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RANGELANDS MANAGEMENT POLICY IN UGANDA

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1. INTRODUCTION

Management of rangelands for sustainable development remains one of the major challenges facing researchers, policy analysts and development agencies in Africa. Uganda is not exceptional to this challenge. Both colonial and post independence governments have invested funds in rangelands with particular emphasis of developing pastoralism, but have in most cases failed to achieve sustainable resource use. Much of the problem stems from the ecological and climatic characteristics of rangelands, coupled with the urge to transform socio-economic institutions governing rangelands under pastoralism to equate them with institutions governing other farming systems. Poverty coupled with the ever increasing human demands due to population growth has contributed to poor farming practices leading to degradation of rangelands.

In Uganda this has been a cumulative effect of a series of policies introduced in hope of improving the quality of life of the communities using the rangelands in arid areas. This paper reviews rangeland management in Uganda, with particular emphasis on the impact of the policies and strategies introduced for its improvements. This paper is essentially a review of a series of studies on rangelands in the "cattle corridor" of Uganda (Kisamba-Mugerwa, 1992,(1995,1999).

1.1 Importance of Livestock in Rangelands

The main use of rangelands is grazing by wild and domestic animals on its natural vegetation. This form of rangeland use provides the cheapest source of nutrients for ruminants in Uganda. Therefore the improvement of rangeland management is fundamental for improved livestock and game production in the country.

In Uganda, rangelands support about 90% of the national cattle population, mainly kept by pastoral and agro-pastoral communities. About 85% of the total marketed milk and beef in the country is produced from indigenous cattle which thrive on natural rangeland pasture.

Livestock constitutes a crucial part of Uganda's food production, accounting for roughly one third of the total value of agricultural output. Cattle raising is the predominant livestock

enterprise in Uganda and pastoralists keep large herds of cattle on rangelands. These large cattle herds are, however, more important to their owners for social functions than commercial purposes. The traditional breeds kept by pastoralists are low milk producers, but are economically important as beef animals. Pastoralists also keep herds of goats and sheeps, which have an untapped export potential to the Middle East. Hides and skins have for long been an important source of foreign exchange for the Ugandan economy.

2. THEORETICAL BACKGROUND

Most of our farmers remain poor and are increasingly experiencing food insecurity. Despite policies related to macro-economic stabilization, land tenure reforms, and both socio-economic and political recognition by the government of the important contribution being made by pastoral resources, degradation of rangeland resources remains a great challenge.

This rangeland situation in Uganda is complicated in light of two crucial factors. The first being population growth which translates in increased demand for food which traditionally entails opening more land for crops and increased number of livestock. The second factor is related to divergent environmental and conservation policies due to the ever increasing competitive land use.

There has been a total failure so far in meeting the increasing demand for food through expansion of cultivated land or extensive livestock. Grazing. Instead there is increasing pressure on the rangelands. Policies related to conservation of natural resources in terms of "protection" such as state forest reserve,games reserves, national parks are subjected to redesigned approach in the form of wise sustainable utilisation.

The need to increase "productivity" to meet the ever increasing food demand coupled with the need for sustainable use of natural resources particularly the rangelands. in Uganda calls for a sector wide approach to promote an integrated development strategy that stimulates productivity and induces adoption of sustainable resource management practices. This is given a special attention by constantly reviewing policies related to land tenure,environment ,wetlands,,rangelands, forest and national parks. As a result serious consideration has been given to policy and institutional options for the management of rangelands in dry areas in Uganda.

Different authorities have defined rangelands using various parameters. In one report FAO (1985 b) used a climatic zone classification based on annual precipitation, while in other reports on agricultural production (FAO 1978, Freeman 1986), agro-ecological zones based on the growing period of crops were used (FAO 1978, Freeman 1986).

Others like Thornthwaite (1948), Meigs (1953) and Budyko (1958, 1974) used indexes based on precipitation and temperature as dryness ratios. Using the same indexes Henning and John (1977) prepared a world map of rangelands for UNCOD.

Lastly UNESCO went further by including other characteristics which are useful in explaining the sources of some of the problems of rangelands and in pointing to possible policy areas for interventions. They included patterns of water losses through high temperatures; nature of vegetative cover, land use patterns and annual rainfall variations.

Rangelands are very varied in all their physical, biological, climatic and human activity dimensions, but as a useful generalization rangelands are wild grasslands in which grasses are not artificially seeded pasture and are managed as permanent pastures. They are characterised by high temperatures, low and highly variable rainfall regimes, low vegetation cover density and fragile soil. The main economic activity is pastoralism. In East Africa however, pastoralism and wildlife in form of game reserves and national parks mainly for the tourism industry go hand in hand.

The problems of rangelands and the need for proper management have always existed, at least in latent form, since mankind started to use rangeland resources in pursuit of various objectives. The main problems of rangelands are those of a scarce resource by nature expendable and renewable whose quantity and quality can be maintained only through proper management, which ensures high resource productivity both in the short run and in the long run. The nature of rangelands as both expendable and renewable resource and the importance of inter-generational equity considerations posit the need for designing mechanisms to ensure sustainable resource use.

As once stated by Sandford (1993) major analyses at both micro and macro levels show that development interventions in rangeland areas in Africa have failed to generate higher levels of productivity, improve the welfare of local communities, or protect rangeland from degradation. Land degradation is one of the fundamental issues confronting SSA in its efforts to increase agricultural production, reduce poverty and alleviate food insecurity. As population grows and

food demand increases while the rangeland areas are shrinking, the traditional extensive use of land is no longer feasible.

Instead, we have to find the solution that increases "Productivity", implying the adoption of intensive farming techniques. Future increases in agricultural production will have to come from yield increases rather than area expansion.

However rangelands and the Pastoral System in particular, pose a more complicated problem than other farming crop and mixed farming systems on merely degraded land other than arid pastoral areas. This is due to the high vulnerability of the pastoral system, which is heavily embedded in strong cultural and historic values. Besides fragility of rangelands, natural hazards such as droughts, floods and wild life issues, these cultural and historical aspects have to be taken into account when designing policies to accelerate technology adoption (Squires, 1998). There is need to examine policy and institutional options that promote accessibility (security of tenure), equity,stability and adoption of improved technologies.

While sustainable use strategies are certainly key to environmentally sustainable development, the link between sustainability and development is crucial. The primary concern of rangeland user is ones ones immediate survival. Access to rangeland use under an equitable environment is crucial for survival. Sustainability is a long term undertaking , only attained or seriously considered by the rangeland user only when the practices pertaining to it facilitate access to and use of the rangeland with ease for immediate needs. It is crucial to explore and understand in practice what are sustainable strategies and conservation techniques, and who implements or adopts them and for what purpose.

The concept of "Sustainability" whether sustainable utilisation or sustainable development is generally associated with the use of natural resources to meet the needs of the present, without compromising the ability of future generations to meet their own needs. According to Squires sustainable development assumes the alignment of development decisions with environmental considerations. Rangeland are generally a fragile resource. The users of these resources have immediate needs to meet for survival. The main agent of change, for worse or for better, is the resource user: the numerous small farmers on the rangelands.

According to FAO (1991) sustainable agriculture is "the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and

future generations. It is environmentally non-degrading, technically appropriate, economically viable and socially acceptable". While the resources are exploited to meet human needs now, we will need the same resources to be exploited in future by generations to come. As a consequence conservation strategies must be integrated with development to ensure satisfaction of human needs. The concept of rangelands degradation may be deduced from land degradation which refers to changes in vegetative cover through soil erosion, leaching and decline in soil physical characteristics (Zake et al., 1997).

3. THE NATURE AND EXTENT OF RANGELANDS IN UGANDA

In Uganda the term rangelands is used in a broad sense to cover natural grassland, bush land and wood land. These lands form what has been called the "cattle corridor". Geographically, the cattle corridor forms an unbroken stretch of land that divides the other two areas of the country where the main agricultural activity is crop production.

The "cattle corridor" runs in from the South-west to the North-east direction, from the Rwanda border to the Sudan/Somalia/Kenya borders.

Uganda's rangelands cover an estimated area of 84,000 sq.km, or 43% of the country's total land area, and contain a population of 6.6 millions . This areas are spread over several districts whose proportional coverage varies from complete coverage (100%) as is the case in Moroto, Kotido, Soroti, to over 60% in Kiboga, Mubende, Nakasongola, Sembabule, Mbarara and Ntungamo to the very low levels in Kabarole and Mbale.

The Uganda rangelands exhibit most of the characteristics of rangelands; low and erratic rainfall regimes leading to frequent and severe droughts, and fragile soils with weak structures which render them easily eroded. Pastoralism is the main economic activity and rangelands are traditionally mainly used as a common pool resource.

These areas receive rainfall ranging between 500-1000 mm annually. Some of these areas already exhibit desert-like conditions. In addition there are other areas subject to degradation in high rainfall agricultural zones and in wetlands of importance, and they are also under increasing pressure for economic exploitation.

The main factors contributing to desertification include drought, overgrazing, deforestation, poor farming practices and soil erosion. Poverty coupled with a rapidly increasing population

exacerbates these factors. This scenario has intensified land degradation resulting in losses to the productive potential of the land, leading to more frequent famnes, lower household incomes, increased pastoral migration both within Uganda and to neighbouring countries and increased social unrest in affected areas, particularly in the North and North East of the country.

Since colonial times a number of changes have taken place in the management of rangeland resources in Uganda. The process took the form of sedenterization of some pastoralists who hold the land under communal land tenure system, the creation of privately owned ranches such as the Ankole/Masaka Ranching Scheme, in which the land is held under a titled leasehold land tenure, and the creation of various national parks and game reserves located within the cattle corridor. The ipact of these development policies varies according to the aridity of the rangeland.
These changes reduced the rangeland area available to traditional pastoralists, and became a source of conflict, both within the cattle corridor and also with neighbouring districts.
Rangeland management degenerated into "open access" leading to overgrazing, pasture degradation and soil erosion.
Ugandan rangelands display a high degree of pasture and soil degradation and some parts have traces of desertification.

Most crucially these rangeland management practices fail short of recognising pastoralism (livestock farming) as an economic activity that needs business, skills and quick decision making mechanisms by the `farmer'. For a long time the government has neglected policies that would promote investment in the management of rangelands.

In Uganda the importance of rangelands and the need for their proper management is reflected in their contribution to the livelihood of the people and the importance of livestock in the national economy.
The livestock sub-sector contributes about 8% of the country's GDP, 90% of which is produced by small herders, with only 10% deriving from commercial ranches. This production level makes Uganda almost self-sufficient in meat, a position similar to that of the food crop production sub-sector.
Grazing land is shrinking at an increasing rate and the remaining part supports increasing livestock populations without improved pasture productivity.
Overgrazing as well as undergrazing are evident. These result in pasture degradation with change in vegetation cover quantitively, in terms of biomass; and qualitatively in terms of replacement of high value grass species by unpalatable poor quality grass species and thorny

shrubs all of which tend to lead to degradation and promote soil erosion and possibility of gully formation.

Traditional farming systems, which evolved over thousands of years, contained strategies for coping with the unfavourable physical, climatic and biological environment under which people farmed. The coping mechanisms were passive in that man simply adjusted his activities to nature without trying to change the natural situation.

Crop farmers practiced shifting cultivation and crop rotations. While pastoralists developed pastoral systems with various degrees of sophistication. Under this system herds were moved continuously following no set pattern along pre-determined routes each year in search of water and pasture following the seasonal rainfall pattern. This practice is equivalent to an "open access" situation with no or minimal institutional development and control. Under this system the herds moved along pre-determined routes each year in search for water and pasture following the seasonal rainfall pattern.

Pastoralists also kept a diversity of herds to cope with droughts: e.g. sheep and goats have high reproductive rates, lactate even in dry periods and goats feed on a wide range of vegetation. They kept the type of animals suitable for the existing environment conditions: disease resistant livestock which could survive under stress of poor grazing conditions, high temperatures and constant movement. But as these animals were poor yielders and pastoralists kept great numbers to satisfy their subsistence requirements. The management system was centred on the pastoralists' subsistence needs.

Rangelands under customary farming systems were common pool resources regulated under various regimes:

centrally controlled under central authority of chiefs hierarchy
diffuse or egalitarian set up under elders' councils
minimal government with limited power of rule enforcement through loosely knit and changing coalitions

Pastoral communities tended to use minimal government which was more suited to their nomadic way of life. This was also promoted by the low livestock populations which were controlled by frequent occurrences of devastating disease epidemics, rustling and destructive wars.

4. RANGELANDS MANAGEMENT STRATEGIES AND THEIR IMPACT

4.1 National and International Boundaries

The free movement of livestock and pastoralists was severely restricted through the creation of international boundaries which cut across pastoral routes. Internally the pastoralists were restricted to the driest areas where crops could not grow. Simuntaneously, there were rapid increases in both human and livestock populations as the result of control of endemic human and livestock diseases, increased nutrition and containment of destructive inter-tribal wars.

4.2 Introduction of Cash Crops

The government introduced cash crops whose acreage expanded rapidly and spontaneously as well as other cash crops through government sponsored special crop production schemes. The production was mainly increased through opening new land. The result was of the livestock and reduction of rangeland areas due to encroachment by the cash crop farmers, whose population was also rising. The net result was serious rangeland degradation, which was first perceived by the government in the 1920s.

4.3 Crop Production Bias

The colonial powers were more interested in crop agriculture for both export and food production and their intervention centred only on soil erosion as the main environment hazard. Soil erosion was thought to be caused by bad agricultural practices by crop farming and overgrazing in the pastoral areas.

Government interventions of the pre-1960 period are characterized by a "coercive" top-down approach. They included gazetting off highly eroded land as "non-grazing" areas and forest reserves.
Other interventions included forced de-stocking to reduce livestock population densities, limits to goat browsing in pastoral area, grass planting and afforestation in watershed areas and construction of dams in water catchment areas.

The results of these efforts were in most cases failures in controlling land degradation, in improving livestock production and in improving the welfare of pastoralists. The concern was not centred on the well-being of the pastoral people, but more on the preservation of the

environment. The pastoralists were seen merely as agents of environmental degradation who interfered with cash and food crop production.

4.4 The Impact of the Drought on Ugandan Rangelands

Uganda periodically within a range of 10 to 12 years experiences prolonged droughts. The most recent being one of 1988.As a result of a prolonged droughts, worldwide consciousness about environmental and equal opportunities concerns recognized the widespread consequences of land resources degradation.
In parts of the cattle corridor, the effects of drought tends to be very severe. This is reflected in the loss of grass cover. Furthermore in 1988 the drought resulted in the emerging of white ants that fed on all the herbage and often on barks of trees. The resultant effect of the droughts is exposure of soil to the vagaries of land degradation - water and wind erosion.

Uganda has never had any feed subsidies for pastoralists. The mitigation measures that are of potential value to counteract feed shortages include, deferred grazing, fodder planting and conservation In the cattle corridor attemps have been made to incorporate leguminous trees and shrubs in the existing farming system. Studies by Tobbs (1969) and Sabiiti (Sabiiti et al. 1992, 1997) undertaken in Uganda established significant increases in pasture yield and soil status, especially nitrogen where forage legumes were incorporated in the production system.

4.5 Decentralisation

The management style has generally tended to adopt, at various degrees, a "Bottom-up" approach which stresses community participation in the planning and implementation of programmes. Decentralization of power from the centre to lower levels, down to the grassroot is now the most-talked about topic. It includes mass mobilization for collective action. Under these arrangements the interests of the pastoral people are well-cared for, since they are no longer institutionally marginalized and have equal opportunity to participate in the political affairs of the nation.

The main problem however is the traditional character of pastoralists to live in isolation and conservatism which makes it difficult to integrate them in the general development stream with the rest of the people.

5. LAND TENURE ISSUES

Land tenure is defined as the manner and conditions under which land is held and used. It refers to the nature and range of rights individuals or groups have to access land resources in relation to rights exercised by other individuals and groups. According to Bromley (1989) a resource tenure derives its meaning from the structure of rights that characterises the relationship of individuals to one another while the nature and number of rights contained in an individual bundle indicate the individuals freedom of use of the resource and thus reflects the management style of the resource.

The basic issues addressed are the rights to land access, the security of tenure and equity in the distribution of the rights of access. This is true regardless of what use land is put to or who the users are, whether crop producers, livestock producers or any other users such as estate developers.

In Uganda land can be held under one of the four land tenure systems and their characteristic regimes. Each tenure system has its own impact on the management of the resource and has social and economic implications.

Since rangelands are managed under all four land property regimes it is important to highlight these social and economic implications.

5.1 Customary Tenure

This is the most common tenure system throughout the pastoral and non-pastoral areas of Uganda. Under this tenure system land is held, used and disposed of following customary regulations of the concerned community.

The system has in-built capability of excluding non-members and adequate rules for allocating the resource among the members, managing conflict resolution and to guarantee the security of tenure to its members. Its main advantage is its equitable distribution of rights and there is no landless class.

In its pure form it offers limited incentives to the land user to invest in land improvement technologies due to the weak security it offers. Lack of titles to land limits the land user's ability to invest in farming since the formal sources of credit require titles to land as collateral.

Land under communal land tenure system, as practiced in most pastoral areas does not conform to the standard definition, as common pool resource under common property regimes due to fundamental changes which have taken place over the century in the social, economic and political environment in the country.

5.2 Individualization of Communal Pastoral Land

There has been a high level of individualization of the communal pastoral land throughout the entire corridor. The areas most effected are Ntungamo, Mbarara, Rakai, Kiboga, Luwero and even Karamoja.

This move has been spearheaded by multiple land users who have settled on previous pastoral land and practice crop production alone or in conjunction with livestock keeping.
There has been a reduction in the available grazing land on communal land in the areas.
The displaced pastoralists graze on the reduced grazing area on the communal grazing land leading to overgrazing and land degradation while the others have either become landless or have moved outside their traditional grazing area, thereby increasing livestock population densities in the new area of invasion with resultant overgrazing.
The most serious incidence of landlessness of pastoralists as the result of crop farmers' encroachment is in Kasese where the Basongora pastoralists have been completely displaced by the Bakonzo agriculturalists.
The incidence of conflicts between the displaced and the encroachers, at the local scene, has reached alarming proportion resulting even in violent encounters. This is the experience in Ntungamo and some parts of Nyabushozi and Karamoja.
Conflicts have also risen between old pastoralists and cropper and new comers which have also led to violence. This is the case in Kabarole.

5.3 State Property

Land managed as state property comprises delineated parcels of land which are gazetted and set aside for special purposes. The administration of these lands is entrusted to special agencies. In Uganda these areas include national forest reserves, national parks, game reserves, wild life sanctuaries and community wild life areas.

Table 1 : National protected wildlife areas:

TYPE	No.	Area (Sq km)	% of land
National parks	10	11,150	4.6
Wildlife reserves	10	8,760	3.6
Wildlife sanctuaries	7	850	0.35
Community wildlife areas	13	27,600	11.4
Protected wildlife area in Uganda			20.0

Source: NEMA Report 1996.

Forest reserves cover about 1,137,000ha of which 720,000ha are under savanna and the rest are high forest.

Table 2 : National distribution of protected wildlife areas:

TYPE	PLACE	TOTAL AREA (Sq km)
National parks	Kidepo	1,442
	L. Mburo	365
	Kibale	766
Wildlife reserves	Katonga	207
	Moroto	4,321
	Kotido	1,587
Wildlife sanctuaries		225
Community wildlife areas	Moroto	10,793 7,988
	Katonga	18 2,299
		30,011 sq km

Source: National Environment Authority Report 1996.

As the above tables show state land includes national parks, wildlife reserves, wildlife sanctuaries and community wildlife areas total up to 30,011 sq.km. Besides these, the corridor

is sprinkled with several small lots of protected forests. The existence of these closed areas within the cattle corridor has created management problems for the pastoralists, the forestry and wildlife authorities.
The great pressure on land has led to a lot of encroachment by pastoralists in the gazetted land. This is most serious around Lake Mburo, Kibaale, and Katonga areas and Karamoja.

Recent developments have led to the adoption of a seemingly anti-pastoralist management approach, reminiscent of the colonial period when the pastoralists were marginalised. The first is the development of a very strong environment-oriented pressure group which has caused the displacement of the encroachers on gazetted land, such as forest reserves. Kibaale has been one of the most affected areas. Secondly, the development of tourism, which is a very important source of foreign exchange, has further marginalised the interests and the rights of pastoralists whose land has been turned into national parks, wildlife reserves or wildlife sanctuaries. To mitigate the negative impact of these trends NGO's, especially environmentalist ones, have devised programmes geared to make tourism acceptable to the local communities. The management of such programmes is becoming community-based and entails a reasonable degree of local community participation in the share of the benefits from tourism. These programmes include community wildlife areas cover about 70% of all the protected wildlife land in the corridor.

5.4 "Open Access"

There are areas in Uganda where "open access" is practiced on a large scale where pastoralists move their livestock with impunity and respect no boundaries or local authority. Such is the situation in Isingiro (Bukanga), Kiboga, Luwero, Nakasongora, Kabarole and in surrounding districts of Mbale, Lira and Apac, Soroti and Katakwi.

Uncontrolled livestock movement creates the following management problems:

Difficulties in disease control and disease spread through the unmarked trek routes.

Difficulties in planning and implementing development programmes such as: construction of watering points; infrastructure development as markets and treking route to the market centres; control of stocking rates to avoid land resource degradation; and the design of optimum resource allocation among multiple users and uses within the ecosystem.

Uncontrolled livestock movements are the major cause of the spread of cattle diseases, over-grazing, declining ecosystem productivity, and widespread and dangerous inter and intra-tribal conflicts.

6. AREAS OF FOCUS FOR POLICY

Thus the main problems of rangeland management arise from:

- Attitudes of pastoralists who resist adjustment of livestock population to the rangeland resources carrying capacity. They keep big numbers of animals for subsistence.
- Inadequate water supply and water sources.
- Insufficient market facilities.
- Insufficient investment in extension, infrastructure and research.
- Poor pasture management and insufficient disease and pest control.
- Lack of institutional support.

7. INITIATIVES FOR IMPROVED RANGELAND MANAGEMENT

The Government embarked on a rangeland improvement programme using many strategies the most important of which are:

7.1 Sedentarisation of Nomads through Privatization of Rangeland and Ranches

- The government has established ranches in the South West under the Masaka/Ankole ranching scheme where original big ranches of (5sq. miles) have been restructured into smaller ones (1 sq.mile). The second is the newly formed ranching schemes in Kiboga district covering 30 sq. miles.
- Several private ranches are being established on public land under leasehold arrangements in Luwero, Kiboga and Nakasongora and Masindi districts.
- The new Land Act of 1998 has provisions for the formation of group ranches in addition to ensuring security of tenure for tenants under all types of land tenure systems.
- A high level of spontaneous individualization of communal land by pastoralists and

crop farmers is going on in Mbarara, Ntungamo, Kasese and Karamoja with tacit support of the government which has resulted in displacement and conflicts among local communities particularly in Kasese where the pastoralists Basongora lost the land to the crop farming Bakonzo.

- Construction of watering points, as the dams in Mbarara, Rakai, Sembabul, and similar constructions planned for Karamoja aimed at cutting down nomadic practices to neighbouring districts and cattle rustling.

7.2 The Rehabilitation of the Animal Sector

This includes import and distribution of veterinary input, and restructuring of ranches. In particular:

- Restocking of areas affected by civil strife

- Improvement Management Practices:

    - Regular livestock census
    - Cattle breeding policy
    - Livestock improvement
    - Improvement of animal nutrition
    - Disease control

- Sectoral intervention programmes

    - Diary master plan
    - Meat master plan study
    - Animal production programs
    - Promotions of wildlife ranching
    - Livestock health research institute
    - National Animal Genetic Resource Programme

7.3 Gender Issues

This aspect concerns the incorporation of women in range management programme especially in water resource management and disease control together with actual participation in livestock keeping and ownership.

7.4 Agricultural Modernization in all Fields

The government has restructured the civil service, decentralized governance through the Decentralization Programme, implemented SAO, embarked on a universal primary education programme under UPE programme and is implementing land tenure reforms.

Modernization has in principle three basic elements:

- Development: introduction and adoption of appropriate technologies and technological innovations in production and marketing in the broadest sense
- Planning based on scientific principles and modern methodologies
- Human development both at the individual and the societal levels

The relevance of modernisation in resource management is reflected in technology and technological innovations in terms of research, water supply systems, design of integrated farming systems, pests and disease control methods, new marketing systems, formation of new farming systems and human development.

7.5 Provision of Water

As stated earlier the main innovations include the construction of watering points, in form of dams in Mbarara, Rakai, Sembabule and Karamoja in order to cut down the Karamojongs' nomadic practices to neighbouring districts and cattle rustling.
There are clear signs of overgrazing and serious soil erosion along the trek routes to and around the new watering points, because the provision of more water has encouraged the growth of livestock beyond the number supportable by the available pasture (Goldschmidt, 1981).

8. LESSONS

8.1 Establishment of Infrastructure

- Pasture improvement, disease control programmes and the establishment of markets should go hand in hand with the establishment of watering facilities.
- The absence of adequate marketing facilities has been identified as a major cause of a low off-take rates of livestocks especially during the wet seasons when the cattle prices are very low.
- The water points and their maintenance should be carefully planned to avoid over concentration of livestock at one point. Community participation in the management of communal dams and other water points should be encouraged to regulate access. Participation is also important for other pasture management programmes. This calls for proper design of watering point, for example preferring the construction of several small dams scattered over a wide area to that of a few big dams each serving a large area which can render the area susceptible to soil erosion and the rapid silting.
- Individualisation of CPR promotes stability.
- Individualisation of pastoral rights promotes investments in improvement of rangelands.

8.2 Resource Tenure Problems

- Resource tenure insecurity is caused by privatization of pastoral resources e.g leasing of pastoral land in Southern and Central Uganda.
- Conservation Policy has displaced people in areas declared national Parks, game and forest reserves e.g. Lake Mburo National Park.
- Population pressure internal as well as due to immigration.
- Imposition of institutions and conflicting land uses e.g. establishment of government ranching schemes, army barracks, and air fields in pastoralist areas.
- Government's emphasis on grain production and subsequent toleration of cultivators' encroachment on pastoral land.

- Civil conflict has often displaced pastoralists and affected their grazing patterns. Live examples include the 1981-85 guerilla war in the Luwero triangle, cattle rustling amongst the different clans of the Karamojong and cross border rustling between the Karamojong and the Turkana of North-Western Kenya.
- International boundaries, e.g. Ugandan-Tanzanian border, interfere with movement of pastoralists in the region.
- Urbanisation and geological speculation.
- Lack of a land tenure system that recognises the rights of the pastoralists and allows them to have control over rangeland resources.

8.3 Resources management and pastoral policy problems

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- Harsh climatic conditions as insufficient rainfall, prolonged droughts, have always paused problems to the Ugandan pastoralists
- The bad distribution of water points on rangelands results in overgrazing those areas around the water points thus degrading the resource basis. Related to this is the unplanned provision of bore holes in Karamoja area, rendered non-functional by poor site choice and lack of adequate maintenance.
- In general pastoralist groups experience political marginalisation and are not represented in decision making positions. For instance the Basongora have no representation in the Resistance Councils from the 3rd Local Council level upwards.

Lack of understanding of the pastoral context by non-pastoralists and sometimes by the government has also contributed to the depletion of rangeland resources and impoverishment of the pastoralist communities through:

- misguided government policies e.g. allocation of pastoral land for other uses such as ranching in Mbarara, Masaka, Rakai and Nakasongola districts;
- failure to provide social services including schools, health centres, veterinary services, etc.
- lack of an integrated approach in development projects.

8.4 Institutions and administrative problems

- Loss of indigenous technical knowledge and introduction of new institutions without recognising and considering existing ones has not only resulted into mistrust between the state and the pastoralist but has also impoverished the latter.
- Administrative institutions are far away from the pastoral areas hence making it difficult for services such as justice, police, etc. to be accessible for the pastoralists.
- Gender insensitive plans:Despite being the majority, women are not usually involved in decision making. For instance in Karamoja a decision on the location of a new bore hole will be taken by the village council comprised of men only, without consulting women who are the major users.

9. CONCLUSIONS AND RECOMMENDATIONS

1. There are various institutions working on pastoral resource management that perceive the lack of a comprehensive national policy on rangelands. This should be considered the first step to tackle this problem.

2. In the light of institutional problems among pastoral communities, a participatory approach involving local communities is recommended in determining the best opportunities available for the management of rangelands.

3. To improve rangeland management for sustainable development and improve welfare of the local communities, there is a need to increase production and productivity of rangeland through increased off-take of livestock and livestock products and increase the income of pastoralists.
   This would entail research and programmes enhance the understanding of the present situation with regard to the utilisation of rangelands resources.

4. There is a need to strengthen the management capacity of rangelands through measures that enhance pastoralists' control over natural resources.

5. The need for land use plans is very strong in the light of multiple uses of rangelands. The rights of pastoralists over rangeland resources must be legally recognized, thus

ensuring security of tenure.

6. There is a need that stakeholders, pastoralists in particular, take advantage of the existing state administrative machinery to become involved in the decision making process on matters affecting rangeland resources. NGOs, government and pastoralists working together can have a positive impact on sustainable use of rangeland resources.

7. the capacity to restore soil fertility through nitrogen fixation and also improve grazing lands and overall ecosystem productivity.

References

Feder, G., T. Onchan, Y. Chalamwong and C. Hongladaron. 1988. *Land policies and farm productivity in Thailand*. Baltimore: Johns Hopkins University Press.

Kisamba-Mugerwa, W. and R. Barrows. 1989. *Land tenure and agricultural development in Uganda*. Madison: Makerere Institute of Social Research and Land Tenure Centre.

Kisamba-Mugerwa, W. 1995. The impact of individualisation on common grazing land resources in Uganda. Ph.D. Thesis, Makerere University.

Migot Adholla et al. 1991. Indigenous land rights systems in SUS - Sturn Africa constraint on productivity?, *World Bank Economic Review* 5:155-175.

Place, Frank and Brent Swallow. 2000. Assessing the relationships between property rights and technology adoption in smallholder agriculture: A review of issues and empirical methods. CGIAR System Wide Program on Property Rights and Collective Action. IFPRI: Washington DC.

Sabdfird S. 1993. *Management of pastoral development in the Third World*. Overseas Development Institute: London.

Squires V.R Sustainable development: A dream or an economic and environmental imperatives? PP3-9 in the dry lands: Sustainable use of range lands into the twenty -first century, IFAD Series Technical Reports: Rome, Italy.

Zake,J.Y.K, Mugunda and C. Nkwiine . 1997. Integrated soil management for sustainable agriculture and food security: The Uganda case. Paper presented at the Workshop on Integrated Soil Management for sustainable Agriculture and Food Security in Southern and East Africa. December 8-12.

Map of the Cattle Corridor.

