

**DROUGHT MANAGEMENT AND VULNERABILITY REDUCTION  
AMONG PASTORALISTS:**

**A case study of Garissa District**

By  
**NYAWIRA C. HIUHU**

**A PAPER SUBMITTED TO THE DEPARTMENT OF SOCIOLOGY  
IN FULFILMENT FOR THE REQUIREMENTS OF A MASTER OF  
ARTS IN SOCIOLOGY-DISASTER MANAGEMENT**

**UNIVERSITY OF NAIROBI  
2002**

University of NAIROBI Library



0472072 8

**EAST AFRICANA COLLECTION**

## DECLARATION

This Project Paper is my original work and has not been submitted for examination in any other University

Signature Hiuhu

Date 1/10/2002

**Nyawira C. Hiuhu**

**Department of Sociology**

**University of Nairobi**

This Project Paper has been submitted for examination with our approval as University Supervisors

Signature Chitere

Date 22/10/02

**Dr. Chitere P.O**

**Department of Sociology**

**University of Nairobi**

Signature Ocharo

Date 11/10/02

**Dr. Ocharo R.M**

**Department of Sociology**

**University of Nairobi**

## AKNOWLEDGEMENT

I would like to give sincere thanks to my two supervisors Dr. P.O Chitere and Dr. R. Ocharo for the

guidance given to me while writing this paper.

I would also like to thank the staff of the sociology department, classmates and in particular Mr. S.K

Maina for the moral support given to in the course of my studies. I wish to express gratitude to my

family for the support they gave me all along.

I would like to sincerely thank Farah Ahmed of Arid Lands Project, Garissa for his full support while

I was doing my research and the Arid Lands Staff .

Thank you to all those who assisted me in making the completion of this paper a success.

## TABLE OF CONTENTS

<b>DECLARATION</b>	
<b>LIST OF TABLES</b>	
<b>ACKNOWLEDGEMENT</b>	
<b>CHAPTER ONE</b> .....	<b>1</b>
<b>INTRODUCTION</b> .....	<b>1</b>
1.1 problem statement .....	3
1.2 objectives of study .....	5
1.3 justification of study .....	6
1.4 scope of study .....	6
<b>CHATER TWO</b> .....	<b>8</b>
<b>2.1 INTRODUCTION</b> .....	<b>8</b>
2.1.2 livestock-a social and economic base .....	8
2.1.3 Flexibility,risk and resilience .....	8
2.1.3 Sedenterization and Poverty .....	12
2.1.4 Resource Conflict .....	13
2.1.5 Risk Minimization Mechanism .....	14
2.1.6 Factors Affecting Coping Strategies .....	15
<b>2.2CONCETUAL FRAMEWORK</b> .....	<b>17</b>
2.3 hypothesis .....	19
2.4 Definition of terms .....	20
<b>CHAPTER THREE</b> .....	<b>23</b>
3.0 Site description .....	23

3.1 Sample Selection...	24
3.2 Techniques of Data Collection...	25
3.3 Methods of Data Analysis...	26
3.4 Limitations...	26
<b>CHATER FOUR</b> ...	<b>27</b>
<b>4.0 INTRODUCTION</b> ...	<b>27</b>
4.1 Socio economic profile of dependents...	27
4.1.2 Age of respondents...	27
4.1.3 Marital Status...	28
4.1.4 Family size of respondents...	29
4.1.5 Respondents level of education...	30
4.1.6 Sources of income...	30
4.1.7 Livestock Owned...	31
4.1.8 Focus Group Observations...	32
<b>4.2 Coping strategies during drought</b> ...	<b>35</b>
4.2.1 Impact of drought on coping strategies and community...	39
<b>4.3 Drought Interventions</b> .....	<b>42</b>
4.3.1 Drought Preparedness...	42
A. Water users association...	42
B. Womens groups...	43
C. Agro-pastoral group...	45
D. Livestock Devt. groups...	47
4.3.2 Community training...	48

4.3.3 Livestock Vaccination... ..	49
4.3.4 Early Warning Systems... ..	49
4.3.5 Mitigation Activities... ..	50
4.3.6 Emergency interventions... ..	51
4.3.7 Recovery interventions... ..	52
4.4 Role of traditional coping strategies in drought management... ..	53
<b>CHAPTER FIVE... ..</b>	<b>54</b>
<b>CONCLUSIONS AND RECOMMENDATIONS... ..</b>	<b>54</b>
5.1 Conclusions... ..	54
5.2 Recommendations... ..	55
<b>BIBLIOGRAPHY</b>	
Appendix 1 Questionnaire	
Appendix 2 Maps	
Appendix 3 Drought Monitoring Questionnaire	
Appendix 4 Drought bulletin	

## LIST OF TABLES

Table 1. Sex of Respondents ... ..	27
Table 2. Age of Respondents ... ..	28
Table 3. Marital Status ... ..	29
Table 4. Family Size ... ..	29
Table 5. Level of Education ... ..	30
Table 6. Income Source ... ..	31
Table 7. Livestock Owned ... ..	32
Table 8. Membership in Water Users Associations ... ..	43
Table 9. Women Groups ... ..	45
Table 10. Number of Farmers ... ..	46
Table 11. Commodities Sold ... ..	47
Table 12. Membership in LDGs ... ..	47
Table 13. CAHWs Training ... ..	49

## CHAPTER 1

### INTRODUCTION

Poverty is endemic in Kenya, a country with one of the most highly skewed wealth distribution patterns, and where a small part of the population owns virtually all wealth generating capacity. (Analyst, 2000). Poverty reduction is a national challenge. It is recognised as a major threat to a very significant section of Kenyan household (NPEP, 1999-2015)

According to the welfare monitoring survey of 1994, the incidence of poverty in Kenya was 47% in the rural areas and 29% in the urban areas. Poverty in Kenya is defined in terms of inability to afford basic necessities, which in 1997 was calculated at Ksh927 per month for rural areas and KSh.1450 for urban households. At the end of 1999, the number of poor stood at 15 million compared with 3.7 million in 1972/73 (Analyst, 2000).

Poverty is multi-dimensional and includes shortage of income and deprivation in other aspects such as knowledge, life expectancy and in standard and quality of life experienced (KIPEP 1999 - 2015) in Kenya. The poor tend to be clustered in social categories such as female headed households, pastoralists in drought prone ASAL districts, the landless and handicapped.

In Kenya, the highest incidences of poverty are found in Arid and Semi Arid lands (ASALs). The poor in these areas tend to be physically isolated, have inferior access to



basic goods, services and infrastructure and rely on an uncertain resource base. Out of every 100 households, 60 of them suffer absolute poverty (IPRSP, June, 2000). This refers to the sustained lack or deficiency of basic needs required to sustain human life. They also suffer poor nutritional status, lower enrolment and higher primary school drop out rates, lower life expectancy, limited access to basic services such as health, safe water and sanitation.

The inhabitants of the arid lands are pastoralists who are categorised as marginalized groups. The ASALS cover 50m ha of land and provide home for 7.5 million Kenyans as well as 54% of the country's livestock and 65% of its wildlife (IEA, 1998).

Pastoralists are highly vulnerable to drought and flooding and this can decimate the livestock on which they depend. Livestock herding is the main economic activity of pastoralists and is the backbone of their economy. It is based on animals such as cattle, sheep, goats and donkeys (Barrow, 1996). Livestock represents greater than 90% of their economic assets. It is sometimes said that they suffer from livestock mono-culture which puts them at greater risk due to drought. (IIN, 2001)

In recent years however, the livelihood has been put under great pressure due to the persistent droughts that have now become more frequent e.g. in 1996, Kenya experienced drought, followed by EL Nino floods in 1997/1998 and by another drought in 1999. These short phases between droughts do not give the pastoralists sufficient time to recover. It is indeed a vicious cycle.

Drought can be defined as a dry season or prolonged period of poorly distributed rainfall, which does not come at the expected time. Drought has caused impoverishment among pastoralists by destroying their livestock hunger, disease and death. Without livestock, most pastoralists become destitute because they lose the major source of their livelihood.(Barrow,1999)

In order to protect livelihood of pastoralists, there is need to address the issue of drought and how to manage it so that livelihoods are sustained and levels of poverty and vulnerability are reduced. Traditional coping strategies have always been present among pastoralists and it's only in recent years that these strategies have been greatly affected due to recurrent droughts and have been unsustainable because they are only activated when the drought has reached its height. It is therefore important to look at what can be done to reduce vulnerability and therefore improve the livelihoods of pastoralists.

### **1.1 Problem Statement.**

Pastoralists in Kenya have led a life geared towards subsistence. Their principle asset and primary source of their subsistence is livestock. (Hendrickson, Armon, Mearns, 1998). Livestock provides them with milk and meat to survive on and therefore ensure that there is food security.

Lack of a clearly defined land tenure and ownership framework, compounded by non prioritization of ASAL areas for structural development has given rise to insecurity,

conflicts, banditry, together with high vulnerability to food insecurity. This results from a lack of an effective system to manage droughts, which eventually leads to poverty and underdevelopment (IIN,2002)

Recurrent drought in these areas has often resulted in high livestock losses and declines in food security. Drought reduces livestock holdings by pushes households into destitution. (Oba, 1997). Due to this, pastoralists are increasingly becoming most vulnerable groups.

In the past, pastoralists dealt with drought by engaging their coping strategies, which helped reduce stress and improve survival. They were diverse and were activated during and after droughts. These strategies have not escaped the ravages of drought and so their affects are limited.

Due to their vulnerability, they tend to be affected when it comes to their ability to prevent, mitigate, prepare or respond to disasters e.g. drought. They are unable to absorb losses after droughts and recover from them.

In the past, pastoralists dealt with drought by engaging their coping strategies, which helped reduce stress and improve survival. They were diverse and were activated during and after droughts. These strategies have not escaped the ravages of drought and so their affects are limited. But whatever the nature of a drought, the central issue lies in reducing the risks or minimizing the damage associated with a drought

It has become the tradition of relief agencies to give out food when drought happens. Granted, it is needed to stop people selling off their assets but more often than not they come to rely on it for their survival. There is the risk that famine camps can form where people just wait for handouts of food. But response to high levels of vulnerability cannot merely be in the form of emergency aid once drought has struck.

Vulnerability to drought can only be decreased if the factors that contribute to it are tackled. This means creating structures and institutions that capacitate communities in the recognition that reducing vulnerability is the same as increasing capacities.

In order to enhance the pastoralists' capacity to cope with droughts, it is important to strengthen their livelihoods. This study will be exploring what measures have been taken to reduce the incidence of vulnerability among them.

## **1.2 Objectives of Study.**

The main objective of this study is to explore if drought management has led to the reduction of vulnerability.

The specific objectives are:

1. Find out how drought impacts on traditional coping strategies.
2. Determine the extent to which coping strategies have helped pastoralists to deal with drought.
3. Determine what structures or institutions have been put in place to improve on the capacities of pastoralists

4. To establish the relationship between drought and the elements of preparedness, mitigation, response and recovery.

### **1.3 Justification of the Study.**

Drought is an environmental disaster that no man can control. Droughts are a part of pastoral systems. During drought, they tend to lose so many animals that they are often left without a means of livelihood. The effects of a drought are far reaching and affect everybody in the community.

This leads to falling out of their production system, leading to sedentization. This in turn leads to large numbers of pastoralists forming settlements around relief camps. It is often difficult for them to then get back into pastoralism. It is important to examine the relationship between effective traditional drought management and vulnerability reduction. This will reveal how different interventions in drought management have impacted on people's lives and the extent to which they have helped to reduce vulnerability.

A bottom-up community based approach serves to create a resilient community which can be able to survive.

### **1.4 Scope of the Study.**

The study is focused on pastoralist communities based in Garissa district, North Eastern Province. The main issue of focus here will be drought and drought management and what impact it has had on the communities. It will be looking at what structures are in

place to cope with drought and the impact these structures have had in enabling the communities to deal with drought.

The study shall also focus on the different phases that constitute drought management and interventions carried out to reduce a community's vulnerability.

## CHAPTER TWO

### LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

#### 2.0 Introduction

The livelihood system in arid areas is pastoralism. Chambers as adequate stocks and flows of food and cash to meet basic needs define a livelihood. Pastoralism is a system where people own and rely on animals for their subsistence.

Pastoralists have with time developed sustainable land use system based on mobility of livestock herds, therefore making spatial use of land (Barrow, 96). They have evolved sound ecological strategies enabling them to live in harmony with their environment. These strategies evolve around complex livestock grazing patterns. They are appropriate for survival in a harsh and unpredictable environment.

Most pastoralists practice some form of transhumance particularly for their cattle. This is a system based on wet season grazing in the lowlands and dry season grazing in wetter areas. Within this system, large tracts of land may be set aside for use in times of drought (Barrow, 1996).

There is need to understand that traditional land use systems are attuned to harsh environments and therefore offer a basis for sustainable production (CARE, 2000).

#### 2.1 Livestock - A social and Economic Base.

Livestock are central in pastoralism, which is based on animals such as cattle, camel,

sheep, goats and donkeys. This enables optimum utilization of available fodder through mobility in management. A key factor in shaping pastoral activities is the relationship between animals and climate (Cross 1990).

According to Barrow (1996) this relationship can be seen not only by the way pastoralists rear their animals but also care for the environment. In arid areas, the control over access to water and fodder are central to pastoralism e.g. among the Turkana, during the dry season, they depend on acacia ponds for fodder (Hogg, 1986).

Herd ownership rights to water are an important consideration in determining where one moves to during bad periods. Ownership rights to grazing areas are exercised and this in effect restricts the number of animals and people in an area at any particular time.

Human to livestock ratios also tends not to vary greatly. Livestock is usually redistributed among people mainly through bride wealth and livestock redistribution system. A person who gives livestock is able to marry when he has sufficient stock from his own herd and from herds of friends and family. When his herd grows he is also expected to give those who need it for bride wealth. During periods of drought, herd owners put some of their livestock with herds of friends to safeguard against losing all animals. Animals are thus dispersed over a large area. Redistribution of livestock means a wealthy herd owner will support more dependants that is, poor friends and relations.



A further characteristic of pastoral strategies concerns the age and sex structure of herds and flocks (Swift, 1982). Female animals make up two thirds to three-quarters of pastoral herds. This enables nomadic pastoral economies to support a far larger number of people. During good seasons, milk yields are inadequate and must be supplemented by meat consumption. The owner of a large herd produces more milk in good years and has greater meat and skin reserves for sale or barter in poor years than the owner of a small herd (Western, Finch 1986).

According to Barrow (1996), pastoralists' mobility is in response to rainfall and fodder variability since most rangelands are characterised by low and highly variable fodder. The more variable the rainfall and the climate, the greater the need for mobility.

Pastoralists try to make most efficient use of their environment without overstressing it. They are aware of the need to preserve their resources base to ensure the pastoral economy does not harm the environment.

### **2.1.2 Flexibility, Risk and Resilience.**

Risk and resilience are central to pastoralism because the areas it is practised in have low and variable rainfalls (Swallow, 1994).

In pastoral economies, households traditionally reduced risk by the choice of species to herd and individual households were protected from consequences of animal loss by a network of transactions between households that is they could give some of their animals to a neighbor to keep for them. This spread the risk of failure of animal production and enabled households stay alive and reconstitute herds after drought

(Swift, 1980). Species kept included camels, sheep, goats and cattle.

Some characteristics of pastoral systems are related directly to drought resistance and resilience. They include high mobility to low stocking rates, diversification of livestock species, high to moderate stock units per person and availability of large diverse ranges. Stability of pastoral economics in the face of fluctuations in the environment contributes to risk avoidance. Pastoralists move into and out of an area according to the state of pasture and when a drought occurs. Some households drop out of pastoral economy only to re-enter later through loans and gifts.

Where pastoralists are marginalised from their dry seasons grazing areas, their resilience is significantly reduced. This increases risk and loss of resilience could have a variety of causes and they include: -

- Population growth - when population grows, pastoralists adjust supply of milk, meat, turn to opportunistic agriculture and wild food collection.
- Marginalisation of pastoral dry season areas due to land and population pressures.
- Common property resources where traditional management systems have broken down.
- Poverty.

Drought is assumed to play an important role in the lives and development of pastoral lands. Pastoralists have learnt to cope with it and have adapted to it. Risk reduction and

increasing resilience are two strategies used to deal with vagaries such as drought and harshness of land.

### **2.1.3 Sedentarization and Poverty**

According to Baxter (1975), sedentarization tends to alter the texture of social relationships. When pastoralists do settle, their existing social structures may begin to crumble and social stratification happens leading to survival of the fittest or those who are able and impoverishment of those who are unable.

Traditional societies coped with wealth fluctuations through elaborate mechanisms such as stock sharing and lending to emphasise the importance of co-operation in pastoral resource management.

Factors that can lead to settlement include drought that leads to insufficient fodder and water. Death of livestock occurs after sometime leading to destitution of pastoral units for example families move and settle around relief camps where they stay as destitutes or dependants. If the situation improves, they can then try and accumulate livestock and return to the pastoral system. They may also leave the pastoral area, obtain gainful employment and then send support to their pastoral relations thereby supporting the system.

A great majority of those who are sedentary are women. They usually end up with a heavier work burden when trying to keep the family together. Women headed

households are often among the poorest. Without livestock, women became socially disadvantaged.

In households of sedentary pastoralists, you will find great incidences of poverty. The household's stocks and flows of food and cash are low. Family members then have to work so that they can get income to survive on (Chambers 1993).

The household is also vulnerable because it is forced to draw on diminishing cash reserves and reduced consumption. Most often, the productive assets have been sold or mortgaged off, due to distress in times of drought.

Sedentarization leads to environment degradation because settlements put pressure on surrounding vegetation which they need for fuel and building materials. There is usually too much pressure on the land due to the large numbers of people settled and it cannot recover quickly from such pressures and hence get quickly degraded

#### **2.1.4. Resource Conflict**

Conflicts in pastoral areas revolve around access to and control over resources for the animals. Kenya is a water scarce country and as settlements have continued to develop, they have denied pastoralists access to these resources thereby sowing seeds of conflict. Drought has also led to conflict due to scarcity of resources. The nature of conflict has also continued to change as communities have gained access to sophisticated arms. Conflict tends to hinder development of these areas and they

become further isolated. The pastoral economy has become further weakened.

### **2.1.5 Risk Minimization Mechanisms**

Pastoralists have developed highly flexible social systems and elaborate sets of both individual and collective based survival strategies that allowed them to effectively utilize the harsh and extremely variable environment in order to minimize loss of livelihoods. The coping mechanisms include:

#### **1. Mobility**

The prime objective is to maximize livestock survival. The nature of movements undertaken depends on environmental conditions, quality of available resources and species of livestock.

- **resource utilization mobility**-a response to unpredictable forage and water availability. Distance covered and degrees of flexibility vary with the year, location, type of livestock and community.
- **drought escape mobility**-involves long distance migration to evade drought in one locality. During such hard times, community survival overrides security concerns.

#### **2. Herd Diversification**

Involves maintaining several types of livestock. It allows for efficient use of pasture

resources and facilitates a more reliable supply of food. The diverse attributes of different species is an advantage for example goats and sheep are important in pastoral economy due to their higher reproductive rate and hardiness which makes them more suitable for herd reconstruction

### **3. Herd Maximization**

In pastoral economies, surplus stock beyond a basic minimum serves as an investment and some kind of insurance during periods of pasture and water scarcity, when some animals may be sold to purchase grain. Herds are also necessary for building strong alliances through transfer of animals to friends and kinsfolk especially during times of need. Families that lose animals would then approach friends and relatives for assistance in replenishing herds. This is an essential element in this production system.

### **4. Splitting Herds**

With increasing dryness, pastoralists split their herds into smaller groups in order to visit different grazing areas simultaneously. By moving large numbers of livestock away from concentration areas, the rate of use of pasture around dry season water holes is minimized.

## **2.1.6 Factors that Affect Coping Strategies**

Coping strategies help pastoralists weather transitory disturbances of their livelihoods in drought prone areas thus minimising risk to household food and livelihood security (Care, 2000). However, these coping strategies have been undermined in several ways.

First, environmental degradation is increasing, as the resource base is insufficient for drought survival because too many people are settled in the few areas where the resources are to be found. Land degradation occurs because people are driven to get as much as they can out of their land, forcing pastoralists to also use land far more intensively than under traditional management strategies. Settlements due to droughts deplete surrounding vegetation and increase soil erosion. As settlements grow, land use is intensified and indigenous control collapses. When the environment is degraded in an already fragile ecosystem, there is little pasture and water left for animals. This means pastoralists have to move further a field in search of good grazing grounds for their animals and this can lead to problems like conflict.

Secondly, resource alienation is a growing threat to the pastoral economy. Loss of key grazing areas increases vulnerability to drought. As the population grows, it puts pressure on land and people tend to settle down in areas that pastoralists use for grazing and turn them into farms or settlements. Vast areas are also carved out of pastoral lands and made into national reserves. This increases vulnerability because without these grazing lands, animals will have to be taken further distance and in a weak state they are likely to die of hunger and exhaustion.

Thirdly, unclear policy on land tenure makes long-term capital investment unjustifiable. Legislation of land tenure and resources undermines pastoralists land tenure regimes and resources use. Customary regimes governing pastoralist land recognizes land as communal in contrast to individualisation and privatization as advocated by the state.

This disrupts traditional grazing patterns jeopardising the source of pastoralist's livelihood e.g. animals risk death by starvation. Pastoralists hence develop a non-challant attitude and graze anywhere they find grass and water. They encroach into land set aside for irrigation schemes, wildlife game parks and reserves and military purposes (Kona, 2000).

Fourth, conflict over grazing resources between different pastoral groups has had a traumatic effect on coping strategies. Pastoralists travel far to get good grazing areas for their animals. Sometimes they go into another clan or tribe's territory and this usually leads to conflicts especially when the resources are few e.g. the Somali and Borana conflict in 1999 due to the Somalis encroaching on Borana areas in Isiolo.

Whereas pastoralists land use is designed to respond to ecological variability, banditry and insecurity undermine them. Secure areas are overexploited while insecure areas are abandoned.

## **2.2 Conceptual Framework.**

### **Capacities and Vulnerabilities Analysis.**

According to this framework, vulnerabilities and capacities can be divided into three interrelated categories. They include the material / physical realm, the social / organisation realm and the motivational / attitudinal realm. This framework provides the core information for planning and implementing promoting long term development



Development can be defined as the process through which people move from vulnerability and low capacity to situation of low vulnerability and high capacities (Woodrow, 1989). Every development effort should contain elements of disaster prevention, mitigation and preparedness designed to address local vulnerabilities. In the event of a disaster, local capacities should be promoted.

In capacities and vulnerability matrix, you look at vulnerabilities and capacities side by side. When considering the physical / material realm, you need to assess what productive assets a community has resources, skills and what hazards exists e.g. poverty is a physical vulnerability. They live on marginal lands and are poor in health. These factors make them more vulnerable to disasters meaning they'll have a harder time surviving and recovering from a disaster.

In the social organisation realm, you examine the relations and organisations among people e.g. people who are marginalised are more vulnerable to disasters meaning they'll have a harder time and recovering from a disaster. However, people do have skills and knowledge, family and community and so they are stronger.

In the motivational / altitudinal realm, societies where the mood is one of discouragement and powerlessness are more vulnerable than those in which people feel sense of efficacy and share motivation for change. It is worth noting that even within one community, different members have different

vulnerabilities and capacities e.g. women and men. Women are usually more vulnerable than men and usually have fewer resources and more limited mobility.

This framework can show changes over time e.g. impact of a project on people. A project might meet people's immediate need but fail to reduce their vulnerabilities to future disasters. The capacities and vulnerabilities matrix basically shows that reduced vulnerabilities and increased capacities are the only way to sustainable development and by appreciating local competence.

	VULNERABILITY	CAPACITIES
<b>Physical/Material</b> What productive resources, Hazards and skills exist		
<b>Social/Organisational</b> What are the relations and organizations among people		
<b>Motivational/altitudinal</b> How does the community view its ability to create change.		

### 2.3 Hypothesis

This study hypothesises that drought <sup>management</sup> can be progressively used to minimize the impact of drought on a population while increasing the capacities of the affected population.

## **2.4 Definition of terms**

### ***Drought***

A dry season or prolonged period of poorly distributed rainfall which does not come at the expected time.

### ***Pastoralist***

This refers to people whose movements are opportunistic and follow pasture resources in a pattern that varies from year to year.

### ***Coping Strategies***

Various activities that individuals, households and communities develop to overcome poverty, adversity and crises

### ***Disaster***

A crisis that outstrips the capacity of the society to cope with it

### ***Drought Management***

Process of reducing impacts of drought to prevent destruction of the productive base off pastoral and agro- pastoral production systems.

### ***Drought Monitoring***

A system of data collection to provide information on the status of drought

### ***Drought Mitigation***

Acting in time to minimize the impact of a crisis on people and their livelihoods.

### ***Preparedness***

Active, on going process where contingency plans are reviewed, modified and updated on a regular basis

### ***Disaster Response***

Set of activities implemented once disaster has struck aimed at satisfying the immediate needs of the affected population

### ***Vulnerability***

A set of prevailing or consequential conditions which adversely affect a community's ability to prevent, mitigate, prepare for or respond to drought

### ***Capacities***

Strengths and resources which are present in individuals, households and community and enable them to cope with, withstand, prevent, prepare for, mitigate or quickly recover from a disaster

### ***Vulnerability Reduction***

Transforming unsafe conditions to safe conditions, unsustainable livelihood to sustainable livelihood and vulnerable communities into capable and resilient ones.

*Personal characteristics of group members*

These include age, sex, educational background, marital status, number of dependants and occupation

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.0 Site Description

The research was to be conducted in Garissa district, North Eastern Province. Garissa has fourteen administrative divisions including two newly created ones. The district is comprised of approximately 44,952 square kilometres of arid and semiarid rangeland. It borders Wajir district to the west and Somalia to the east.

(Garissa district development plan, 1997-2001)

Garissa is low-lying attitude range between 70M - 400M above sea level. The Tana River, which runs along the western boundary of the district, is the only permanent river. It has tremendous influence over climate, settlement patterns and economic activities within the district. It forms the single most important source of water for the growing Garissa town and surrounding areas.

The district has two contrasting climatic zones. The more arid zones are to the north while the humid ones are to the south. Given the arid nature of the district, the temperatures are generally high most of the year with a relatively cooler spell between the months of April to August. Highest temperature range from 34 - 40 degrees Celsius minimum temperature range from 15 - 24 degrees Celsius.

The rainfall of the district is bimodal with the short rain in October/December period and the long rains in March/April period. The mean annual rainfall ranges

from 300mm - 750mm. The district is devoid of any mountains, hills or valleys facilitating easy movement of people and livestock (Garissa Devt. Plan 1997-2001). Livestock keeping is the major economic activity. The major land use is nomadic pastoralism and all other commercial activities depend on livestock production. The main livestock reared include cattle, sheep and goats, camel and donkeys. The main livestock products are milk, hides and skins.

Garissa agricultural production is concentrated mainly along Tana River through irrigation. Crops grown include tomatoes, bananas, pawpaws, watermelons and mangos. Other activities include fishing, though this has not been fully exploited due to eating habits of the district inhabitants who are Somalis. Sand mining has been done and is widely used to make blocks for construction.

There are many activities in the informal sector. They include shoe repair, radio and watch repairs, tailoring, retail trading, water and charcoal selling. This sector continues to provide an important source of employment to the inhabitants. According to the 1999 population census, the district population is 392,510 people. Due to poor infrastructure, a collapsed road network and general insecurity, the study area has been limited to central division of the district.

### **3.1 Sample Selection**

A list of villages in the division was obtained from the district development

office. The villages selected were Madogo and Masalani, due to logistical considerations. The units of analysis were the pastoralist people who were also the key informants. In these two villages, 88 respondents were selected using purposive sampling so as to get those who were conversant with the problem of drought and had experienced its hardships. This was done with the help of the village headman. There were 44 male respondents and 40 female respondents. There were 44 respondents from each village. The sample size was arbitrarily determined. The respondents from both villages formed the focus groups. These groups were established for the duration of this research. Also interviewed was the district drought monitoring officer, who provided information on what activities he was involved in concerning drought and drought monitoring.

### **3.2 Techniques of data collection**

- **Secondary Data**

This was obtained through desk research in order to get information to help in the interpretation of the findings. The process involved reviewing various books, research, reports, records of agencies that deal with drought management and records on the district of study. Secondary data helped to assess nature and the magnitude of the problem.

- **Primary Data**

This was collected through administration of questionnaires to the respondents. An open and closed ended questionnaire was used. The



information collected covered issues such as respondents age, marital status, number of dependants, level of education and means of livelihood.

Focus groups were conducted using unstructured interviews to elicit greater detail. Information from the focus groups included questions on how drought had affected them, coping strategies, vulnerability, activities other than livestock keeping they were involved in.

### **3.3 Methods of Data Analysis**

Data analysis was done in a simple, descriptive way. Quantitative was presented in the form of tables for analysis. Percentage and aggregate proportions were used in narrative form. Data collected from focus group discussions was analysed by categorizing it into themes as reported by the group participants. The themes were presented qualitatively and were used alongside quantitative data.

### **3.4 Limitations**

Due to poor infrastructure, a collapsed road network and general insecurity, the study area has been limited to two villages in central division in the district. The sample size used will be determined arbitrarily due to distribution of population, availability of resources and amount of time available for study.

**CHAPTER FOUR**  
**PRESENTATION OF DATA**

**4.0 Introduction**

This chapter covers the findings of the study. It covers perceptions by pastoralists, impact of drought, drought interventions, capacity building and role of traditional coping strategies.

**4.1 Socio-economic profile of Respondents**

The communities in Madogo and Masalani, which are the focus of the study face drought as their most common disaster. The number of respondents interviewed were 88. Women comprised 45.5%(40) of the respondents while men represented 54.5%(48) of the respondents.

**Table 1 Sex of Respondents**

<b>Sex</b>	<b>Number</b>	<b>%</b>
Female	40	45.5
Male	48	54.5
Total	88	100.0

**4.1.2 Age of Respondents**

The age of the respondents ranges from 29 -72 years of age. Table 2 shows the age distribution. Respondents aged 41-50 are the majority, followed by those who are 51-60 years of age. The majority of respondents fall within the 41-50 year bracket. Those who

are aged over 50 are the ones usually consulted by the rest of the community on important issues that affect them.

**Table 2 Age of Respondents**

Age	Number	%
<30	7	7.9
31-40	16	18.2
41-50	36	41
51-60	20	22.7
>60	9	10.2
	88	100

#### **4.1.3 Marital Status**

Majority of the respondents(84%) are married.A small percentage were not married (4%), Widows were few and in this case both were women . 9.1% of the respondents were widowed and 2.3% were divorced. The single people were young men as you are unlikely to find a young woman in her late 20's who is not married.

**Table 3 Marital Status**

<b>Marital status</b>	<b>Number</b>	<b>%</b>
Single	4	4.5
Married	74	84.1
Widowed	8	9.1
Divorced	2	2.3
	88	100.0

**4.1.4 Family size of Respondents**

The number of family members per respondent is shown in the table below. Those with no dependants make up 4.5% of the respondents. Many of the respondents (59.1%) have families ranging between 6-10 people. Families of between 11-15 people make up 27.3% of the respondents. Families tend to be large due to the polygamous nature of the people. This being an Islamic society, a man can have up to four wives. Those who had less than five children either had one wife or two wives with a few children.

**Table 4 Family Size**

<b>No of Members</b>	<b>Number</b>	<b>%</b>
No dependants	4	4.5
1-5	8	9.1
6-10	52	59.1
11-15	24	27.3
	88	100.0

#### 4.1.5 Respondents Level of Education

Table 5 shows the level of education of the respondents. All the respondents have had some sort of schooling. They have all gone to the madrassa, which is the koranic school. Some have had the opportunity to undergo traditional education in the 'dugsi' or traditional schools. A small percentage have gone to secondary school, most being men. Fewer women go to school because they are married off when they are so young. Girls are normally at a disadvantage because when money is not sufficient they are made to drop out in favor of their brothers.

**Table 5 Level of Education**

Level of Education	Frequency
Primary	65
Secondary	48
College	12
Madrassa	88
Dugsi (traditional schools)	62

#### 4.1.6 Sources of Income

About 43% of the respondents earn their income from some form of formal employment for example as watchmen, 59% are involved in farming, from which they derive

income. All the respondents got some form of income because they all own livestock and they sell milk, hides and skins, ghee or the livestock itself.

**Table 6 Income Source**

Source	Frequency	%
Employment	38	43.2
Farming	52	59.1
Livestock	88	100.0
others	76	86.4

#### **4.1.7 Livestock owned**

The respondents interviewed own a large number of cattle collectively. Some of the herds are big while others are small. Some people own three cattle while there are those who own even up to twenty. More people own goats than they do sheep as goats are more hardy in the type of environment found in that area. Camels and donkeys though fewer are used for heavy tasks like for example donkeys are used to ferry water from the river to the homestead while camels are used when a family is on the move to carry the goods and the movable house.

**Table 7 Livestock owned**

Type of Livestock	Number
cattle	700
goats	550
sheep	250
camels	150
donkeys	90

#### **4.1.8 Observations Made in Focus Group Discussions**

During focus group discussions, respondents discussed various issues such as what they thought poverty is or what they thought vulnerability is among other things. When asked to define poverty they agreed that it was a state where one could not survive without the help of others as they had very little or no assets.

They also said that somebody became vulnerable because they did not have any property and especially livestock. They named orphans, women headed households, and the disabled as some of those they thought were poor and vulnerable. Some of those said to be poor had low levels of education, few livestock, and had very large families that they could not maintain.

When asked if they could tell a poor person they came up with varied answers. They gave the following as characteristics of the poor:

- Malnourished due to lack of food

- Poor shelter
- Did casual work-a laborer
- Lives from hand to mouth
- Has no voice and is thus not listened to
- Despised by the rich because of fear of being asked for help

They cited drought as one of the major causes of poverty because it normally wiped out herds of livestock that they had. They have social classification depending on the number of livestock one owns.

### **Social classifications**

These are some of the social classes as told by the focus groups. This is how the community classifies people.

- *Faqir*-someone who is physically able but due to natural or manmade causes has lost his animals
- *Taagole*-somebody with few livestock for example 10 shoats or less, three cattle, camel or less
- *Bariya*-one who is able and has over 20 shoats or ten cattle /camels
- *Faya*-one with 40 shoats or more or 20 cattle/camels
- '*wax bun haista*' - livestock owner who has over 100 shoats, 30 cattle over 20 camels.

All the respondents agreed that women headed households were among the most vulnerable and thus the incidences of poverty were likely to be higher. Women had



less access to resources as compared to men and earned a lot less income due to low levels of education low levels of skills. Traditions and culture have a lot to do with this. Women tend to be married off at a tender age and opportunities for them are relatively fewer as compared to the boys. One lady in the FGD's shared that she was married off at the age of thirteen because her father needed the livestock to pay dowry for her brother. She told us that her story was not unique because it had happened to people she also knew. Girls are seen as a source of wealth for their families.

The women also said that they had an excessive workload necessitating the mothers to keep their daughters at home to help with various chores such as fetching water, building traditional houses and cooking. The capacity of the women to take an active role outside the house is often limited by this work she has to do to support the family.

Orphans were also seen as vulnerable because they do not have their parents to fend for them leaving them with the responsibility of having to take care of themselves. The FGDs however said that it was the social responsibility of the extended family and the community to take care of them.

The disabled were also put into this category. They rely on their family, relations and community to survive, and for food and shelter. One mzee shared that the disabled do not own livestock because they were seen as incapable of looking after them. They are also considered a burden because they cause a strain on the resources and reduce the family workforce. One young man from the focus group from Masalani thought it would be

better to have the disabled in homes if there were any as that would ease the burden on the family. The FG from Madogo did not agree with this because they saw the social support system as strong enough to take care and support these people.

The respondents said that for the poor families, meeting their most basic needs for food and water was a struggle. They experienced the greatest hunger, were more vulnerable to diseases and had very few assets by way of livestock.

The poor benefited from the social security systems through gifts from community members, through loans of livestock, getting milk from neighbors and transfer of animals from one person to another. Several women in the focus groups said that they had been beneficiaries of this system particularly after a drought when they had lost their animals.

Drought was cited by all respondents as one of the biggest problems they had to contend with. They said drought exposed them to the risk of losing their animals and, starting from the beginning was not only difficult but also frustrating.

#### **4.2 Coping Strategies during Drought**

Drought in the pastoral areas is something that has been there for very many years. Over the years, pastoralists developed strategies to deal with the drought not only to save themselves but their animals. These strategies are seen as a type of crisis management. They are flexible and different strategies are used depending on the severity of the drought or if there is conflict over resources.

During discussions with the focus groups the respondents shared with us the different strategies that they use. The different coping mechanisms are gendered with men and women's roles being well defined. Women's roles complement those of men. These are the most frequently used strategies:

- *Splitting the herd*-the milk herds remain at home to provide milk for the women and children while the rest of the herd is taken further away in search of pasture. This is a strategy that ensures that some of the animals survive the drought. The animals are taken quite far away up to Ijara where there is good pasture (though there is a problem with tsetse flies) to the north of the district where they have good grazing areas.
- *Grazing control*-in the pastoral areas there are wet and dry season grazing areas. Wet season areas are those which depend on rain fed and lack permanent water sources for example dams and water pans. Dry season grazing areas are reserved for the times when there is no rain. These are permanent water sources. Their use is carefully monitored to see that they are not being misused for example wells and boreholes.
- *Loaning of milk animals*-also called '*irmansi*' in Somali. This ensures that there is food security among the members of the community, and clan members who do not have enough milk to meet the needs of the household and especially the children. The milk animals are returned after the drought is over. Focus group

members maintained that there is no room for being mean because at some point one may be in need of the same type of generosity and they will not be helped.

- *Food preservation*-when animals are slaughtered ,the meat is preserved by salting and drying it or it is dried in the sun and then fried in ghee to make 'nyiri nyiri',which can last for three months without spoiling. Milk is preserved in special gourds made out of wood and which are smoked with herbs.
- *Prayers-'roob-doon'*
- *Household migration-'aymis'*-the entire household migrates to areas where they can get enough pasture and water for the animals.The focus groups in Masalani and Madogo said that the place where they usually migrated to was Tana River district or sometimes they even went as far as Isiolo.This is the season that they call '*der*',because it is hot
- *Suspension of social functions*-these are suspended for example marriage,paying of bride price,wedding ceremonies and any other function which involves animals.They resume these functions during the period between April and May.
- *Sharing of resources-'isla wdaagid'* -people share whatever resources they have with those who do not have any to sustain themselves.

- *Symbolic relationships with others*-'*daqsin*'-this a traditional approach where different clans approach each other and agree to share resources such as fodder,water and temporarily assimilate so long as they respect the other community as their host.
- *Skipping meals*-the adults usually go with one meal a day to save on food and ensure that the young children get food to eat.The children usually get to have three meals.
- *Milk gifts*-'*xersi*' –this happens when members of the community donate a part of their milk.This done on a regular basis.

The women mentioned what they did at home while the men went out to herd and look for pasture.Their roles and strategies during drought include:

- herding the animals left at home
- fetching water for the household sometimes in far off places which they said stressed them out physically and tires them out very fast
- feeding the young animals
- income generating activities such as sale of mats, selling miraa, milk to get money to purchase food and other necessary items

#### 4.2.1 Impact of Drought on Coping Strategies and on the Community

In the recent years, many pastoral households are unable to make a full recovery from drought before the onset of the next one greatly due to the frequency with which they occur. The ability of the pastoralist households to recover has significantly reduced because even small stresses to the system tend to lead to crisis. The drought monitoring officer, Farah, together with four elders from the two villages (in the FGDs), Ali Aden Yussuf, Mohammed Wehliye (from Madogo) and Issak Maalim together with Ibrahim Hussein (from Masalani) sought to explain what has led to the steady erosion of these coping mechanisms. They came up with quite a number of reasons which include:

- Drought is occurring too often and recovery time is not sufficient enough. They gave the example of the 1999/2000 drought which was already very bad and before they could sort themselves out they were faced with another one
- People dropping out of the livelihood system as a result of not being able to cope with the drought – when the animals die, the pastoralists tend to lead sedentary lives and they become poor. They are then forced to rely on relief food handouts and do odd jobs. In the focus group discussions, the respondents could easily identify someone they knew had fallen victim to this trend.
- Sale of assets – when the pastoralists start seeing their animals waste, they tend to sell them off at very low prices to get money to purchase other foods. When the

drought ends they do not have any stock left with which to rebuild their herds throwing them into destitution

- Many boreholes have been sunk, encouraging people to settle around them. They population pressure around the borehole leads to the area being damaged environmentally leading to depletion of water and forage.
- Conflict-these usually arise due to scarcity of resources especially grazing. Most respondents could at least recall times when they had experienced conflict. The conflicts tend to be between clans in the area and also with their neighbors, the Borana. The loss of animals through conflict was having very negative consequences both to human and animal life. They also experienced attacks from bandits, who came to raid them but not that frequently though.
- Resource alienation-the loss of key grazing areas due to the creation of reserves for the wild animals. They said this is more a problem in the south than closer to where they live
- Food security-drought means that the pastoralists have to go far searching for water and pasture for their animals. The general body conditions of the animals deteriorates and could even mean death. This reduces the productivity of the animals meaning that the household food security is reduced. This means searching for other sources of food to survive on even with the high prices.

- Banditry-this intensifies during periods of drought recovery when those who have lost their animals to the drought go and raid other people as a way of restocking themselves.Mzee Isaak Maaalim said he had at one time been a victim of this kind of attack.He said it was made worse by the fact that these bandits now have sophisticated weapons like guns
- Breakdown of social security systems-drought disrupts the redistribution of resources and weakens sharing among the community members. Women are particularly affected as they rely on these networks to ensure food security in the home.

All these factors serve to impact negatively on the traditional coping strategies rendering them ineffective in the long run.When the stress of the drought is greater than the coping strategies can handle ,people resort to non pastoral means of survival for example the pastoralists in Garissa have started farming,something that was previously looked down on while others have started fishing.Since some of the strategies have become weakened, people started relying heavily on relief food.Incidences of banditry have increased over the years as people are unable to get back on their feet so they resort to it.



### **4.3 Drought Interventions**

These include prevention, mitigation, response and recovery. These activities are done depending on which stage of the drought cycle a community is in. They are geared towards minimizing the extent and effects of drought while at the same time reducing vulnerability of the people at risk. These activities help people to move from situations of high vulnerability to high capacities. Some of these activities sometimes overlap.

#### **4.3.1 Drought Preparedness**

This includes activities that are aimed at building community's capacities to manage drought. They take place when there is no drought stress.

The respondents in the survey are involved in a number of community development activities. They range from building schools, clinics, small scale businesses, farming and income generating activities.

#### **Activities of Different Groups**

##### **A. Water Users Associations**

Their activities include management of boreholes and levying fees. The fees range depending on the amount of water one is going to use and the purpose. Charges differ for domestic use and for animal use. Men and women are members of these associations. They monitor the use of the boreholes to make sure they do not break down due to overuse.

They also rely on different sources of water depending on where they are. For example, reserve boreholes are for emergencies. Some of the water sources mentioned by the respondents included lags, Tana River, boreholes, dams and water tanks and sometimes they got water delivered to them through water tankering. The distances to the water place depend on where they are. Sometimes they have to walk for long distances to fetch water both for themselves and their animals.

**Table 8 Membership in Water Users Associations**

<b>Members</b>	<b>Number</b>	<b>%</b>
<b>Men</b>	<b>25</b>	<b>58.1</b>
<b>Women</b>	<b>18</b>	<b>41.9</b>
	<b>43</b>	<b>100.0</b>

43 of the respondents are in water users associations in their villages. In all WUAs, the treasurer are women because they are the most trustworthy when it comes to keeping money. With the money collected they buy spare parts for the boreholes to maintain it in good working order. This ensures that it operates at its full potential even when there is drought.

### **B. Womens Groups**

Most of the women are involved in womens groups. Milk trade is the most common activity among the female respondents with 42 % of them being

involved. These activities generate extra income for the women and they use this money to buy food, medicine, clothes or pay school fees. They also have access to credit facilities from K-Rep, Garissa. Their access to credit facilities has a more direct impact on the household than income of men, while men can join these groups, women tend to dominate. These groups are registered with the ministry of Culture and Social Services. They have a minimum of 15 members, open a bank account and identify the activity of their interest. They are entitled to loans from the groups.

In the focus groups, women said they were milk managers while men, who associate animals with wealth and prestige are managers of the herds. These groups also provide women with a basis for mobilization and their increased participation in the development activities. The women however noted that there were limitations to those who were too poor to and could not become members as they could not afford the registration fee, high rates of illiteracy which limit their potential access to resources. Despite all these, women groups are a starting point for women's empowerment.

**Table 9 Women Groups**

activity	frequency	%
livestock trade	34	38.6
selling vegetables	32	36.4
mat making	26	29.5
milk trade	37	42.0
running tea kiosk	12	13.6
trade in hides and skins	18	20.5

Out of all the respondents ,34 men(38.6%)and 18 women(20.5%) are in farming.They sell different commodities in the market.

### **C.Agro-pastoral groups**

These are groups where members keep animals as well as engage in farming.They also buy and sell sheep,goats and fresh produce.Membership is open to both men and women.In Masalani and Madogo villages,there were respondents that were involved in farming.There is a management committee in the farms that they belong to but each individual member is responsible for their piece of land, cultivation and marketing of their own produce.On average,they can make between KSh.2000-3000 per week when they have bountiful harvest.Each member contributes KSh.100 per week for the maintenance of the pump.They have a group account.These farms create employment through hiring of casuals to

till and harvest them. They belong to the Jamhuri an Raya farms which are large group farms run with the support of the Arid Lands Project in Garissa.

**Table 10 Number of Farmers Among Respondents**

sex	number	%
male	34	38.6
female	18	20.5

#### **Commodities sold in the Market**

The commodities sold vary as can be seen in the above table. The fruits sold include watermelons, bananas, pawpaws, and mangos. Other commodities sold include eggs, ropes, mats, miraa, honey and charcoal. Milk is mostly sold by the women.

**Table 11 Commodities sold**

<b>Commodity</b>	<b>Number of people selling</b>
Cereals	41
Vegetables	47
Fruits	52
Milk	40
Poultry	32
others	43

#### **D.Livestock Development Groups**

These are groups involved in activities that pertain to animals and animal health. These activities include sale of veterinary drugs, running and managing of dips, fencing dams and managing use of water .identifying community animal health workers and trading in livestock. They usually charge a small fee for these services. Majority of the members are men with a very small percentage of women.

**Table 12 Membership in LDGs**

<b>Membership</b>	<b>Number</b>	<b>%</b>
Male	40	45.5
Female	10	11.4

Of the 48 men in the FGDs ,40(45.5%)of them are members of the livestock development group,which represents 83.3% of all the male respondents.10 women (11.4%) are members of these groups and represent 25% of all the female respondents.

The LGDs sell veterinary drugs at a small fee to the pastoralists.They also charge a minimal fee for the use of drugs.The LGDs all come together on Wednesday to trade their animals.This is the market day in Garissa.hey said response to their services is positive and encouraging.

#### **4.3.2 Community Training**

Organizations like Arid Lands ,Garissa are involved in training of communities.They are deeply involved in the training of community animal health workers (CAHWs)who are meant to travel along with the herdsman and treat their animals.The training takes place for three weeks and there are also refresher courses.At the end of the training,each participant gets a certificate.

**Table 13 CAHWs Training**

<b>Training</b>	<b>Number</b>	<b>%</b>
Yes	27	56.25
No	21	43.75
	48	100.0

Among the male respondents, 27 (56.25%) had received training as CAHWs. They are responsible for treating animals as well as ensuring there is steady supply of drugs that do not run out when they are in far off places.

#### **4.3.3 Livestock Vaccination**

Vaccination is done to protect animals from opportunistic diseases. They are vaccinated against various diseases that attack animals under the supervision of the district livestock extension officers. These nomads follow defined routes so they are easy to track down.

#### **4.3.4 Early Warning Systems**

##### **Interview with Drought Monitoring Officer (Garissa)**

Early warning systems involve the collection of data from households and analysing the livelihoods. The Arid Lands Project has put in place an early warning system in Garissa where data is collected every month. This is a system of drought monitoring. We have people who live in these



communities whom we have trained on how to collect data so that we can have the real picture on the ground. This data is collected once a month and compiled into a bulletin. This information is then shared out with the various agencies that have programs in the districts through the district steering groups (DSGs). The purpose of this information is to collect and provide timely notice of drought in order to elicit timely response. This is a community-based system. The information gathered is analysed and information shows whether an area is in a normal, alert, alarm or emergency phase. So far it has helped in warning us of when a drought is impending and we have been able to act on time avert a crisis.

Early warning information is vital in making contingency plans. These plans are all about being prepared, which means predicting a situation and preparing for it. These plans also determine the amount and type of assistance needed. These plans are aimed at

- Encouraging destocking to avoid livestock deaths and preserve stock
- Prevent formation of famine camps
- Provide food for work schemes
- Support traditional coping strategies
- Promote local capacities

#### **4.3.5 Mitigation Activities**

These are activities aimed at minimizing the impact of drought. They include destocking, conflict management, and maintenance of water sources.

Destocking is an activity that involves purchasing stock from pastoralists and the distributing it back to them as a protein supplement. Most of the respondents have been involved in this activity and have given goats, sheep and even cattle.

During focus group discussions, the respondents said they had been involved in conflict management at community level especially regarding community resources. Their efforts are usually supported by Arid Lands and other NGOs.

Maintenance of boreholes is another activity that's important. Well maintained boreholes mean that people don't need to go far looking for water. The respondents said that they were keen on maintaining the boreholes in good condition and make sure people do not over strain due to overuse.

#### **4.3.6 Emergency Interventions**

These are measures that are aimed at saving lives. They include provision of relief food which is supplied to prevent people from starving.

Supplementary feeding is done along side this but is targeted at the young children. Relief food stops the pastoralists from selling their animals. The respondents had all at one point received relief food especially during the 1999/2000 drought ,which was particularly severe.

Water tinkering is also done to provide water for people who are far off. It satisfies the immediate need for water but is not sustainable because it is expensive.

Animal and human health interventions are also done at during this phase. These involve vaccination of animals, providing vaccines for children, antenatal care for expectant mothers and nutrition surveys for children under five.

#### **4.3.7 Recovery Intervention**

This is an intervention aimed at accelerating return to normal life. It includes food for work ,restocking, rehabilitation of dams, and repair of infrastructure.

Food for work involves doing various jobs in return for food. They include desilting of dams, farm work or construction work .Most times, the people who do this work are those who cannot afford to buy it because they are destitute.

Restocking involves the donation of animals from people who live with someone who has lost almost all their animals. In FGDs ,it emerged that

majority of the recipients are women who have at least 10 animals. If they do not have any animals and they receive. They are most likely to sell them for food. When the donated animals give birth, the recipient gives the young animals to the people who donated them.

Repair of infrastructure includes repair of water sources, cattle crushes, Stock routes and cattle yards. The repairing of cattle yards and stock routes is to make sure that animals can get to the holding grounds quickly so that they can be sold.

#### **4.4 Role of Traditional Coping Strategies In Drought Management**

Pastoralists' drought survival requires the strengthening of traditional coping strategies including those that are tenable to planning drought management. Coping strategies that aim to preserve livestock should be incorporated into drought management. Social security networks should be strengthened by involving activities like sharing of milk animals, and restocking into drought management. Local communities should have a role in design and implementation of activities that are geared towards drought management so that their coping strategies can be incorporated. Coping strategies can be strengthened by the planning drought management at the community level and increasing drought preparedness preparedness by building indigenous early warning systems.

## CHAPTER FIVE

### CONCLUSIONS AND RECOMMENDATIONS

Drought management can be progressively used to minimize the impact of drought on a population while increasing capacities of the affected population.

From the data presented, drought management has many facets to it. There are elements of preparedness, mitigation, response and recovery. One way of dealing with drought is to strengthen the coping strategies of pastoralists through coping strategies. If these are strengthened, vulnerability is reduced and the numbers of those who are vulnerable are reduced. The creation of women groups and other associations shows that people are willing to do something about their vulnerability and lift themselves out of a cycle of dependency. These groups are created to supplement whatever income they get from livestock.

#### 5.0 Conclusions

- I. Coping strategies play an important role in bringing together the community members during periods of crisis. They provide a buffer and support for the community
- II. The self help groups and small scale businesses have helped women to come out of the poverty trap and gain some financial independence and provide for their families
- III. Community involvement is important for the success of any project.

- IV. Early warning systems as a means of drought management helps to create early awareness and brings timely response so that the pastoralists are prepared and do not have to incur heavy losses through loss of livestock
  
- V. All the activities done are geared towards increasing the capacities of the pastoralists like formation of water users associations, and livestock development groups
  
- VI. Drought management is an on going cycle and is something that is done all year round whether or not, there is a crisis because when you are forewarned you are prepared
  
- VII. People are willing to do what they can to lift themselves out of poverty. The projects mentioned in this paper are all geared towards the development and self sustainability of the community.

### **5.1 Recommendations**

- I. There is need to ensure that effective early warning leads to timely response to trigger appropriate and timely response
  
- II. There is need to support extension training of women in survival and investment skills. Petty traders suffer because of lack of business skills

- III. There should be establishment of livestock emergency markets where pastoralists can sell their animals during a drought to reduce the heavy losses incurred due to absence of one.
  
- IV. There is need for improved structural development in the pastoral areas. These developments would include supporting educational initiatives, conflict management, improved natural resource management and enhancement of community organizations
  
- V. Disease control mechanisms should be strengthened in the pastoral area to prevent spread of disease
  
- VI. Pastoralists should be encouraged to diversify their livelihood means and try their hand at things such as farming where it is appropriate

## BIBLIOGRAPHY

- Barrow G.C. Edmund (1996) The Drylands of Africa. Local Participation in Tree Management, Nairobi, Initiatives Publishers.
- Blench Roger (2001), Pastoralism in the New Millenium, UNFAO
- Chambers Robert (1993), Rural Development. Putting the Last First, Longman Group, UK
- Development Policy for the ASAL areas ((1992), GoK
- Ekaya Wellington et.al (2001) Reporting Food Security and Drought, in Pastoral Areas Nairobi IIN
- Field O. John (1993), The Challenge of Famine, Kumarian Press, U.S
- Garissa District Development Plan, 1997 – 2001, GoK
- Garissa District Livelihood Security Assessment, (2000)Care, Kenya
- Hubbard Micheal (1995) Improving Food Security – A Guide for Rural Development Managers, London ITDG
- IGAD, Disaster Preparedness Strategy, (1998) UNFAO
- Improved Vulnerability and Capability for Community Based Disaster Mitigation (1999) DPIRP, Nyanyuki
- Kenya at the Crossroads-Scenarios for our future (2001) IEA
- Kinoti W Hannah, (1998) A Handbook of Social Research Methods, NCKK
- Maalim M., Osman A (1997) Community Mobilization Report, Garissa District, ALRMP
- Maskrey Andrew (1989), Disaster Mitigation – A Community Based Approach, Oxfam Publishing
- Narayan Deepa et. al (2001) Voices of the Poor, Can Anyone Hear Us?, World Bank, Oxford University Press
- National Development Plan, 1997 – 2001, GoK
- National Poverty Eradication Plan 1999-2015,(1999) O.P Government of Kenya



Oba Gufu (1996), Pastoralists Traditional Drought Coping Strategies in Northern Kenya, Acacia Consultants, Kenya

Oxfam, (1995) Oxfam Hand Book of Development and Relief, Oxfam Publishing

Promoting Rights of Pastoralists in the Horn of Africa, (1998) Workshop Report

Responding to Disasters (2001) Action Aid Report

Social Dimensions of Development – Human centered development and targeted poverty interventions

**Questionnaire**

**Date of interview:**

**Name of respondent:**

**Sex: male**

**Female**

**1.Age: <30**

**31-40**

**41-50**

**51-60**

**>60**

**2.Marital status:**

**Divorced**

**Married**

**Single**

**Widowed**

**3.How many children do you have?**

**None**

**1-5**

**6-10**

**11-15**

**4.What level of education did you attain?**

**a.primary**

**b.secondary**

**c.college**

**d.dugsi(traditional schools**

**e.madrassa**

**3.What are your sources of income?**

**Employment**

**Farming**

**Livestock**

**Others**

**4.What animals do you own?**

**Goats**

**Cattle**

**Sheep**

**Donkeys**

**Camels**

**5.Are you a member of any water users association?**

**6. If you are in any womens group,What activities are you engaged in?**

**7.Are you are engaged in farming?**

**8.What commodities do you sell in the market?**

**9.Are you a member of a livestock development group?**

**10 Have you been trained as a community animal health worker?**

**Focus Group Discussion Questions**

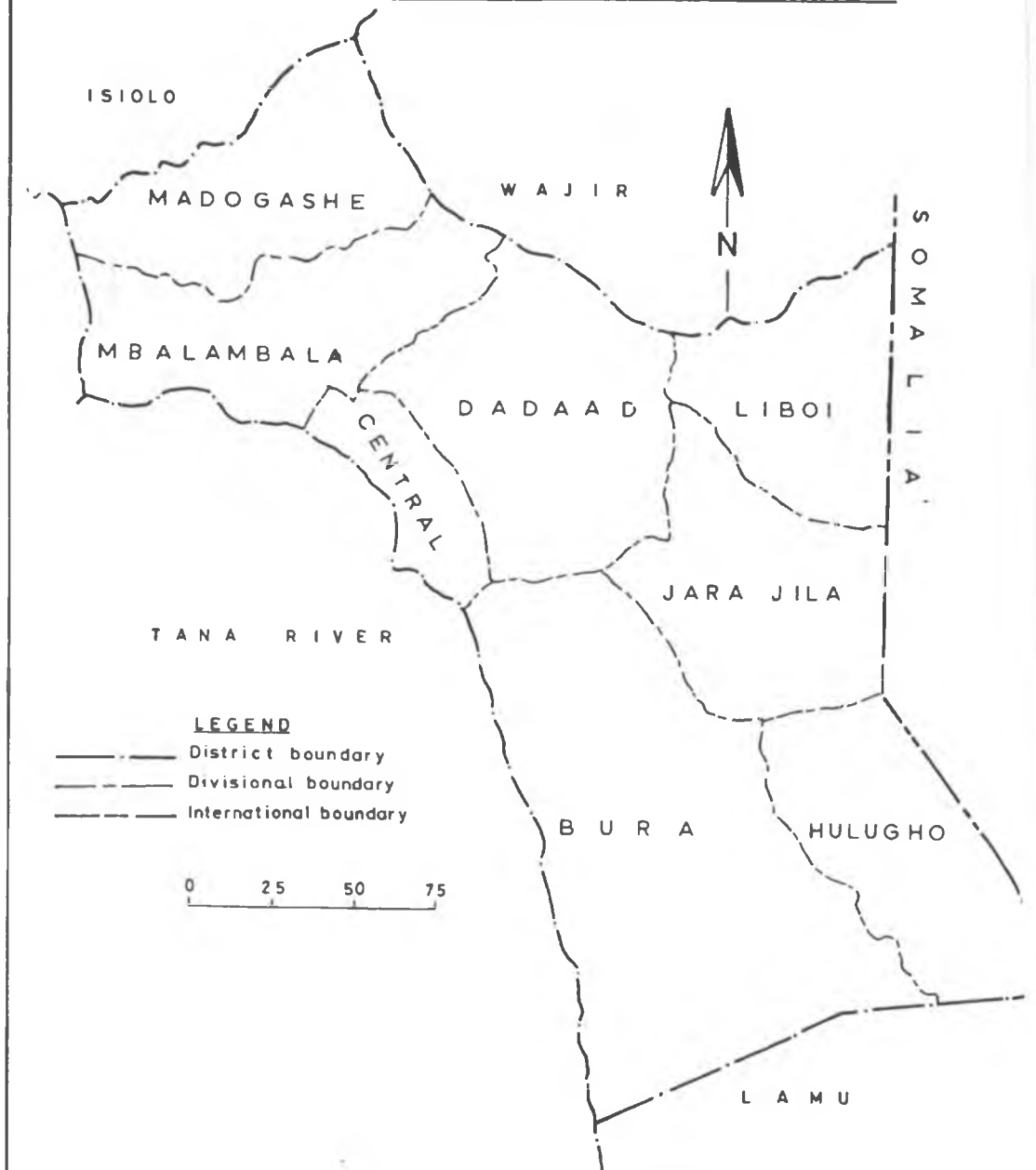
- 1. What determines who is rich or poor?**
- 2. Who are identified as rich or poor?**
- 3. What traditional coping strategies do people use?**
- 4. Are strategies different for men and for women?**
- 5. Are these the most frequently used strategies?**
- 6. How has drought affected these strategies?**
- 7. Have any new strategies emerged?**
- 8. What are the roles and responsibilities of the CAHWs?**
- 9. How do they get to you when you have left your homes in search of pasture**

**Drought Monitoring Officer's Questionnaire**

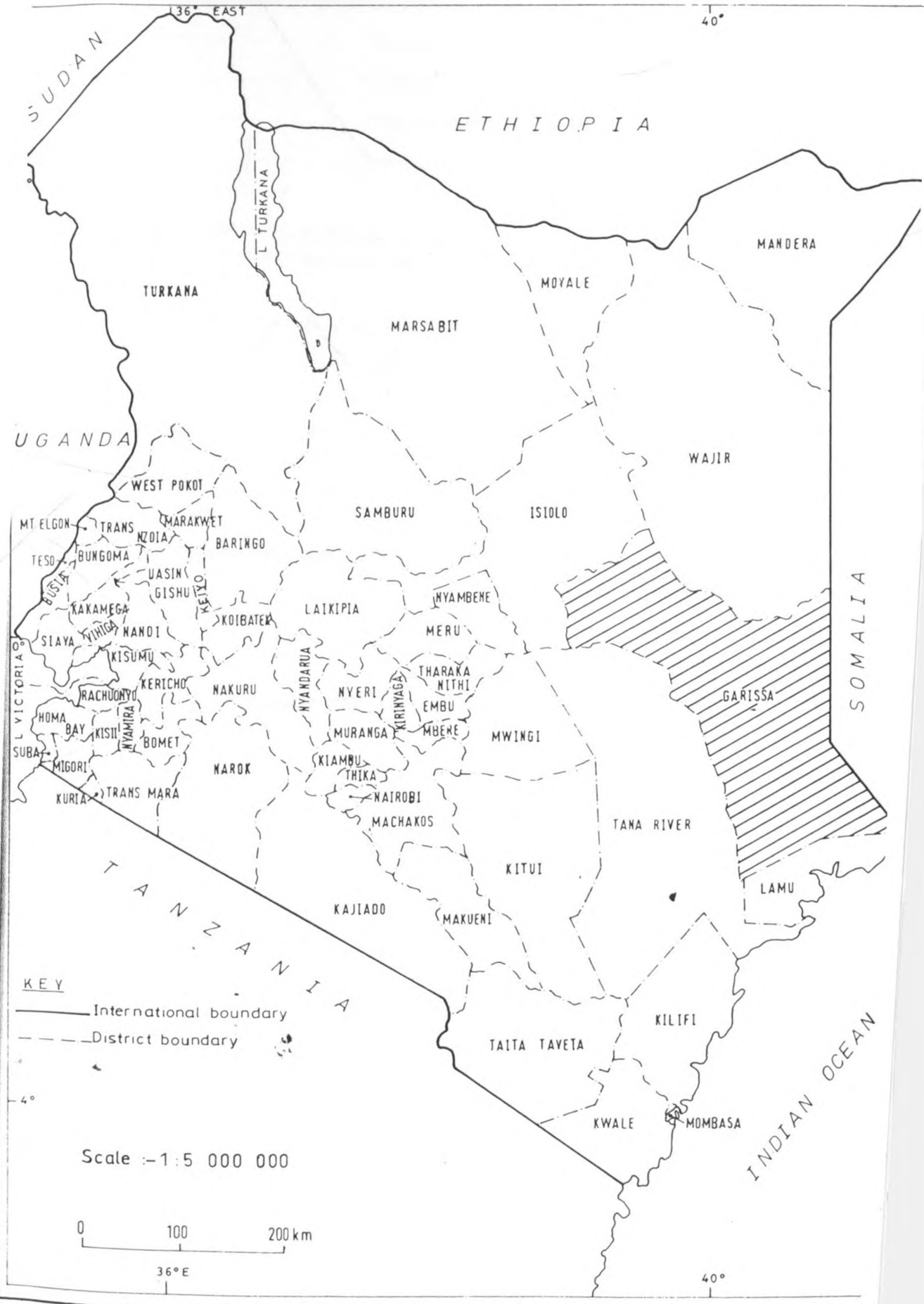
- 1. How do you gather information on drought ?**
- 2. How do you access communities who are far off?**
- 3. What interventions have you put in place to deal with drought in terms of mitigation, preparedness, response and recovery?**

**4. How successful do you think drought monitoring has been?**

GARISSA DISTRICT  
ADMINISTRATIVE BOUNDARIES



# LOCATION OF THE DISTRICT



ARID LANDS RESOURCE MANAGEMENT PROJECT/DROUGHT  
PREPAREDNESS, INTERVENTION AND RECOVERY PROGRAMME

HOUSEHOLD QUESTIONNAIRE

District..... Division .....

Sample area ..... Community .....

Monitoring Officer ..... Date of Monitoring .....

Name of Household..... Number of Household Members .....

Number of Children under the age of five .....

Questionnaire and answers should cover occurrences during the last four weeks. The head of the household or senior wife should be interviewed, preferably with the presence of one other household member.

A. Mention the households' **main** source of livelihood in a normal year (✓)?

- (a) Livestock ..... Ask Section 1 (Livestock Production)
- (b) Agriculture ..... Ask Section 2 (Agricultural Production)
- (c) Agro-Pastoral ..... Ask Sections 1 and 2

**Section 1—Livestock Production**

1.1. ANIMAL BIRTHS

1.1.1. Mention the number of animals in your household herd, which were born during the last four weeks?

(a) Sheep ..... (b) Goats ..... (c) Camels ..... (d) Cattle .....

1.2. ANIMAL MORTALITY

1.2.1. Mention the number of animals in your household herd that died during the last four weeks?

(a) Sheep ..... (b) Goats ..... (c) Camels ..... (d) Cattle .....

1.2.2. Mention the age (✓) of most of the livestock that died during the last four weeks?

Livestock	Mostly Immatures	Mostly Matures	Equal Number of Both
Sheep			
Goats			
Camels			
Cattle			

1.3. ANIMAL SALES

Mention the number of animals that you sold during the last four weeks?  
Indicate Average Price received per Animal (PPA).

- (a) Sheep..... PPA ..... (b) Goats ..... PPA .....
- (c) Camels..... PPA ..... (d) Cattle ..... PPA .....



### Section 3—General Purchases

#### 3.1. CEREAL PURCHASES

3.1.1. Did your household buy cereals during the last four weeks? Yes/No (\*)

3.1.2. Indicate Price per Kilogram (PPKG).

(a) Posho (locally milled) Yes/No (\*) PPKG. ....

(b) Maize Yes/No (\*) PPKG. ....

(c) Sorghum Yes/No (\*) PPKG. ....

(d) Rice Yes/No (\*) PPKG. ....

### Section 4—Welfare

#### 4.1. MILK CONSUMPTION

4.1.1. Mention who drank milk during the last four weeks:

Everyone/Children only/No one (\*)

(Note: "milk", in this case, is only whole milk and does not includes milky tea).

#### 4.2. RELIEF

4.2.1. Did your household receive any aid during the last four weeks? Yes/No (\*)

(If No, go to qu. 4.2.4.)

4.2.2. Mention the type of aid recieved by your household during the last four weeks.

Relief Food/Food-for-Work/Cash-for-Work/Other .....(\*)

4.2.3. Mention the number of kilograms of food aid your househld received during the last four weeks (mention cereals only).

(a) No. of kg. relief food (cereals) per household .....kg.

(b) No. of kg. FFW (cereals) per household ..... kg.

4.2.4. Did any of your children receive UNIMIX and/or Soya during the last four weeks?

Yes/No (\*) If Yes, how many children? .....

4.2.5. Mention the number of kilograms of UNIMIX and/or Soya your children received during the last four weeks.

No. of kg. UNIMIX/Soya received per child: .....kg.

#### 4.3. NUTRITIONAL STATUS

4.3.1. Measure the Mid-Upper Arm Circumference (MUAC) of the children older than one year but under five years of age (12–59 months). Include qualifying children in the sample household AS WELL AS the children in the immediate neighbouring household(s).

ARID LANDS RESOURCE MANAGEMENT PROJECT/DROUGHT PREPAREDNESS  
INTERVENTION AND PROGRAMME

**COMMUNITY OBSERVATION FORM**

District: ..... Division: .....

Sample Area: ..... Monitoring Officer:.....

Name of Community: ..... Date of Monitoring: .....

Field Monitors are to make their own observation in the sample community, and list them accordingly.

**1. Water Sources**

1.1. Check on type of water sources the community has access to and list them accordingly.

TYPE OF WATER SOURCE	INDICATE IF COMMUNITY HAS ACCESS TO WATER SOURCE (✓)	AVERAGE DISTANCE FOR COMMUNITY TO EACH WATER SOURCE (IN KM.)
Traditional river wells		
Catchment pools		
Constructed shallow wells (functioning)		
Boreholes (functioning)		
Other (specify)		

**2. Community Population**

2.1. *Population Numbers*

2.1.1. Estimate the total population number of the sample community. Use the following guidelines:

(a) Calculate the average number of household members per household within the sample community. (See household questionnaires).  
.....

(b) Count or estimate the total number of households that are in use within the sample community.  
.....

(c) Multiply the outcome of (a) with (b).

**Estimated population of sample community** .....

**3. Migration and Displacement**

3.1. Check on evidence of displacement and migration. Consult with local elders and comment on the following:

Have any households/herds moved away from the sample community during the last four weeks?  
Yes/No (\*)

If Yes, give who moved (✓).

Estimate Number  
(of households)

(1) Whole household ..... ..

(2) Milking herd ..... ..

(3) Satellite herd ..... ..

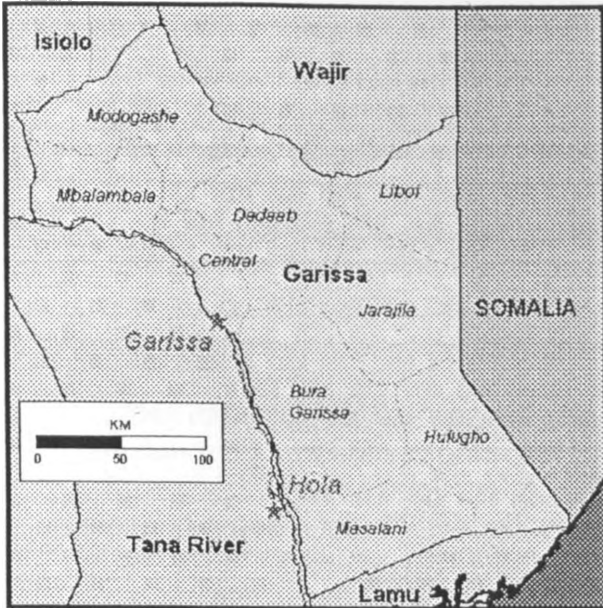
\* Underline where appropriate.

# Arid Lands Resource Management Project Drought Early Warning System

## Drought Monitoring Bulletin: Garissa District

**Period: June 2001**

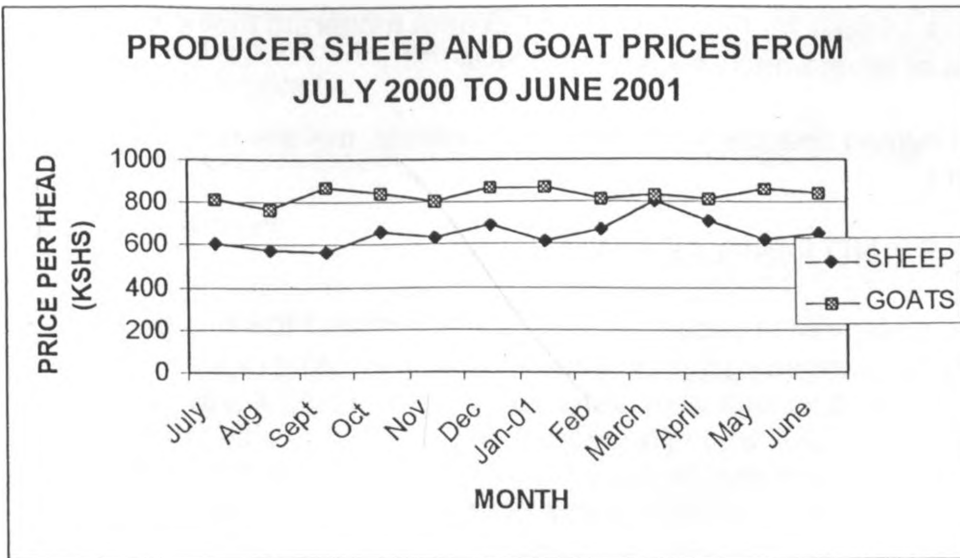
### **WARNING STAGE:**



<u>Division(s)</u>	<u>Stage</u>	<u>Trend</u>
Bura	Alarm	Worsening
Ijara	Alert	No change
Masalani	Alert	No change
Sangailu	Alert	No change
Holugho	Alert	No change
Central	Alarm	Worsening
Sankuri	Alarm	Worsening
Modogashe	Alarm	Worsening
Shanta abak	Alarm	Worsening
Liboi	Alarm	No Change
Dadaab	Alarm	No Change
Jarajilla	Alarm	No Change
Benane	Alarm	Worsening
Mbalambala	Alarm	Worsening
<b>DISTRICT</b>	<b>ALARM</b>	<b>Worsening</b>

#### Situation Overview

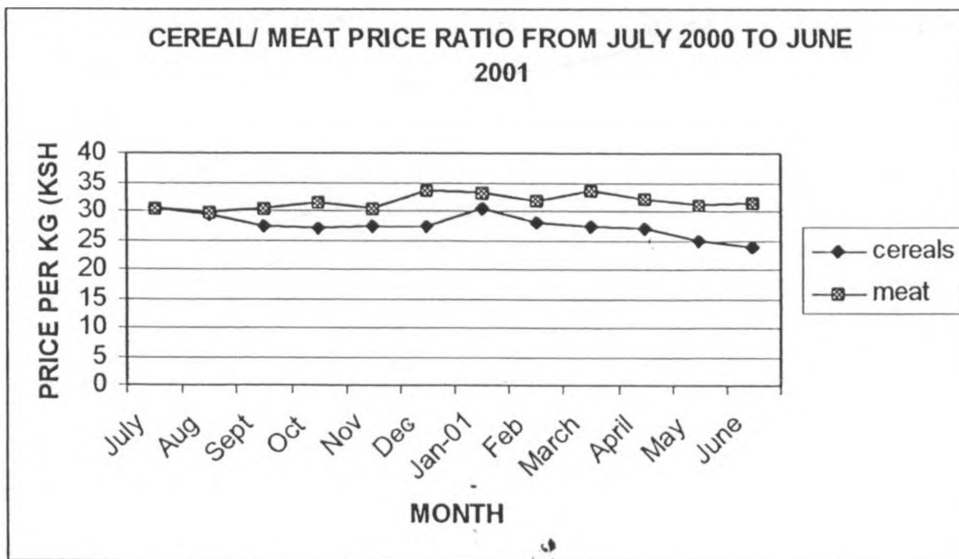
- ❖ As dry weather condition persisted in most parts of Garissa district, some rainfall was realized in parts Ijara district.
- ❖ Water availability improved substantial in Ijara district as some of the pans have impounded water. In Garissa district most of the pans remained dry as they did not impounded water. Acute water shortage persists, in the northern divisions and the worst affected parts include Balambala, Sankuri, Shanta abak and Modogashe divisions of Garissa district.
- ❖ The rainfall realized resulted in improved range condition as regeneration of vegetation particularly the browse species was noted in Ijara district. However, in Garissa district, this was confined to only areas where sufficient rainfall was realized.
- ❖ Subsequent to the improved browse condition in areas where sufficient rainfall was realized, marked improvement in body condition of livestock was observed especially in Ijara district. However, poor livestock body condition especially cattle was still evident in areas where the rainfall was not sufficient in Garissa district.
- ❖ Overall, the livestock growth rate recorded a positive trend during the month and this may be attributed mainly to the increase in kidding and lambing rate particularly among the small stock. Other reasons, which may be attributed to the positive growth rate, include reduced sales, slaughter and mortality rates recorded during the month. No outbreak of a notifiable disease was reported.
- ❖ A notable decrease of livestock sales was recorded during this month when compared to the preceding month. This can be attributed to the increased cereal availability through the current relief distribution and the decreased in the number of livestock presented for sale. Purchasing power of the pastoralist continues to be stable.
- ❖ The nutritional status of children aged 1-5yrs slight improved when compared to preceding month. Those at risk i.e <135mm were 14.69% while moderate and severe malnutrition was 1.5% and 0.78% respectively.
- ❖ Increased movement of pastoralist was noted and this may have been occasioned by search for better pasture and water.
- ❖ CARE Kenya continued to distribute relief in both Garissa and Ijara Districts.



### 3.0 PASTORAL WELFARE INDICATORS

Due to improvement noted in prices of some of the livestock and the staple cereals prices, which is mainly, attributed to the on going relief operations; the pastoralists' terms of trade continue to be favorable. This is evident from the declining cereal: meat price ratio. A kilogram of meat was selling at Ksh. 31.40/= (live body weight) while a kilogram of cereals was selling at Ksh. 23.80/=. This means that an average of 76% of the price obtained for 1 kilogram of meat (live body weight) was needed to purchase an equal amount of cereal. The survey showed slight improvements in milk availability though the same is still low in most parts of the district and as a result, cereal consumptions dominate the pastoralist diet. The percentage of the households consuming milk was 44.6% for only children while 2 % was for everyone. The percentage of household reporting that they did not take milk at all was 49.6 %.

The line graph below shows the cereal/meat price ratio.



The malnutrition rate for children aged 5 years improved slightly and this may be attributed mainly to the continued provision of supplementary feeding and the slight improvement in availability of milk.

- ❖ Drilling replacement boreholes should be speeded up as a matter of priority as the old boreholes are caving. In this regard Yumbis borehole should be given first priority.
- ❖ Support to rehabilitation of critical sources should continue.
- ❖ **Warning Stages**

NORMAL:	Environment, livestock and pastoral welfare indicators show no unusual fluctuations and remain in the expected seasonal range.
ALERT:	Environmental indicators show unusual fluctuations outside expected seasonal. This occurs within the entire district, or within localized regions.
OR	Asset levels of households are still too low to provide adequate subsistence levels and vulnerability to food insecurity is still high.
ALARM:	Environmental and livestock /Agriculture indicators fluctuate outside expected seasonal ranges, affecting the local economy. This condition occurs in most parts of the district, and directly and indirectly threatens food security of pastoralists and/or agro-pastoralists.
EMERGENCY:	All indicators are fluctuating outside normal ranges, local production systems are collapsed as well as the dominant economy within the district. This situation affects the asset status purchasing powers of the population to an extent that welfare levels have been seriously worsened resulting in famine threat.