

Pastoral land tenure and agricultural expansion:

Sudan and the Horn of Africa

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INTRODUCTION

Competition over natural resources, particularly land, has become an issue of both major concern and conflict among the pastoral populations of the African Sahel and Horn. Since the 1970s, the region plunged into recurring cycles of drought and famine threatening the lives of both people and livestock. The issue of "food security" has consequently become an over-riding concern for both national governments and donors to the region. But invariably strategies for food security seem to emphasise the expansion of agricultural production to enable people to attain "self-sufficiency". Over the last three decades, and particularly since the mid-1980s, numerous interventions have been launched. A few nation-wide and large-scale regional initiatives by governments, bilateral and multilateral donors were established, but the majority of the interventions seem to be small-scale projects backed by numerous non-governmental organisations (NGOs). Although the stated and ultimate objective was food security and self-reliance, governments and donors were consistently drawn (often unwillingly and contrary to their stated objectives) into distribution of famine relief. Vulnerability seems to defy all efforts towards rehabilitation and development of affected communities.

The factors behind the persistence of vulnerability are varied and complex. Some blame the "dependency syndrome" resulting from continued distribution of free food. A few apparently adopt a Malthusian/Spencerian view that recurrent famine is a natural adjustment mechanism to a situation of excessive growth rates of both human and animal populations which local environments cannot sustain. Distribution of free food is thus pointed out as a catalyst to the perpetuation of vulnerability. Others conceive vulnerability as a consequence of a long term environmental degradation process which the victims have exacerbated by adopting unsustainable patterns of resource use. Both views seem to inform the current rehabilitation and development interventions. But both also seem to gloss over the extent to which vulnerability is underlain, first and foremost, by state policies, particularly those affecting traditional land tenure systems on which vulnerable communities formerly depended. The purpose of this paper is to shed light on the extent to which land use policy has contributed to the vulnerability of otherwise better-off sections of rural people in the Horn, viz. the pastoralists.

Pastoralists in the Horn constitute the majority of the famine vulnerable groups. The interventions extended by both governments and donors, however, focus on crop rather than livestock production. With the anxieties of donors regarding

global warming affecting countries of the North, cultivation is generally perceived as "environment-friendly" in contrast to the assumed "unsustainability" of traditional nomadic pastoralism. The ultimate objective of current interventions thus seems to be the settling of pastoralists to become farmers, and the abandonment of traditional pastoralism. As explained later, this policy objective overlooks the fact that pastoralism not only enjoys higher returns from labour than small scale traditional agriculture, but it is also a more secure investment in a region characterised by climatic variability. The consequences of sedentarisation, often ignored, have been to intensify conflicts both among populations and between pastoralists and the governments of the Horn. It is not coincidental that all the "hot spots" in the Horn are specifically areas inhabited by pastoralists. The various security hazards (widespread banditry, inter-group conflicts and outright rebellion against government) can all be viewed, to varying degrees, as consequences of increasing competition over resources, particularly land.

This paper examines the particular case of Sudan, but the discussion is relevant to the countries of the African Horn in general and Southern Ethiopia in particular. Pastoralists in the Horn seem to experience similar, if not identical, processes resulting from land laws promulgated by the governments in the region. In both Sudan and Ethiopia, for example, the undermining of the principle of tribal areas was effected through the introduction of new land legislation, in Sudan from 1970 onward and in Ethiopia by the land laws of 1975 and 1993.

The paper begins with a brief historical account of the land tenure system prior to the inception of British colonial rule. This puts in perspective the far-reaching ramifications of the laws and policies introduced by the British colonial administration. Successive national governments in Sudan took the colonial land tenure system as the basis of their policies; rather than abolishing it, the national governments carried it further to the detriment of pastoral production systems.

Pastoralists in Sudan at present are thus enduring a multiple-marginalisation process exacerbated by an administrative vacuum. The concluding remarks suggest a rethink of the strategies devised to eliminate or mitigate vulnerability. The ultimate objective is to draw attention to the necessity and desirability of a new approach to vulnerability mitigation that places a simultaneous emphasis on both pastoralists and pastoralism. Land policy is considered pivotal to that effect.

THE PRE-COLONIAL SYSTEM OF LAND TENURE

Prior to the establishment of Turco-Egyptian colonial rule in Sudan (1821-1884), two main forms of land ownership prevailed in the country. In the relatively densely-populated riverain regions of northern and central Sudan, individual land ownership was taking root through the centuries as the absolute title of the Nubian Christian monarchs was gradually being challenged and undermined. However, the land under private ownership was confined mainly to the immediate vicinity of settlements of farming communities. In the rainlands in general, the abundance of land, coupled with the largely nomadic-pastoral activities of the inhabitants, did not prompt the emergence of individual land ownership. Various forms of communal ownership vested in a "tribe" or one of its sections were recognised by nomadic pastoralists. Among rainland sedentary cultivators, land use was legitimised through membership in a village community. In the various parts of Southern Sudan, the inhabitants held land in common as a "tribe" or group and an individual had no rights except as a member of such tribe or group, irrespective of whether the land was riverain or rainland (Bolton, 1948).

The pastoralists in central rainland Sudan during that early period legitimised access to rangeland by membership of then fluid structures of "tribal agglomerations". A "tribe" was a fluid and changing group organised around a "power-centre" controlling a strategic resource in a region. By establishing control in a region, the "power centre" instituted itself as the "core" of diverse (and often unrelated) small kin groups which in identifying with the "power-centre" comprised a "tribe" (Abdel Ghaffar, 1979). As a power centre lost hegemony, a new core emerged thereby giving rise to a new "tribe".

Pastoralism in pre-colonial rainland Sudan was the most important sphere for investment and accumulation. Compared to small-scale cultivation, pastoralism was, and continues to be, a more secure form of investment in a region characterised by a relatively uneven distribution of rainfall (spatially as well as over the rainy season) conducive to frequent crop failures. The mobility of animals would mitigate the climatic constraints in any one district. Given the level of technology in agriculture during that period, moreover, pastoralism was more attractive as it was less labour intensive, offering a higher return per unit of labour. Agricultural surpluses were thus consistently converted to an investment in animals - a practice among small farmers that continues to the present day (see Halland, 1969, 1972). The distinction between pastoral

nomads and sedentary cultivators was therefore basically underpinned by disparities in resources, while the two groups were drawn from the same populations. However not only did nomadic pastoralists possess more wealth, but it was also from among the more affluent among them that the tribal rulers (of both the nomadic and sedentary populations) usually emerged (Spaulding, 1979a; 1979b).

During the Funj period in particular (1405-1821), title to land was regulated by the *Wathiga* ("Charter") system by which Muslim monarchs granted land, as a gift, to local tribal rulers and holy men (O'Fahey and Spaulding, 1974; Spaulding, 1979a). In the predominantly pastoral rainlands, "tribes" constituted the basic administrative units, and the charters were granted to the "power-centres", who were thereby given external legitimacy and support. The head of the "power-centre" in each tribe was endowed with authority over both nomadic pastoralists and sedentary cultivators who lived within his *dar* (homeland). The Funj period thus encouraged relative stabilisation of what had formerly constituted a fluid group organisation. Nevertheless the Funj monarchs did play the different "power-centres" within a "tribe" against each other to serve their purposes. But, although titles to *dars* were granted to, or withdrawn from, a power-centre, the composition of the "tribes" themselves showed relative stability. An institution similar to the Funj *wathiga* also prevailed in Darfur in Western Sudan where the Keira kings granted *hakura* ("concession" or "monopoly"), but often for a specific period of time (O'Fahey and Spaulding, 1974; O'Fahey, 1980).

The downfall of the Funj Kingdom was brought about by the Turco-Egyptian colonial invasion in 1821 and a new system of administration was established. The colonial administrators assumed direct control over urban sedentary populations, and the former "power centres" were left to administer their "tribes" (which came to be defined as consisting largely of "nomads" only). The dissociation of urban populations from the "tribal" administration set into motion a process of political marginalisation of pastoralists that is clearly observed in present-day Sudan.

During the brief Mahdist rule (1885-1898) no changes were introduced to the basic structure of the land tenure system. Nevertheless the ownership of vast territories was transferred by the Khalifa from disloyal to loyal groups; but this was soon to be reversed by the British colonial administration (Mohamed Hashim Awad, 1971).

THE BRITISH COLONIAL LAND TENURE SYSTEM

As soon as the 'reconquest' of northern and central Sudan was completed, the British colonial administration paid particular attention to the system of land tenure, and issued its first "Titles to Land Ordinance" in 1899. By this law the colonial administration announced that all land in northern and central riverain Sudan which had been continuously cultivated during the preceding five years, would be considered the private property of cultivators. The Ordinance, however, excluded from land settlement and registration the rainlands of central, eastern and western Sudan as well as all lands in Southern Sudan. As with the uncultivated land of riverain northern and central Sudan, these 'unsettled' areas were categorically classified as government-owned and divided into two classes: (a) Government land subject to no right, and (b) Government land subject to rights vested in a community such as tribe, section, village, or, at least in the case of the Nuba Hills of Western Sudan, in individuals (Bolton, 1948). This classification has remained intact up to the present time.

The class of government land subject to no right is confined mainly to the northern, central and eastern riverain regions. It is out of this class that successive governments during both the colonial and post-colonial periods allotted land to native and expatriate entrepreneurs for agricultural investment. It is to the institution of this class that the chronic food insecurity of pastoralists in the Red Sea area may be traced. The Hadendawa tribes lost their most fertile agricultural lands in the deltas of Tokar and Gash in eastern Sudan. Since then they have become confined to the low potential Red Sea Hills where food sufficiency is most difficult, if not impossible, to achieve.

The class of Government land subject to customary usufruct rights, on the other hand, mainly comprises the abundant rainland where usufruct rights of nomadic pastoralists and sedentary cultivators were recognised and included the whole of Southern Sudan.

PASTORALISM IN THE ANGLO-EGYPTIAN SUDAN

The central rainlands of Sudan comprise a number of rainfall zones. Considerable variations may be observed regarding the timing, duration and distribution of rainfall. The southern parts usually receive the heaviest rains,

reaching 900 mm, while the northernmost area receives below 300 mm. The basic problem for the pastoralists is to maintain the maximum number of animals under dry season conditions in order to make use of the plentiful supplies of both water and forage during the rest of the year. To relieve pressure on both water and grazing around the watering centres, pastoralists tend to move away and disperse widely among the different regions during *kharif* (rainy season) to make use of the water pools formed by the rain as well as the extensive grazing area.

The movement of herds in search of pasture, in order to reduce pressure on resources around the permanent water sources, at least during the rainy season, was therefore imperative for those intent to maintain herds. Various types of pastoral movement emerged as adaptations to changing ecological constraints. These range from "pure nomadism", typically involving camel breeding and long distance movement, to forms of transhumance, involving cattle, sheep and goats over relatively shorter distances. Even sedentary cultivators who are settled for a large part of the year find it necessary to move during the dry season with their relatively small herds. Notwithstanding variations in type of animal or distance covered, pastoral movement may generally be classified as either *nishuq*, or wet season northward movement, or *dammer*, dry season, mostly southward, movement towards dry season water points.

The ecological constraints necessitating nomadic movement were recognised by the British colonial administrators. From 1904 onwards, the colonial government started to regulate grazing activities by delineating areas for the larger tribal federations, and to stipulate general regulations for the allocation of resources to the different sections of a tribal confederation and to outsiders. This was achieved primarily through the system of Native Administration, a form of indirect rule instituted by the British in the country. At a general level, regulation separated the respective domains of cultivation and grazing by enforcing *grazing lines*. These lines constituted the northern limit for sedentary cultivators. No farmer was allowed to cultivate north of it, otherwise pastoralists would not be held responsible for crop damage. Similarly, pastoralists were instructed not to enter the cropping areas with their animals during the agricultural season, otherwise they would be liable to both fines and imprisonment in case of agricultural damage. The movement of the southern pastoral groups to and from the northern part of their region, through the cultivated area, was also regulated to avert conflicts between farmers and herders. Sufficiently wide nomadic routes and corridors were recognised as part of the grazing domain, and no farming was allowed along them. In addition, Local Orders were annually issued stipulating the latest date for harvest, after which pastoralists were free to enter the cultivated area and graze

the agricultural residues. The colonial government strictly enforced these regulations, mainly through the native administrators who jealously guarded the domain of pastoral activity.

At a second level, regulation of pastoral activity concerned the limitation and containment of tribal intermingling in the grazing areas. This was primarily achieved through the principle of *dar*, or "tribal homeland", which generally denoted the "*dammer* centres", where pastoralists customarily spent the hot dry season. Within each *dar*, resources were allocated to the constituent units down the hierarchy of administrative organisation as *Khutes*, *Omodlas*, villages and nomadic camps. In *dars* that received outsiders during the rainy season, moreover, a careful classification into "common" (or seasonal) grazing areas and "special" grazing areas was introduced to contain inter-group conflicts. The common area was open for all pastoralists present in the *dar* during the rainy season. But outsiders were required to leave the *dar* by the end of the rainy season and fall back on their respective dry season sites. The special grazing areas were reserved for the groups of the specific *dar*, and no tribe from outside was allowed to graze. The special grazing areas also contained the permanent water sources, from which outsiders were barred and their animals were expected to depend on the water pools formed by the rain. Patrols formed of native administrators used to tour the common areas and settle disputes between members of different camps. Difficult disputes, typically involving homicide, were referred to the *Nazir* (paramount tribal chief) or the district courts. Up to the 1970s, annual conferences attended by the *Nazirs* of the pastoralists in a region and representatives of Government were held to regulate the use of the common grazing areas and to settle major inter-tribal disputes.

A further set of controls over nomadic movement devised by the British colonial government concerned the manipulation of water policy. The colonial government accordingly used to open and close watering points in order to influence the timing and direction of pastoral movement, normally away from sites considered poor and in need of rehabilitation. Range management was linked to water policy in a region and this promoted a high degree of direct control by government over pastoral movement.

During the first four decades of British colonial rule, pastoral activity in the central rainlands generally flourished. On the one hand, it was encouraged by restored conditions of security following decades of destabilisation. On the other, with the establishment of new water points, and the extension of veterinary services, livestock mortality rates decreased considerably. The animal population seemed to have grown to the extent that by the 1950s some

evidence of localised overgrazing around watering points was reported (Harrison, 1954).

THE MARGINALISATION OF PASTORALISM

Notwithstanding the British colonial measures that stabilised and improved pastoralism during the first decades of the century, the colonial land tenure system proved detrimental to pastoralism. The food insecurity among pastoralists in the Red Sea area is a salient though often unrecognised consequence. However the categorical classification of the rainlands as "government owned" though "subject to usufruct rights" was no less detrimental. The long term effect was that government could, and did, withdraw usufruct rights in order to introduce other forms of land use, particularly large scale "modern" farming.

From 1944 onwards, the central rainlands experienced the initial emergence, and eventually a dramatic expansion of large-scale, irrigated as well as rainfed, capitalist agriculture. Pastoral production was simultaneously subjected to a consistent process of marginalisation. Mechanised rainfed farming started in the clay plains of the eastern Sudan in 1944, with support of the British colonial government, but up to the early 1960s expansion was rather slow. Agricultural investment during the colonial period was directed more to the cotton gravity irrigation (Gezira) and pump-schemes along the White, Blue and River Niles. With the dwindling of cotton prices in the world market, the pump-schemes encountered serious problems of indebtedness to an extent that required government intervention in 1967. The pump-schemes were taken over by government, and generous compensation was paid to the scheme-owners. By that time the profitability of rainfed mechanised farming was becoming evident. A liberal credit policy by the state (backed by the International Finance Corporation, IFC, of the World Bank Group) promoted considerable expansion in private mechanised rainfed farming.

In 1968, the Mechanised Farming Corporation (MFC) was created to promote and regulate investment in rainfed mechanised schemes. This expansion was not confined to eastern Sudan, but also extended to the West (Habla in Nuba Hills), south-east (Agadi-Grabeen and Dali-Mazmoum complexes in Blue Nile) and the South (Renk in Upper Nile). Most of the expansion that has taken place in these areas, however, was not authorised by the MFC. In the particular case of eastern Sudan, for example, authorised schemes in 1983 covered an area of

1,083,400 feddans, while the area of unauthorised schemes was said to be in excess of 3 million feddans¹.

Up to the late 1960s, mechanised farming did not trespass over the grazing lines. Nevertheless, it steadily reduced the dry season pastureland of the pastoral groups. This has induced disputes between farmers and pastoralists, particularly over land covered by unauthorised schemes. As the pasturelands in Sudan are not legally registered and as such considered the property of the State, while pastoralists only enjoy alienable usufruct rights, the settlement of disputes has consistently been detrimental to the interests of pastoralists.

The bias in the settlement of disputes was institutionalised during the British colonial period when, in 1944, the Soil Conservation Committee recommended that:

“where nomadic pastoralists were in direct competition for land with settled cultivators, it should be the policy that the rights of the cultivator be considered as paramount, because his crops yield a bigger return per unit area” (Galal El-Din El- Tayeb, 1985:35).

Initially the pastoralists were partially compensated for the reduction in dry season pastures by free access to agricultural residues in the schemes. In recent years, however, this access has been blocked by the scheme-owners, who started to demand a price for residues. The economic and political power of the scheme-owners grew considerably during the post-colonial period, and their interests were forcefully defended. For instance, in the early 1980s, the representatives of scheme-owners in South Kassala at the Eastern Regional People's Assembly blocked a regional act to institute a new grazing line proposed by the regional Ministry of Agriculture. The central government, in its turn, was reluctant to contain the expansion of mechanised farming not only because of the political influence of the scheme-owners, but also because of their own plans to increase food crop production to meet the growing demand by the urban population. The failure of pastoralists to defend their rights may also be partly explained by their political marginalisation in Sudan. The Native Administration which gave the pastoralists leaders powers to control resources in their *dar* in addition to other matters, was abolished in the early 1970s by the “May regime” that was in power from 1969 to 1985. Instead of the electoral system based on geographical constituencies that prevailed up to 1968, a new electoral system with constituencies for the “modern forces” was introduced by the May regime. The new constituencies for professionals, businessmen, workers, women and youth as well as (big) farmers and pastoralists reduced

¹ A feddan is equivalent to 1.038 acres/0.42 hectares.

geographical representation to a mere 40% in elected legislative bodies at regional and national levels. The voting powers of pastoralists no longer have the same weight that previously forced politicians to show interest in pastoral affairs.

A corollary of expansion in mechanised farming has been the intensification of charcoal making for commercial purposes. The government grants licenses for woodcutting and charcoal making, often in areas earmarked for rainfed mechanised schemes. But vast forest areas seem to have been cleared without permission from the authorities. Again, the leniency of government towards unauthorised forest clearance may be explained as a reflection of the desire to maintain low fuel prices for the urban population, but undoubtedly a large proportion of the demand for fuel-wood originates from traditional bakeries and lime and brick-kilns.

The wholesale deforestation of central rainlands is thus mainly a consequence of expansion in mechanised farming and large-scale commercial woodcutting. Deforestation too is adversely affecting pastoralists. Pastoralists not only need the tree cover because some animals prefer to browse, but also because animals need shade. In bad years, moreover, herds tend to depend almost exclusively on forests, and branches are lopped for cattle and sheep, which do not browse.

In parallel to the post-colonial expansion in mechanised rainfed farming, the central clay plains have also witnessed considerable expansion in large scale irrigated schemes in the last three decades through direct public investment. Three years following Independence, the Managil Extension of the Gezira Scheme was established. During the 1960s the New Halfa scheme was established in the Butana on an area of half a million feddans, cutting out large areas of pastureland and blocking traditional nomadic corridors and access to watering points during the dry season. During the 1970s, the Rahad Scheme was established in an area of 300,000 feddans, again at the expense of the richest pastures in the area. The area taken over by the Rahad Scheme was part of the "Common Grazing Area" frequented by pastoral groups from both within and outside Central Butana during the rainy season. Inclusive of the areas allotted to towns and villages established within them, the two irrigated schemes have jointly cut out more than a million feddans of rich grazing land. Sugar plantations along the White and Blue Niles have further reduced pastoral areas and, as in the case of Kenana Sugar Factory on the White Nile, resulted in the displacement of large numbers of pastoralists.

Nomadic pastoralists have been partially compensated by the allocation of tenancies in the irrigated schemes. But those pastoralists to whom tenancies

were allocated did not give up their pastoral activities. Rather, they sought to combine involvement in the schemes with their established pastoral interests; and a new circuit of transfers of values (between tenancies and the livestock sector) was accordingly generated (Sorbo, 1977, 1985). The majority of pastoral nomads could not have access to tenancies; and the establishment of the schemes has thus adversely affected their pastoral interests. The establishment of the irrigated schemes has blocked access to rivers by the establishment of tenancies as well as the expansion in *jiruuf* cultivation which supplies the population within the schemes with vegetables and fruits.

THE ADMINISTRATIVE VACUUM

Concurrent with the rapid agricultural expansion of the early 1970s, the government introduced far-reaching administrative changes affecting pastoralists. It abolished the system of Native Administration and ceased to issue the local orders regulating grazing activities. Simultaneously, it implemented a reorganisation of the Soil Conservation, Land Use and Water Programming Administration (SCLUWPA), the government institution of prime and direct significance to pastoralists. From SCLUWPA two units were dissociated – the Range Management Administration and the Rural Water Development Corporation). This re-organisation effectively ensured the separation of range management from processes concerning water policy. In 1980, moreover, the government declared all unregistered rainland as common property to all Sudanese, thereby undermining the principle of "tribal homeland" on which regulation of pastoral activities was based.

Government policy towards pastoralism over the last three decades has resulted in virtual administrative chaos. With the abolition of Native Administration, an administrative vacuum ensued, and to-date no alternative institution capable of regulating grazing activities, or even of collecting herd tax, has been established. Simultaneously pastoralists have lacked an institution willing to enforce grazing lines. An unfettered expansion in unauthorised mechanised schemes has thus ensued crossing the formerly recognised grazing lines, blocking access to watering points and disrupting virtually all the nomadic routes in the country.

Pastoralists currently follow the tracks of commercial trucks in their seasonal movements through the farming areas. As the present routes are narrow, incidents of crop damage proliferate with a consequent intensification of disputes between farmers and pastoralists. Cases of crop damage are settled in courts controlled by predominantly sedentary people biased against pastoralists,

and assessments of crop damage and the value of fines levied are excessive bearing no relation to the actual damage caused. The fines are often levied on innocent pastoralists, who are brought to court merely because they happened to be in the vicinity of damaged schemes and the scheme owners accuse them of trespassing. In bringing pastoralists to courts, scheme owners are assisted by police patrols, which are assigned, for a payment by scheme-owners, to protect crops.

Furthermore, the abolition of Native Administration has resulted in the absence of a credible institution capable of articulating and pursuing the interests of pastoralists in dialogue with government institutions. This is particularly reflected in the general deterioration of water points, which either lack maintenance and spare-parts or have become incorporated within mechanised rainfed schemes. Likewise, the Local Councils have ceased to issue orders regulating grazing activities which Native Administrators used to enforce. These orders not only concerned the timing and direction of pastoral movement, but also used to ban a group from entry into a certain area. In effect, controls on tribal intermingling have relaxed. With the abolition of the principle of *dar*, unregulated tribal intermingling (and intensified conflicts) has ensued, resulting in widespread bandit activity in the pastoral areas.

Furthermore, the sole governmental institution concerned exclusively with pastoralists, the Range and Pasture Management Administration, has been progressively marginalised. The development and management of the Acacia Belt of Central Sudan (which is officially gazetted as a grazing area) gradually shifted from the Range and Pasture Administration to the Forestry Department. International concern over global environmental rehabilitation has underlain this shift. In view of generous support by donors, the mandate of the Forestry Department started to expand, initially with the promotion of the Department to a Central Forestry Administration and recently, to a National Forestry Corporation.

The marginalisation of the Range and Pasture Management Administration is also observed in relation to water programming and management. In the past (during the colonial period and up to 1977), policies for water development and programming used to take into account the position of pastoralists and the recommendations of Range Management at local level. Most of the watering points in pastoral areas date back to the 1950s and the 1960s, although a number were established at the beginning of the 1970s. Since the mid-1970s, however, virtually no new water sources have been established unless directly paid for by communities, and a large number of those already in place have either deteriorated rapidly or become inaccessible to pastoralists. At the same

time, coordination between the Range Management Administration and the Rural Water Development Corporation declined. With the abolition of Native Administration, which was instrumental in collecting taxes for financing rural councils, the Corporation and the Rural Councils ceased to maintain and repair the wells and *hajt'rs* on which pastoralists depend². This situation has had several serious implications, especially for the capacity of the deteriorating grazing areas to support herds away from the cultivated area for long periods (Salah Shazali, 1993a; 1993b).

Well before the drought of the 1980s, there was evidence of pressure on permanent water sources and a general shortage in water supply in the central rainlands. The drought since 1983 has only compounded the situation. The extent of water scarcity, particularly in the Eastern and Western Sudan has become considerable. This scarcity has two main implications. Firstly, pastoralists who used to move northwards with the start of the rainy season to stay for up to five months (June-December), now find it imperative to return south much earlier due to the shortage in water. In the Butana of eastern Sudan, early return means trespassing into either the cultivated area or the reserved forests. In both situations, pastoralists have become subject to harassment by policing patrols and biased courts. In Western Sudan, pastoralists found themselves drawn into conflicts with sedentary small farmers who, in response to drought, shifted their farming from *qoz* (sand dunes) to clay soil (traditionally grazing areas). The tragic tribal conflicts in Darfur may be attributed to this conflict over land. As of January 1999, reports of heavy casualties are made daily, and martial law was declared in West Darfur State which, of all the states in the country, now has a military government.

The failure of rains during the last two decades has aggravated environmental degradation in the central rainlands. Heavy stocking during the wet season has limited grass regeneration and thereby constrained the carrying capacity of the range during the rest of the year. Due to the forced concentration of herds in the shrinking grazing areas, shortages in the supply of both pasture and water have ensued. Digging of private wells has consequently become a relatively attractive sphere for investment by well-off pastoralists and merchants. Such investments have helped contribute to a larger water supply in some areas, but at a relatively high monetary cost for pastoralists, particularly those with small herds. To deal with the scarcity in pasture, some camel pastoralists started to cover longer distances between grazing and watering sites. But smaller animals, particularly cows and sheep, cannot undertake two to three days movement without water. Solutions have therefore been sought in the purchase

² A *hajt'r* is a large pit, often the size of a football pitch and several metres deep, that collects run-off during the rainy season and is used for livestock watering.

of agricultural residues in mechanised farms and the smaller irrigated farms along rivers (*diruuf*), and resorting to supplementary feeding (mainly oil-cakes, or *umbaz*).

The extent to which pastoralists have come to depend on agricultural residues was exposed in 1992 by a team of consultants in relation to eastern Sudan:

Th(e) natural grazing and forage of [South Kassala], although depleted in both extent and quality by recent land use changes, are now supplemented by the livestock feed resources provided by the arable farms which dominate the rural scene. Indeed the crop residues, fallow fields and failed crops of the area now provide four fifths of the available grazing and forage resources of the entire area (Sudan Government, 1992:54).

The consequent rise in the cash requirements of pastoral production started to deplete the herds of small pastoralists. In such a context, overgrazing of easily accessible pastureland has become imperative, and environmental deterioration has thereby been further entrenched. Simultaneously, impoverishment has tended to exacerbate the vulnerability of small pastoralists, who either came to be ever more dependent on famine relief or end up as displaced in towns.

The forest reserves policy adopted by government further exacerbates the problems of small pastoralists. Supported by donors, the National Forestry Corporation (NFC) selects sites for reforestation programmes and declares them closed. Usually the selected sites incorporate depressions on which pastoralists depend for water as well as pasture. Sites have also been selected without consideration to nomadic routes. Reforestation initiatives have not included consultations with, and participation by, the Range and Pasture Administration and pastoral nomads. They accordingly alienated pastoralists, effectively converting them into a potential threat, although they are the primary group with vested interests in reforestation. One implication of this alienation has been an unwarranted increase in the costs of projects (fencing, policing, etc.). Another is the potential of direct confrontation between pastoralists and government, as the NFC is likely to involve the regular forces in protecting its reserves (Salah Shazali, 1996).

CONCLUDING REMARKS

It is widely thought, in the case of the Sudan, that land is not scarce. However, given the development of the land tenure systems, particularly in the high potential areas of central rainland Sudan, statements about land abundance are

debatable. It is important to note that out of a total area of 2.5 million km² for the country, 45.3% (1,123,000 km²) is desert. Flood regions cover 11.6% (247,500 km²), while Hill Catena and hilly soil have an area of 5.4% (135,000 km²). Only 37.8% (842,500 km²) is low rainfall savannah on sand and clay soil and high rainfall savannah on ironstone. This last category is the high potential area where competition over land between farmers and pastoralists is widespread.

It has been shown that land tenure systems have been changing through time. However what we are witnessing today is an evolutionary change in response to new state policies, new technology and new land use patterns which are evolving due to the changing political and class structures. Under such circumstances the mechanised farming technology introduced approximately sixty years ago, has led to a rapid horizontal expansion of cultivation that has marginalised most pastoralists and small farmers in Eastern, Central and Western Sudan. The mining of the soil by these mechanised scheme owners together with the consequent forced overgrazing has led to environmental deterioration which is difficult to reverse.

Planners and policy makers do not seem to recognise the implications for the national economy of their focus on crop production and their disregard of pastoral production. They gloss over the fact that the livestock sector contributes more to GDP than the crop sector. The crop sector, on average, contributes 10% of the 38% share of the agricultural sector in GDP. Over the past decade, the livestock sector has contributed over 11% and its share is increasing. It has to be remembered that the livestock sector is mainly in the hands of the pastoralists. The mechanised rainfed schemes that marginalise pastoralists do not contribute more than 1.5% of GDP (Abdel Ghaffar, 1998).

The pattern of land use promoted by government thus seems to undermine pastoralism, which in strictly economic terms, stands today as the leading foreign exchange earner to the national economy. However, not only the imperatives of economics, but also the necessities of politics call for a reconsideration of government land policy. The conflicts ensuing from competition over land compound insecurity and civil strife in a country plagued by a civil war of attrition. A further consideration is the desirability of ending the dependence on charity, manifested in extension of famine-relief, and the promotion of self-reliance among pastoralists. The precondition for pastoral self-reliance, evidently, is enhancement of the viability of pastoral production systems. As corroborated throughout this paper, however, that viability has been undermined, first and foremost, by government policies, particularly those concerning land tenure.

Government seems to have little regard for the solution to the problems of pastoral production. In 1994, for example, the President of Sudan issued a Presidential Decree stipulating the re-opening of all known nomadic corridors disrupted by mechanised farms all over the country. By 1999, virtually nothing had been achieved. While it may not be realistic to expect that all nomadic corridors may be re-opened, those, which are most important, must be restored. Reopening corridors without the available grazing area, however, is of little value as it implies a journey without destination. The grazing area need not be annexed from the farming area, but reclaimed through water development in distant pastures currently lacking water. Effective local administration, particularly to regulate pastoral activities, also has to be devised. But before implementing any of these optimistic recommendations, one question has to be clearly asked, and answered, by policy makers: do pastoralists, as citizens, have rights to land, whether use and/or ownership? If the answer is positive, then solutions may be found in recommendations from the numerous conferences and workshops convened over the last two decades. If the answer is negative, we will witness a continuation of the current situation, which is inherently unstable, indeed explosive.

The situation in most parts of the Horn of Africa is not very different. One example from Ethiopia may serve to illustrate the point. The current problems of the pastoral Borana and their neighbours, as documented by a number of researchers (Helland, 1998, Getachew, 1998 and Boku, 1998), were partly shaped by the long history of various administrative and land related government policies. As the pastoral Borana territory has diminished over the decades, due particularly to the expansion of Somali and other neighbours into their grazing areas and the imposition of government land reforms, their land and resource use patterns have changed. Consequently, not only have the traditional mobility patterns of Borana pastoralists been altered but so also have their fundamental relationships with and their attitudes towards their neighbours and their collective resources. Over the years, they have tended to become permanent settlers who combine opportunistic agriculture with livestock management, trade and waged-labour. These pressures have led to a new emphasis on protecting their remaining reduced resources. Borana stress territoriality and increasingly rely on owning firearms to defend their remaining lands from further encroachment by their neighbours (Getachew, 1998).

The future of the pastoralist in the Horn of Africa will depend on which realistic land tenure system the government will chose. In order for pastoral production systems to continue playing an important role in the national economies of the region, they must have the power to influence the system of governance. This

is not the case at present. Marginalisation is a common feature of all the pastoral systems in the Horn today.

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