THE INFLUENCE OF FARMLAND LEASING ON HOUSEHOLD LIVELIHOOD STRATEGIES: A STUDY OF THE WHEATBELT REGION OF NAROK DISTRICT.

BY:

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This is my original work and has not been presented for a degree in any other university.

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John Leyian Letoluo

This project paper has been submitted for examination with our approval as university supervisors.

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DEDICATION

This work is dedicated:

To my parents for their encouragement and unending support,

To my sisters Sereti and Resian and my brother Lerionka for their love and prayers.

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ABSTRACT

The main purpose of this study was to investigate the influence of farmland leasing on the livelihood strategies of pastoral households.

The study was conducted in two wheat-growing locations of Narok district. The main survey involved eighty respondents randomly selected from both administrative locations. A total of ten key informants were also interviewed.

The study found that pastoral households mainly leased out their land in order to earn some income. Secondly, many leased out their land due to inability to effectively utilise their land.

The households were found to have invested their lease income differently. However, the majority invested most of it in the education of their children. Many had also invested heavily in livestock.

Farmland leasing was also found to have several effects on pastoralism. One major effect was the reduction in the size of land available for grazing, which has forced pastoralists to make significant adjustments. It has also encouraged a seasonal migration of livestock that is not based on scarcity of pasture due to drought but rather from the alienation of land by farming.

Most households had also seen a significant increase in the number of their animals since they started leasing out their land. The whole process of farmland leasing was found to have especially favoured sheep farming.

It was also established that farmland leasing is likely to continue into the near future. However, there are some indications that it could come to an end in the distant future as social and economic changes take place among the pastoralists.

In view of the above findings, some conclusions were made. The increased commercialisation of the pastoral economy has encouraged households to lease out their land to tenants. Secondly, lease income has encouraged pastoral households to diversify into other livelihood activities like business, crop farming and investment in capital assets. The study also concluded that farmland leasing is intensifying pastoralism by encouraging some new aspects into traditional pastoralism. Finally, the study concluded that pastoralists do not really identify with farmland leasing as a livelihood strategy. The practice is therefore likely to come to an end sometime in the future.

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CHAPTER 1

INTRODUCTION

1.1 Background

Households the world over usually have strategies through which they earn their livelihoods. These strategies vary from country to country and from region to region. One common determinant of the livelihood strategy chosen is the resource endowment of an area.

Farmland leasing is a livelihood strategy pursued by many households both in developed and in developing countries. It has been practiced for a long time in the United States of America and Australia. In the United States for example, tenancy provides a means by which prospective landlords lease out their surplus land resources to others and receive monetary returns from their properties. The practice goes hand in hand with the modernisation of agriculture and population growth. Leasing has spread to developing countries as a result of the advent of cash crop farming. Likewise, due to increase in population, land has become scarce. Land-poor households are therefore forced to lease-in land from others.

There are no official statistics on the extent of farmland leasing in Kenya. However, according to Amman and Duraiappah (2001), an estimated 55,400 hectares of land are under lease in Narok district (the study area). The practice has gone on from the late 1970s when residents started leasing out land to commercial wheat farmers. The

commercial farmers are mostly second and third generation Asians and Europeans from outside the district. However, some indigenous Kenyans have now ventured into wide scale lease in of land. These farmers mostly cultivate wheat, barley and rape seed. The farmers are capable of managing 100 hectares or more and their farms are highly mechanized (Kenya 1997).

1.2 Problem Statement

Pastoralists have now joined the group of people who lease out land. Many have resorted to the leasing option because it provides a quick source of income (Ikiara et al 1999). However, despite the above positive contribution, the practice has some factors associated with it that are of critical concern. First is the effect of farmland leasing on pastoralism. There are some fears among herders that increased farmland leasing will eventually drive them out of their pastoral life. This is mainly because, the leasing of land has led to a reduction in grazing land in the district. There are also fears that as tenants clear up the land, the ground is exposed to agents of erosion. They would therefore not be able to continue with grazing when the tenant leaves. The use of chemical to kill weeds or pests by tenants is also a common source of concern. Ikiara et al (1999) found that the chemical used negatively affects grass and bush that borders the sprayed parcel. The pastoralists expressed fear about effects on their livestock grazing on the affected area.

There is also the concern that the pastoral landowners may not put the rent income into long-term use. This is because of a general feeling that such earnings are not realised

from the sale of cattle. Money from the sale of livestock is valued differently since it is got after one has disposed part of his treasured animals. Money from leasing, on the other hand, is equated with finding money on the roadside (Doherty 1979). Pastoral households receive this money without toiling, incurring costs or tax deductions.

Thirdly, there has been a cry about the 'mine' and 'shift' methods applied by some tenant farmers that have turned land desolate. In spite of the above concerns, farmland leasing is still commonly practiced. Hence, the basic research question is: how does leasing affect the livelihood strategies of pastoral households?

The following are therefore the sub-questions that the study tries to answer:

1. Why do pastoral households lease out their land?
2. On what do the households spend their lease incomes?
3. What is the effect of farmland leasing on pastoralism?
4. How sustainable is farmland leasing as a livelihood strategy?

1.3 Objectives of the Study

This study had four main objectives. First and foremost was to investigate the reasons behind farmland leasing. Secondly, the study aimed to determine the influence of farmland leasing on household investment patterns. The third objective was to assess the effect of farmland leasing on pastoralism. Fourthly, the study examined the future of farmland leasing as a livelihood strategy. At the end of the study, recommendations for policy were also to be made.

1.4 Justification

The study is justified on the following basis. First, lease income has not been given much consideration by successive Narok District Development Plans. Many acknowledge the existence of the practice, but do not actually state how much is earned by households from farmland leasing. The study is vital since it tries to come up with an average estimate of how much is earned by households. It will also show the use into which the income is put and identify the livelihood strategies that can be associated with the practice.

Secondly, the study comes in when sustainable livelihoods is an area of concern in Development Studies. There are concerns that land leasing may not be sustainable due to its role in land degradation. However, most of the concerns raised are related to environmental sustainability. This study comes in to investigate the socio-economic sustainability of leasing in the district.

Thirdly, pastoralists have been known to be livestock keepers. Land leasing has, however, reduced the size of land available for grazing. It is of interest to know how this new livelihood strategy is impacting on their main source of livelihood, and whether it has a role in the adoption of other livelihood strategies by the same households.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 LITERATURE REVIEW

2.1.1 Farmland Leasing

Literature on farmland leasing and land rents in Kenya is scarce and difficult to come across, despite the fact that the practice is widespread. It appears that few studies have been conducted in this area. This paucity of data is not restricted to Kenya alone. Cornhiel and Sanjak (1999) inform that " hard" data on frequency of tenancy and its financial implications in Africa is not available.

Raleigh (1958) in his work on the political economy of rural-urban land use in the United States found that the leasing of farmland provided a means by which prospective landlords could lease out their surplus land resources to others and thus receive monetary returns from land they did not wish to operate. At the same time, they made it possible for prospective tenants to acquire use and possession of the landlord's property. His work is important to the present study since it presents some reasons behind farmland leasing. However, the study was based in the United States, a first world nation. There is need to assess the issue in the Kenyan context. This study comes in to investigate whether there are unique reasons why households lease out their land in Kenya.

Cornhiel and Sanjak (1999) in a recent review of literature, have extensively explored the issue of land tenancy. Their review focused on recent and contemporary tenancy

structures in Asia, Africa and Latin America. They observe that lack of capital for production and investment in the land appears to be one of the principal reasons why households lease out their land. Poor households with land do not have access to minimal capital needed for production, particularly as commercial agriculture becomes more dependent on expensive commercial inputs and infrastructure. They also add that having too few workers to work on the land is a determinant of how much land is leased out. Their review is valuable to the current study since it candidly explains the factors behind farmland leasing and the general tenancy trends. They however do not give the socio-economic implications of land leasing on the respective households.

In their study, Amman and Duraiappah (2000) investigated the nexus between institutions, poverty, inequality and environmental degradation in Narok district. They found some problems associated with land leasing. They inform that lack of information on the true value of land on the part of the landowners could provide the tenants with more bargaining power. A common problem also occurs when tenants regard rented land as a resource to be exploited for personal gain. This has often resulted in land degradation and 'soil mining'. Their study is important to the current study in understanding the effect of farmland leasing on the environment. There is, however, need to go beyond the environment and look at the effects of farmland leasing on household livelihood activities.

Similarly, Ikiara et al (1999) in their recent study in Narok District, examined the relationship between various land uses, and the conflicts that arise between them and

environmental degradation. They report the concerns and perceptions that pastoralists have towards farm leasing. They note that leasing has reduced land available for grazing. They also found that the majority of the pastoralists were in favour of farmland leasing. Most of the farmers who had leased out land had also purchased more cattle and sheep or goats, leading to overstocking in the available group ranch. Their study, however, portrays land leasing as a threat to the environment and pastoralism. It does not show whether there are any strategies adopted by the pastoralists that enable them to continue leasing out their land alongside pastoralism.

It has emerged from the literature that little is known about the socio-economic implications of farm leasing on households. This study will try to fill this gap by investigating the influence of farmland leasing on household investment patterns.

2.1.2 Livelihood Diversification

Ellis (1998) in his article reviewed recent literature on diversification as a livelihood strategy of rural households in developing countries with particular reference to Sub-saharan Africa. He defines livelihood diversification as the process by which rural families construct a diverse portfolio of activities and social support capabilities in order to survive and to improve their standard of living. For many households, farming alone is unable to provide a sufficient means of survival. They therefore diversify into off-farm activities. He goes on to give a basic classification of income diversification. In his categorisation, he distinguishes between farm, off-farm and non-farm income sources. Farm income refers to income generated from own-account farming whether on owner

occupied land, or on land accessed through cash or share tenancy. Non-farm income on the other hand refers to non-agricultural income sources. His work is significant to the present study since it categorises lease income as part of the non-farm income. However, the article has given more attention to diversification by farmers. Not much has been mentioned about pastoral diversification.

Livelihood diversification has been found to lead to a gradual increase in the standards of living. Heyer (1996) in a study on the complexities of rural poverty in Machakos district (Kenya), found that the interaction of various livelihood activities like remittances, non-agricultural employment, agricultural employment and income, education and health provision, enabled incomes to rise and poverty to decline. The study is important for it shows the benefits that households can get by diversifying their livelihoods.

On the other hand, livelihood diversification has been associated with long-term negative effects. Davies (1996) did a study on adaptable livelihoods in the inland Niger Delta region of Mali. The study focused on how households coped with food insecurity. She found that diversification is becoming less and less effective in supplying livestock and crop producers with their needs. She argues that all producers, including those who have diversified more, have become vulnerable to food stress due to population growth, pressure on natural resources, increased competition for natural resources, pressure on dry season grazing and increased dependence on the market. Her study is important to the current study since it shows that livelihood diversification activities like farmland leasing can be counter productive.

Seppala (1996) in a study on the politics of economic diversification in South East Tanzania has argued that success or failure in undertaking diversification strategies is dependent upon households' different management approaches such as differences in timing of activities, location of activities or capacity to estimate risks. He notes further that diversification is a cultural as much as a material strategy. He found that diversification was a strategy for cultural expression and formation of a separate identity. Through income generating diversification activities, individuals gained esteem in their community. The desire for esteem therefore spurred on the pursuit of livelihood diversification. This study is relevant to the present study in showing factors influencing the decisions of households to invest their incomes in various activities. However, the study approached diversification from the political perspective. There is need to go beyond politics and look at factors that affect household investment strategies such one's entitlements and social environment.

Wegulo and Obulinji (2001) carried out a study on the interface between farm and non-farm activities among sugarcane growers in Kakamega District. The study was concerned mainly with determining the income earned among sugarcane farmers and how the money is spent. The study found that most of the expenditure went to school fees, purchase of business machinery, and construction of business premises. It was also found that farmers owning larger areas of land tend to be involved in running one type or other of small-scale enterprises. This study is important to the current study in demonstrating how households spend the income that they regularly receive. However, the study was

carried out among a traditionally agricultural community. There is therefore need to study investment patterns among pastoralists.

Though livelihoods tend to specific to regions, Cekan (1992) informs that the primary activities of some producers may become livelihood diversification for others. She found in her study of five Malian villages that crop producers are increasingly keeping livestock and herders increasingly engage in crop cultivation. She argues that this represent ways in which livestock and crop producers attempt to adapt their livelihood strategies to ensure their long term viability. Her study is relevant to the present study in showing that pastoralists can also engage in crop farming. It is, however, not clear from the study whether pastoralists would still diversify into farming if they had a steady source of income like farm leasing.

Little et al (2001) in a review of literature on diversification among pastoralists concluded that with declining per capita stock holdings, many herders, both male and female, have had to diversify their income earning activities. They argue further that different categories of pastoralists have responded differently to diversification. For the poorest herders, unskilled wage-labour and petty trade seems to be the most common non pastoral option, while for the wealthiest it tends to be trading, business and skilled (high income) wage labour. However, their study has mainly described pastoral diversification as a response to risk and declining stocks. There is need to look at other factors that encourage pastoral diversification.

The above literature has given more attention to diversification by crop farmers than by pastoralists. This study will therefore look at how the entrance of new sources of income, specifically, lease rent, into the pastoral economy, influences diversification by the pastoralists.

2.1.3 Pastoralism And Expansion Of Agriculture

Commercial farming is gradually expanding into rangelands. The main economic activity in these areas has been traditional pastoralism. The arrival of tenant farmers and adoption of farming by herders is having effects on pastoralism. Indeed, Ikiara et al (1999) note that farmland leasing has led to a decrease in land available for grazing.

Blench (2001) has critically reviewed literature on pastoralism. He observes that the encroachment of cultivation onto land traditionally held and grazed by pastoralists has forced them into increasingly marginal and unproductive land. He adds that much of the encroachment is carried out by the pastoralists themselves or by non-pastoralists who have encroached into rangelands. He concludes by arguing that pastoralism is likely to simply disappear in any region where it competes with agriculture. The review is useful to the current study since it describes the imminent threat of various farming activities on the pastoral way of life. However, the review does not indicate whether there are any ways that pastoralism benefits from the expansion of agriculture into the rangelands.

In her P.H.D thesis, Hodgson (1995) focused on the problems of pastoral development among the Maasai pastoralists of Northern Tanzania. She found that because of increased

land alienation, pastoralism becomes less and less viable as a productive system. Some pastoralists began to cultivate in order to either supplement their dietary intake or use their profit to rebuild or expand their herds. Her study is important to the present study since it shows the effects of land alienation on pastoral households. However, the study was conducted ten years ago. Therefore, there is need for current and detailed information on effects of crop farming on pastoralism.

Mwachabe (2000) in his work, Nomadic Pastoralism and environmental legislation in Kenya, gives an insight on the nomadic production system and perspectives from which the production system can be incorporated into the legislation process. He observes that as cultivation becomes a more significant land use system, pastoralists are denied access to pasture especially the dry season grazing that were of critical importance as fall back areas during drought. As a result, the growing pastoral populations end up concentrating on alternative grazing and watering points. The paper, however, does not expound on how cultivation becomes a significant land use system in pastoral areas. Its is not clear whether it is the pastoralists who are embracing cultivation or whether it is taking place through outsiders who acquire farms through land transfer. This study therefore looks at farmland leasing as a method of land transfer and what influence it has on the adoption of crop farming by the pastoralists.

Shazali and Ghafar (1999) present other effects of the expansion of agriculture on pastoralism. Their work focused on pastoral land tenure and agricultural expansion in the Sudan and the Horn of Africa. They argue that agriculture has led to the disruption of

nomadic routes, blocked access to watering points, concentration of herds in shrinking grazing areas and loss of shade for animals due to deforestation. To deal with the resultant scarcity in pasture, pastoralists began covering longer distances in between grazing and watering points. Some sought to purchase agricultural residue in mechanised farms and engaged in supplementary feeding. This study is important to the current study since it shows the adjustments that pastoralists make as a response to the reduction in the size of grazing land.

The literature has mostly portrayed the expansion of agriculture into the rangelands as a threat to pastoralism. However, not much has been mentioned about the benefits that can be derived by pastoralists from the expansion of large-scale farming into their environs. It is also not clear whether there are ways in which pastoralism and cultivation can supplement each other. This study will attempt to address these issues by focusing on the effect of farmland leasing on pastoralism.

2.2 THEORETICAL FRAMEWORK

There are various issues in the study that require answers. From the literature review, there are strong indications that pastoral households are compelled by the need to earn money to lease out their land to tenants. What is not clear at this moment is what factors have prompted pastoral households that were previously reliant on livestock to develop a taste for money from other sources. Secondly, there is a lingering question as to what is the implication of the introduction of a new source of livelihood like farm leasing on pastoral households. In trying to address these issues, two theories were chosen to inform the study. These are: the modernization theory and the entitlements approach. These theories were selected on the basis of their applicability to the research problem.

2.2.1 Modernisation Theory

Modernization is a process of transformation of societies into advanced capitalism (Leys 1996; Smelser 1968). Capitalism is a socio-economic system where goods and services are produced for market exchange (Bernstein et al 1992). Commercialisation and commoditisation are some of the most visible attributes of modernisation today. Commercialisation by external and internal factors tends to bring about changes in the status of the family as well as habits and mental attitudes. Even in the most isolated rural areas of contemporary Africa, there is some evidence of monetisation (Malasi 1997; Freund 1985). It is possible that pastoral households in this study have also been exposed to monetisation. This theory is therefore crucial in explaining the introduction of farm leasing among pastoralists.

Land for shelter or agricultural production becomes commercialised, if demand exceeds basic supply. According to Aina (1990) commercialisation implies that land becomes a source of revenue or income, turning it principally into a commodity of some form thereby creating a land market. In a modern world, land becomes a commodity to be freely sold or rented without restriction by customary Laws, rights, monarchs, feudal codes, peasant communities or whatever else (Bernstein 2000). Commoditisation refers to the process of the arrival of capitalist relations in a non-capitalist world, and the effect it has there. All goods and services are in principle turned into commodities for sale (Thomas 2000; Bernstein etal 1992). This basically answers the research question 'why pastoralists started leasing out their land to commercial farmers'. It is also implied in this theory that farm-leasing tendencies start once households realise that their land has commercial value. Indeed, Patharsathy (1991) identifies modernisation as a causal factor in the appearance of "capitalist" tenancy and reverse leasing.

Dube (1988) has observed that, modernisation as a process is lengthy, systematic, and irreversible. The movement towards goals of modernisation takes place through identifiable phases and sub phases. He observes further that modernisation is inevitable as well as desirable. The evolution from subsistence farming towards commercial production of agricultural goods is viewed as modernisation. Pure commercial profit becomes the criterion for success and maximum per hectare yield, derived from man made (fertilizer, pesticides, hybrid seeds) and natural measures, becomes the object of farm activity (Todaro 2000; Katorobo 1987; Raikes 1988; Thomas 2000). It can therefore be deduced from this theory that the relentless pursuit of profits by commercial farmers

and the resultant high demand for land, could have influenced the Maasai pastoralists in the study to start leasing out their land.

2.2.2 The Entitlements Approach

The approach has been extensively developed by economist Amartya Sen. Though initially meant to explain the cause of hunger, famines and food insecurity, the approach is increasingly being used to analyse and describe livelihoods. This approach is important to the study since it helps to explain the contribution that can be made by lease income in the lives of pastoral households. It is significant in understanding how households in the study acquire and spend their lease income. Though it does not directly explain the ways in which households spend their lease income, it nevertheless explains the benefits, the financial freedom and control that pastoral households can acquire by renting out their lands to tenants.

Entitlements refer to the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces (Sen 1981). Entitlements also refer to the set of income and resource bundles (assets or commodities) over which households can establish control and secure their livelihoods. In a private market economy, the entitlement relations of individuals are determined by what they own, what they produce, what they can trade and what they inherit or are given (Frankenberger and Maxwell 1992).

Entitlements are relatively simple to characterize in a purely market economy. If a person can say earn $ 200 by selling his labour power and any other saleable object he has or can produce, then his entitlements refer to all the sets of commodity bundles costing no more than $ 200. He can buy any such bundle, but not more that and the limit is set by his ownership (endowment) and his exchange possibilities (exchange entitlements). These two together determine his overall entitlement. It is important to note that the exchange entitlement is only a part of the picture and is incomplete without an account of ownership or endowment (Sen 1984). An endowment is the owned asset (e.g land) and personal capacities which an individual or household can use to establish an entitlement.

The importance of entitlements rest in the role they play in the determination of capabilities. On the basis of entitlements, a person can acquire some capabilities i.e. the ability to do this or that (e.g. be well nourished, build a house or buy a car). Similarly, the pastoral households in this study have their own initial endowment, which in this case is in the form of land. Such an endowment gives them the ability to establish an entitlement i.e. the ability to acquire other assets and commodities. But these entitlements can only be got by first exchanging the endowment in the market place. In order to establish an entitlement, the household head may exchange the land in the lease market and earn some income. The entitlement of the household therefore consists of all assets or goods that it can acquire using the lease income earned. The household therefore acquires the capability to do many things e.g build a house, be well nourished or invest in a real estate.

2.3 HYPOTHESES

Based on the above theories and the literature reviewed, the following are the hypotheses that will guide this study.

1. Monetisation of the pastoral economy has led to leasing of farmland by households.
2. Lease income has an influence on household investment patterns.
3. Leasing has led to changes in traditional methods of herd management.
4. Leasing is counter productive.

2.3.1 INDENTIFICATION AND OPERATIONALISATION OF KEY CONCEPTS

Independent Variables

MONETISATION.

This refers to a process where money increasingly becomes the medium of exchange in a society. A price value is attached to goods and services. There is therefore a great demand for money. This variable will be measured by:

- Preference for commercial tenants
- Engagement in business
- Ownership of purchased oxen
- Ownership of a bank account

LEASE INCOME

Refers to any payment received by a landowner from the tenant in the form of cash or services. This variable is indicated by:

- Lease rate per acre multiplied by total size of land leased-out in acres
- Services provided to the landowner by the tenant

LEASING

Is the process of operating on someone's land for a specified period of time in return for rent. This variable is indicated by:

- Lease income
- Size of land under lease
- Total number of years of leasing
- Number of tenants who have operated on the land
- Proportion of land under lease

Dependent variables

HOUSEHOLD INVESTMENT

Is an economic activity that foregoes consumption today with an eye to increasing output in the future and secure livelihood security. It is used here to refer to any observable livelihood activities undertaken, achievements made and assets acquired from the deliberate expenditure of lease income. This variable is measured by:

- Purchase of land
- Construction of rental houses

- Excavation of earth dams/sinking a borehole
- Purchase of productive cattle
- Purchase of commercial vehicles e.g *Matatu*
- Purchase of a *Posho* mill
- Erecting a Fence
- Engagement in cattle trade
- Running a retail business
- Crop farming
- Meeting education costs
- Building of a residential house

CHANGES IN HERD MANAGEMENT

This refers to the methods employed in the care and rearing of livestock that have come about since households started leasing out land. These methods were not traditionally employed by pastoralists. They are part of the coping strategies and also a response to modernisation.

- Whether the herd is based elsewhere (at a friend's or relative's)
- Changes in inputs and equipment use
- Improvement of breeds
- Changes in herd size
- Changes in herd composition
- If there is a change in the type of fence of the kraal / boma
- If there are changes in type of forage

- If there are any crushes built
- If there are hired shepherds.
- Whether herds have been split[1]

COUNTER PRODUCTIVE

Refers to any activity that has an opposite effect than intended (Wehmeier 2000).

This variable is measured by:

- Household indebtedness
- Absence of terraces.
- Inability to educate children if tenants migrate
- Difficulty in meeting basic needs if tenants migrate
- Visible bare patches on the leased out land
- Appearance of gulleys on leased out land
- Rate of alcohol consumption
- Lack of future investment plans

[1] Pastoralists traditionally split their herds as a response to drought. In this case, however, herd splitting occurs due to a reduction in grazing land caused by farmland leasing.

CHAPTER 3

METHODOLOGY

3.1 SITE SELECTION AND DESCRIPTION

The study site is Narok District. It lies on the South-Western tip of the country. It shares common borders with several other districts namely: Bomet and Nakuru to the North, Kajiado to the East and Transmara to the West. It shares the border with Tanzania to the South. The District lies between Latitude 0°50° and 2°05 South and Longitudes 35°58 and 36°05 east and covers an area of about 17,128 km^2. It is divided into six administrative divisions. The topography of the district consists of highlands rising over 2300m and lowlands of 1,000 – 1500m above sea level. The district experiences a bimodal type of rainfall with peaks during the month of March to June and low to medium rainfall between October and March. The rainfall is unevenly distributed with an annual average rainfall ranging from 500mm to 1800 mm. The Northern and Western parts of the district are the wettest recording an average annual rainfall of between 1200mm and 1800mm.

The district can be divided into five Agro-ecological Zones. There is the tropical Alpine zone, which is mostly suitable for sheep and cattle grazing. The district also has an upper highland zone, which is suitable for sheep and dairy cattle rearing, as well as wheat, pyrethrum and forestry production. The third zone is the upper midland zone mostly used for coffee, tea and maize production. The lower midland zone on the other hand is used for sorghum, millet, sweet potatoes and livestock production. The fifth zone is the lower highland zone. Land in this zone is basically used for coffee, tea and maize

production (Kenya 1997). The highlands cover Upper Mau, Olokurto and Ilmotiok divisions, while the lowlands cover parts of Osupuko, Ololulun'ga and lower Mau areas. The highlands have rich volcanic soils suitable for intensive agricultural production.

This study is, however, based in two administrative locations of the district: Ntulele and Ololulunga locations. The two form part of the wheat belt of Narok district. They, however, have some differences. Ntulele location has a higher population, partly due to its favourable weather and soils that support agricultural activities. Ololulunga location on the other hand has a lower population attributed to the fact that it comprises of large farms. The two locations have been selected for sampling for a number of reasons.

First, the residents of the two locations have been leasing out their land consistently for the last seven years. Secondly, they also have a high number of Maasai pastoralists leasing out their land. Finally, the two locations have been chosen due to their proximity to two rural towns namely: Ololulunga and Ntulele. This would help to facilitate the research on the influence of rural towns on diversification by landowners.

3.2 CHARACTERISTICS OF STUDY POPULATION

The district has a population of 365,745 people. The study population consists mainly of Maasai pastoralists. They mostly keep cattle, sheep and goats. Livestock, especially cattle have been identified as the traditional asset for accumulation. They, however, grow some crops. The major crops grown are maize, wheat, potatoes, beans and vegetables. The pastoralists have subdivided their parcels such that, they have some land leased for large-

scale wheat farming and the rest is under grazing. Most of the residents derive their income from sale of animals, leasing out land, off-farm and on-farm employment and remittances. The mean monthly income in the district is Ksh 7,799 while the unemployment rate stands at about 6%. About 64 % of the population live below the poverty line according to the 1997 Welfare Monitoring Survey. There are three main banking institutions offering services in the district: Commercial Bank, the National bank of Kenya and Post Bank. Both administrative locations have livestock market days, when the residents can buy and sell their animals. Ntulele location has two market days per week: Tuesday and Saturday. Ololulun'ga location on the other hand, has Tuesday as its sole market day.

There is also a high illiteracy level among the population. There are however school going children, both at secondary and primary school levels in the district. The current enrolment in primary schools is 79,411. There are a total of 44, 355 boys and 35, 056 girls. This enrolment is still low, since less than half (46%) of the eligible children are in primary school and only 11 % are at the secondary level (IEA 2002). There are 293 primary and 23 secondary schools in the district. These institutions are, however, not enough to cater for the whole population. The main religions are African Traditional religion and Christianity. Access to water is a major problem for both locations. The common diseases facing the population include: malaria, typhoid, urinary tract infection and brucellosis (IEA 2002).

3.3 SAMPLING PROCEDURE

In undertaking the study, both probability and non-probability sampling procedures were used. The two administrative locations were selected purposively. The main survey involved eighty respondents selected from the two locations. The simple random sampling method was used to select the respondents. Since it was not possible to get a sampling frame on the land-leasing households, the researcher had no choice but to develop one. This was done with the help of some key informants and some individuals who had conducted the national population Census in the area in 1999. A sampling frame was prepared for each location. Once the sampling frames were ready, forty people were selected for the study from each location using the paper and basket method. The researcher began by assigning numbers to all farm leasing households on the sampling frame from Ololulun'ga location. The numbers were then written in separate pieces of paper and folded. All the folded papers were thereafter put in a basket that was later shaken thoroughly. Numbers were then drawn from the basket, one after another, until the sample size was reached. The same procedure was then repeated for Ntulele location. A total of ten key informants were also interviewed. Their selection was however done purposively. It was based on their length of stay in the area, knowledge of issues of the area and general experience.

3.4 DATA COLLECTION PROCEDURE

The study was mainly based on primary data. The following methods were be used.

i) A survey

ii) Key informant interviews

iii) Direct observation.

Survey

Interviewer administered questionnaires were used. Close and open-ended questions were asked. The questionnaires were mainly targeted at the household head, as the unit of observation. The key issues that the questionnaires covered included: the socio-economic and demographic characteristics of the respondents, farmland leasing as a practice, the reasons behind farm leasing, the influence of farmland leasing on household investment and herd management and finally, the future of farm leasing as a livelihood strategy.

Key Informant Interviews

This data collection tool was an interview guide with open-ended questions. The interviews were expected to generate expert information about the two locations based on the research objectives. The key informants interviews supplemented the information generated from the questionnaires. They were supposed to offer information on the reasons why households lease out their land and why some households do not put their lease income into long-term use. They were also to provide information on any negative effects that could be associated with farmland leasing. Finally, they were to give an expert opinion on the future of farm leasing as a practice and as a livelihood strategy.

Direct Observation.

This was done alongside the interviews. The researcher's eye was used as a data collection tool. This helped to confirm what respondents said e.g. size of the farm, household investments or assets.

3.5 DATA ANALYSIS

Both qualitative and quantitative methods were used. For quantitative data, the Statistical Package of Social Sciences (SPSS) and MS Excel were used. The analysis of the qualitative data was ongoing i.e. it started right from the field. The data from the field notes was first organised into categories. The information was then coded by assigning numbers to the categories and analysed with the aim of searching for emerging patterns, themes or consistency in ideas. The information was finally evaluated to determine its usefulness in answering the research questions.

Percentages and cross tabulations and Pearson correlation coefficient were the main tools of analysis.

Percentages

To facilitate comparison, frequencies were converted to percentages. A percentage is defined as the proportion of a subgroup to the total group or sample and ranges from 0 to 100.Percentages reflect the relative weight of a specific category in a distribution (Mugenda and Mugenda 1991; Nachmias and Nachmias 1996). Percentages were mainly used in this study to compare the frequency distributions.

Cross-tabulation

This involves the use of two-way and multi-way tables to show the relationship between two or more variables. The tables were used in this study to make comparisons between variables with the aim of establishing relationships and patterns.

The Pearson Correlation Coefficient (r)

The correlation technique is used to analyse the degree of relationship between two variables. The computation of a correlation coefficient yields a statistic that ranges from – 1 to 1. The Pearson correlation coefficient is used when both variables in a hypothesis are measured at ratio or interval scales and are continuous. However, variables that are categorical are also used in computing the Pearson correlation coefficient by changing them into dichotomous categories. In this study the correlation coefficient is used to test the strength of relationship between the variables.

3.6 FIELD PROBLEMS

In the course of doing the fieldwork the following problems were encountered.

1. Some respondents were not comfortable with some of the questions asked. Many were dejected when asked whether they consumed alcohol. The concerned respondents were, however, assured that the information was confidential and would not be used against them in any way.
2. The respondents who receive the lease income in instalments had difficulties remembering how much they were paid in total. They had to be probed further to get the right information.

CHAPTER 4

SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS

This chapter aims to give the characteristics of the people in the study. These include: their age, gender, educational level, marital status, number of children, number of children in school, size of land, the number of cattle owned and ownership of a bank account. These characteristics are discussed first, so as introduce the people in the study. It is also done with the realisation that these characteristics have a major implication on the research question.

4.1 Age

Study findings show that more than a third of all respondents (38 %) were aged between 31 and 40 years. They were closely followed by those aged between 41 and 50 years (33%). Those aged between 21 and 30 years made up about 18 % of the respondents. The situation differed slightly at the location level.

More than a quarter of the respondents (28%) at Ololulun'ga location were aged between 21-30 years. However, the majority were aged between 31 and 40 years. Close to a half (45%) of the respondents at Ntulele location were also from the 31 to 40 years age bracket. This location, however, had very few (8%) of those aged between 21 and 30 years. Those aged 61 years and over were the fewest of the respondents in both administrative locations. The mean age of all the respondents was 41 years.

Table 1: Age of Respondents

Age	Study Area		Total
	Ololulun'ga n= 40	Ntulele n = 40	n=80
21-30	27.5	7.5	17.5
31-40	30	45	37.5
41-50	27.5	37.5	32.5
51-60	-	7.5	3.8
61-70	5	-	2.5
71-80	10	2.5	6.3
Total	100	100	100

Source: Field Data

The findings on Table 1 show that most of the respondents are young. This therefore means that they are at their most productive and reproductive years. The implication of this is that part of the income that they receive from farm leasing could go towards consumption by their young families. Being young also means that they are dynamic and more receptive to new ideas than the older generation. They are, therefore, likely to invest their lease income in non-pastoral activities.

4.2 Gender

More than three quarters (79%) of the respondents were male, while the remaining 21% were female. Both locations showed a similar pattern in the sex of respondents. They both had more male respondents.

Table 2: Sex of respondents

Sex	Study area		Total
	Ololulun'ga n= 40	Ntulele n = 40	n=80
Male	80	77.5	78.8
Female	20	22.5	21.3
Total	100	100	100

Source: Field Data.

The above table suggests that most of the households are male headed, considering that the unit of observation in the study was the household head. This implies that the male is dominant. This therefore means that men exercise control over productive resources of the household including land. As a result, they are more likely to exercise control as regards the size of land to be leased out and decisions on expenditure or investment of the lease income.

4.3 Level of education

More than two thirds of the respondents (69%) had never gone to school. There were, however, some who had reached various levels of formal education. About 14 % reached primary school level, 8 % secondary level and 6% attended adult education classes. Only 4 % reached the post-secondary level. Ntulele location had a higher level of illiteracy than Ololulun'ga. The number of those who had attended primary and post – primary was also higher in Ololulun'ga location.

Table 3: Distribution of respondents according to their level of education

Education level	Study area		Total
	Ololulun'ga n= 40	Ntulele n = 40	n=80
None	57.5	80	68.8
Primary	22.5	5	13.8
Secondary	10	5	7.5
College	2.5	5	3.8
Adult	7.5	5	6.3
Total	100	100	100

Source: Field Data

The above results show that the rate of illiteracy is high in the two locations. This is likely to have major implications as regards participation in the cash economy. This is also likely to affect the path that these people choose to invest their lease income. The slight difference in the number of educated individuals in the two locations is likely to reflect itself in the ways that they invest their lease income. The educated individuals are more likely to use their lease income to diversify into non-pastoral and non-farm activities.

4.4 Number of wives

The results show that close to half (46%) of the respondents had two wives. There was, however, a significant number (35%) who had one wife. There was a great similarity as regards the number of wives per respondent, in both locations. The two locations had almost the same percentage of respondents with two wives. Infact the mode for the number of wives per respondent in each of the locations was two. The pastoralists in the

study prefer more than one wife for management reasons. They observed that two wives are better than one in caring for the livestock especially the young ones.

Table 4: Number of Wives

Number of wives	Study area		Total
	Ololulun'ga n= 40	Ntulele n = 40	n=80
None	5	2.5	3.8
One	32.5	37.5	35
Two	47.5	45	46.3
Three	10	12.5	11.3
Four	5	2.5	3.8
Total	100	100	100

Source: Field Data.

The above results shows that most of the households are polygamous. The implication of this is that households might have many dependants in the years to come. This might, therefore, mean that much of the lease income could be spent on consumption and less on household investment. Secondly, there is a likelihood that the same land that is currently leased out might be sub-divided among the dependants in future. There might, therefore, be less land available for leasing.

4.5 Children in school

The majority of the respondents (31%) had children at the nursery / primary level. This is also visible at the location level, where more than a third (34%) of the respondents at Ntulele had their children at the nursery/primary level. A similar scenario was also

observed at Ololulunga, where about 30% of the households had children at the same level of education. This means that parents in the study have a challenge of paying for their secondary education in the near future. This, therefore, implies that part of their lease income will be spent on meeting education costs.

4.6 Ownership of a bank account

The respondents were first asked whether they owned a bank account. It is interesting to note that only 27% owned one. The majority (74%) did not. However when analysed at the location level, over 90% of the households at Ntulele location were found not to own a bank account. This was, however, different in Ololulun'ga location where about 45 % of the households operated bank accounts. The study observed that the pastoralists preferred livestock as their mode of accumulation than saving in banks. This implies that the Maasai pastoralists are likely to invest their lease income in livestock than putting it in bank accounts.

4.7 Cattle owned

An overwhelming majority (98%) of the respondents rear the traditional Zebu breed of cattle. It was also found that the majority (34 %) of the households owned between one and twenty heads of cattle. They were followed by those (26%) who owned between forty and eighty herds of cattle. The situation was, however, very different at the location level. The majority (35%) of the households at Ololulunga location owned more than eighty heads of cattle. This differed sharply with Ntulele location where more than half owned between one and twenty cows. Study findings, however, show that the mean size

of cattle owned by the households in the study was 59. The minimum size was 4, while the maximum was 400.

Table 5: Size of herds

Size of Herd	Study area		Total
	Ololulun'ga n= 40	Ntulele n = 40	n=80
1-20	15	52.5	33.8
21-40	17.5	17.5	17.5
41-80	32.5	20	26.3
81 and above	35	10	22.5
Total	100	100	100

Source: Field Data.

The above data shows that the households own large herds of cattle. The number of animals owned could even be higher considering that they also rear sheep and goats. With such large herds, households are likely to run into management challenges given the fact that part of their potential grazing land is leased out. This therefore implies that households may have to develop some coping strategies.

4.8 The Size of land

There was a sharp variation in the size of land owned by the households in the study. This was most visible when viewed from the location level. About 90 % of the households at Ololulun'ga location owned more than 100 acres. There were very few (3 %) who owned 20 acres or less. On the other hand, more than half of the households in Ntulele location (56%) owned 20 acres of land or less. Those who owned more than 80 acres were a paltry 8 %. The mean size of land in Ololulun'ga Location was 119 acres per household,

compared to 28 acres per household in Ntulele. This difference could be due to the fact that there is a lower human population at Ololulun'ga Location than at Ntulele.

Table 6: The size of land

Land size	Study area		Total n=80
	Ololulun'ga n= 40	Ntulele n = 40	
20 or less	2.5	57.5	30
21-40	2.5	22.5	12.5
41-60	-	12.5	6.3
61-80	-	-	-
81-100	2	7.5	6.3
101 or more	90	-	45
Total	100	100	100

Source: Field Data.

The above results suggest that there is more land available for leasing at Ololulun'ga than Ntulele location. This implies that the lease income could be higher at Ololulun'ga. The households in the location are therefore expected to be well-off in terms of assets ownership compared to their Ntulele counterparts.

This chapter has described the socio-economic and demographic characteristics of the household in the study. The next chapter will discuss farmland leasing as a practice.

CHAPTER 5

FARMLAND LEASING AS A PRACTICE

This chapter discusses farmland leasing as it is practiced in the district. It is divided into two sections. The first section gives the characteristics of farm leasing. This includes: lease income, years of leasing, the land under lease, type and number of tenants and the payment mode. The next section of the chapter discusses the reasons why the households lease out their land.

5.1 Characteristics of farmland leasing

5.1.1 Years of leasing

Farmland leasing has taken place in the district for a long time. Study findings show that the majority (61%) had leased out their land for between six and ten years. They were followed by those who had leased out for between one and five years (36%). Only 3 % had leased out for eleven years or longer.

Table 7: Distribution of households according to how long they have leased out their land

Number of years	Frequency	Percentage
1-5	29	36.3
6-10	49	61.3
11-15	2	2.5
Total	80	100

Source: Field Data

The above table shows that land leasing is not new in the district. The likely reason why many started leasing out in the years 1995 and 1996 is the individualisation of land. Most people acquired individual parcels around this time. However, there are a few people who

acquired pieces of land informally before 1994 when the land was still under the group ranch system. This could explain why some indicated leasing out for over seven years. This implies that the individualisation of land could have given freedom to pastoralists to start leasing out their land. This is supported by Bernstein (2000), when he posits that, in a modern world, land becomes a commodity to be freely sold and rented without restriction by customary laws, rights, monarchs, feudal codes, peasant communities or whatever else. This is because land becomes individual property.

5.1.2 The lease fee

The Lease fee per acre differed in the two locations. Ntulele location had a higher lease fee per acre. Close to three quarters (73%) of the households earn Ksh 2000 and more per acre. The lease rate is however lower at Ololulun'ga location, where close to two thirds (65%) earn between Ksh 1000 and Ksh 1500 per acre. The modal lease fee at Ntulele location was Ksh 2400 while that at Ololulun'ga Location was Ksh 1400 per acre. The lease rates per acre for both locations however ranged between Ksh 600-2500 per acre. This is different from the one given by Ikiara et al (1999: 13) of Ksh 1300-2000 per acre.

5.1.3 The land under lease

Most of the households (73%) at Ololulun'ga location had leased out between 41 and 80 acres. However, the majority (95 %) at Ntulele location had leased out between 1 and 40 acres of land. The mean size of land leased out in Ololulu'nga location was 80 acres compared to 16 acres for Ntulele location. This difference in sizes of land leased could be due to the fact that households in Ololulun'ga location own larger parcels of land.

Table 8: Distribution of households according to size of land leased out

Size of land leased out	Study Area		Total
	Ololulun'ga n= 40	Ntulele n = 40	n=80
1-40	5	95	50
41-80	72.5	5	38.8
81-120	15	-	7.5
120 or more	7.5	-	3.8
Total	100	100	100

Source: Field Data

The above results show that households lease out large portions of their land. Indeed, study findings show that more than half of the households leased out between 61% and 80 % of their land. There is therefore less land available for other activities. This implies that most households allocate much of their land to tenants at the expense of other livelihood activities such as pastoralism and crop farming.

5.1.4 Type of tenants

It has emerged from the study that there are two main types of tenants: commercial and small-scale farmers. About 70% of the respondents indicated that they had leased out their land to commercial tenants. They were followed by those who had leased out to small-scale farmers (23%). There are however some (1%) who have given out their land to relatives and friends. The rest (6 %) had many types of tenants on their land. It also emerged that the commercial farmers usually prefer to have written leases (see Appendix ii), while small-scale farmers prefer oral agreements (oral leases).

5.1.5 Number of tenants

Most households (74 %) had one tenant on their land, followed by 15% who had two tenants. Only 8 % of the households were found to have more than two tenants on their land. The study also showed that many households have not had many tenants on their land since they started leasing it out. The majority (43%) have only had two tenants since, followed by those who have had three tenants (28%). A further 18 % have only had one tenant ever. Only 7 % have had more than 4 tenants. This low turnover in the number of tenants could be due to the fact that some tenants lease-in particular tracts of land for long periods. This, therefore, suggests that a few large-scale farmers lease-in most of the land in the two locations. Indeed, according to the Narok District Development plan (1997), such farmers are capable of managing 100 hectares or more.

5.1.6 Lease income

Study findings show that more than a third (36%) of the households earn between Ksh 4,000 and Ksh 30,000 per year. The remaining 64% earn between Ksh 30,000 and Ksh 169,000. However among this group, the majority are those who earn between Ksh 60,000 and Ksh 90,000 per year. The mean lease income for both locations was Ksh 63,998 per year. Ololulun'ga location however had a higher lease income of Ksh 94,663 compared to Ksh 33,333 at Ntulele location. The lowest income recorded during the study was Ksh 4,000 while the highest was Ksh 169,000 per year.

Table 9: Lease income during the last Period

Lease income (in Ksh)	Frequency	Percentage
30,000 or less	29	36.3
30,001-60,000	10	12.5
60,001-90,000	19	23.8
90,001-120,000	14	17.6
120,001 or more	8	10
Total	80	100

Source: Field Data

Lease income in this study did not only refer to the money paid out by tenants but also to any services provided by the tenants to the landowners. About 36% of the respondents indicated that they received services from their tenants. Tractor services were mentioned by most (66%) as the type of service offered. Other services received included farm labour (7%), and transport (7%). Some (21%) received both transport and tractor services. The majority (76 %) said that tenants usually subtract the service fee. It is however interesting to note that some tenants offer this services free of charge. About 24% of the respondents said that they received the services free of charge.

The above findings show that most households earn quite a substantial amount of money. This means that farm leasing has become a source of income for most households. They are therefore likely to continue leasing out land to continue getting more of this income. The fact that some tenants offer tractor services to landowners also suggests that leasing not only provides income but also brings in opportunities for pastoral households to diversify into crop farming.

5.1.7 Payment mode

There are two main modes of paying the lease rent: instalments and lump sum. The majority (70%) of those interviewed received their lease income in lump sum. The remaining 30% receive theirs in instalments. The mode of payment has some implications on the households. Those that receive payment in instalments are disadvantaged since the money comes in small portions. The money might therefore not be enough for one to make significant investment. It may end up being spent on consumption. Households that receive payment in lump-sum on the other hand, might be better off since they can plan to spend the whole amount on a single investment.

5.2 Reasons for leasing out land.

One of the objectives of this study was to investigate the reasons behind farmland leasing. It was hypothesized that, the monetisation of the pastoral economy has led to farmland leasing. Study findings have shown that there are four main factors why pastoral households lease-out their land. However, most respondents gave more than one reason when asked why they leased out their land. Therefore, during the analysis, the frequency of responses was considered over individual cases to cater for the multiple responses.

The need for money emerged as the main reason accounting for 56 % of all responses. Secondly, many (41%) leased out because they were unable to utilise their land. There are others (2%), who leased out their land so that tenants can clear and open up virgin

lands for them. Finally, about 1 % lease out land so that they can get some fodder for their animals.

Table 10: Reasons for leasing-out Land

REASON	FREQUENCY	PERCENTAGE
The need for money	64	56
Inability to utilise the land	47	41.2
To be cleared up	2	1.8
To get animal fodder	1	0.9
Total responses	114	100

Source: Field Data.

The discussion below looks at each of the reasons for leasing out land and their significance to the study.

5.2.1 The need for money

The findings in Table 10 show that the main reason why households lease out their land is to get money. For many households, leasing has become an additional source of income after pastoralism. Many lease out their land so as to get money to cater for the basic needs that the sale of cattle cannot meet. Some households also have large portions of land that are not in any use other than communal grazing. It is therefore more economical to lease it out. Raleigh (1958) reports a similar case in the United States of America, where landlords leased out their surplus land resources that they did not wish to operate in order to receive monetary returns. The above results, therefore, imply that the

households will continue to lease out their land for as long as they have a need for money.

5.2.2 Inability to utilise the land.

Many of the households were interested in carrying out large-scale wheat and maize farming on their land, but they were inhibited by lack of capital. It seems that many of the households could not afford most of the inputs needed for farming. This is confirmed by Cornhiel and Sanjak (1999) when they postulate that, lack of capital for production and investment in the land appears to be one of the principal reasons why small-holders rent out their land. Poor households with land do not have access to minimal capital needed for production, particularly as commercial agriculture becomes more dependent on expensive commercial inputs and infrastructure. The implication of this is that if these households were to get adequate capital to work with and therefore utilise their land, then leasing of farmland could reduce significantly.

5.2.3 Clearing purposes

Some households lease out their land, for the sole purpose of it being opened up. Most of the tenants are eager to cultivate on virgin lands due to their high soil fertility. The commercial farmers usually use bulldozers to remove trees and shrubs. Small-scale tenants on the other hand mostly employ the services of charcoal burning merchants to clear the land. During this time, there is usually a zero-rent agreement between the tenant and the landowner. This becomes an incentive to the landowner, since he is able to have his land opened up without incurring much costs. Some respondents reported that they

stopped leasing out part of their land once it had been completely cleared up. This implies that by leasing out their land, some pastoral households manage to create for themselves open land that can be used for other livelihood activities like crop farming.

5.2.4 Animal fodder

Some pastoralists lease out their land so as to get fodder to feed their animals. There is usually abundant fodder once the wheat and maize planted by tenants is harvested. The animals feed on the maize and wheat stalks and other residue that remain. This is usually important since it provides dry season feeding for the animals. Rainfall during this time also causes grass and wheat grains that spill during harvesting to germinate, hence providing forage for livestock. It was however observed that more agricultural residue is found in farms leased in by commercial farmers than subsistence farmers. Table 11 shows that about 73 % of those who hold written leases (with commercial farmers) get fodder once the crop is harvested, while about 60% of those who hold oral leases do not get fodder for their animals at harvest.

Table 11: Type of Lease held in relation to availability of Fodder

Availability of fodder	Type of Lease Held		
	Written n=56	Oral n=22	Total n=78
Yes	73.2	40.9	64.1
No	26.8	59.1	35.9
Total	100	100	100

Source: Field Data

The findings in Table 11 show that those who lease out to commercial farmers derive more benefits in terms of animal forage. This is because commercial farmers mostly plant wheat. Once it has been harvested livestock get forage from the wheat stalks and other vegetation on the land.

5.3 Farmland leasing and monetisation of the pastoral economy

It was hypothesized that the monetisation of the pastoral economy has led to farmland leasing. Monetisation refers to a process where money increasingly becomes the medium of exchange in a society. A price value is attached to goods and services. There is therefore a great demand for money. Various aspects of monetisation were noted among the pastoral households in the study. This was indicated by their ownership of purchased oxen[2] and by their preference for commercial farmers.

5.3.1 The ownership of purchased oxen and size of land leased out

Study findings show that the majority (53%) of those who own purchased oxen had leased out between 40 and 80 acres of land. The case was, however, different among those who did not own purchased oxen. The majority (61%) of them had leased out between 1 and 40 acres, while about 27 % had leased out between 41 and 80 acres.

[2] The ownership of purchased oxen has been used as an indicator of monetisation. This is because those pastoralists who own these oxen have interacted with the money economy through the livestock market.

Table 12: Ownership of purchased oxen in relation to Size of land leased out

Size of Land leased out (acres)	Ownership of purchased oxen		Total n=80
	Yes n=36	No n=44	
1-40	36.1	61.4	50
41-80	52.8	27.3	38.8
81-120	8.3	6.8	7.5
121-above	2.8	4.5	3.8
Total	100	100	100

Source: Field Data

The above table shows that those who owned purchased oxen leased out more acres of land than those who did not. This difference could be due to the desire among those who own purchased oxen to earn more lease income. The desire could have arisen out of their interaction with the market economy. They might therefore understand the value and potential of money more than those had not purchased oxen from livestock markets.

5.3.2 Preference for commercial farmers

Most of the respondents (46%) indicated that they preferred to have commercial farmers as tenants. They were followed by those who preferred small-scale farmers (31%). The fewest (23%) were those who preferred relatives and friends (23%).

Table 13: Type of tenant preferred

Tenant type	Frequency	Percentage
Commercial farmer	36	45.6
Small-scale farmer	25	31.6
others	18	22.9
Total	79	100

Source: Field Data

The above results show that most households would prefer to have commercial farmers on their land when given a choice, while very few preferred to have relatives and friends as tenants. This suggests that their preference is influenced by factors beyond social capital. It is likely that their preference for commercial farmers is linked to the need to earn more money. This is because commercial tenants are entrepreneurs driven by the need to make profit. They are therefore likely to lease-in more land and hence pay more income.

This chapter has generally discussed the reasons why households in the study lease their land to commercial and small-scale farmers. The next chapter looks at how the pastoral households invest the income that they receive from farmland leasing.

CHAPTER 6

FARMLAND LEASING AND INVESTMENT PATTERNS

This chapter discusses how households in the study area invest their lease income. According to Sen (1981) an individual can use his endowments to establish an entitlement i.e. the ability to acquire other assets and commodities. In other words, investments are a function of the resources at hand. Study findings show that the households sampled had used land as an endowment to establish their entitlements. They are now able to earn lease income, which has given them the capability to do many other things. Many households have managed to invest in capital assets, education, farming and business.

This chapter is guided by the hypothesis that, lease income has an influence on household investment patterns. It begins by giving an overall description of how the households have invested their lease income and then goes on to discuss the influence of farmland leasing on each of the major investments pursued by the households.

6.1 Overview

Education turned out to be the most common investment, accounting for 27 % of all responses. It was closely followed by the purchase of livestock at 24%. Crop farming came in third with 19% of all the responses. Other investments that had a significant number of responses included: building a residential house (9%), developing the land (9%), purchasing land (4%) and developing a water resource i.e. earth dams, boreholes or water tanks (4 %). Only 2% of the households said that they had put up rental buildings,

while the purchase of *Posho-mills* and tractors jointly accounted for less than 1% of all responses.

Table 14: How households have been investing their lease income

INVESTMENT TYPE	FREQUENCY	PERCENTAGE
Education	213	27.13
Purchase of livestock	186	23.69
Crop farming	147	18.73
Building a residential house	69	8.78
Developing the land	67	8.53
Purchased land	34	4.33
Developing a water resource	29	3.691
Putting up rental houses	12	1.53
Fencing the *Kraal/ boma*	11	1.40
Construct a granary	6	0.76
Established a business	4	0.51
Purchased a tractor	3	0.38
Money invested in a bank	2	0.25
Bought a chainsaw	1	0.13
Bought a *Posho* mill	1	0.13
Total Responses	785	100

Note: Some respondents gave more than one response.

Source: Field Data

The above results show that households invested their lease income in various ventures. The Table shows that respondents invested in activities other than pastoralism. Education seems to be the most favoured investment. This could mean that pastoralists have realised the importance of having educated children. The purchase of livestock is the second most practiced investment after education. This could imply that even though pastoralists invest in other activities, a large part of the lease income is still invested in their main

livelihood activity. This is further demonstrated by the number of households that have invested in livestock related activities namely: fencing the boma, purchase of land and development of water resources.

It can also be noted from the Table that crop farming and business are the main livelihood activities that pastoralists in the study diversify into. However, the proportion that indicated investing their lease income in business is very small. It is also interesting to note that very few of these pastoralists had spent their lease income on major investments like tractors and rental buildings. The few who had managed to acquire such assets mentioned that they had combined their lease income and money from other sources to acquire these assets. It is therefore implied that pastoralists need to have other sources of income to supplement their lease income in order to make significant investments.

6.2 INVESTMENTS

6.2.1 Education

Lease income has been invested heavily in the education of children. Over 85 % of the households indicated that lease income had helped them to buy school uniforms, schoolbooks and pay tuition fees. It is, however, important to note that the study was conducted a few months after the introduction of free primary education in Kenya. The respondents were therefore partly referring to the primary education expenses they offset before January 2003.

The respondents were then asked to estimate the size of their lease income consumed by education. The results showed that the majority (28%) spent most of their lease income

on education. There was however a substantial number (24%) that indicated that it consumed little. These two differences could be due to the level of education the children had reached. More than a third of those who indicated that education consumes most of their lease income had children at all levels of education i.e. primary, secondary and college. Their financial obligation could therefore be high. On the other hand, the majority of the households that indicated that lease income consumed little of their lease income, had children at the nursery / primary level. Their financial obligation could therefore be lower, assuming that the children are in public schools.

Table 15: Size of lease income consumed Education

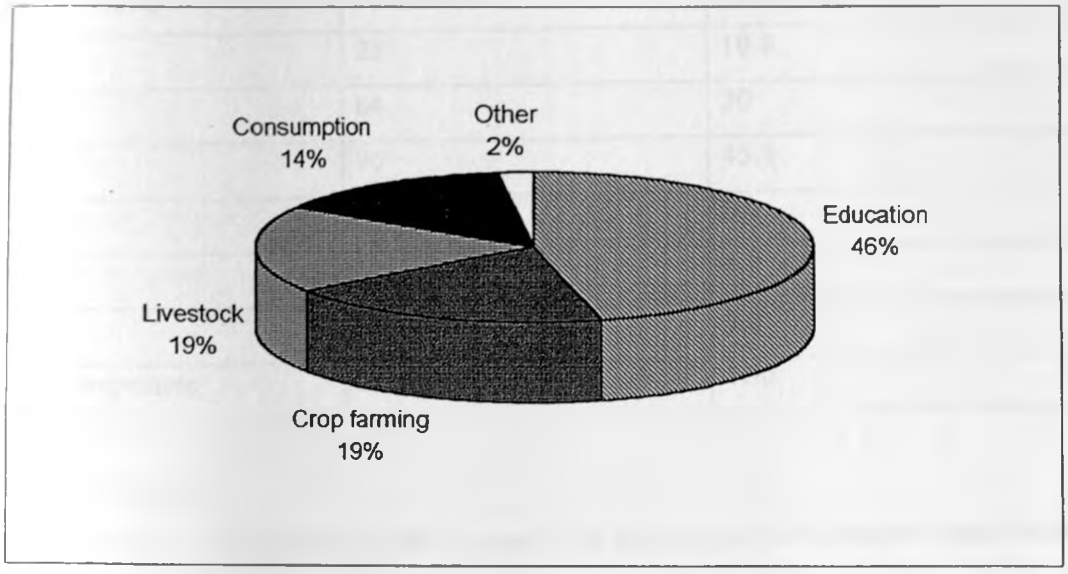
Size Consumed	Frequency	Percentage
None	1	1.3
Very little	11	14.7
Little	18	24
Half	13	17.3
Much	11	14.7
Most	21	28
Total	75	100

Source: Field Data.

The findings in the Table above show that lease income has been invested heavily in the education of children. This investment is likely to continue given the fact that the majority of the respondents still have children at the primary school level of education.

Most of the households (45%) also ranked education as the activity that consumes most of their lease income.

Figure 1: Activity consuming most of the lease income



Source: Field Data

The above chart shows that education costs consume a considerable part of the lease income. This suggests that the households consider the education of their children to be their most important investment. The implication of this is that households will continue spending most of their lease income on education as long as they have children in school. The share of the lease income taken by education costs is also likely to increase as children progress into higher levels of schooling.

The investment of lease income in education also varied among the various age categories. Those respondents aged between 41 and 50 years had invested in education more than any other age category. Those aged between 21 and 30 years had invested less of their lease income on education. Investment in education was however lowest among those aged 50 years and above

Table 16: Investment in education by age group

Age category	Frequency	Percentage
21-30	23	10.8
31-40	64	30
41-50	96	45.1
51-60	2	0.9
61- 70	7	3.3
71-80	21	9.9
Total responses	213	100

Source: Field data

The above Table shows that parents at a particular age category invest more of their lease income in education more than others. This could be because they have children at higher levels of education. It is therefore implied that those households with children at lower levels of education are also likely to spend much of their lease income on education in years to come.

6.2.2 Crop farming

This study also sought to know whether pastoral households invested their lease income in crop farming. Study findings show that all respondents were engaged in crop farming. They mostly grew wheat, maize and beans. An overwhelming majority (95%) said that the leasing out of land has influenced their entry into farming. Farmland leasing was found to have influenced investment in crop farming by pastoralists in four major ways.

First, it has enabled them to acquire the capital to engage in farming. Over 90% have managed to hire farm machinery, purchase inputs and pay for farm labour from their

lease income. It is interesting to note that about 12% of the respondents use their lease income to lease in land to grow crops.

Table 17: Contribution of lease income per farm activity

Farm activity	Yes	No	Total
Purchase of farm inputs	98.8%	1.2%	100
Payment of farm labour	96.3%	3.7%	100
Hiring of farm machinery	93%	7%	100
Building granaries	82.5%	17.5%	100

Source: Field Data

Secondly, many pastoralists have benefited from services from the tenants. One respondent said that he leases out his land in order to get the opportunity to use the tenant's tractor. Indeed, study findings show that tenants ploughed portions of land for 31% of the households in the study. These portions usually lay side by side with the tenants land. About two thirds of these households grow wheat in these portions. Thirdly, farmland leasing has led to the opening up of land. Tenants usually clear up using bulldozers. Alternatively, some landowners clear up the land by themselves in order to get some tenant to lease it in. This therefore provides the landowner with suitable land for farming.

Fourthly, tenants are gradually socialising pastoralists to get into farming, especially wheat farming. Over the years, pastoralists have learned by observing the farming techniques and inputs employed by tenants on their land. About half of the respondents indicated that they are engaged in small-scale wheat farming. Many of them, however, do it in groups to spread risks. It has emerged from the above findings that the leasing out of land has greatly encouraged pastoralists to invest in farming. This implies that the

increased interaction of tenants and pastoralists is likely to influence the latter to invest more in crop farming.

Investment in crop farming by the pastoralists was found to vary with the size of land leased out. The majority of those who invested in farming had leased out between 50% and 100 % of their land. Very few of those who had leased out between 1% and 50 % had invested in crop farming. This could be due to the fact that those who leased out larger proportions also got higher incomes. They might therefore have more capital to invest in crop farming.

Table 18: Investment in crop farming by proportion of land leased out

Proportion (%) of land leased	Frequency	Percentage
1-50	27	18.4
51-100	120	81.6
Total responses	147	100

Source: Field data

The results in Table 18 suggests that the size of land leased out also influences the extent to which one can invest in crop farming. It is implied that pastoralists need to lease out larger proportion of their land in order to make significant investments in crop farming.

6.2.3 Business

The study found that there were very few households in the study that were involved in business. However, about 77 % indicated that they had at one time been engaged in business. Of these, 58 % had been engaged in cattle trade. It emerged that the majority

got their capital from the sale of livestock and from their lease income. About 31 % got their business capital from the sale of cattle, while 26 % got directly from lease income. Another 31 % indicated that they derived their capital from both the sale of cattle and from lease income.

Table 19: Source of Business capital

SOURCE OF CAPITAL	FREQUENCY	PERCENTAGE
Sale of cattle	19	30.64
Lease income and Sale of cattle	19	30.64
Lease income	16	25.8
Lease income/Sale of cattle/sale of farm produce	2	3.2
Lease income and salary	1	1.6
Lease income/sale of cattle/loan	1	1.6
Lease income /sale of farm produce	1	1.6
Loan	1	1.6
Sale of farm produce	1	1.6
Remittances	1	1.6
Total	62	100

Source: Field data

The findings on the above Table show that farmland leasing plays a substantial role in providing capital for starting and running business. It however appears that lease income in isolation is not enough to run the businesses. One requires other sources of capital to supplement income from farmland leasing. The implication of this is that the contribution of lease income to businesses may not be fully felt unless the households get additional sources of capital.

The study also found that the majority (49 %) of the businesses were based at home while 45 % were based in the neighbouring rural town centres. The remaining 6 % said that their businesses were based in urban centres like Narok and Nairobi. This therefore means that lease income is not only invested locally but also far away.

6.3 Factors that hinder investment

Despite the availability of capital from farm leasing, some households had not made significant investments. The majority (49 %) of these respondents said that the lease income they receive is too little. It is therefore not enough for investment in major assets like tractors and Posho mills. The second reason accounting for 39 % of all responses is education costs. The cost of educating children was cited as a major hindrance to investment in capital assets, since it consumes a lot of their lease income. Other reasons cited included: crop farming expenses (15%), consumption expenses (5%), livestock expenses (3 %), lack of investment plans (3%), payment of credits (1%) and the sending of remittances (1%).

The above results suggest that the choice of the size and type of a household investment is influenced by the size of the lease income earned and the nature of domestic needs. It is therefore possible that most of the households have invested their lease income in education, livestock and small-scale farming since the lease income earned may not have allowed for larger capital investments.

6.4 Future investment plans

Finally, the respondents were asked how they planned to invest their lease income. The majority (21 %) plan to put up rental buildings. This was followed by the purchase of livestock (20 %), crop farming (11 %), putting up residential houses (10 %) and developing water resources (10%).

Table 20: Future Investment Plans

INVESTMENT TYPE	FREQUENCY	PERCENTAGE (%)
Put up rental buildings	28	21.05
Livestock	26	19.55
Crop farming	14	10.53
Fence the land	13	9.77
Develop water resource	13	9.77
Put up residential house.	13	9.77
Education	10	7.51
Purchase land	9	6.77
Start a business	5	3.76
Purchase a tractor	2	1.50
Total responses	133	100

Note: Some respondents gave more than one response.

Source: Field Data.

The above Table shows that rental buildings and the purchase of livestock are the most targeted forms of investment. This could be interpreted to mean that the households are interested in financial stability. By investing their lease income in rental buildings, households are guaranteed of regular sources of income in the form of rent. The purchase of livestock on the other hand enables the households to save. According to Ashley and Naanyenya (2002) livestock can be used as a unit of accumulation. It can then be used to

finance future expenditure. This therefore implies that livestock will still be a valued investment even in the future.

Crop farming was also mentioned frequently as a future investment. This suggests that the pastoral households in the study might invest more in crop farming in the future. Though education had been mentioned as the leading investment among the farm-leasing households, it does not feature prominently in the future investment plans of the households. This could be due to the fact that many consider it to be a temporal investment i.e. investment stops once children are through with schooling. It is also interesting to note that very few households planned to invest their lease income in business. Business is generally considered to be a risky undertaking by the pastoralists. This was also observed by Little et al (2001) when they report that, many alternatives to pastoralism tend to generate low incomes and may actually increase risk during periods of stress.

In summary, farm leasing has been found to play a significant role in influencing the type of investment chosen, size of the investment, the location of investment and future investment plans of the households. The next chapter discusses the effects that farm land leasing has had on pastoralism.

CHAPTER 7

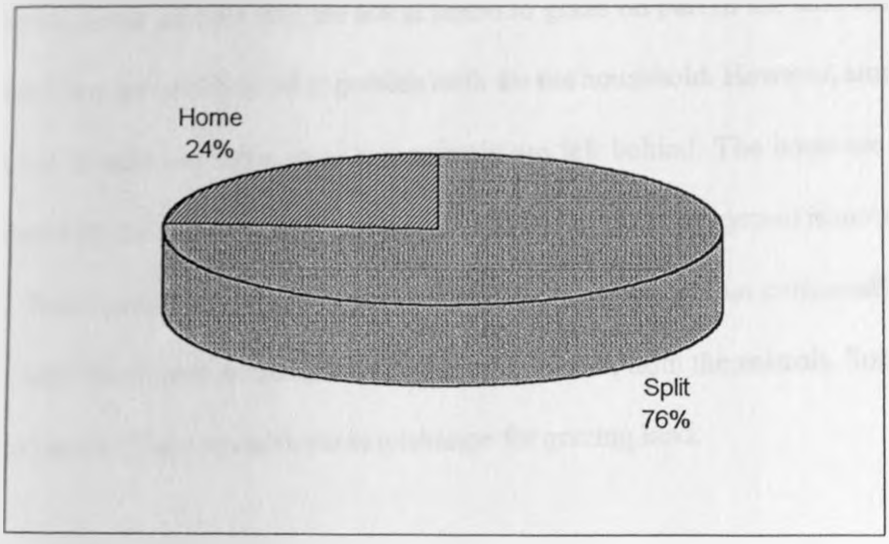
THE EFFECT OF FARMLAND LEASING ON PASTORALISM

One of the objectives of the study was to investigate the effect of farmland leasing on pastoralism. This chapter highlights the effects that the process has had on the main livelihood strategy of the households. Special focus has been given on how farmland leasing has affected grazing land, the size of livestock kept and livestock management. This chapter is guided by the hypothesis that farmland leasing has led to changes in traditional methods of herd management.

7.1 Effect of farmland leasing on the base of the livestock

The respondents were asked to state where their animals were based given the fact that most of the households had leased out more than half of their land. The majority (76%) responded that they had split their flock in such a way that some of the animals grazed on the remaining portion, while others were with friends and relatives or at leased in land. However, 24% said that their animals were based at home and grazed on the portion of the land that was not leased out. It is important at this point to state that pastoralists traditionally split their herds as a response to drought. But herd splitting in this case is attributed to lack of pasture caused by the leasing of land.

Figure 2: Base of livestock



Source: Field Data

Those who stated that their animals were based at their friends or relatives were asked whether they compensated their hosts. Close to two thirds (65%) indicated that they compensated them. Of these, more than half (56 %) compensated their hosts in kind, while 40% compensated them in cash. Another 4% did so both in cash and in kind.

Table 21: Form of compensating the hosts

	Frequency	Percentage (%)
Cash	21	40.38
In Kind	29	55.76
Cash and In kind	2	3.8%
Total	52	100

Source: Field data

The findings have shown that farmland leasing has led to reduction in the size of grazing land. This has made the households to adapt some coping mechanisms. First, many have split their herds. The bulk of the animals is usually with friends, relatives and in-laws.

These hosts are usually based in areas of the district where little or no cultivation takes place. Land in these areas is mostly not privatised. Grazing is therefore free for all. There are, however, some animals that are left at home to graze on part of the land that is not leased out. They are mostly used to provide milk for the household. However, since these portions are usually not large, very few animals are left behind. The hosts are usually compensated for their hospitality though it is not mandatory. The payment is mostly done in kind. Some give bags of maize, packets of flour, sugar and other consumables. The majority also allow these hosts unrestricted access to milk from the animals. Some hosts are given pieces of land to cultivate in exchange for grazing land.

Secondly, some households have resorted to outright leasing-in of land. They agree with landowners to graze animals in exchange for cash. For example, the cost of leasing in grazing land in Ololulun'ga location currently ranges between ksh 6,000 and ksh 7000 per year. This charge is applicable throughout the location, since there is less variation in the sizes of land parcels available for grazing. Thirdly, some decide to buy land to be used for grazing. Many of those who can afford are buying grazing land in other areas of the district. This provides a base for their cattle and sheep.

Once the tenants harvest their crop the landowners usually return their livestock back home to feed on the agricultural residue. It is however important to note that households with very large herds rarely bring home all their animals from their hosts. This is because the forage may not be enough. Once the tenants start cultivating the circle usually repeats itself. Farmland leasing can therefore be said to have triggered a seasonal migration of

livestock. It is, however, different from the traditional form of nomadism since it is not caused by drought but rather by the alienation of land for farming.

It is interesting to note that the majority of those who had split their herds had leased out less land, while most of those who leased out more land had their herds based at home. For example, about 87 % of those who had leased out between 1 and 40 acres had split their herds while less than half (44%) of those who had leased out more than 80 acres had split their herds.

Table 22: Size of land leased out and where livestock is based

Base of livestock	Size of land leased out (acres)			
	1-40 n=40	41-80 n=31	81- n=9	Total n=80
Home	12.5	29	56.6	23.8
Split	87.5	71	44.4	76.2
Total	100	100	100	100

Source: Field data

The above results suggest that the higher the size of land leased out, the lesser the reliance on herd splitting. This could be due to the fact that those who lease out more land also own more land. They are, therefore, able to lease out some part of it and still leave out a considerable portion for their animals to graze on. It is also possible that those who lease out more land also own land elsewhere. The herds might therefore be based in this other land while the other land is leased out.

7.2 Effect of farmland leasing on livestock numbers

Households in the study were found to have experienced changes in the numbers of animals they keep since they started leasing out their land. About 86 % of the respondents indicated that the numbers of their animals have risen since they started leasing out their land, while only 6 % reported that their livestock numbers had decreased. Another eight percent responded that they had not noticed any changes in the size of their livestock.

Table 23: Effect of land leasing on the number of animals reared

Change	Frequency	Percentage
Increased	67	85.8
Decreased	5	6.41
No change	6	7.69
Total	78	100

Source: Field

It is clear from the above results that the numbers of livestock kept by pastoralists have increased since the households started leasing out their land. This could be because the households buy livestock every time they received lease income. Indeed, a fairly strong positive correlation was found between lease income and the number of cattle owned by the pastoralists in the study.

The number of cattle was also found to vary with the size of land leased out. Those households that leased out more land were found to own more cattle. More than half (58%) of those who had leased out between 1 and 40 acres owned 20 cows or less, while more than two thirds (68%) of those who had leased out between 41 and 80 acres had between 21 and 40 cows. However, those who had leased out over 80 acres owned the most number of cows. Over three quarters (78%) of them owned more than 40 cows.

Table 24: Size of land leased out and the Number of cattle owned

No of cattle	Size of land leased out (acres)			Total
	1-40 n=40	41-80 n=31	81- n=9	n=80
0-20	57.5	9.7	11.1	33.8
21-40	15	22.6	11.1	17.5
41-	27.5	67.7	77.8	48.8
Total	100	100	100	100

Source: Field data Pearson's R = 0.465 Sig = 0.0000

The above data shows that the larger the size of land leased out the larger the herd of cattle. Indeed, a Pearson correlation coefficient of 0.465 suggests a fairly strong positive correlation. This therefore suggests that those who lease out more land purchase more cattle compared to those who lease out less from their lease income.

7.3 Livestock composition

One major observation made in the study is the change in the type of livestock kept by the pastoralists. Many of the respondents indicated that they now own more sheep than cattle. This change was reported by about 56 % of the respondents. These changes are directly attributed to farmland leasing. This has happened in three majors ways. First, most of the households prefer to buy sheep on receiving their lease income. Rearing sheep is beneficial since the animals can be sold at any time to meet small household expenditures. Sheep also tend to reproduce faster than cows. This could explain their rise in numbers.

Secondly, as tenants clear land for farming, plains are created. These plains have proved to be very suitable for sheep rearing. This is partly because there are no more shrubs and bushes to harbour parasites like ticks. Thirdly, sheep tend to benefit more from the forage left after tenants have harvested their crop. It was observed that once it rains after harvesting has been done, some wheat usually grows again. This green wheat and grass that grow has proven to be excellent fodder for sheep and hence their rise in numbers. The implications of these findings is that as leasing out of land continues some pastoralists might begin specialising more in sheep farming contrary to what has been the tradition.

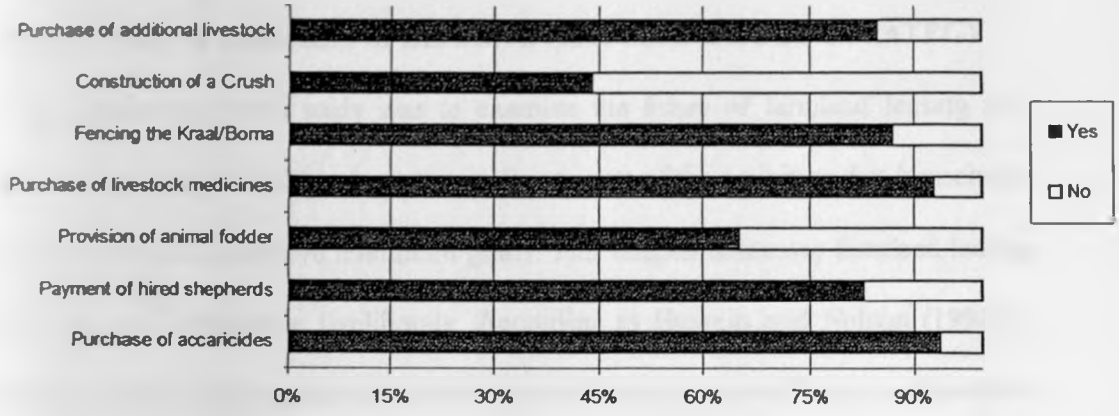
7.4 Improvement of Breeds

Most of the respondents (71%) had attempted to improve their traditional zebu cow. An overwhelming majority (95%) indicated that their lease income contributed greatly in their attempt to improve their breed. The majority (60%) bought an improved bull while 32 % had bought improved heifers. Another 2% had paid for services of an improved bull.

7.5 Effect of farmland leasing on herd management

This study found that farmland leasing as a process has played a significant role in the management of animals. Over 90% of the respondents indicated that farmland leasing has enabled them to acquire various inputs like accaricides and livestock medicine. Over 80% indicated that lease income has enabled them to fence their *Boma*. Less than half constructed a crush from their lease income.

Figure 3: Contribution of lease income to herd management



Source: Field data

It appears from the above figure that farmland leasing has enabled pastoral households to acquire inputs needed for better management of livestock. The implication of this is that the households will go on leasing out their land for continued access to these benefits.

From what has been discussed in this chapter, farmland leasing has been found to have various effects on pastoralism. The study has shown that the practice is contributing to the intensification of pastoralism through provision of capital to purchase inputs, hiring of shepherds, leasing in land for grazing and introduction of a new type of fodder in the form of agricultural residue. Farm leasing has also led to the seasonal migration of livestock, between the sowing and harvesting seasons. In the next chapter, the future of farmland leasing as a livelihood strategy is discussed.

CHAPTER 8

THE FUTURE OF FARMLAND LEASING AS A LIVELIHOOD STRATEGY

The last objective of this study was to examine the future of farmland leasing as a livelihood strategy. A livelihood strategy refers to part of the activities that households make or undertake to achieve livelihood goals. This chapter discusses farmland leasing on the basis of sustainable livelihoods. According to Hussein and Nelson (1998), a livelihood is said to be sustainable if it can recover from stresses and shocks and maintain or enhance its capabilities both now and in the future, while not undermining the resource base. The opposite of sustainable livelihoods is a cycle of impoverishment characterised by household indebtedness, low food stocks, vulnerability, inability to bounce back from temporary set backs and natural resource depletion (Cekan 1992; Scoones 1998).

Some indicators were developed in this study to measure whether farmland leasing is a sustainable livelihood strategy. They included: the trend of the lease fee per acre, environmental effects, household indebtedness, consumption of alcohol and dependency on lease income. The future of farmland leasing has also been measured based on its identity among the pastoralists. Omosa (1998) citing Wallman (1984) argues that a livelihood is equally a matter of ownership, the affirmation of personal significance and group identity.

8.1 The trend of the lease rate

This study was interested in finding out whether the lease rate has been increasing or decreasing. The trend differed sharply in the two locations under study. About 95% of the

respondents at Ololulun'ga Location said that the lease rate had been decreasing over the years. The opposite of this is happening at Ntulele Location. Over 92% responded that the lease rate per acre has generally been increasing. Another 5% indicated that the lease rate has been fluctuating from year to year depending on the availability of rainfall. Only 1% of the respondents noted that there have not been changes in the lease rate.

Table 25: The trend of the Lease rate per location

Location	Increasing (%)	Decreasing (%)	Constant (%)	Fluctuating(%)
Ololulun'ga	2.5	95	2.5	0
Ntulele	94.9	0	0	2
Total	48.1	48.1	1.3	1.3

Source: Field Data

The above Table shows that the trend of the lease rate differs remarkably in the two locations. This sharp disparity could be attributed to the difference in land potential between the two locations. Ntulele Location generally records higher annual rainfall. It is therefore less susceptible to crop failure than ololulunga. Secondly, there are more bags harvested per acre in Ntulele Location. This could therefore mean that the soil at Ntulele location is more fertile. Due to this sharp discrepancy in the trend of the lease fee, it is difficult to forecast the future course of the lease rate. However, if the lease rate continues to decrease in ololulunga, households may earn less and less. They might therefore decide to stop leasing altogether. Conversely, if it continues to rise in Ntulele, households may be spurred to lease on. The implication of this is that the leasing of farmland might become an activity of the highly productive areas of the district. This could mean a loss of livelihood to households in the areas affected.

8.2 Environmental effects of farmland leasing

This study was also interested in finding out whether there are any negative effects that can be associated with the leasing out of land. About 41% of the respondents had noticed the appearance of bare sections on their land since they started leasing out their land. Bare sections are patches of land where there is virtually no topsoil cover. The majority (51%) also indicated that they had noticed the appearance of gulleys on their leased-out land.

Table 26: Appearance of bare sections in relation to appearance of gulleys

Gulleys	Appearance of bare sections	
	Yes n=33	No n=46
Yes	90.9	23.9
No	9.1	76.1
Total	100	100

Source: Field Data

The data in Table 26 shows that the majority of those who have noticed the appearance of bare sections on their land have also noticed the appearance of gulleys. Interestingly, the majority of those who had not noticed the appearance of bare sections had also not noticed the appearance of gulleys. There is therefore a high probability that the farms that have experienced the appearance of bare sections are also likely to experience the appearance of gulleys. The above findings suggest therefore that land degradation could be taking place in some particular leased-in farms. If the current trend continues, the practice might undermine the natural resource base.

The study findings also show that gulleys occurred more in farms occupied by small-scale farmers. More than three quarters (86 %) of those who held oral leases with small-

scale farmers had experienced the appearance of gulleys on their land. The majority (60%) of those who held written leases on the other hand, had not experienced the appearance of gulleys on their land.

Table 27: Appearance of gulleys in relation to type of lease held.

Appearance of Gulleys	Type of Lease		
	Written n=55	Oral n=22	Both n=1
Yes	40	86.4	0
No	60	13.6	100

Source: Field Data

The above findings show that different types of tenants have different effects on the land. Some can cause negative environmental effects more than others. It is therefore implied that number and type of tenant operating on the land might determine the future sustainability of that land resource.

The respondents who had indicated seeing negative effects on their land were asked to give reasons why they continued leasing out their land, in spite of the negative effects. More than half of the respondents (53%) said they continued doing so since they needed the money from leasing. A substantial number (37 %) indicated that they continued leasing out their land since the tenants had promised to conserve the soil.

Table 28: Reasons For Leasing Out Land inspite of Negative Effects

Reason	Frequency	Percentage
To get Money	23	53.48
Tenants promised to conserve the soil	16	37.20
I have no other use for affected land	2	4.65
I construct terraces personally	1	2.35
Unaware that the effects are negative	1	2.35
Total	43	100

Source: Field Data

From the above Table the need for money is the underlying reason why households continue to lease their land, inspite of the imminent threat of it being degraded. This therefore seems to suggest that households are more inclined to meeting their current needs than minding the future sustainability of their land. The implication of this is that farmland leasing could be a threat to the sustainability of the natural resource base.

8.3 Debts based on expected lease income

More than 76 % of the respondents take credit that they hope to repay on receiving their lease income. The majority of them indicated that they mostly take credit from friends. Household indebtedness was reported to be a negative effect associated with farmland leasing. Many households take credit based on expected lease income. Though most households take them from friends, a large proportion of this credit is also taken from tenants, shops and hospitals. This becomes a problem when debts accumulate. Some households spend a large part of their lease income repaying the debts incurred. The debts that are of major concern are those taken from the tenants. In this arrangement, the tenant usually gives out some money to the landlord and this is recovered later on from the rent. However, some pastoral landlords have been taking huge sums of money more

than they can repay in one season. The tenant, on the other hand, benefits since he is guaranteed of land to cultivate based on the debt owed. The implication of this is that the landowner may not get money in lump sum to invest or put into meaningful use.

8.4 Consumption of Alcohol

Less than half of the respondents (44%) indicated that they consumed alcohol. Of these, only 15% indicated their rate of alcohol consumption increases on receiving their rent income. The study was, however, not able to establish a significant correlation between lease income and alcohol consumption. It is important to note that most respondents were not willing to discuss this issue. It was, however, observed from some key informants that alcohol consumes a large part of the lease income of some households.

Alcohol consumption was also found to vary with the proportion of land leased out. Most (60 %) of those who consumed alcohol were found to have leased between 50% and 100% of their land to tenants. The remaining 40% of those who consumed alcohol had leased out between 1 % and 50 % of their land.

Table 29: Proportion of land leased out in relation to Alcohol consumption

Proportion of land leased (%)	Alcohol consumption		Total n=80
	Yes n=35	No n=45	
1-50	40	17.8	27.5
51-100	60	82.8	72.5
Total	100	100	100

Source: Field Data

The data in Table 29 suggests that alcohol consumption could be higher among those households that have leased out larger proportions of their land. It is therefore possible that part of their lease income is spent on alcohol.

8.5 Dependence on lease income

This study sought to find out whether households have developed any dependence on lease income. This was measured by finding out the effect of tenant migration on the household. The majority (61%) of the respondents indicated that they have had years when there were no tenants to lease-in their land. The same group of respondents were again asked whether the absence of tenants had any effect on their households. More than half (66%) said that the absence of tenants affected their households, while over 43 % experienced difficulties in paying school fees and also in running their businesses. Another 19 % indicated that they had difficulties paying school fees and affording food for the household.

Table 30: Effect of Tenant migration on the household

Effect	Frequency	Percentage
Difficulties in paying school fees/Business	16	43.24
Difficulties in paying school fees/Purchasing food	7	18.9
Difficulties in purchasing food	5	13.51
Difficulties in paying school fees	4	10.81
Difficulties in running Business	1	2.7
Difficulties in paying school fees/ Food/ Business	1	2.7
Difficulties in paying school fees/Food/Livestock expenses	1	2.7
Difficulties in running Business/Crop Farming	1	2.7
Difficulties in meeting Livestock expenses	1	2.7
Total	37	100

Source: Field Data

The data in Table 30 shows that households experience difficulties once tenants emigrate. The payment of school fees appears to be mostly affected. This is not surprising given the fact that school fees consumes most of the lease money. It was also noted that a significant proportion experience difficulties in getting food once tenants emigrate. On the contrary, it was also observed from the key informants that lack of food also occurs when there are tenants on the land. Households that lease out most of their land are left with little to cultivate for subsistence. Secondly, the migration of livestock to other areas when land is leased out causes some household food insecurity since there is less milk to subsist on. These two forms of food insecurity were, however, observed to occur in very few households. In summary, the above findings show that households experience difficulties once tenants migrate. This could be due to the fact that many have their expenditures planned around their lease income. The findings therefore seem to suggest some dependence by households on their lease income. Indeed, one respondent remarked that some households rely so much on lease income that they are ready to lease it out at any price/ rate offered by tenants.

8.6 Households' perception of farmland leasing

Finally, this study aimed to find out how respondents felt about land leasing as a process and as a livelihood strategy. Many of the respondents (64%) plan to continue leasing out their land while 36 % plan to stop soon.

The respondents were then asked to state whether a time will ever come when they will stop leasing out their land. A substantial number (36%) said they will stop leasing out

their land once they got enough capital to work/cultivate the whole of it. Another 28 % indicated they have already laid out plans to stop leasing out their land. They plan to cultivate and graze animals on this land soon. A further 10% indicated that they would stop leasing out their land once they are able to meet their basic needs. Only 3 % of them had absolutely no plans to stop leasing out their land. It was generally observed that most households would rather cultivate their land than lease it out. This is because the returns of growing a crop like wheat are far much higher than the lease income that they receive.

Table 31: Distribution of households according to when they plan to stop leasing out land

	Frequency	Percentage
When I get enough capital	29	36.3
I plan to start working on it soon	22	27.5
When able to meet basic needs	8	10
When financial responsibilities reduce	5	6.3
When land is subdivided among Siblings children	5	6.3
If lease rate per acre does not increase	3	3.8
I have already stopped	2	2.5
I plan to continue leasing out	2	2.5
When I fence the land	1	1.3
I plan to allow the soil to rest	1	1.3
If land continues to lose fertility	1	1.3
When land dispute is settled	1	1.3
Total	80	100

Source: Field data

The above results suggest that households do not lease out their land out of their own wish. They are forced by some circumstances to do so. Wealth accumulation up to a certain threshold level would make the households stop leasing out land. However, unless

this wealth is created soon, households are likely to continue leasing out their land into the near future.

There are, however, some indications that the leasing out of land will come to and end in the distant future. First, as more and more pastoralists educate their children, less and less land will become available for leasing. This is because this progressive generation is likely to cultivate the land that their parents had previously leased out. Indeed, some young men are already growing wheat and maize hence reducing the acreage of land available for leasing out. Secondly, leasing is likely to stop once the pastoralists come into realisation of the immense benefits that can be got from growing wheat. This is, however, beginning to happen. Due to years of interaction with tenants many have learned that farming is profitable. Many pastoralists are now getting into groups so as to cultivate. In this way they are able to spread the risks that might occur. Thirdly, leasing is also likely to stop once parcels of land become smaller. This could happen when land is subdivided among children and siblings. The beneficiaries are likely to cultivate their land instead of leasing out.

In summary, this chapter has demonstrated that farmland leasing is likely to continue into the near future. It has, however, emerged that pastoral households do no really identify with farmland leasing as a livelihood strategy. The two negative effects that can be associated with farmland leasing are: land degradation and dependency on lease income by households. The next chapter summarizes the major findings in terms of conclusions, implications and recommendations.

CHAPTER 9

9.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The aim of this chapter is to summarize the major findings of this study, draw conclusions and show some of their implications. The study established that pastoralists mainly lease out their land so as to get money. By leasing out their land to tenants, the pastoralists are able to earn some income. Secondly, others lease out their land since they lack the capital for production and investment in their farms. Thirdly, some lease out their land so that it can be cleared up. This happens when tenants clear the land of any obstacles such as shrubs and trees. Fourthly, others lease out their land so as to benefit from the services that tenants offer such as tractor service. Finally, some pastoralists lease out their land so as to get animal fodder in the form of post harvest stubble.

It was established that lease income is mainly invested in the education of children. This was followed by investment in productive livestock and crop farming. Farmland leasing has also encouraged pastoralists to invest in crop farming. It has not only provided them with capital to engage in farming but also socialised them into farming. Lease income has also provided capital for households to engage in business. Most of them had used part of their lease income to engage in cattle trade. The study, however, established that pastoralists did not favour business as an investment strategy. It was also found that most of the lease income was invested locally. Very little was invested in urban centres.

It was also found that lease income had not been heavily invested in bigger capital assets. This is because lease income on its own was not enough to allow for major investments. It also emerged that lease income features prominently in the future investment plans of the pastoralists. The majority plan to invest their lease income in rental buildings and productive livestock. It was further established that even though pastoral households invest their lease income in crop farming, business and capital assets, a large part of the lease income is still invested in pastoralism.

It was also established that farmland leasing has led to reduction of size of grazing land. In response to this many of the households had split their herds in such a way that some animals are based at home and others with friends or relatives. It was also found that most of them compensate their hosts by paying them in kind. It also emerged that pastoralists are increasingly leasing in land for their animals to graze on, while their land is under tenant cultivation. Some households also purchase land in other areas for their animals to graze on, while their other land is leased out. The study also found that households are increasingly having more sheep than cattle partly because the farmland leasing process has benefited sheep rearing than cattle rearing. It further emerged that farmland leasing is encouraging a seasonal migration of livestock. Animals move away from home once tenants start cultivating and return after harvesting.

The study also established that farmland leasing is likely to continue into the near future. This is because many households still have an acute need for money to cater for their basic needs. Secondly, many still lack the capital to work on their land. There are

however some indications that it might come to an end in the distant future as more and more pastoralists venture into crop farming. The young educated generation is likely to take over most of the currently leased in land and use it for cultivation. Secondly, further subdivision of land among household members is likely to lead to smaller parcels of land, which may not be leased out.

From the above findings a number of conclusions were made. The increased commercialisation of the pastoral economy has encouraged households to lease out their land to tenants. It was also concluded that lease income has encouraged pastoral households to diversify into other livelihood activities like business, crop farming and investment in capital assets.

The study also concluded that farmland leasing is intensifying pastoralism by encouraging some new aspects into traditional pastoralism. It has also encouraged a seasonal migration of livestock that is not based on scarcity of pasture due to drought but rather from the alienation of land for farming.

Finally, the study concluded that pastoralists do not really identify with farmland leasing as a livelihood strategy. The practice is also likely to come to an end in the distant future as social change takes place among the Maasai pastoralists.

Recommendations

Based on the findings of this study, the following recommendations were made. As regards policy:

Adult education programs need to be broadened to include basic business education. This will help to impart knowledge and appropriate methods of investment among land leasing households.

The pastoral households that lease out land need to be encouraged to form cooperative unions. This will enable them to negotiate for a better lease fee per acre from the tenants. The activities of the cooperative can also be expanded to include micro-credit. The members can then qualify for small loans that they can supplement with their lease income to engage in major investments. The cooperative union can also be used as a vehicle of acquiring inputs for those who would like to engage in commercial wheat farming.

Soil conservation measures need to be emphasized to curb the loss of farmland as a result soil erosion. Pastoralists need to be sensitised on the methods of preventing soil erosion. In this way they would be able to encourage the tenants in their land to take appropriate measures.

Extension services need to be emphasized to advice pastoralists who are beginning to engage in wheat farming. This will enable them to reap maximum benefits from their land.

There is need for institutions to regulate and monitor land-leasing contracts. This will ensure that tenants do not pay land rents that are far below the market rates.

The study recommends the following issues for future research:

- A comparative study on the effect of farmland leasing on households needs to be done. The comparison ought to be between households that lease out their land and those that do not.

- There is also need to investigate the effect of farmland leasing on household food security.

- Finally, a study ought to be done to determine the role of lease income on household indebtedness and alcoholism.

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APPENDIX I:

QUESTIONNAIRE

Good day. My name is John Leyian Letoluo. I am a Master of Arts student at the University of Nairobi. I am currently collecting data for my research project. The main objective of my study is to investigate the influence of farmland leasing on the livelihood strategies of pastoral households. In order to achieve this objective, I have designed a questionnaire that acts as the main Data collection tool. I therefore kindly request you to provide answers to the questions asked.

QUESTIONNAIRE NUMBER. .....

1. BACKGROUND

1.Name of respondent.....

2. Study area

- Ololulun'ga
- Ntulele

3.Sex

- Male
- Female

4.Age.....

5.Education level

- None
- Primary
- Secondary
- College
- University
- Adult education.

6.Occupation

- Teacher
- Pastoralist
- Businessman
- Farmer
- Other :Specify.....

7.Marital Status

- Married
- Never married
- Separated/ divorced
- Widowed

8.How many co-wives are there?

- None
- One
- Two
- Three
- Four
- Other. Specify.....

9.Total number of children .....

2.FARMLAND LEASING

10.What is the total size of your land in acres ?.....

11.How many acres of your land have you leased out? .....

12.How many acres are not?.....

13. In total, how many tenants have you ever had on your land? .....

14.How many tenants do you currently have on your land? .....

15.For how long have you leased out your land to Commercial Farmers? .....

16. What is the current lease rate per acre?
- Commercial Farmers.....
- Small-scale farmers.....
- Other:Specify.....

17.When did you first lease out your land (year)?.....

18.When did you lease out your land last (year)? .....

19. Who decides on the lease fee?
- Myself
- Tenant
- Broker
- Myself and tenant
- Tenant and broker
- Other: Specify

20.What type of Lease do you hold?
- Written
- Oral lease

21.Who is currently leasing in your land?
- Commercial tenant
- Small scale farmer
- Relative
- Friend
- Other: Specify.....

22.Who would prefer to lease- in your land ?
- Commercial tenant
- Small scale farmer
- Relative
- Friend
- Other: Specify.....

23.Why do you lease out your land? .....
.....
.....
.....
.....
.....
.....
.....

24.Why don't you cultivate the land instead of leasing?
.....
.....
.....

25.why don't you use the whole land for grazing instead of leasing it? .....
.....
.....
.....
.....
.....

Lease Income

26.How much were you paid as lease money last year/ when you last leased out your land?.....

27.How are you paid?

- Lump sum-beginning of the season
- Per activity
- In instalments
- Lump sum end of the season.

28.Who receives the rent?

- Myself
- Son
- Daughter
- Spouse
- Relative
- Other: Specify.....

29. Does the tenant render any services to you?

- Yes
- No

30.If yes, what kind of services?

- Transport
- Tractor
- Harvesting
- Other. Specify

31.Does the tenant subtract the service fee from your rent money?

- Yes
- No

3.INVESTMENT PATTERNS

32.Do you own any of the following?

	YES	NO	If yes, year acquired
Land elsewhere			
Purchased Oxen			
Earth dam/Borehole/watertank			
Commercial buildings for rent			
Residential house			
Tractor			
Motor Vehicle			
Matatu			
A shop			

33.Generally, how have you used your lease money since you started receiving?

Period	Amount	Investment
1ST		
2ND		
3RD		
4TH		
5TH		
6TH		
7TH		
8TH		
9TH		
10TH		

34.Is there anything that you would wish to invest in but are unable to?

- Yes
- No

35. What factors do you think are preventing you from investing in assets despite availability of cash from leasing?

.....
.....
.....
.....

Business

36.Have ever been engaged in any kind of businesses?

- Yes
- No (go to question 40)

37.If yes, of what kind?

- Cattle trading
- Shop.
- Hotel.
- *Matatu*
- *Posho* mill.
- Selling milk.
- Skins and hides
- Other.Specify.....

38. What was the source of your Capital?

- The sale of cattle
- Loan
- Lease money
- Sale of Land
- Other : Specify.....

39. Where is your business based?

- Home.
- Neighbouring rural town.
- Urban centre.
- Other.Specify.....

40.If no, what factors prevent you from engaging in business despite availability of capital from lease money

.....
.....

Education Costs

41.How many of your children are in school? .....

42. What level

Nursery.....primary.....secondary.....college.....

43. Are there some who are in boarding primary schools?
- Yes
- No

44. Has lease money assisted in undertaking the following ?

ACTIVITY	YES	NO	If No state source of money

45. What size of your lease money does education consume?
- None.
- Very little
- Little
- Half
- Much
- Most

46. Supposing the tenant emigrated today, will you still be able to educate them?
- Yes
- No

Crop Farming

47. Do you cultivate?
- Yes

- No (*if no go to question 54)*

48. If yes, what do you grow?
- Beans
- Wheat
- Maize
- Other:.....

49. Where do you cultivate on?
- Own land
- Leased in land
- Relatives land
- Other. Specify.....

50. Has lease money played any role in any of the following activities?
(Please tick)

	YES	NO
Paying for farm labour		
Acquisition of farming inputs (seeds, Jembes,etc)		
Hiring of farm machinery (e.g tractor)		
Construction of a granary		

51. Do you have an agreement with the tenant to cultivate a portion of land for you?
- ❑ Yes
- ❑ No

52.If yes, do you plant wheat in this portion?
- ❑ Yes
- ❑ No

53. Did you feel that leasing has played any role in your entrance into crop farming?
- ❑ Yes
- ❑ No

4.INFLUENCE ON HERD MANAGEMENT

54.What is the size of your herd? .....

55. Where are your livestock based given the fact that part of your land is leased out?
- ❑ Remaining portion
- ❑ Friends land
- ❑ Relatives land
- ❑ Other .....

56.If based on friends / relatives land, do you compensate them?
- ❑ Yes
- ❑ No

57.If yes, in what form?
- ❑ Cash
- ❑ In kind
- ❑ Other :Specify.....

58.Since you started leasing out your land has the size of your herd?
- ❑ Increased
- ❑ Decreased
- ❑ No change

59.Has the leasing out of land changed the type of animals that you keep (i.e. cows, sheep, goats)?
- ❑ Yes
- ❑ No

83.If yes, was your household affected?

- Yes
- No

84.If yes, how?

- Difficulty in paying school fees
- Difficulties in running business
- Difficulties in purchasing food
- Other: specify.....

85.Do you take beer?

- Yes
- No

86.Does your rate of drinking increase when you receive lease money?

- Yes
- No

87. Do you plan to continue leasing out your land?

- Yes
- No

88. Do you think a time will come when you will stop leasing out your land? .....
.....
.....

APPENDIX II

INTERVIEW GUIDE FOR KEY INFORMANTS

1) What reasons made pastoralists to start leasing out their land?
2) How is the lease fee negotiated? Has it been increasing or decreasing?
3) Are there services offered by tenants to pastoral landowners? Under what agreements and conditions?
4) What uses do pastoral households put their lease income into?
5) Are there households that have managed to start businesses out of their lease income? What kind of businesses?
6) Has leasing income played any role in education of children?
7) What has been the effect of leasing on grazing land? What coping strategies have they been adopting?
8) What is likely to happen to a household if the tenant emigrates?
9) What are the problems brought by land leasing on Households, the land, and the community?
10) Does expected Lease income encourage households to get into debt? Is this widespread?
11) Do you think Lease income can be relied upon as a regular source of income?
12) Do tenants take any conservation measures on leased in land?
13) Why are some households unable to put their lease income into long-term / meaningful use?
14) What do you think is the future of leasing?

APPENDIX III

LAND LEASE AGREEMENT

This agreement of lease is made this..... day, of..... 200.....
between.....
.....
of.....hereinafter
called the LAND OWNER , and.....of P.O BOX.....
..... herereinafter called the lessee.

1. The land owner has HE as the Legal Owner of the same adjudicated land TITLE DEED NO :- .....
   situated at .....
   measuring approximately.....
   thereabout hereinafter called the PIECE OF LAND

2. That the Land Owner has agreed to let and the Lessee has agreed to lease the PIECE OF LAND for the term of..... years Commencing from .....and terminating on the .....

3. That the Lessee shall pay to the Land Owner rent of
   Kshs..... per acre for the first year
   Kshs..... per acre for the second year
   Kshs..... per acre for the third year

4. The LAND OWNER undertakes that the LESSEE paying rent enjoys undisturbed possession of the PIECE OF LAND until the end of the term hereby reserved .

5. That the property or assets belonging to the lessee, such as buildings, fences and machinery remain the property of the lessee throughout the period of the lease and at its termination.

SIGNED BY THE LAND OWNER.....

In the presence of.....

SIGNED BY THE LESSEE.....

In the presence of.....