through administrative strategies similar to those used by village councils in Maasailand. Instead, the ideological edict of the post-colonial regime, that Tanzanians can elect to reside where they wish, seems to retain much currency in the Coastal region. The ethnic composition of the villages is also more eclectic than in the predominantly Maasai villages mentioned earlier. To safeguard pastures, Maasai village councils manipulated the formalities of membership with the argument that the shortage of land was too acute, but in the Coastal area, where pastoralists seldom have the upper hand, such consensus is seldom possible. Instead, the privatization of artificial bodies of water serves the purpose of controlling access.

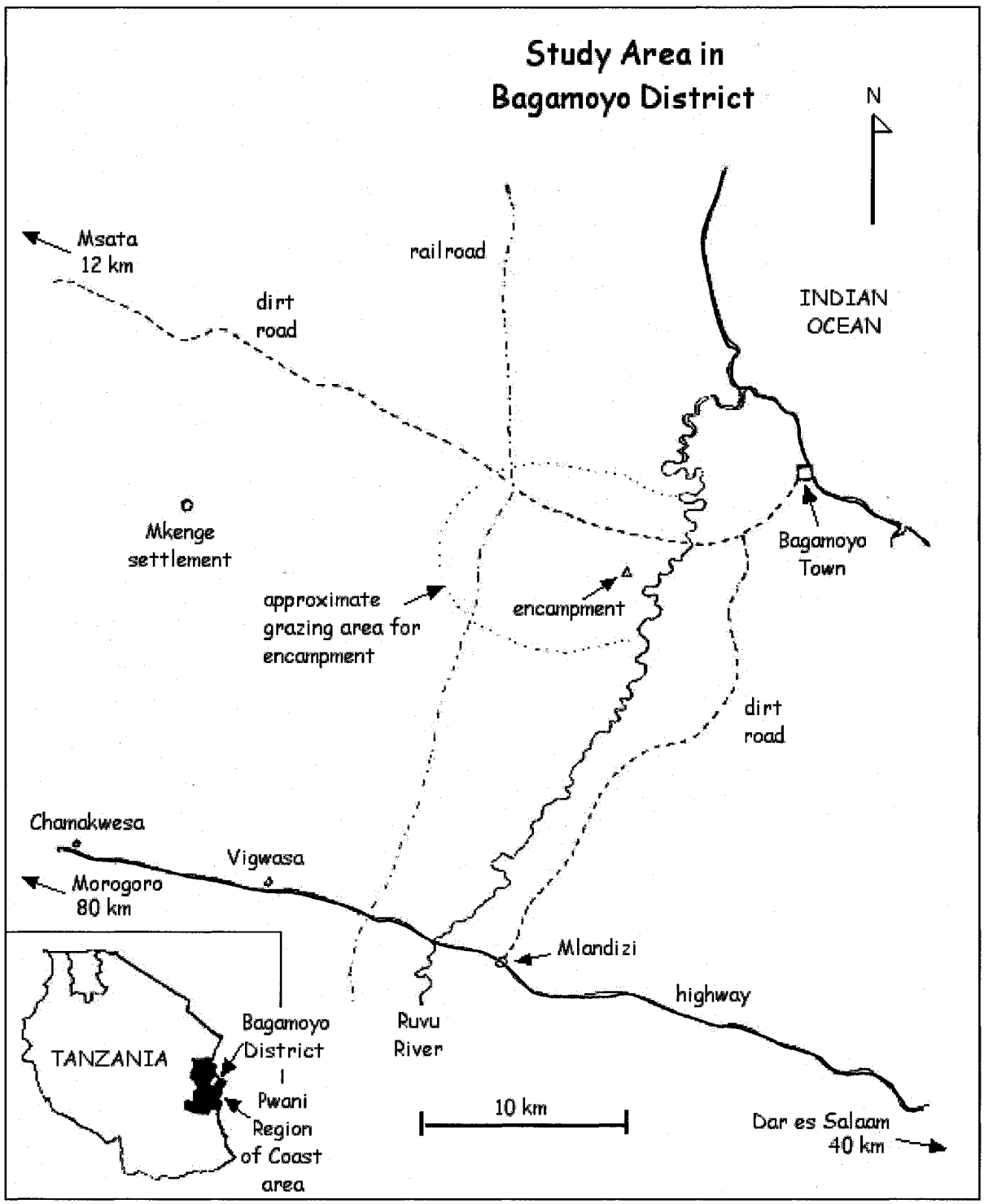
Study Area in
Bagamoyo District
N
Msata
12 km
railroad
dirt
road
INDIAN
OCEAN
Mkenge
settlement
Bagamoyo
Town
approximate
grazing area for
encampment
encampment
dirt
road
Chamakwesa
Vigwasa
Morogoro
80 km
Mlandizi
highway
TANZANIA
Bagamoyo
District
Pwani
Region
of Coast
area
Ruvu
River
10 km
Dar es Salaam
40 km

FIG. 5

Commercialization and herd distribution:

Pastoralists who hope to settle are deemed problematic, but transient ones are rather welcome. Chamakwesa is a thriving livestock market place and cattle mobility has an important commercial dimension. To escape drought, herds from the dry hinterland often trek to Chamakwesa from as far as the capital Dodoma and beyond. Overland travel ends there however, because the highway to Dar es Salaam crosses the Ruvu River a short distance from Chamakwesa, and cattle are not allowed to cross on foot. Cattle weary from their long treks are often sold at the biweekly 'auctions', and local pastoralists make a brisk business of buying thin cattle and fattening them on pasture. Several Parakuyo have become cattle brokers or owners of small butcheries.

Another commercial venture is also thriving recently. The milk from 'indigenous' cows has a higher fat content and the nearby Dar es Salaam market pays a premium for it. A lorry from Royal Dairies Ltd. makes daily rounds from the city; the company purchases milk at seven collection sites along the highway, for 200Tsh. per litre. Parakuyo women can now make a tidy income (although men are increasingly appropriating the income stream), especially during the growing season when cows produce a milk surplus.

The various marketing opportunities have far reaching implications in terms of concentration of livestock and reduction of livestock mobility outward from the commercial center. Cattle destined for the meat market can still be transferred to peripheral areas seasonally for grazing, but market animals nevertheless spend an inordinate amount of time close to the settlements near the highway. Milk-producing cows, on the other hand, are also kept as close as possible to the highway since milk is perishable and ferrying milk containers on bicycle to the highway is costly (30Tsh/l) and troublesome. Also, a maximum number of nursing cows remain at the homestead, close to market, during the growing season when cows produce the most milk and herds are usually shifted inland. Not surprisingly, communities along the highway plan to build dams close to the settlements, rather than inland where permanent water would relieve grazing intensity.

The outcome of the skewed distribution of livestock in the zone of available grazing is a year-long concentration of livestock around the permanent settlement. Every

interviewed herd owner recognized the utility of dry season or drought reserves, but the exiguity of readily available pastures precluded such measures. In the absence of collective planning and coordination, herders compete daily to reach the best grazing areas and hoard their forage on a first-come-first-served basis. The only report of grazing coordination was at the scale of the homestead. Members of a homestead with over 20 co-wives (including Parakuyo, Maasai, Gogo, Sukuma, Barabaig women) mention amalgamating their herds during the rainy season, but herds scatter during the dry season. The concept of *olailili* is familiar, but there is no such measure taken at the homestead or the village level.

Ilaigwenak remain authority figures in matters of conflict resolution within the Parakuyo community, and between pastoralists and farmers. But, overall, there are few vestiges of territorial organization such as described earlier. Herds occupy local pastures continuously, with little regard for allowing grazed plants to recover during the growing season. Nonetheless, herd owners deem it necessary to access dry season pastures beyond one day's trek from the homestead; seasonal mobility remains a critical component to their pastoral system.

One could argue that the type of pastures and plant communities in the Coastal area can withstand severe and continuous grazing. A cursory inspection cannot establish whether a permanent shift in plant composition has occurred, but a considerable bank of standing forage in Mkenge village, and other peripheral grazing areas, remains unused yearly (or is burned). A reduction of livestock mobility thus incurs significant opportunity costs. Furthermore, whether or not range degradation is taking place, the District authorities believe so. They are therefore planning drastic measures to curb unrestricted grazing. We will return shortly to that subject.

Grazing access in peripheral areas:

An increased influx of pastoralists is reported in Bagamoyo District (Mafunguo, personal communication[12]). Many are displaced Barabaig pastoralists belonging to the wider Tatoga ethnic group. Unable to contain the aggressive Maasai southward

[12] Mafunguo is the Bagamoyo District Livestock Officer

expansion during the eighteenth century, the Barabaig and other Tatoga groups withdrew from the Serengeti Plains and Ngorongoro Highlands (Lane 1996:1). Most Barabaig eventually established their pastoral territory around Mount Hanang in today's Hanang District, south and west of Monduli District. Like other specialized pastoralists, Barabaig struggled to maintain their transhumant mobility patterns during the colonial and post-colonial era. Barabaig adjusted to the inroads of Iraqw farmers by retreating to more marginal areas, but a large agricultural project in the 1970s crippled their pastoral system. The Tanzania Canada Wheat Program confiscated and ploughed over 70,000 acres of crucial seasonal pastures (Lane 1996:154). Scores of destitute Barabaig scattered far and wide to find pasture in other parts.

Pastoral immigrants in Bagamoyo District must circumvent cultivated areas and somehow gain access to pastures occupied by resident pastoralists. Rights and privileges of pastoral newcomers are ambiguous. Earlier occupants often attempt to extract benefits through illegitimate means. In other words, pastoral expansion can be quite onerous for the individuals who leave their customary territory.

During my research, a large cluster of Barabaig domestic groups resided at the third site by the Ruvu River, at the outskirt of Bagamoyo (see Fig. 5). Despite acquiring village membership at Mkenge village, Barabaig found that their access to grazing and water was precarious in Mkenge and did not improve wherever they move their temporary encampments.

Barabaig groups set up temporary *bomas* close to the banks of Ruvu River once temporary water pools dry up in Mkenge village. The surrounding floods plains are not accessible during the rains, but grazing is plentiful after the water recedes. As the season progresses, daily grazing trajectories extend to 15 km., but long daily treks are common occurrences. Animals may drink on alternate days.

Livestock access to the river, however, has become more problematic for Barabaig. The banks of Ruvu River are steep and livestock has access at only one site where the bank slopes gently. To circumvent cultivated plots along the river banks, herders get to the river over a pathway they have lined with acacia bushes to prevent the animals from entering gardens and crops. Nonetheless, farmers claim that livestock

trespass over private land, and herders often find a fence obstructing the pathway. Barabaig 'transgress' with great trepidation. Another tactic of farmers, according to Barabaig herders, is to make 'traps': small plots outside the fenced area are summarily cultivated and a few seeds planted. A cow occasionally wanders over the 'trap' and cultivators get very agitated over crop damage.

WaKwele cultivators made several such claims during my field study. The short rains had failed and crops were nonexistent both in the fields and in the 'traps'. The fuss over crop damage was obviously contrived, but Barabaig took it very seriously when handed a written notice to pay a fine, however suspect its legitimacy might be. They had recently paid a hefty amount (30,000 Tsh) to avoid the confiscation of a cow should the 'police' become involved. Upon inquiry at the District Office, I was informed that the land in question on the banks of Ruvu River had been leased to a foreign company several years ago, but it had not yet taken possession.

The power struggle behind the communal ideology of 'Tanzania for all Tanzanians' takes many forms amongst stakeholders. Squatters conjure up land ownership rights, damages are fabricated, and fines levied. Watering privileges are indirectly purchased and, by extension, grazing access is 'taxed'. For instance, while surveying the dam at Mkenge with the Village Councillors (composed exclusively of WaKwele), I inquired about livestock damage; the village chairman and executive secretary emphasized that they could not deny access to livestock belonging to pastoralists, for the above ideological reasons, but Barabaig apparently broke the rules of usage on a regular basis: watering livestock outside the dedicated stretch of shoreline cost between 3,000 and 5,000 Tsh per offending animal. Consequently, Barabaig had 'contributed' over one million Tsh in fines over the last four years[13]. Nevertheless, WaKwele do not intend to exclude pastoralists. There is sufficient land in remote Mkenge to accommodate both, and pastoralists regularly sell milk, and buy goods from

[13] The amount was confirmed by Parakuyo interviewees who are keenly aware of the practice of 'fines'; but the exorbitant amount could not be altogether substantiated. Regardless of the actual total amount, Barabaig herders avoid as much as possible taking their herds to the Mkenge dam although they are registered residents.

local shops and staples from WaKwele producers, thus circulating valuable hard currency.

Obviously, for a system of fines and 'taxes' to function, there must be a corresponding capacity to pay them. Despite their vulnerability to extortion, Barabaig herders enjoyed a substantial cashflow at the time. They journey regularly to the weekly local livestock auctions, in Chamakwesa, nearby Vigwasa settlement and Chalinze Town. Barabaig sell sub-standard animals and buy replacements for their domestic 'dairy' herd. They also buy animals in good flesh to sell soon afterwards to butchers in Bagamoyo Town. Both herds are accounted for separately.

Cattle brokers usually ship cattle destined for slaughter by lorry from the auction grounds, which is expensive. Barabaig use their herding skills, instead, to by-pass middlemen and save on transportation costs. Herders drive the animals fifty kilometres to their Ruvu river camp where they hold them with their domestic herds. Thence they cross a secondary bridge over Ruvu River to reach the bustling market in Bagamoyo Town. Barabaig explain that each animal returns roughly 17,000 Tsh. in profit (after their minimal expenses). Livestock mobility therefore generates a tidy profit. Considering the rapid turnover (five to ten animals is a regular weekly volume[14]), pastoral incomes can far surpass the local farmers' income from rain-fed crops.

If Barabaig were not 'taxed' so heavily and their vulnerability exploited, they could develop an innovative economic niche and contribute to the local economy in a sustainable fashion. Access to resources is so precarious, however, that insecurity and intimidation drives them away. Upon returning to the Ruvu River camps, several months after my initial fieldwork, every Barabaig homestead had been abandoned, although floods had not threatened and the grazing was still plentiful. Their domestic groups had reportedly scattered towards Morogoro and beyond. Unbeknownst to District authorities, and to the astonishment of resident WaKwele cultivators, a new so-called 'lease-holder' was ploughing the pastures with a tractor.

[14] Enterprising Barabaig, however, were increasingly snubbed by Parakuyo, who declined to sell 'Maasai' cattle to outsiders, even for a significant profit.

Encroachment, conflicts, and the privatization solution:

Despite their fearsome reputation at home (Klima, 1970; Rekdal, 1999), exiled Barabaig prefer to walk away from conflict. Parakuyo, on the other hand, may 'buy' a crop they wish to graze, but they loathe paying a fine. During an interview I had with a local Parakuyo *olaigwenani,* the latter was summoned to an urgent meeting. A WaKwele cultivator had brandished a gun to the face of a *murrani,* over a trespass incident, but had paid for his audacity with his own life. The current uproar within the WaKwele community, however, was the murder of its wealthiest livestock-owner. Parakuyo (or 'Maasai', as they are widely called) were again suspected, but the police had allegedly been bribed to overlook the matter. District officials confirm that violent incidents are common-place. The livestock officer also reports that pastoralist cattle are often poisoned in retribution for various offences.

Regional administrators estimate that the fundamental problem behind the unrest is the inefficiency of prevailing agricultural practices, which results in poverty. The Coastal Region, and Bagamoyo District in particular, is "resource-rich" and underutilized according to the Bagamoyo District Council (2002:1). Thus, if individual producers were allocated sufficient means of production (land), necessary tools (technology, credit and marketing outlets), and appropriate education (government extension services), agricultural production should soar and economic security would overcome current conflicts over resources. For this purpose, the government has devised economic programs for 'poverty alleviation' in rural areas. The 'Household Ranching and Mixed Farming Initiatives Project' (Ministry of Agriculture and Food Security; 2001) is the latest brainchild of the Bagamoyo and Kibaha District Councils. The program has another agenda besides boosting production and improving tenure security. For instance, one key objective is:

> "To ensure that livestock movements are restricted to a controllable state through land demarcation and fencing in order to encourage vegetative growth of pastures and control of the spread of diseases and environmental degradation" (Ministry of Agriculture and Food Security 2001:2).

Furthermore:

> "The Household Ranching Component aims at causing about [sic] a change in traditional pastoralists producer's attitudes and practices in order to increase production per unit animal and area through restricting animal movement. [...] It is planned that each household ranch unit will occupy 250 acres" (ibid:4).

The Bagamoyo District livestock officer and the DED (District Executive Director) representative[15] are ardent proponents of the program, especially the sedentarization component. The recent upsurge of pastoral immigrants in the District must be stemmed, according to them, or else the depredations of pastures and land conflicts will escalate. They estimate that between 20,000 and 40,000 head of cattle arrived in the District in the last two years, whereas it held around 56,000 until recently[16]. To control the inflow, the authorities must recruit the support of long-time resident pastoralists. The best means is to grant them long-term leasehold to a substantial 'household ranch' and facilitate the 'modernization' of their practices. With the projected success of the pilot project, applications for private ranch demarcation and registration should multiply, and, in turn, resident pastoralists will exercise their capacity to exclude intruders.

The 'Household Ranching' project is not innovative: it is a scaled down replica of many similar ranching projects. During the colonial era, the 'Masai Development Plan' (MPD) was a five-year plan for 'improved' range management. It was designed by British administrators and 'experts' and subsidized heavily by Maasai constituents. Considerable brush-clearing was involved but the water development schemes promised by the authorities never materialized. Starting in 1964, USAID poured huge sums in the 'Maasai Range Project'. The administration of the project was fraught with political interference and was frequently reformulated. The later version of the project restructured territories into 'ranching associations' with promises that pastoralist

[15] Mafunguo, the livestock officer, is Chagga (an agriculturalist ethnic group), and the DED rep is a German expatriate who was an ex-industrial dairyman.

[16] The inventory numbers are based on the report for the budget from 2003/04 to 2005/06 (Bagamoyo District Council 2002:1). Cattle inventories, however, are notoriously inaccurate; and even more so the estimates of cattle movements. The value of the above statements is to demonstrate the government's rhetoric.

communities would secure substantial property rights. But another change of course in the villagization program derailed the plan, and the associations never received the Rights of Occupancy nor the water rights that had lured the participation of pastoralists in the first place (Hodgson, 2001). The history of 'ranch development' in Tanzania is a dismal sequence of administrative failures, both in terms of 'range management' and of allocation of property rights (Hodgson, 2001; Jacobs, 1980; Ndagala, 1992; Shivji, 1998).

Pastoral development under 'Household Ranches' has even less likelihood to succeed. Plans to fence the properties "in order to encourage vegetative growth of pastures and control environmental degradation" (ibid) will have the converse effect on the land. Similar instances in Kenya demonstrate that restricting a herd within narrow confines reduces the carrying capacity of the area[17] (Boone, to be published). A reduction of forage variety adversely affects animal diet, and since the 'daily orbit' of movement is so constrained, a herd retraces its own steps in the course of a day[18]. Growing plants are therefore continuously exposed to grazing and have no opportunity to recover.

Besides fencing, the costs of surveys, demarcation and registration are prohibitive (Shivji, 1998, 1999:4), yet the project requires it. Donor funding will subsidize the initial expenses of the pilot project, but the onus over the long term invariably falls on individual applicants. The 'Official' land privatization component, however, is workable, with some proviso, since it complies with the recent Land Act and Village Land Act of 1999.

Parakuyo herd owners who were selected as future 'ranchers' welcome the opportunity of setting aside personal grazing reserves (and receiving subsidies for cattle dips, fences, etc.). At the time of the interviews, however, they were not aware that exclusive rights to a 'ranch' carried also a duty to keep cattle within its perimeters. Interviewees would tolerate such restrictions only while forage lasted; but they would not store hay crops or pay someone to bring bundles of grass on a bicycle (a common practice among agro-pastoralists). Pastoralists are clear in the matter: if grass becomes scarce,

[17] The project plans to allocate 250 acres for a herd of about 60 cows, and expect sustainable annual sales of 43% of the total breeding stock (Ministry of Agriculture and Food Security 2001:7). These offtake levels are clearly unattainable, as performance record of pastoralists and ranches elsewhere in the world indicate.
[18] Of course, 'station-grazing' rather than 'drift-grazing' is an option. But Boone's research (to be published) and my own observations suggest that the 'length' of the daily trajectory of a pastoralist herd within close confines covers the entire available space on a daily basis.

cattle move to where grass is, not the other way around. Furthermore, if the survival of his animals is at stake, a pastoralist *will* be mobile.

Summary of the situation on Bagamoyo District:

Pastoralists are relative newcomers in the Coastal region. Parakuyo, and later Barabaig and Kisongo, followed distinct patterns of livestock mobility and elaborated complex territorial organisation in their customary territories of origin [19]. But pastoral immigrants do not carry on with these in the Coastal region for a variety of reasons, ecological, economic and political.

The landscape in the area of Bagamoyo District, where the research took place, does not contain many ecological zones. Its uniformity offers little potential for transhumance between pastures with vastly different plant composition. Nonetheless, seasonal patterns of herd concentration and dispersal are necessary to compensate for the uneven distribution of permanent watering sites; by scattering during the rainy season, when surface water is plentiful, herders have the opportunity to optimize the pastoral use of available grazing resources as a whole. But several factors conspire against mobility.

The concentration of economic activities in Chamakwesa village and the marketing of animal commodities reduce the dispersion of livestock. The potential income from a sedentary dairy herd overshadows the advantages of accessing remote banks of forage. The village council decision to dedicate a significant portion of the village to agriculture further concentrates herds within a limited radius. Consequently, space is at such a premium that no grazing reserves are set aside, although herd-owners find the concept attractive. Instead, the rule of first-come-first-served prevails throughout the range at all time.

The village councils of Chamakwesa and Mkenge do not exclude newcomers, on the pretext that there is not enough land available. The councils reiterate that the government protects the rights of rural Tanzanians to select their place of residence. But

[19] Parakuyo herded in the Simanjiro Plains, within Maasailand, until Kisongo Maasai displaced them in the nineteenth century (see Galaty 1993a). Herd mobility was presumably an important component of their pastoral economy. Until recently, the Barabaig followed intricate patterns of herd mobility in their customary territory, in the vicinity of Mount Hanang and Katesh (see Lane 1996).

since water is scarce for pastoralists and farmers alike, water development projects are therefore an opportunity to control resource use by controlling the membership of investors in the construction of water dams. Maasai and Barabaig communities are now raising funds internally to match the grants from the government and foreign donors and hire large equipment to dig large water dams. Local authorities do not altogether exclude outsiders from land or from water dams, but they manipulate the rules and formalities of access to 'tax' them heavily.

The ambiguous status of leases held by foreigners exacerbates the climate of land tenure insecurity. Military authorities and politicians reportedly also hold large leases in the area, but the Regional Office is very evasive on the matter. The governmental allocation system is far from transparent. However, the Livestock Officer in Bagamoyo reports that the government has granted agricultural leases to German, Italian and even Somali investors. These absentee leaseholders wait for confirmation that further investments in operations would be safe in the wake of the latest land reform. Until then, squatters infiltrate unoccupied areas and proceed to make phoney claims of land ownership. They thus manage, on fabricated legal grounds, to extract tolls and fines from livestock herders. In Bagamoyo, police authorities do not help to separate fiction from fact, to the disadvantage of pastoralists who wish to access public property. Consequently, prejudices against mobile pastoralists run high in this primarily agricultural area, and conflicts erupt regularly.

Overall, despite substantial economic opportunities in multiple locales, some pastoralists become 'nomads' for political rather than ecological and economic reasons. Furthermore, District and Regional authorities make elaborate plans to eradicate pastoral mobility altogether. Administrators offer individual 'private ranches' to entice pastoralists to settle and abandon their wayward practices, but the ecological rationales behind development projects are antiquated. Nonetheless, if the past is any indication, the predictable failures will be blamed on the 'conservatism' of pastoralists.

Conclusion

A common theme during my fieldwork visits was that "The land is getting smaller". For Tanzanian pastoralists, this expression meant that the principal problem for people wishing to live from livestock is the insecurity of access to pastoral resources. This insecurity, as I found out in time, is foremost a function of the type of land tenure in Tanzania and the forms of land appropriation that are available to rural residents. The rights to allocate land and control land-use are concentrated into the hands of politicians on all level of government. The outcome of land policies is the cumulative alienation of key pastoral resources and the fragmentation of territories. The case studies illustrated the strategies of pastoralists to circumvent difficult political constraints and achieve some measure of social and economic security. They do so by playing the privatization game, but the exercise is a high wire act as far as the overall livestock economy is concerned. During fieldwork, it became evident that capturing the 'situation' from the perspective of a single study site would be unsatisfactory. Political and social factors generated a chain reaction across a region and beyond, and I could not fathom overall effects on the livestock economy without examining at least a few of the links along the chain. A more comprehensive study, however, confronted me with an array of strategies that are difficult to integrate and to present in a coherent fashion.

Land politics in Tanzania are far from transparent. Interpretations differ about the implications of recent land laws (see Kipobota & Mafoe 2005:5-6; Myenzi, 2005; Sundet 2005:10-1; Wylie, 2001), but if the dismal record of land laws and policies are an indication, politicians can exploit many legal loopholes to perpetuate a high degree of interference under the guise of a 'land reform'. The state remains the sole owner of all land, and, in practice, a centralized bureaucracy controls the rights of allocation since the President can transfer land from the Village Land category to the more 'public' General Land and, by law, the Minister of Land or the regional government oversees any land allocation over 250 ha. (Wylie, 2003). Large tracts of land may also be appropriated by the central government for the 'public interest'. This measure serves to promote economic development, and the access of investors to land resources and the dedication

of more land for 'conservation' purposes. The proportion of all land in Tanzania under the administration of National Parks and Conservation areas already stands at 28%, much of which was excised from former pastoral territories. The allocations to investors follow a similar pattern. During fieldwork, for instance, many Barabaig interviewees hailed from Morogoro area, displaced from unused parastatal ranches to make place for Zimbabwean investors and sugar cane plantations. At the local level, the village government is now in charge of land management for village land, but 'village land titles' held by the village councils have been extinguished in 2001. According to the new laws, it is possible for multiple villages to pool their pastoral resources and manage them communally, but the allocation of land resources in villages is presently limited to small agricultural plots for private individuals. Nonetheless, the village councils of pastoral villages manage to concentrate the ownership of rights to land in the hands of pastoralists rather than agriculturalist newcomers. Overall, the current level of implementation of land laws has been inimical to communal institutions, and hampers territorial co-operation over large pastoral areas. There is little sign that large-scale alienation of pastoral land will abate.

With rising population numbers, both regionally and within villages, the competition for land is high and pastoralists eagerly participate in the race for private land plots. The insecurity of access to common pastoral resources contrasts with the security granted by the rights over a private plot of land. Individual pastoralists make rational choices in the matter. When a private plot is excised from valuable dry season pastures, for instance, the loss of access is shared by a community of herd-owners. But when an individual pastoralist acquires a plot of land, and thus contributes to the alienation of dry season pastures, his benefits far exceed his share of the communal loss. *Shambas* therefore multiply, since no effective regulation keeps in check the alienation of private plots from the commons, in the absence of communal decision-making authority. The establishment of *shambas* also serves as a deterrent for alienation by the government for the 'public good'. Maasai living in the proximity of Tarangire National Park in Simanjiro District, for instance, have expanded their *shamba* operations in areas coveted by conservationists, with the knowledge that these areas had little agricultural value. They

reasoned that, since wildebeest and elephants held more rights than cattle, and cultivating land conferred more secure claim to land than grazing its vegetation, the loss of some portions of valuable pastures to unproductive *shambas* was preferable to the loss of an entire area. This practice, described as 'defensive' farming in conservationist milieu, illustrates the political purpose of multiplying private *shambas* as a means to assert communal rights (see Ndagala, 1996; Conroy 2001:209). It is less blatant in the above villages of Monduli District, where rationales are foremost economic, but cultivation remains a sort of insurance policy against alienation. If all village land with agricultural potential is under Maasai tenure, village authorities can argue with higher ranking administrators that there is indeed no valuable land resources left for outside applicants. Rather, they have met any possible 'development conditions' enshrined in law that could be used by politicians as leverage to legitimize land alienation. The cumulative effects of cultivating land plots are nonetheless detrimental to the livestock economy. Some village authorities have reined in the allocation of plots, but not before valuable pastures were compromised. Hence, the burden of local scarcity is transferred elsewhere, thus stressing the conventions of reciprocal obligations between herding communities. The fragmentation of pastoral territories during villagization into independent village administrative units compounds the matter since each council represents local interest. Customary mediators such as *ilaigwenak* are called in to prevent conflagrations, but not to help restore a more rational system of allocation and utilization of pastoral resources. Many sub-villages have also recently gained village status, thus potentially giving residents more managerial clout over resources. Again, the political fragmentation of village land compounds the problems of territorial and economic co-operation, since village communities have not yet created social networks to deal affectively with inter-village issues. Pastoralists thus have a complex political agenda. The strategies for gaining private property rights overlap with community strategies to keep outsiders from squandering local resources, on the one hand, and with collective strategies to minimize the threat of state interference, on the other. The current reduction of key pastoral resources, the fragmentation of pastoral territories and the concentration decision-making in autonomous administrative bodies conspire against making a living from livestock and

moving animals where and when needed. In the final analysis, political and social factors have shaped current pastoral practices to the extent that the region's transhumant pastoral system is jeopardized.

The principal asset of the pastoral system extending from Mount Monduli to the Rift Valley is the access to a variety of resources available at different seasons. Until about twenty years ago (according to informants) most herders practiced transhumance to take advantage of resources from different ecosystems. Although herds still travel to the Monduli highlands during the dry season, many herders have changed dry season destination as a result of agricultural encroachment. Rather, many herds from villages at higher altitude spend longer periods of time in villages at lower elevation where extended dry seasons or droughts are more likely to occur. This reversal of mobility pattern exposes the herds of livestock to forage and water scarcity on a yearly basis and during droughts which are more severe at lower altitude. Furthermore, some pastoralists have settled in the plains in the course of the last decades, as a result of villagization. While year-round grazing for a limited number of livestock numbers is manageable there, the influx of outside herds exceeds the capacity of micro-pastoral systems to meet the total demand for forage and water. This new pattern of mobility is therefore economically counterproductive. The village councils in Esilalei and Losirwa now consider excluding transient herders as a solution for themselves. But whether their 'micro-territory' is adequate for local demand and sustainable on the long run remains a question. Since village pastoral plan has been in operation for a relatively short time (at most since villagization), the economic and ecological implications of pastoral systems with constricted herd mobility are not yet known for the area. But the access to a variety of forage available during different seasons is very limited, since it is limited to the wet season component of the overall transhumant system. To make matters worse, key dry season resources situated where forage is sub-irrigated are increasingly cultivated. The remainder of 'dry season pastures' are areas where forage accumulated during wet season. But there is pressure to overuse these pastures. Finally, the range of mobility within village 'micro-territories' is minimal (see Fig. 2, 3 and 4). Herders from Losirwa report that they can take their herd to the far reaches of their village land in a single day.

The susceptibility of these villages to uneven distribution of rains is therefore very high. Research indicates that the fragmentation of Group Ranches in Kenya into small tracts reduced the carrying capacity of the pastures. In other words, pastures yield fewer animal-days of grazing on a per-acre basis once the cattle are confined to smaller parcels (Boone & al, to be published).

The situation of pastoralists in Bagamoyo District mirrors the above one in some respect, but additional economic factors also come into play. Regional administrators promote 'Household Ranches' of 250 acres on the grounds that sedentary ranching will improve the productivity of pastoralists. The 'carrying capacity' of such units remains to be known, but the infrastructural costs of surveying, demarcating, registering, fencing and, possibly, of water development, will likely be prohibitive. The initial ten ranches will be subsidized, according to plans, but the next set of applicants will be hard put to make the necessary investments. In addition, much larger operations in the area have adopted the conventional ranching 'model' and failed. Future household ranch owners expect to be able to range beyond the confines of their property if needed, but the original purpose of the project, according to regional administrators, is to prohibit 'nomadism'. As far as current pastoral practices are concerned, the commercial ventures of Parakuyo villagers impair the range of mobility of their herds and considerable wet season forage is underutilized. But with a significant population of transient herders passing through, informants report that implementing plans such as dry season reserves, for instance, is nearly impossible.

If one makes an assessment of pastoral practices in Tanzania strictly from the perspective of range management, range ecology or pastoral economics, pastoralists would appear to be entirely self-defeating. The organization of herd mobility seems dysfunctional and current patterns contradict sensible ecological logic, the condition of many pastures is deteriorating and the economic decisions of individual pastoralists undermine the common pastoral production system. But if one takes in consideration their political and social circumstances and the high level of interference on their decision-making, the general picture takes on a more coherent complexion. The

emerging profile, however, is not one of pastoralism as an 'ecological adaptation', as it is often portrayed.

Appendix

Pastoral conservation in Manyara Ranch

The Tanzanian Land Trust intends to promote Manyara Ranch as a model of resource management for Maasai pastoralists. The recovery of the vegetation on Manyara Ranch has been remarkable, according to AWF reports. However, a comprehensive assessment is required before asserting that a conservative ranching model is superior to Maasai territorial management. The resident ranch herd is very modest in relation to the pool of pastoral resources available on this large ranch, notwithstanding the seasonal use by wild herbivores. Minimal grazing activity during the growing season creates considerable yearly forage carryover that could suppress future vegetative growth if left to accumulate over many years.

A common measure is to burn the range yearly, to 'rejuvenate' its vegetation. The ecological effects of chronic burning are often deemed desirable (Homewood & Rodgers, 1991), but the burning regime of Maasai is hardly comparable to the burning of a range that consistently contains a very high fuel load. Distinctions are important between 'cold fires' and 'hot fires'. The intensity and frequency of fire influence the long-term impact of a burning regime. Manyara Ranch has until now upheld a prudent no-fire policy. Litter therefore accumulates which has several advantages. Foremost, it reduces the speed of water runoff and minimizes the mechanical impact from rainfall which seals soil surfaces and interferes with water percolation to the root systems.

Water availability is obviously a major pastoral preoccupation. Huge sums are spent on water development. Aid projects invest expensive technology and sophisticated designs in the 'banking' of drinking water[20]. Dams are invariably damaged by floods, however, especially in denuded areas or where cultivation is rampant. But in recent years, when copious seasonal rains fell on Manyara Ranch, surface water did not race to

[20] Subsurface dams, containing rocks or coarse sand, such as extant in Namibia, are 'innovations' now considered in many areas, for their low evaporation losses.

fill water dams (Jones 2004, personal communication). Because of the litter cover, it infiltrated the ground instead, and excess water filled the water dams on Manyara Ranch gradually.

The ranching tenure of NARCO[21] had been devastating on Manyara Ranch: much land was cleared in accordance with past range management prescriptions (see Hodgson 2001). Bribes could buy grazing access, and grazing management was abysmal. Land was consequently denuded and range health was compromised. The vegetation has recovered since then due to low stocking rates. Soil erosion is minimal and considerable litter has accumulated on the soil surface in the absence of mechanical clearing and fire. With the prohibition of most livestock grazing during the growing season, except for its modest resident herd, Manyara Ranch has in effect become a dry season grazing area and a potential drought reserve, in addition to a safe haven for migrating wild herds.

The Tanzanian Land Trust has an obligation to adjacent Maasai communities. The Ranch management has increased the quota of village livestock granted access on the Ranch over time. It is important, however, to recognize the value of the Maasai grazing occupation. The grazing of cured dry season forage and its conversion into manure helps the cycling of nutrients, and prevents the excess accumulation of senescent plants which would otherwise require the yearly burning of high fuel loads. In other words, there can be too much standing dead vegetation: it overwhelms future growth if cured forage is not consumed or trampled down by animals to become 'litter'. Areas that were recently impacted and severely grazed by Maasai herds during dry season have rebounded remarkably after the next rains (Jones 2004, personal communication); this is predictable since forage plants benefit from rest or long recovery periods during the growing season and thus retain much vigour for regrowth, even after severe grazing during the dormant season. This phenomenon is apparent in the dry season forage banks and drought reserves under Maasai management, when seasonal exclusion rules are enforced. Since Maasai herds evacuate at the onset of the rains, however, Manyara Ranch does not need

[21] NARCO is the governmental parastatal arm for its ranching industry in the post-colonial regime. Considerable pastoral territory was expropriated to create a network of 'modern' state-run ranches, most of which failed.

to accommodate a large herd during the growing season, when controlling grazing damage is a delicate matter, whereas neighbouring Maasai villages do.

The success of Manyara Ranch reflects wise watershed and forage management; the manager maintains a prudent scepticism towards conventional range management and commends the hired Maasai herders who make the day-to-day grazing decisions for the ranch herd. For all its success, however, Manyara Ranch constitutes primarily a single component of an entire pastoral system: namely the segment for dry season use. Current arrangements with adjacent villages ensure that the ranch benefits from high livestock populations in the most beneficial season. Forage plants are more vulnerable during the growing season, and the timing of grazing occupations then requires much tighter management, but the Maasai herds leave before grazing during growing season becomes problematic. Manyara Ranch escapes most potential deleterious effects during vulnerable intervals, while Maasai herd owners struggle with a dysfunctional territorial system. A cursory comparison between Manyara Ranch and adjacent village land is therefore unfair on ecological as well as political grounds.

Arguably, Manyara Ranch also has a small year-round resident herd, so the ranch it is not exclusively used as a dry season reserve. The ranch herd yields high levels of production per head of livestock, as conventional ranches do. Yet ranch production per unit of land pales in comparison to its pastoralist counterpart, according to several studies, especially once pastoral production for domestic use is taken into account. Thus, a ranching model does not carry overall economic advantage, despite its incessant promotion. But, more importantly, Manyara Ranch has the discretion to control access and manipulate the timing and intensity of grazing episodes to match its ecological and economic objectives. An analysis of the context of governance reveals more about the stark contrasts between village land and land under conservationist tenure than the inherent advantages of one type of management over another.

Glossary

boma (pl. *maboma*): a corral or *kraal* that contains livestock, and usually surrounds the residence of domestic groups (in *KiSwahili*).

enkang: a group of several Maasai households living within the same *boma* (in *Maa*).

KiSwahili: national language in Tanzania, also used throughout East Africa and to a lesser extent in the Great Lakes region.

olailili: areas reserved for herds belonging to domestic groups or to specific localities.

olosho (pl. *iloshon*): a Maasai section (in *Maa*).

enkutoto (pl, *inkutot*): a locality within Maasai territory (in *Maa*).

Maa: language spoken by Maasai and related groups.

murrani (pl. *murran*): a Maasai belonging to the warrior age-group (in *Maa*).

olaigwenani (pl. *ilaigwenak*): age-group agents representatives, who mediate community conflicts (in *Maa*).

shamba: a small farm (in *KiSwahili*).

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