

**PASTORALISM AND RANGE LAND MANAGEMENT IN NGOMA SUB-
COUNTY.**

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DECLARATION

I, **AKANDWANAHO PETERSON** declare that this is my original work and has never been submitted to any other institution for the award of any academic certificate.

Signature



AKANDWANAHO PETERSON

DATE:



APPROVAL

This dissertation entitled 'pastoralism and Range land management in Ngoma Sub County has been submitted to the faculty of education Kampala International University with my approval as the assigned supervisor.

Signature



KAMULEGEYA SIRAJE

Date. 02/03/2010

DEDICATION

Dedicated to my parents Mr. Katareba Petero and Mrs. Bakundwa Joy, my relatives and friends for all their commitment to the cause of my study

ACKNOWLEDGMENT

My special thanks go to my dear parents Mr. Katareba Petero and Mrs. Bakundwa Joy for their efforts of tirelessly educating me. I also thank my classmates at KIU for all their assistance towards making this study a reality. Further, I wish to pay my special gratitude to the members of the faculty of education of KIU, the various respondents in the field and to my supervisor Mr. Kamulegeya, for their contributions towards the study.

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DEFINITION OF KEY TERMS

Pastoralism - Pastoralism or pastoral farming is the branch of agriculture concerned with the raising of livestock.

Rangeland - Rangeland refers to expansive, mostly unimproved lands on which a significant proportion of the natural vegetation is native grasses, grass-like plants, forbs, and shrubs.

ABSTRACT

This study was conducted to explore the impact of pastoralism on rangeland management in Ngoma sub-county. This was after the realization of the degradation of the rangelands due to human activities such as pastoralism. The study took the form of a case study of Ngoma sub-county in which the data collected was both qualitative and quantitative. The study design also involved purposive sampling. The data were collected using interviews, observation and questionnaire for primary data and document analysis for secondary data. In all a sample of 20 respondents was involved in this study. The study specifically set out to achieve the following objectives: - To find out the effects of pastoralism on rangeland management and to find out how pastoralism can be sustained in the rangelands.

The data were analyzed both qualitatively and quantitatively. Qualitatively analysis involved literal description and narration of the emerging issues out of which conclusions were drawn. For quantitative analysis, the data captured by questionnaires were coded and analyzed manually after which it were presented in percentages and tables. This was followed by the description of the emerging issues and drawing of conclusions. The study established that pastoralism impacts on rangelands by causing soil erosion, loss of plant species, desertification, depletion of water sources and reduction in the availability of food. The study also established that pastoralism and rangelands can be sustained by construction of valley dams, establishment of market centers, planting of drought resistant pastures and through demonstration farms.

The study recommends for an intersectoral and participatory planning given the fact that issues concerning pastoralism and rangelands are multi-faced. The study concludes that human activities such as pastoralism negatively impacts on the rangelands. The low levels of education, lack of alternative opportunities, limited voice in decision making and cultural prejudices inhibit the sustainability of the rangelands and pastoralism.

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LIST OF ABBREVIATIONS

UPE – Universal primary Education

SAO - Share an Opportunity (SAO) Uganda, a nongovernmental organization committed to supporting local community initiatives for child development.

CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 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 (Armitage,1996).

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 (Joeke,1999).

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 (Larsen, et al 2003). 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. (ibid)

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 (Gamasa, 1996).

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. (ibid).

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. (Larsen, et al 2003)

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 utilization.

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

1.2 Statement of the problem

There has been a high level of individualization of the communal pastoral land throughout the entire corridor. Recent developments have led to the adoption of a seemingly anti-pastoralist management approach, reminiscent of the colonial period when the pastoralists were marginalised (Squires, 1998). 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. Nakaseke District 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. There is therefore need to investigate the land range and pastoralist problem in order to come up with measure that can help pastoralist settle peacefully on the range lands.

1.3 purpose of the study

The purpose of this study was to examine the challenges of pastoralism and range land management in Ngoma Sub County, in Nakaseke District.

1.4 Objectives of the study

The specific objectives of the study were;

1. To find out the effects of pastoralism on rangeland management in Ngoma Sub-county
2. To find out how pastoralism can be sustained in the rangelands of Ngoma Sub county

1.5 Research questions

1. What are the effects of pastoralism on rangeland management in Ngoma Sub County?
2. How can pastoralism be sustained in the rangelands of Ngoma Sub County?

1.6 Scope of the study

The study was carried out in Ngoma Sub County in Nakaseke District. The sample consisted of cattle herders, veterinary officers and community elders. In all, a sample of 20 respondents was purposively selected for the study in order to yield only focused and useful information and also to save time and money. The study took a period of four Months from August to November 2009.

1.7 Significance of the study

The findings and recommendations of the study are expected to be useful to the policy makers regarding livestock management, land use practices and the management of arid and semi-arid areas. This will enable such people to base their decisions and actions on concrete knowledge of issues supported by research. The research will also form a basis for further research on the social,

economic and environmental predicaments of the pastoralists and the sustainability of range lands.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction.

This chapter discusses the literature related to pastoralism and range land management. The literature review particularly focused on the effects of pastoralism on range land; and the sustainability of pastoralism and rangelands.

2.1 The effect of pastarolism on Rangelands

The last 10 to 12 years have seen Uganda experiencing prolonged droughts with widespread consequences of land resource degradation in the cattle corridors (Sabiiti et al. 1992, 1997).

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 and the incorporation of 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.

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 grass root 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 (Feder, 2001)

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 (Migot Adholla et al. 1991). 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 (Sabdfird 1993).

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 (ibid).

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. (Kisamba-Mugerwa, et al, 1989).

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 Nakaseke. (Kisamba-Mugerwa, et al, 1989).

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 trekking 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 (Kisamba-Mugerwa, et al, 1989).

2.2 Pastoralism and sustainable use of rangelands

For the sustainance of pastoralism and range lands, a range of comprehensive strategies need to be under taken like defending grazing, conservation and planting of drought resistant fooder. Privatization of ranflands.

From the study, the following were found out to be the measures that could sustain past and the range lands.

2.2.1 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 (Potkanski, 1997).

2.2.2 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 o Cattle breeding policy o

Livestock improvement o Improvement of animal nutrition o Disease control •
 Sectoral intervention programmes o Diary master plan o Meat master plan study
 o Animal production programs o Promotions of wildlife ranching o Livestock
 health research institute o National Animal Genetic Resource Programme
 (Potkanski, 1997).

2.2.3 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. (Wagao, 1991).

2.2.4 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 developmen (Kisamba-Mugerwa, et al, 1989).

2.2.4 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).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the procedures and methods that were used in collecting data on the study. They included:- the research design, area of study, sample size and sampling techniques, data collection, data analysis and limitations of the study.

3.2 Research Design

The research design took the form of a case study of Ngoma Sub County in which the data sought were both qualitative and quantitative. The research design also involved purposive sampling aimed at collecting focused information and selecting useful cases only. This was because the limited time and funds. The primary data were got from the field using interviews, observation and the questionnaire while secondary data was got from the review of the documents in libraries and the internet.

3.3. Area of the Study

The study was carried out in Ngoma Sub County in Nakaseke District. Located in the Central Region of Uganda. It is named after Nakaseke, the largest town in the district and the location of the district headquarters. Nakaseke District is bordered by Luweero District to the southeast and east, Nakasongola District to the northeast and north, Masindi District to the northwest, Kiboga District to the west and Mityana District to the south (Wikipedia, 2009). The 2002 Uganda national census estimated the population of Nakaseke District at 138,011 with an annual growth rate of 3.3%. Given those statistics, it is estimated that in 2009, the population of Nakaseke District is about 173,227. The location was convenient in terms of transport since that is where the researcher lives.

3.4 Sample size and Sampling techniques

In all, a pre-determined sample of 20 respondents were purposively selected for the study in order to yield only focused and useful information and also to save time and money. The sample consisted of six cattle herders, seven veterinary officers, the seven community leaders who were presumed knowledgeable on the subject of study.

3.5 Data collection

The data collected were of primary and secondary nature. The primary data were collected from the field through interviews, observations and questionnaires. The interviews and observations provided a basis for qualitative data while the questionnaires provided a basis for quantitative data. An interview schedule containing open ended questions was used to collect data from eleven key informants who included six cattle herders, three community leaders and two veterinary officers. Observations were also used to reinforce the data collected through interviews. This involved the observation of cattle facilities, state of livestock and pasture lands among others. For the questionnaire, it involved both open ended and guided questions. It was subjected to key informants who included five veterinary officers and four community leaders.

3.6 Data Analysis

The data were analyzed qualitatively and quantitatively. Qualitative analysis involved literal description and narration of the emerging issues out of which conclusions were drawn. Direct quotations from respondents were also adopted for purposes of accurate reporting. This mainly applied to the data that were collected through interviews. For quantitative analysis, the data captured using the questionnaires was first inspected and edited in order to get rid of the unwanted irregularities. After this the data were coded and analyzed manually after which it were reported in frequencies, percentages and tables. This was then followed by the description of the emerging issues and the drawing of conclusions.

3.7 Limitations of the study

The study could have been conducted in all the sub- counties of Nakaseke District. However, the limited time and funds dedicated the smaller sample. The localization of the sample to Ngoma sub – County could therefore limit its generalization to other parts of Uganda. Never the less, the study is bound to provide fertile ground for future research on pastoralism and range lands.

CHAPTER FOUR

DISCUSSION OF THE FINDINGS

4.1 Introduction

This chapter is a presentation of the discussion of the field results in relation to the objectives of the study which were: to find out the effects of pastoralism on rangeland management in Ngoma Sub-county, and to find out how pastoralism can be sustained in the rangelands of Ngoma sub-county. The results are presented in qualitative and quantitative forms involving frequencies and percentages and the narration or literal description of the emerging issues out of conclusions were drawn.

4.2 The effects of pastoralism on rangeland management

The first objective of the study was to investigate the effects of pastoralism on rangeland management. The findings indicated that the affects of pastoralism on range lands are multi faced. They are ecological and socio-economic in nature, for example; soil erosion, loss of plant species, desertification, depletion of water sources and reduction in food production.

4.2.1 Soil erosion

According to the study findings, soil erosion caused by rain and wind is one of the effects of nomadic pastoralism in range lands. As noted from the observation, soil erosion arises after the degradation of vegetation cover by livestock such as cattle's, sheep, and goats. This is more so where live stocking was rampant. The findings tally with what (Rapp, 1974) found in his study that Overgrazing has reduced range productivity virtually everywhere outside the tsetse fly regions, in north, west, east, and south Africa. Wind and water erosion have devastated landscapes in the cultivated regions and in much of the rangelands Shortened fallow periods in the shifting cultivation system south of the Sahara have led to

severe depletion of plant nutrients. Salinization and water logging of irrigated land is worst in the Nile Valley and North Africa but also occurs elsewhere.

Respondents were asked if pastoralism leads to soil erosion. Their responses are summarized in Table. 1;

Table 1: Opinion on whether pastoralism leads to soil erosion

Response	Number	Percentage (%)
Agree	25	50
Not sure	12	24
Disagree	13	26
Total	50	100

Source: field summary in Ngoma sub-county

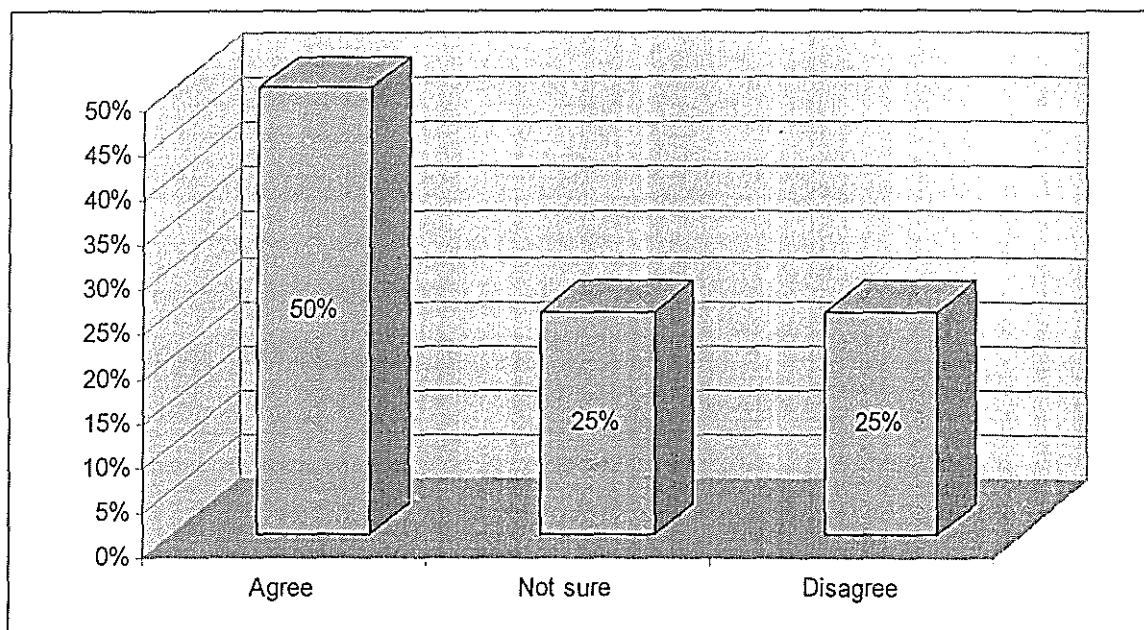
The results in Table 1 shows that 25(50%) of respondents agreed with the statement that pastoralism leads to soil erosion. 13(26%) were not sure and 12(24%) disagreed that pastoralism leads to soil erosion.

The results in the findings are in line with the findings of Schlesinger et al., 1990 who discovered that inappropriate strategies can cause desertification – the overwhelming problem in semi-arid areas. Desertification (or degradation) – the loss of productive land - is believed to be a consequence of a combination of climate variability and human mismanagement. It carries huge ecological, economic and social costs. Income losses worldwide of US\$42 billion per year are estimated to result from the loss of productive land due to degradation (UNCCD, 2004). Therefore the crucial task for the future is to prevent the risk of degradation by identifying appropriate grazing management strategies

In addition to this risk of long-term decline in pasture productivity, livestock farmers have to deal with the risk associated with high fluctuations in income from year to year caused by variable rainfall (Pickup & Stafford Smith, 1993; Wang & Hacker, 1997; Quaas et al., 2004). In the past, people were forced to use means of self-insurance or self-protection to deal with this risk. Apart from income diversification, an example of self-protection is the granting of grazing reserves for times of drought.

Respondents were asked if pastoralism leads to wind erosion. Their responses are summarized in Figure 1

Figure 1: Opinion of respondents on whether pastoralism leads to wind erosion



The results in Figure 1 showed that 20(50%) of respondents agreed that pastoralism leads to wind erosion. 10(25%) were not sure and 10(25%) disagreed that pastoralism leads to wind erosion.

According to Sabiiti et al. (1992), in parts of the cattle corridor, the effect 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 results of the findings therefore show that pastoralism leads to wind erosion.

4.2.2 Loss of plant species.

The loss of plant species was also identified from the findings as one of the effects of nomadic pastoralism. The locals observed that plant species are lost during the dry periods when pastures are set on fire and also out of over grazing. Similarly the findings also noted that Herbivores can have a variety of direct and indirect effects on plant communities. Direct negative effects of herbivores on a subset of plant species can produce strong indirect effects on plant species composition, above-and belowground plant productivity, and nutrient cycling. Such effects maybe particularly strong when herbivores limit the abundance of one or a few important plant species that control resource abundance, e.g., nitrogen fixers or other efficient nutrient competitors. As a result, herbivores may indirectly control the form and function of ecosystems (Lawton 1994).

4.2.3. Desertification

The study also found out that desertification is under way in the range land attributed to pastoralism. According to Condon (1978) a common misapprehension about desertification is that it spreads from a desert core, like a ripple on a pond. The truth is that land degradation can and does occur far from any climatic desert; the presence or absence of a nearby desert has no direct relation to desertification. Desertification usually begins as a spot on the landscape where land abuse has become excessive. From that spot, which might be around a watering point or in a cultivated field, land degradation spreads outward

if the abuse continues. Ultimately the spots may merge into a homogeneous area, but that is unusual on a large scale.

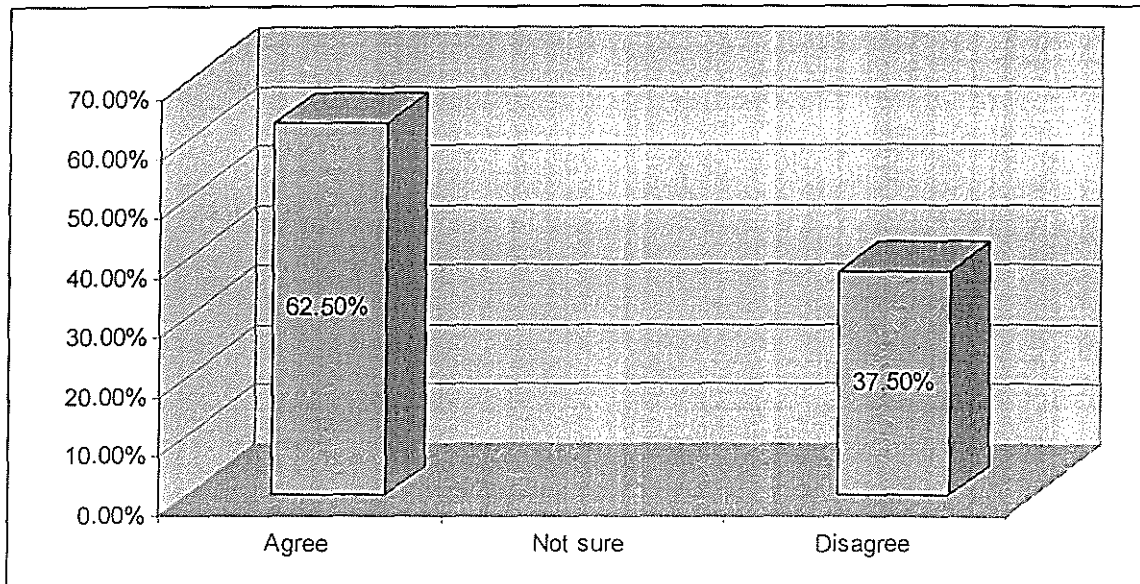
A second misconception is that droughts are responsible for desertification. Droughts do increase the likelihood that the rate of degradation will increase on non-irrigated land if the carrying capacity is exceeded. However, well-managed land will recover from droughts with minimal adverse effects when the rains return. The deadly combination is land abuse during good periods and its continuation during periods of deficient rainfall. The famous satellite photograph taken during the 1970's drought of a green rectangle surrounded by brown denuded land in eastern Niger demonstrated dramatically the value of good range management during favorable and unfavorable years.

4.2.4. Depletion of water resources

The study also illustrates how pastoralism has contributed to the degradation of water resources in the range lands of Ngoma. From the field observation and the interviews conducted in the area, water resources are degraded as a result of encroachment on wetlands by the herdsman. Many acknowledge that the drying of wet lands had contributed to the death of some streams and wells in the area, thereby risking the sustainability of range lands and pastoralism.

Respondents were asked if pastoralism leads to overgrazing and land degradation. Hence, their responses are summarized in Figure 2;

Figure 2: Opinion of respondents on whether pastoralism leads to overgrazing and land degradation



The results in Figure 2 showed that 25(62.5%) of respondents agreed that pastoralism leads to overgrazing and land degradation and 15(37.5%) disagreed that pastoralism leads to overgrazing and land degradation.

According to WHO (2003), 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 results therefore conclude that pastoralism leads to overgrazing and land degradation.

4.2.5 Reduction in food production

Although the range lands are known for basically supporting pastoralism crop production is equally important. In the range lands of Ngoma, the chief crops include cassava, sweat potatoes, among others. However, from the field interviews, the production of such crops had drastically declined owing to environmental degradation attributed to pastoralism among others. The local also

complained about the pastoralists who graze their livestock in their crop fields. This too had contributed to the reduction in crop production in the area.

Further, the interviews also revealed that there are clashes in the area between the herdsmen and cultivators arising out of the disagreement regarding the land use. One of the cultivators in the area, said that as long as the pastoralists do not respect our gardens they will not sit down but will rise up to defend themselves.

In general, agricultural crops have been regarded as being in direct competition with wild animals, with the result that extensive efforts have been devoted toward their complete extermination. In fact, the origin of many of the national game departments in southern Africa can be traced to the perceived need for an organization with the responsibility for destroying wild animal "pests" that threatened government plantations.

Wild animals can and do cause tremendous damage to agricultural crops. Some antelope species browse young trees and eat valuable agricultural crops. Birds, notably the quelea, are known to cause serious damage to grain crops and drastically reduce yield. Rodents cause untold millions of dollars worth of losses, both in the field and after harvest.

But the plantation system also creates an environment that is particularly favourable to the harvesting and utilization of wild animals as food. Unfortunately, the anxiety generated by the damage tends to be so overwhelming that possibilities to utilize pest species for nutritional purposes are rarely examined. In many situations the development of techniques for the sustainable exploitation of the animals concerned could control damage and provide an additional source of income and food.

Ironically, in many situations effective traditional techniques already exist but are unused because local people are often employed only as a source of labour in

plantation systems: their knowledge of local conditions is ignored. For example, in West Africa, various traditional methods exist to trap and utilize potential rodent pests, e.g. grasscutter (*Thryonomys swinderianus* Temminck) in Ghana, Benin and Côte d'Ivoire, and giant rat (*Cricetomys gambianus*) in Nigeria around agricultural crops. This both provides food and keeps the population of these animals below excessive levels. By including local people in plantation efforts, these methods could be applied cost-effectively on a large scale. In fact, on many cocoa and oil-palm plantations, local workers can be observed trapping so-called pests for food in their free time.

Rice cultivation under irrigation in northern Ghana faced serious problems with grain-eating bird pests. Local workers were trained in using mist-nets, with the result that the damage was substantially reduced and the farmers obtained a good source and regular supply of protein in what was previously a protein-deficient area (Ntiama-Baidu, 1986).

4.3 Pastoralism and sustainable use of rangelands

The second objective of the study was to explore the sustenance of pastoralism and rangelands. To achieve this, respondents were asked to identify strategies that could address the sustainability of pastoralism and the rangelands. The study findings indicated pastoralism and the rangelands can be sustained in the following ways

4.3.1 Planting drought resistant pastures

Most of the interviewers acknowledged that there is need to plant drought resistant pastures as a way of saving them for walking long distances in search for green pasture. This would also make their animals healthy and serve them from dying during drought.

4.3.2 Construction of valley dams/Bore holes

There is need to construct valley dams to reduce the movement of cattle from one area to another in search of water. The construction of valley dams is intended to reduce the spread of animal diseases. Respondents said many cattle keepers have been moving miles in search for water, something they say lowers the quality of meat by encouraging spreads diseases. The researcher observed that some areas in the cattle corridor already have valley dams but the government wants to increase on the number of valley dams available for livestock farmers and pastoralists. The construction of valley dams is intended to allow farmers increase the number of animals they keep.

4.3.3 Demonstration farms

Respondents also observed that there is need to construct demonstration farms to teach the farmers methods of better farming and providing alternative land to using a wetland. Respondents saw the need to provide some money for providing manure that will be generated from the compost so that instead of following fertility in wetlands, they would use it as fertilizers in their gardens uphill

4.3.4 Market centres

Respondents saw the need for stakeholders to construct them market centres where they can sell their products to the people and where they can assess market for their products in the entire country.

CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSIONS

5.1 Recommendations

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.

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.

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.

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

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.

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

5.2. Conclusion

This study examined the challenges of pastoralists in the management of rangelands in Ngoma Sub-county. The specific objectives of the study were to: find out the effects of pastoralism on rangeland management in Ngoma Sub-county; and to find out pastoralism can be sustained in the rangelands of Ngoma Sub County.

The findings of the study discovered that the following are the major effect of pastarolism on Rangelands: 50% of respondents agreed that pastoralism leads to soil erosion; another 50% of respondents agreed that pastoralism leads to wind erosion; 62.5%) of respondents agreed that pastoralism leads to drought; and 87.5%) of respondents agreed that pastoralists graze on the reduced grazing area on the communal grazing land leading to overgrazing and land degradation.

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 Ngoma area, rendered non-functional by poor site choice and lack of adequate maintenance.

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

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APPENDIX A: QUESTIONNAIRE FOR PASTORALISTS

Dear respondent,

I am a student of Kampala international University carrying out an academic research. You have been randomly selected to participate in the study and are therefore kindly requested to provide an appropriate answer by either ticking the best option or give explanation where applicable. The answers provided will only be used for academic purposes and will be treated with utmost confidentiality.

NB: do not write your name anywhere on this paper.

A) Personal Information

1. Gender

a) Male

☐

b) Female

☐

2. Age

a) Below 20 years

☐

b) 21- 30

☐

c) 31-40

☐

c) 40 and above

☐

The effect of pastarolism on Rangelands

3. one of the major effects of pastoralism is soil erosion?

a) Yes

☐

b) Not sure

☐

c) No

☐

4. another effect of pastoralism is wind erosion

a) Yes

☐

b) Not sure

☐

c) No

☐

5. Pastoralism leads to drought

a) Yes

☐

b) Not sure

☐

c) No

☐

6. Pastoralists graze on the reduced grazing area on the communal grazing land leading to overgrazing and land degradation

a) Yes

☐

b) Not sure

☐

c) No

☐

7. Give any effects other than the ones given of pastoralism

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Patoralism and sustainable use of rangelands

8. What are some of the strategies that have been put in place to address sustainability of rangelands?

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