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# Food Systems under Stress in Africa

## African-Canadian Research Cooperation

**Proceedings of a  
Workshop held in  
Ottawa, Ontario, Canada  
7-8 November 1993**

**Edited by  
Ronnie Vernooy and  
Katherine M. Kealey**

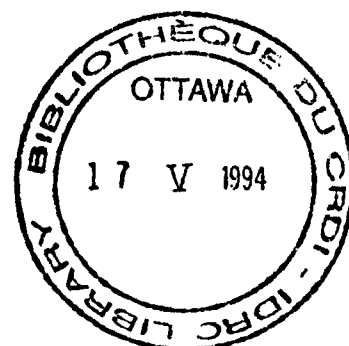
The International Development Research Centre  
Le Centre de recherches pour le développement international  
El Centro Internacional de Investigaciones para el Desarrollo

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# *Food Systems Under Stress in Africa* *African-Canadian Research Cooperation*

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## *The Pastoralist's Dilemma: Common Property and Enclosure in Kenya's Rangeland*

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***Abstract** Despite the need of pastoral communities to practice mobility to benefit from widely dispersed resources, the African rangelands are going through a progressive process of enclosure and privatization. Privatization has been supported by the tragedy of the commons arguments, and the application of our "prisoner's dilemma" to stocking decisions. The "pastoralist's dilemma," however, is applicable primarily when common property resources are appropriated during the enclosure process, when rightholders, seeing their land treated as an alienable free good, demand their privatized shares before that share disappears. The "pastoralist's dilemma" occurs not when rangeland is controlled by communities but when community control is undermined by state or private interests. When the integrity of the community domain is threatened, the individual pastoralists has no choice but to accede to the generalized enclosure of range resources, despite the fact that this is against the individual and collective interests of pastoralists in maintaining higher degrees of mobility, sustaining desirable levels of productivity. Yet communities may well offer the best framework within which local goals and "development" can be realized.*

The African rangelands have long been held under various community-based systems of resource allocation and management. Some systems give an almost exclusive emphasis to animal husbandry, others combine animal husbandry with dryland or irrigated cultivation. Pastoral domains have generally been quite large, allowing a pasture-holding group access to varied resources across several ecozones sufficient to maintain herds through most years (Bonfiglioli 1992). Among the Maasai of Kenya, the need to move herds more widely in drier years has been met through appealing to the political and cultural linkages between sections. It has been on the basis of these two institutions, of section-based domains of common property and intersectional agreements, that movement of livestock has been assured between the variety of resources on which extensive husbandry depends (Galaty 1988).

But over the last two decades, dryland communities have been moved to begin the enclosure of Africa's rangelands: explicit demand has been exerted by policymakers, governments and local elites, and implicit pressure has resulted from local population growth, immigration and economic and educational diversification (Lawry et al. 1984). A case in point is the experience of Kenyan Maasai, for whom the enclosure process is probably further advanced than for any other rangeland area in Africa. Some 20–25 years ago, in the former Trustlands of Kajiado and Narok Districts, group ranches were formed (Davis 1970; Hedlund 1971; Halderman 1972); today, rather than having evolved into stable communities of land ownership and management, most of these groups are in the process of dissolution through being subdivided among their members (Grandin 1986; Galaty 1992).

The most influential argument supporting subdivision derives from a set of intertwined assumptions regarding the predicament of managing common resources; this "tragedy of the commons" theory argues (Hardin 1968):

- That wise, long-term management of collectively held range resources is undermined when the returns on those resources are realized by individuals; short-term interest in maximally exploiting pastures leads individuals to increase the herd using the commons, resulting in the degradation of pastures;
- That long-term investments that improve range resources, thus raising range and animal productivity, are discouraged if individuals cannot be assured of realizing the benefits of the investments they make; and
- That unless land is seen as a commercial, marketable good, there will be no incentive for herders to seek higher returns, by increasing the quality or quantity of animals raised or by developing more commercial strategies of livestock production. In contrast, it has been assumed that subdivision will create conditions enhancing the quality of resource management, the level of investment and the degree of commercialization.

These three assumptions, involving management, productivity investment, and commercialization, underpin the theory of privatization (Toye 1987; Bromley 1989). Similar arguments supported the formation of group ranches, a program of privatization in which a specified membership holds freehold title in a particular parcel of land (Galaty 1980). But the current process of subdivision adds "individualization" to "privatization," reinforcing the faulty notion that collectivities are intrinsically ill-suited to holding property (Bromley 1991).

In this paper I will examine the stated goals, values and motives of Maasai pastoralists, both those who support and those who reject subdivision of their group holdings. I will, in particular, try to assess the logic behind the attitudes expressed by herders and to model the nature of the predicament that underlies their judgments. To what extent are herders' responses understandable as rational choices made in light of the options they face, and to what extent should they be seen as reflections of larger societal shifts, toward an ethic and ideology of modernization and a discourse of development?

This question is an important one, arising at a time that the arguments for privatization, schematically posed earlier, are coming under increasing criticism (McCay and Acheson 1987; Bromley 1991; Bazaara 1992). Many now argue that common property systems are in fact viable means of managing environmental resources, and that resources held in private hands or by the state are often more subject to degradation and abuse (Ostrom 1991). Comparisons of common-property and small-scale individual and large-scale private land holdings have often shown the former to be more productive than the latter (Cossins 1992; Lawyer 1992).

The obvious influence of tenure forms on food systems flows not only through the effects of property on access and use of resources, and the resulting productivity of land; it also flows through the distribution systems established by property rights. In this regard, community-based forms of management often respond more adequately to questions of equity and social justice in the allocation of rural resources and the distribution of returns, arguments of some significance when the communities in question may be poorer or politically less powerful than those making the decisions that affect them (Chambers 1983; Baxter and Hogg 1987). Thus there are two sets of criteria that we should consider in assessing the viability of land-holdings systems: those of resource management, productivity-investment and commercialization; and those of equity and social justice.

### *Pastoralism and the Prisoner's Dilemma*

Is range enclosure a necessary response to the apparent contradiction between the individual and collective interests of herdowners, a contradiction often seen as undermining responsible rangeland management? Enclosure has been advocated by those who argue that cooperation in managing common property is virtually impossible, given this divergence between collective and individual interests. Modelling the strategies pursued by pastoralists, variants of the "prisoner's dilemma" have been applied to the "game" played by herders using common grazing. In the "prisoner's dilemma," two confederates in crime held separately, neither able to communicate with the other, have the option of confessing or not confessing (Ostrom 1991, p. 217). If one prisoner alone confesses to their joint crime, he will receive the most lenient sentence, whereas the partner who has resisted will receive the stiffest penalty. If both confess, they will both receive a stiff but somewhat less severe punishment. If neither confesses, they will be charged with a lesser crime for which they will be sentenced to a punishment of medium severity, more strict than will be given the sole confessor but more lenient than would be given to each if both confess.

Under the circumstances described, neither can be sure the other will not confess, so would normally be expected to "defect" from any agreement not to confess because the worst situation would be to resist while the other confesses. The dilemma is that the cooperative solution is best for both taken as a pair, but with communication impossible and under the threat of losing all if one confesses, it is likely that they will reach a solution less desirable for either, when both confess.

Given an upper limit to the number of animals ( $L$ ) a given pasture can support, a certain number of herders ( $X$ ) can follow one of the following strategies:

- In a cooperative strategy, herders will each graze an equal number of animals on the given pasture ( $L/X$ ), thus receiving a certain profit.
- A defect strategy is one in which one herder "defects" from the cooperative strategy by grazing more animals than are allowed ( $> L/X$ ), thus garnering a higher profit at the expense of those who do not defect, who receive negative profits.



- If every herder defects, however, overstocking will result in a lower profit for everyone.

Without a binding contract, the argument goes, each herder will suspect that another might defect, so will see it in his interest to defect himself. The hope of defecting alone and the fear of suffering another's defection conspire to lead each herder to cede the cooperative strategy which would in fact benefit the collectivity. According to the account, the tragedy of the commons is inevitable unless an overarching authority dictates stocking rights, as in state property, or pastures are privatized, so the incentive to gain a "free good" in the form of extra grass will be gone (because being owned by someone, pastures are no longer free).

However, in the real world, most pastoralists measure numbers of animals rather than profits; a thin animal may be unprofitable at the height of a dry season, yet if it survives it may increase in value when it is fattened or becomes fertile the next year. On nonenclosed pastures, most pastoralists do seek herd increase. From the management point of view, there is much to commend an "opportunistic" herding strategy that seeks to bring as many animals as possible through a dry period, increasing the potential for future herd growth (Sandford 1983). Despite high levels of herd loss in given years, this strategy may result in greater numbers of animals being "carried" over time, for a net gain in range productivity (Behnke and Scoones 1992). But is the rationality of this "defect" strategy necessarily at the long-term expense of rangeland degradation?

Recent findings in range ecology suggest that the notion that there is an absolute limit to the number of animals a pasture can hold (its "carrying capacity"), which can be calculated, is just too simple, since vegetation potential is too complex in nature and too discontinuous in space, and too varied in quality and quantity between seasons and years, to be able to predict accurately (Behnke and Scoones 1992). Herders empirically monitor pasture capacity through continuously assessing the quality of their animals and their milk yields, and respond to declining pasture quality by shifting animals to new areas, selling them or trying to minimize their energy expenditures. But ecologists now argue that rangeland degradation is not primarily due to livestock numbers in many "nonequilibrium" grazing systems, found in drier environments for which climate and vegetation vary unpredictably (Behnke and Scoones 1992, pp. 17–18). Rather, the major predictor of vegetation change is climate, more specifically rainfall. Without rain, annual grasses in arid regions tend to shrivel, dry and disintegrate independent of the extent to which it is grazed; thus their nutrients are either captured by ungulates or lost.

If we consider the pastoralist dilemma with respect to the number of animals each can sustain on common resources, the following choices are evident. Under a cooperative strategy, each would be limited to an equal share of a fixed herd (usually assessed according to sedentary and commercialized herd standards). But the number of animals each owner could manage each year, and the size of the total herd, would usually be less than a herd owner would raise under a more opportunistic strategy. In comparison to the sedentary fixed-herd model, an opportunistic strategy would result inevitably in differential herd sizes, and greater animal numbers in good years, fewer under drought conditions. Thus, pastoralists routinely pursue "defect" strategies by managing their herds for growth (Sandford 1983).

But several conditions underlying the "prisoner's dilemma" model do not hold for the "pastoralist dilemma":

- There does not seem to be a specific ascertainable limit to the number of animals a given parcel of rangeland can carry, since pasture quality and quantity varies along with microecology and variable climate. Of course, the limits of a given parcel of pastureland is ascertained at a particular time by the herder, who carefully monitors the state of his animals; at the extreme, animals weaken and even die, indicating that pasture limits have been exceeded. A cooperative strategy based on a binding agreement, especially one enforced by central control, to limit herd numbers would curtail management flexibility and would inevitably result in lower range productivity over time. In dry, nonequilibrium systems, it would appear that this sacrifice will not result in a less degraded environment.
- Herders are not ignorant of one another's decisions regarding animal holdings and pasture use, since they often practice rapid communication about the herding process. Thus their own strategies are not driven in the first instance by fear of what competitors might do; pastoralists usually have fairly accurate information about what one other is doing. They discuss their dilemmas and coordinate their herd movements.
- Finally, it does not follow that if everyone "defects" the results will be uniformly negative as would be the case if the pasture pie were finite; in fact, aggregate pasture resources differ according to climatic factors, so even if the defect solution is ubiquitously adopted, in many years everyone will reap the benefits. Only in very dry years do the contingencies of herd survival seem to create a zero-sum game. And since severe droughts seem to affect large herd owners more than small herd owners, the outcome may well be to level rather than exacerbate herd inequities.

My argument is that under normal rangeland conditions, the model of the prisoner's dilemma is not applicable to pastoralist stocking decisions. Or, to put the matter somewhat differently, the effect of all pastoralists "defecting" from a conservative fixed-herd strategy is not a lower but a higher aggregate outcome, so individual rationality and collective interests usually coincide under rangeland conditions. Curtailing the flexibility of herd managers to move herds in a rapid and opportunistic way to exploit rangeland resources that rapidly vary over time and space is the major factor undermining pastoralist productivity. This is, of course, a major outcome of range enclosure, as communal pastures are privatized and subdivided, and individual parcels fenced and nonresident herds excluded. It would appear to be the case that even generous apportionments provide inadequate variability of resources to allow a herd to remain resident throughout the year, especially during drought. When private and communal holdings exist side-by-side, the herds of individual land holders inevitably make use of communal pastures, while the reverse does not hold.

My question is this: if, as has just been proposed, it appears to be in both the individual and collective interests of pastoralists to retain flexibility of movement only possible on large, communal holdings, why have many Maasai pastoralists called for enclosure of the rangelands through subdividing group ranches?

### *The Logic and Function of "Groups"*

The notion of the "group" was a compromise between communal and private forms of land tenure, especially suitable for arid and semi-arid regions in which range resources were exploited in an "extensive" fashion (Galaty 1980). Group ranches, as founded in Kajiado and Narok Districts, exercised three functions: land-holding, resource management, and community organization. Many group ranches still function in this manner, and even when subdivided still serve as units of local identity and community organization. I have long been curious about what factors may be crucial to the success of cooperative organizations such as the group ranch, and conversely under what conditions they do not work. Let us consider the logic of the group concept, keeping in mind the question of what factors have led to its demise.

The "group" is a definitive collectivity that stands in an exclusive relation to a precise tract of land, over which it holds private title. After the tract of land was adjudicated, a committee of representatives was struck, one of whose responsibilities was the enumeration of its membership. Although the title holders include registered members only, they are drawn from a community considered in general to have held customary rights of occupation; so registered members are considered to hold land *on behalf of* that community, from which subsequent members can be drawn. The functions of the group, to hold land, manage resources and represent the community (as well as propose and ratify new members and allocate land through subdivision), are normally exercised through its management committee, the "group representatives" (Kituyi 1991).

It was thought that group ranches would provide security of land tenure to a pastoral community, leading to increased investment and greater range productivity. But security of tenure could be ensured only through limiting membership to a specified group, legally securing group land rights through acquiring title and protecting the rights of each registered member to an unspecified but equivalent share of group assets. One entailment of secure title was the right to exclude nonregistered people from occupying group holdings, but this right has in practice been applied only to noncommunity members. Although legal rights are only held by registered members (i.e., almost exclusively adult males), their family members and nonregistered community members have been seen as retaining certain rights: of residence, of potential inheritance and of eligibility for future membership (Okoth-Ogendo 1991).

### *Undermining Group Ranches*

Unfortunately, many of the requisites of success in managing group ranches were not fulfilled in the actual implementation of the program in the two Maasai districts. Security of tenure was undermined when group membership was not limited, share-rights of members were not protected and exclusion of noncommunity members was not achieved. At the same time, an

inexorable process of individuating and subdividing group holdings continued, based in part on the precedent established at the time of the original adjudication of certain individual holdings side-by-side with group ranches. Government agencies and officials have been deeply involved in encouraging and benefitting from subdivision, which represents an extra-legal if not illegal process, to the extent that we must doubt the good faith of government in implementing the ambitious and costly group ranch program. Failure regarding membership has undermined group ranch cohesion and faith in its management committee, both necessary conditions for securing productive investments in the form of credit to the group.

On the basis of what was seen as customary practice, only adult males were normally registered as group members, with women and children gaining rights through fathers and husbands (although in some cases widows with minor children were registered). When young men came of age, through local initiation and receiving a national identity card, they were registered as group members. This obtained for the age-set formed in the late 1970s (*Irang'irang'*) and early 1980s (*Ilkipali*). By the late 1980s, however, population growth had swollen the number of potential recruits and pressure was growing for subdivision. Thus, on the even of subdivision whether the new age-set would be registered as members, or made to share in their father's estate, was vehemently debated, leading to violence and court cases.

Some registered members protested that registering the new age-set would give an undue advantage to families which had produced many children at a time everyone was aware that smaller families were being encouraged. Although each original registrant gained an equal share when the group was founded, that share was seen to be diminished when names were added to the register. On group ranches where registration of the young men was denied, the latter argued that by customary law their right to hold and use land was acquired through initiation and maturity, that is via the community, rather than through their fathers. Some were also aware that their father's held the legal right, as yet not exercised, to act as sole owner rather than family trustee of the land, and could both evict and disinherit sons.

Some group ranches decided to register the new age-set, while others decided against it. On Elang'ata Wuas group ranch, in Ilodokilani section, conflict arose between the new age-set and their titular age-set sponsors (*Iseuri*), who were primarily responsible for refusing to grant them registered status. The decision led to a breach of peace, as the younger set attacked their unhelpful sponsors, while the latter responded with a ritual curse. Because a more senior set was registered while the new age-set, their pair, was not, the integration of the two into a single age group in subsequent years, dictated by age-set procedures, was cast into doubt. This case is expected to come to court, and ranch subdivision has been delayed through court order (Galaty 1993a).

One of the factors stimulating resentment on the part of young Maasai men denied registration is that many people without any customary residential claims have been registered as group members. These include many nonresidents who are both Maasai and non-Maasai, most of whom have some degree of political influence. The presence of non-Maasai within the Maasai districts was subject to much discussion and administrative deliberation during the colonial period, when the Maasai districts were theoretically "closed" to outsiders. Despite this fact, numerous Kikuyu established personal and family ties with Maasai, many becoming "acceptees" over time. Many such Kikuyu with long residence and ties with Maasai were registered as group members and

expect to receive portions of land upon subdivision. It is usually recognized that long-resident non-Maasai should be allocated portions.

Many who are clearly outsiders to the region, however, have sought and gained registration status, including recent migrants who have arrived anticipating subdivision and nonresidents who through influence or bribery insinuate their names. As has been pointed out by outraged Maasai denied registration, most committee members are nonliterate and many have not proven incorruptible. The Group Representatives Act stipulates that two-thirds of the committee must concur to add a name to the official register, which in practice means 6 out of the usual 10 members. Altering the register, however, is often done with the signature of only one or two members, most often the chairman and secretary. In other cases, the District Commissioner, a District Officer or the Director of Lands in the Ministry of Lands and Settlements, with neither the agreement nor the knowledge of ranch officials, procure changes in the register. Thus, ordinary group ranch members have watched for years as more influential members have eroded the collective domain through acquiring title deeds for individual parcels of group land, which often have been subsequently sold. Nonregistered Maasai residents have seen the registry swollen with names of politicians, civil servants, and businessmen, Maasai from other areas or non-Maasai from outside the district. Several cases of outrageous abuse have occurred, in Mosiro, Ewuaso Kedong' or Lodariak, to mention the most noted cases in Keekonyokie location (Galaty 1993b). But the progressive carving up of group land and the insinuation of outsiders has occurred virtually everywhere in the two districts, undermining the ability of group ranches to serve as communities able to manage their resources in common.

### *Why Subdivide? To Resist or Defect*

What has influenced Maasai to seek rangeland enclosure (subdividing group ranches), and what influences others to continue opposing it? In general, access to undivided rangeland is a condition for reaping the full benefits of pasture resources by a livestock-keeping community. So it should be no surprise that subdivision would benefit individual claimants who lie outside the animal economy.

Cultivation informally encloses land by inscribing the signature of an individual's labour on the landscape, marking residual rights over fields and furrows. Others who lie outside the immediate productive community of pastoralists are urbanites and the rural bourgeoisie, namely civil servants, politicians, professionals, businessmen, who, despite the diversification of their economic interests, have retained local land rights. This elite, whose incomes are largely derived outside the animal economy, can only partially renew reciprocal ties that bind them to the community. As long as their rights to land are mediated by the community, as occurs when they are merely members of a group, their special access to power can only be partially realized. So it is undoubtedly in their interest to gain individualized portions of land, which they often do on quite favourable terms.

The question is not why peasants and a more elite class would seek subdivision, but why they would be allowed to do so, and would even be joined in doing so, by the vast majority of pastoralists who, it would seem, can as a collectivity only lose in the process. Earlier, I set forth

several reasons why the prisoner's dilemma is not a useful model for understanding strategies of pasture allocation and stocking rates. However, with respect to allocating land, when classes differ in access to power and information, the prisoner's dilemma may offer a useful model for understanding the range of options facing pastoralists. Below, I will illustrate the "pastoralist dilemma" through presenting select Maasai commentary on the desirability of subdivision.

One viewpoint holds that it is desirable for pastoralists to maintain general access to commonly-held land, since undivided land can overall support more animals than divided land, and thus can provide greater economic security for the community as a whole and higher returns on their animals. One elder of substantial ritual prominence in Keekonyokie location commented that subdivision was "no good", since it would lead to decrease in cattle numbers, limits on movement, and isolation of people (Galaty 1993b, p. 6). Another man observed that subdivision was bad because "there will be no freedom (of movement) like before", a view reinforced by comments by yet another elder, that subdivision was bad "because during our time, before this came, we used to go everywhere looking after animals, but now it's impossible."

In addition to halting herd mobility, subdivision confronts the pastoralist with the dismal scenario that fragments of land may be sold piecemeal, leaving future generations with a heritage of dispossession. One Maasai observed that subdivision is regrettable because the "the coming generations will never have something like land to own, not unless his family will have been good enough to leave some for him," another that it is bad "due to our land being taken by (other) people", a third that "there will be less land, and fewer people." "Some people will stay landless the whole of their lives, although they also desire to have land." From this point of view, subdivision is seen as bad "because some people sell their land and finish it;" due to sales, "the land is becoming small and the coming generations are angry with us." Subdivision has stimulated animosity: "hatred has grown since individuals own their own land and do not want neighbours to interfere."

In light of these notions about why subdivision is collectively undesirable, we might speculate that subdivision would be accepted or sought out under one of the following two conditions, one economic, the other cultural: (a) if the anticipation of potential individual gains or the threat of individual losses outweighed the perceived benefits of resisting subdivision (the rational choice argument); or (b) if the ideological framework within which privatization is presented proves compatible with the evolution of individuals' motives, goals and interests (the modernization argument).

Fear of loss can strengthen desire for gain. It might be assumed that, if subdivision must occur, it would be in the general interest to do so relatively equitably, especially if possible inequities were distributed randomly. But of course this is rarely the case. Those able to gain more information about how land will be allocated, more power to influence that allocation, and thus obtain more allocated land than would be their equitable share, will inevitably "defect" from the default strategy of seeking equitable subdivision, despite the fact that the principle of equity is specified in the relevant legislation, though roundly ignored. Pastoralists come to know that the option to subdivide, and to subdivide inequitably, has been, is being and will be pursued by elites with privileged access to power, information and land. Thus, they are faced with the option of resisting subdivision, with the possibility of facing dispossession later, or of supporting subdivision, to gain something now.

Resisting subdivision would be to a pastoralist's benefit only if the strategy were generally followed, but to his loss if others continued to defect, thus further eroding the residual land base. Faced with demands for land by those predisposed to individual ownership and with the threat of defections in their own numbers, it would be rational for pastoralists themselves to defect. Echoing calls for enclosure, many pastoralist must inevitably feel satisfied relief upon receiving a portion of land. But others feel secure in their traditional neighbourhoods and refuse to seek land or fight those with theoretical claims over their own pastures, in the belief that their indigenous rights should prevail over legal manipulations.

Numerous respondents indicated that subdivision was a good thing because population increase would make shares smaller if allocations were made in the future. Subdivision is not bad since "there would be increase of people and fewer acres when divided." Subdivision is good because "as time goes by population increases and land does not increase. So this will lead to much smaller portions than what we now have." In the future, "there would be increase of population, and there would be big clashes against grabbing of land". It is not bad to subdivide, rather "it is good (now) when people are few and *shambas* (individual farms) will be available, but a few years to come people will be many." Finally, "if we just continue undivided, the population is also increasing, and so it is advisable to divide when our population is still less."

Side-by-side with the rationality of avoiding risk and seeking gain is the cultural rationality of "maendeleo," the ideology of "going forward" to development. "Maendeleo" is a set of notions, presented in meetings, diffused through churches, affixed to projects, signified by schools, and ratified by the state, which suggest that the traditional life of pastoralism is of less value than vague images of what a future without nomadic movement might be. The discourse of development is reflected in commentary on subdivision, since "owning one's own land" is proposed as a hallmark of progress. A plurality of respondents assert that subdivision is a good thing because then everyone will own their own ranches and be able to develop themselves. Subdivision "created ownership of land and proper settlement, without any moving any more." So curtailing movement, regretted by some since it will negatively affect herding, is praised by others as opening the door to "civilization": "it creates ownership and greater civilization within individual ranches;" "many people have acquired ranches and civilization has prospered." What is especially valued is that "we own land by ourselves," and "a bit of progress in the land is practiced." Gaining individual land is thought to "bring awareness in the society, and development in general."

The reasons given for subdivision reflect awareness by pastoralists of their material predicament, but also illustrate the embrace by many of the general ideology of privatization and development. The "pastoralist dilemma" lies in the coincidence of two streams of influence: the disjunction between collective strategies for preserving and individual strategies for enclosing common pasture resources, and the profound assimilation of the assumptions of development discourse, of which the desirability of privatization and individualization of land is one manifestation.

### *The Requisites for Successful Groups*

The group title seemed to represent one means of ensuring that the rights of a community to a given domain of land would remain inviolable. But with expansion of registered members,

often illicitly, each share was in effect diminished in value. At the same time, the value of shares was diminished each time an influential member managed to acquire title to an individual parcel within the group holdings. Thus members of groups not only saw their number grow but their domain shrink. Increasingly, members, whose long-term interests would have been well-served within an large, integrated and coordinated collectively-held ranch, sought comprehensive subdivision under the assumption that they should claim something now or gain nothing later. After the integrity of the group domain had been fractured, there seemed to be no solution other than to give to each his rightful share.

Under what conditions might communal or group holdings prove viable in the African rangelands? This is an important question since the Maasai districts may yet prove to be an exception rather than a bellwether. Although the more fertile areas of rangeland, along escarpments, rivers, mountains, swamps, are underdoing pressure for enclosure, private holdings seem so impractical for meeting the needs of extensive animal husbandry that many experiments in collective land holding and cooperative organization are still under serious consideration.

First, a definitive membership should be established and a defined community from which members are drawn, and to which they are responsible. Second, nonviolability of titles should be legally confirmed, as well as the nonpartibility of shares. Third, the power to exclude non-members and outsiders from the domain should be provided. Fourth, loans should be restricted to productive investments, realized by individual families. Fifth, it should be ensured that group holdings are large enough to ensure flexible allocation of resources, but small enough to maintain internal social cohesion and monitoring of officials. Sixth, bribery and corruption should be met not with benefits of land but with legal redress. Seventh, individuals should be allowed to define strictly limited areas within the group domain for family use, but without title or right of partition, sale or transfer of these holdings.

The Maasai group ranch experience has shown the importance of securing the requisites for holding and managing resources as a community (White and Meadows 1981). When common property is treated as an alienable free good, right-holders, freed of the protection and restraint of local institutions defining rights and obligations, will enclose and privatize that property before others do. Common property is not in itself subject to the prisoner's dilemma, nor to an inevitable tragedy of mismanagement and degradation.

The pastoralist dilemma occurs not when rangeland is controlled by communities but when community control is undermined, by state or local interests, such that it can no longer be used to monitor, sanction or exclude. When faced with land grabbing which threatens the integrity of the entire community domain, the individual pastoralist has no choice but to accede to a generalized enclosure of range resources. But the disruption of transformations in land tenure affects the economic well-being of the community and the stability of the food system. However, this scenario is far from inevitable and far from desirable, as it undermines what may be the most appropriate means for managing widely dispersed resources that virtually require high degrees of mobility to sustain desirable levels of productivity (Swallow 1989). The potential should not be ignored that communities can offer the framework within which local goals, conceptualized as "development," can be realized (Berks 1989).



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