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**DISASTER MANAGEMENT IN ARID AND SEMI ARID AREAS (ASALS) IN
KENYA: THE CASE OF BARINGO COUNTY**

BY

JAMES BINSAI CHEPSONGOL

C154/CTY/24420/2010

**RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF HUMANITIES AND
SOCIAL SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE AWARD OF THE DEGREE OF EXECUTIVE MASTER OF PUBLIC POLICY
AND ADMINISTRATION, KENYATTA UNIVERSITY**

MAY, 2014

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DECLARATION

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

Signature: 

Date: 21/5/2014

JAMES BINSAI CHEPSONGOL

C154/CTY/24420/2010

SUPERVISORS RECOMMENDATION

This research project report has been submitted for review with our approval as the appointed University Supervisors

PROF. KISILU KOMBO

Department of Educational Foundations

Kenyatta University

Signature: 

Date: 25.06.2014

DR. LAZARUS NGARI

Department of History and Archaeological Studies

Kenyatta University

Signature: 

Date: 4/6/2014

DEDICATION

I dedicate this work to my dear wife and children for their encouragement, patience and perseverance they accorded me during my research.

ACKNOWLEDGEMENT

I thank God for giving me the opportunity to experience this life and to work on this research project. I also express my appreciation to my supervisors, Prof. Kombo and Dr. Ngari for their technical input, guidance and availability for consultations to make this project proper and complete.

ABSTRACT

Disasters have continued to pose great challenges to many Governments and organizations across the world. By examining past disaster experiences, it can be observed that preparedness, response, mitigation and resilience to disasters are proportional to a country's level of development. Developed countries tend to suffer less compared to developing countries which are normally devastated during disasters. Efficient and effective management of disasters has the potential of enhancing economic productivity and growth across the country. The application of latest technology for early warning systems and acquisition of modern equipment help in training personnel to deal with management of various kinds of disasters. This study undertakes to find out whether adequate and effective legislation exists for disaster management and how this impacts on the challenges and opportunities for managing disasters in Kenya. The study was premised on the assumption of the existence of legal and institutional frameworks for national disaster risk reduction and that there are opportunities and challenges for mainstreaming disaster management agenda at national and county levels. The study utilized the Social Capital Theory approach on public awareness to analyze the data. Staff at the Ministry dealing directly with the management of disasters, was targeted and included a sample of about 60 members of staff. Purposive Sampling was employed and questionnaires used to collect data from the respondents. Secondary data was collected from the libraries including records and data from the Ministry. The data collected was coded, checked for accuracy and tabulated for summary purposes. Both qualitative and quantitative analysis was used to answer to the arising characteristics of the disaster situation. Descriptive Statistics was used to analyze the data. The Statistical Package for Social Scientists and Microsoft Excel computer programs was used analyze the data. The data is presented using frequency. From the study, the respondents affirmed that the drought, famine, landslides and cattle rustling are the main disasters in Baringo County. They said that the legislation and policies on disaster management were available with majority saying that they did not know of their existence. They rated disaster management in Baringo County as poor because of slow response, efficient equipment and facilities, improvement of infrastructure to hasten response and create policies and legislation that are necessary for effective disaster management. There is also need to increase the cross border peace meeting an enhance frequency to help in managing cattle rustling, develop and encourage farmers use irrigation for food, forest and vegetation cover in landslides-prone areas through reforestation and stopping farming activities on the hills and cliffs.

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DEFINITION OF OPERATIONAL TERMS

Disaster	An emergency event that occurs with little or no warning and that causes more destruction or disruption of operations than the community can correct by application of its own resources (Finely, 1983). This includes events like destructions, death or injuries from the trigger mechanisms/causes such as high winds, earthquake, shocks or drought.
Disaster Management	The organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters.
Disaster preparedness	Activities designed to minimise loss of life and damage, for example, by removing people and property from a threatened location and by facilitating timely and effective rescue, relief and rehabilitation. Preparedness is the main way of reducing the impact of Disasters
ASAL	Arid and semi-arid Lands

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The Ministry of State for Special Programmes was established in 2006 to coordinate and manage disasters facing the country. These disasters include drought, floods, landslides, fires, accidents and terrorism in urban areas. According to available records, the frequencies of natural and man-made disasters tend to occur in the majority of cases in arid and semi-arid areas (ASAL) which form about 80% of the country's territory. These ASAL areas also face developmental challenges and therefore most exposed to disaster risks.

During the last 35 years, at least ten severe droughts have taken place in Kenya, affecting an increasing number of people. For example, the 1975 drought affected a total of 16,000 people, while the droughts of 1999/2001 and 2004/2006 affected 4.4 and 3.5 million people respectively, including those living outside the pastoralist areas. The Government provided 3.8 million people with relief food and water and pasture for livestock during the severe Horn of Africa drought experienced in 2010/2011.

In the past, droughts have always occurred at five or six-year intervals, and have been increasingly experienced more frequently and more intensively in recent decades (Vant Land and Wekesa, 2008). Since droughts are common in ASALs, pastoralists have been unable to use traditional coping mechanisms to sufficiently overcome the problems of drought. However, as droughts become more frequent, the recovery periods also become too short thus pushing the pastoralists into a downward cycle. The government has continued to provide large-scale food distribution programmes during drought periods to save lives and avert catastrophe. While these interventions met their aims, the reverse side was that they created donor dependency among pastoralists, eroding their coping capacity and mechanisms and stimulated them to become sedentary even in normal situations (Swift et al, 2002).

Therefore, this study sought to identify the causes of the dependency and whether the interventions as developed by the government, meet the desired expectations.

Due to the shortcomings of an effective management of drought in ASAL areas, the study sought to identify how a drought management policy, in relation to Kenya, has been formulated and implemented.

This entailed an analysis of the strengths and weaknesses of the policy related to drought management. According to available information related to disaster management policy, policy is expected to help vulnerable communities to deal with disaster effects caused by drought. However, the disaster management document is

not very clear and there is lack of clarity in creating awareness among communities living in ASAL areas. A disaster management policy would help vulnerable communities to develop coping mechanisms and diversify their livelihoods.

Bushell and Wekesa (2002) argue that Kenyans should start questioning why a country like Ethiopia has had a DRR [disaster risk reduction] policy since 1974 whereas Kenya has been working on one since 2002. They contend that the delays were due to continuous amendments being made to the draft policy to include emerging issues affecting the country, such as climate change, earthquakes and political violence. However, they recommend that making decisions on these issues requires a disaster policy. In this respect, Kenya currently has a draft National Disaster Management Policy to establish the guiding principles and policy structures for disaster management in the country.

However, it is noted that the government has continued to enlist research papers and adopted policies that address issues of disaster, including drought management. While these policies exist, the challenge has been the lack of proper coordination and implementation which is the focus of this study. It is these weaknesses that have tended to portray government disaster interventions negatively (Ngecu and Mathu, 1999).

The study has looked into issues of budget funding to determine whether sufficient funds are allocated for disaster risk reduction and mitigation to the Ministry to be able to respond adequately whenever disasters strike. The other issue is whether it is staffed with qualified personnel. It is for this reason that questions continue to be raised as to whether government has any disaster policies given the insufficient or inadequate response measures. It becomes more pertinent when it is considered that disasters like floods and drought tend to occur within predictable circles during each intervention, the government has been portrayed as unprepared and ineffective. The purpose of any policy is to provide the over-arching framework for decision making and presents the institutional structures, roles, responsibilities, authorities and key processes required for co-ordination and coherent approach to disasters. This study examined the drought policy to determine if this is the case

Table 1: Disasters in Kenya

The table below gives an indication of the disasters that Kenya has experienced over the last few years in order to appreciate the challenges, effects and magnitude of the disaster problem (Ministry of State for Special Programmes, 2013).

S/No	YEAR	DISASTER	COVERAGE	PEOPLE AFFECTED
1.	1971	Drought	Widespread	150,000
2.	1975	Drought	Widespread	16,000
3.	1977	Drought	Widespread	20,000
4.	1983/4	Drought	Widespread	200,000
5.	1982	Fire	Lamu	4,000
6.	1982	Floods	Nyanza	4,000
7.	1982	Fire	Nairobi	10,000
8.	1985	Floods	Nyanza	10,000
9.	1990	Fire	Lamu	20 dead
10.	1991/2	Drought	NEP, EAST, Rift and coast province	1.5m in need of assistance
11.	1992	Train accident	MtitoAndei	31 died/207 injured
13.	1995/6	Drought	widespread	1.41 in need of assistance
14.	1997/8	El-Nino Floods	widespread	1.5m in need of assistance
15.	07.Aug 1998	Terrorist Bomb	American Embassy Nairobi	214 killed and 5,600 other injured
16.	1999-2000	Drought	Widespread	1,5m in need of assistance
17.	2002/3	Floods	Nyanza, Western NEP	24,000 Displaced
18.	2004	Fire	City hall	No Deaths documents burned
19.	2004	Drought	widespread	
20.	2005	Drought	widespread	35,000,000 in need of assistance
21.	2006	Building collages Nairobi	Nairobi	14 dead, 100 injured
22.	2008	Post election Violence	widespread	1300 people killed, 650000 displaced
23.	2009	Fire	Nakumatt Nairobi	30 dead

As earlier observed, developing countries suffer the greatest consequences when disaster hits them than industrialised countries because they lack coherent policies and plans in modern research approach to disaster management to subsequently mitigate and alleviate disasters prior to their occurrence.

The first step towards controlling destructions caused by disasters is sensitization of communities regarding the response strategies needed when disaster strikes. Disasters can be most devastating when there are no emergency preparedness plans and mitigation measures in place. Within the context of informal urban settlements, unlike the ASAL areas, there exist a myriad of potential disasters which can be anticipated but are ignored despite persistent early warnings and alerts issued to communities in advance. The case of the recent Sinai fire tragedy in Embakasi in 2012 is one such example of these daily hazards threat. The draft National Disaster Management Policy provides the framework to effectively and efficiently enhance capacity of slum dwellers for self-governance and collective decision making to prioritize common risks for them to realise their role to play – pre, during and post disasters. The policy should enlist the support of the Communities to jointly design disaster preparedness mechanisms and systems for risk reduction management.

In this respect, projects and development initiatives undertaken by both national and county governments must focus on the underlying causes of disaster outbreaks in order to address the issues of governance, standards and dignified livelihoods especially for the poor and marginalized. Sensitization campaigns aimed at risk reduction and control of disasters should address the issues of unstructured developments, environment and resource allocation.

There has been the tendency for disasters to cause communities to depend on the government and other well-wishers towards recovery, capacity constraints and setting up new livelihoods. Interventions by stakeholders should empower the communities to adopt preventive measures towards alleviating potential disasters as opposed to reactive responses after the occurrence of disasters.

1.2 Statement of the Problem

Kenya is highly vulnerable and exposed to several disaster crises exacerbated by climate variability and change. These crises have derailed socio-economic development and impacts negatively on the achievement of the Millennium Development Goals (MDGs) and Kenya Vision 2030. For example, between 1993 and 2010, the international database on disasters showed that 73 disaster incidences (covering drought, epidemics, flood, landslide and tsunami) occurred and affected a cumulative total of over 48 million people. During this period, a total of 5,825 affected people died (EM-DAT, 2012). And the number of people affected by these disasters is gradually increasing. For instance, over the last decade, the impact of drought has increased from an average of 1.5 million to 4.5 million people affected annually (ISDR, 2010).

The 2011 Post Disaster Needs Assessment (PDNA) conducted by the Government with support of the UN and the World Bank, showed that drought episodes during 2008-2011 resulted in USD 2.1 billion worth of damages and losses to the economy, with 85% occurring in the main livelihood sectors of livestock and agriculture. To deal with this great loss, the Government re-allocated almost KSH.11 billion to save lives and restore livelihoods. Similarly, it is estimated that annual country-wide damages from floods exceed KSH 100 million with an equivalent amount spent on emergency response (World Bank 2004).

In Kenya many challenges arise in Arid and Semi Arid Areas (ASALs) almost annually because of the failure to militate against these disasters including severe drought and subsequent famine within Baringo County as well as the challenges of landslides that characterizes the rainy season within the County.

This study therefore, sought to identify the existing challenges in the implementation of the drought disaster policy within ASAL areas.

1.3 Research Questions

The study was guided by the following questions:

1. They are existing legal and institutional frameworks for national disaster risk reduction
2. Limited successes and huge challenges exist in disaster risk reduction.
3. There are opportunities and challenges for mainstreaming the disaster risk reduction at national and county levels

1.4 Objectives of the Study

The study sought to find out the challenges that the Government faces in the management and response to drought disasters in Arid and Semi Arid Areas in Kenya.

However, the study specifically sought to:

1. Examine how local communities participate in the management and response to drought disasters in Baringo County.
2. Examine how the consequences of disasters have impacted on the formulation of disaster management policy in Kenya
3. Examine the strategies applied by the Ministry and other stakeholders in responding to natural disasters in Baringo County

1.5 Research Premises

The study was guided by the following questions:

1. There are existing legal and institutional frameworks for national disaster risk reduction.
2. There are limited successes and huge challenges in disaster risk reduction and policy formulation.
3. There are no clear strategies or policies applied by the Ministry and other stakeholders in responding to natural disasters in Baringo County?

1.6 Justification and Significance of the study

Kenya continues to be threatened by various disasters, including floods, drought, fires, accidents, terrorism, among others. Droughts have caused enormous destruction to this country in the past and this study tries to find out if the

government has put in place sufficient structures to control or minimize the impact of such disasters should they occur in future. The findings are expected to add to existing knowledge as well as provide research findings that can inform government policy interventions on drought mitigation.

The Ministry of State for Special Programmes will hopefully benefit from the study as it will be able to appreciate and better understand the challenges in the management of disasters and can identify the opportunities that exist for them to enhance management of disasters. The Government also will benefit given that the Ministry in charge of disasters will have identified priority areas for improving disaster management in ASAL areas while at the same time identifying opportunities to exploit to minimize disasters in the country. This will also assist with budgeting and planning for the most effective techniques and approaches to realise better management of the identified risks for potential disasters. The study will also help in mitigating against food security both in Baringo County and at the national level.

Other stakeholders in disaster management, including the counties, security agencies and other local authorities will also benefit from this study since they will be able to know areas of weaknesses and strengths in disaster planning and management. Educationists, universities and other researchers will also benefit as this study will add to existing knowledge and contribute to further conduct of more elaborate studies given that this study will not be able to completely answer all challenges and issues related to disaster management.

1.7 Scope of the Study

The study was conducted in Baringo County. The research involved county officers as well as other stakeholders who participate in disaster management in the county. The local opinion leaders, NGOs and other agencies were also invited to present their views on disaster challenges in the county. Due to the diverse topography of the county, responses given would automatically correspond to the particular environment of the correspondent. Baringo County traverses Rift Valley and is split into two by Tugen Hills. To the west is Kerio Valley while to the east Lakes Bogoria and Baringo. The inhabitants are majority Tugen, IlJamus, Pokot and a few others scattered across the County. All these communities have their own peculiar problems while they share others like drought, famine or cattle rustling. It is these divergent

cultural practices and interests that determine intra- social relationships and behaviour. And so responses on cattle rustling, for example, must be seen within this context.

1.8 Limitations and Delimitations of the Study

Disasters have been experienced since time in memorial though the intensity has continued to increase courtesy of natural and unnatural causes. Human activities have continued to destroy and degrade the natural habitat and ecosystem including the soil texture and composition thus reducing the compactness of such soil as well as reducing the forest cover. Since the study will focus only on natural disasters in Baringo County, the study was limited by the fact the unnatural disasters were not studied. The study too was limited by the scope of the study since it was not covering the entire ASAL areas in the country.

Finances and sufficient budget also posed a great challenge as money is always in short supply and especially where the study is self-sponsored like in this case. This was overcome by making a budget that included donations in kind, for example, paper, photocopying and internet services, and telephone calls instead of travelling. The study was conducted at a Central point at the County headquarters are Kabarnet.

Finding time to do the research was another challenge since combining study with a full-time job and family was a sacrifice to be made. This was overcome by making a work-plan and taking some days off work. The issue of getting the support of respondents was also critical to the researcher. It was anticipated that some respondents may be supportive; some may not want to get involved at all, while others may not be available due to other engagements. This applies to both the target group and the pilot. To overcome this challenge, follow-ups were done through phone calls, emails and personal visits and sometimes motivation like having an interview over a cup of tea in a relaxed atmosphere. The questionnaires were also made short, interesting, simple and with clear questions. There was also the challenge of antagonism which occurred among the authorities (national, county and other agencies), thereby jeopardizing the project. This together with lack of cooperation was overcome by giving assurance of confidentiality, explaining that the

purpose of the study was purely academic, the need for such a study and the expected benefits.

Introduction

This literature review is a first step towards a thesis about my topic of interest, which is disaster management in Kenya. The study focuses on the structures and processes of disaster management in Kenya. The literature provides an overview of the current state of disaster management in Kenya, as well as the challenges that exist for the Government. The literature also identifies the factors that influence disaster management in Kenya, such as the socio-economic context, the political environment, and the cultural values. The literature also identifies the key actors in disaster management in Kenya, such as the Government, the private sector, and the community. The literature also identifies the key challenges in disaster management in Kenya, such as the lack of resources, the lack of coordination, and the lack of awareness.

1.2 Disaster Management in Kenya

Kenya is a country that is highly vulnerable to natural disasters. In the 1990-2000 period, Kenya experienced a series of natural disasters, including drought, floods, and earthquakes. The drought in 1999-2000 was particularly severe, and it is estimated that the drought killed over 50 percent of the stock and caused billions in parts of the life value. The drought also caused significant economic losses, and the government spent US\$343 million on relief and emergency aid. A study revealed that over 11 million people would have been required to respond to the drought had there been effective disaster management systems in place.

The extra amount was attributed to poor preparedness and delayed response. According to <http://www.drought.org/kenya-recovery-and-management/>, Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all hazardous situations or emergencies, particularly those which cause or threaten serious injury, property damage, environmental degradation, or recovery is critical to begin the rapid response.

A significant part of the disaster management literature focuses on the role of the Government in disaster management. The literature identifies the key challenges in disaster management in Kenya, such as the lack of resources, the lack of coordination, and the lack of awareness. The literature also identifies the key actors in disaster management in Kenya, such as the Government, the private sector, and the community. The literature also identifies the key challenges in disaster management in Kenya, such as the lack of resources, the lack of coordination, and the lack of awareness. The literature also identifies the key actors in disaster management in Kenya, such as the Government, the private sector, and the community. The literature also identifies the key challenges in disaster management in Kenya, such as the lack of resources, the lack of coordination, and the lack of awareness.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The literature review is about what has been written about my topic of interest, from the world, Africa and Kenya. The study looked into the structures and organization of disaster management in Kenya. The Literature provides an overview of the management of disasters across the world as it tries to examine the challenges it poses as well as the opportunities that exist for the Government. The Chapter also examines the Social Capital Theory which seeks to expound on the actions and reactions that would be observed in the management of disasters. The literature review identifies the existing gaps in disaster management ASAL areas in Kenya.

2.2 Disaster Management in Kenya

A study, *The Cost of Delayed Response: Lessons from the 1999-2001 Drought in Kenya*, conducted by disaster management experts Bushell and Wakesa (2002), estimated that the drought killed at least 60 percent of livestock and caused crop failures in parts of the Rift Valley, Coast, Eastern and Central provinces, costing the government some US\$343 million in food and non-food emergency aid. Further, the study revealed that only \$171 million would have been required to effectively respond to the drought had there been effective disaster management systems in place.

The extra amount was attributed to poor preparedness and delayed response.

According to <http://www.ifrc.org/en/what-we-do/disaster-management>, "Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular, preparedness, response and recovery in order to lessen the impact of disasters".

All countries of the world are not immune from disaster, though vulnerability to disaster varies from one country to the other including natural disasters like floods, hurricanes, earthquakes and volcano eruptions that can have immediate impacts on human health, as well as secondary impacts which cause further death and suffering. For example, floods cause landslides, earthquakes result in fires, tsunamis cause widespread flooding and typhoons sink ferries. There are also man-made disasters which include acts of terrorism, technological or industrial accidents, usually involving

hazardous material, and occur where these materials are produced, used or transported. Large forest fires are generally included in this definition because they tend to be caused by humans. Others involve a break-down of authority, looting and attacks on strategic installations and may also include conflict situations and war. Pandemic disasters involve a sudden onset of a contagious disease that affects health but also disrupts services and businesses, bringing economic and social costs. An example is bird flu or *ebola*.

The question to be raised is whether Kenyans, after having experienced various incidences and disasters are wondering whether the Office of the President which is mandated to co-ordinate a multi-agency approach to disasters, are better able to predict, prevent, control or mitigate these events? The National Disaster and Management Agency and National Disaster Operations Centre involve all stakeholders - the public, private and civil society sectors in matters of disasters.

This strategy for coordination is contained in The National Disaster Management Policy of 2004. The legal framework for this policy is provided for in the various legislative acts such as: The Explosives Act (Cap 115); Petroleum Act (Cap 116); The Water Act (Cap 372); The Police Act (Cap 84); The Public Health Act (Cap 242); The Pharmacy and Poisons Act (Cap 244); The Malaria Act (Cap 246); The Medical Practitioners and Dentists Board (Cap 253); The Food, Drugs and Chemical Substances Act (Cap 254); The National Cereals and Produce Board Act (Cap 388) and The Preservation of Public Security Act (Cap 57).

In addition, there are policy guidelines to prevent, respond and mitigate disasters such as preparing for strategic stockpiles of food, health and essential supplies through the use of early warning systems and vulnerability analysis. The participation and involvement of local communities at the sites where disasters occur is critical for response and recovery.

In this regard, public education and awareness is necessary to enable local communities to collect and document information on disasters that they have encountered and lessons learnt as prerequisites for preparedness for future disasters. Most importantly, each community should be facilitated to incorporate home-grown traditional coping mechanisms.

Disaster risk reduction activities are supposed to be devolved to the local units and administrative authorities in every county. The repetitive occurrence of both the

natural and man-made disasters in the past 25 years suggests that despite the legal, institutional and policy frameworks, local communities are not adequately prepared for disaster prevention, control and mitigation.

It is likely that these programs have not been devolved and adequately implemented at community levels. This was observed by Maingi (2009) in Rural and Urban; Formal and Informal Settlements. Economic, social and cultural barriers may however interfere with community attitudes, thereby reducing their perception and preparedness for disasters. This may include circumstances surrounding disasters such as seasonal flooding, tanker fires, aflatoxin and alcohol poisoning.

However, in the majority of the cases such as traffic accidents, civil unrest and famine, there seems to be a lack of political and governance goodwill which impedes implementation of existing laws and policies. In this regard and for Kenya to benefit from a 25-year disaster experience and prepare for future disasters, political and governance reforms are needed to bridge the disconnection between legislation and policy at all levels of government and knowledge, attitude and practice at community levels. These issues should be adequately addressed to reduce and minimize disasters which are likely to be the major factors compromising the public health situation in the country.

2.3 Legislative Framework

The National Disaster Relief Act, 1982 and the Local Government Act are the two pieces of legislation which have dealt with disasters in Kenya. However, these two acts do not provide an adequate or comprehensive legislative framework for dealing with disasters in a holistic and proactive manner.

One of the main shortcomings of current legislation is that it refers only to disaster response issues. It places great emphasis on dealing with the consequences of disasters (a reactive approach) and minimizes or disregards the proactive, or risk reduction approach required for disaster management.

A legislative framework is often a critical factor for any Government intervention undertaking. This is certainly true for the disaster management approach. Legislation needs to create an enabling environment, in particular at local community levels, as institutions at the forefront and on the ground of disaster management. Natural Disaster relief Act, 1982 and the Local Government Act (LGA) Chapter 265, in the

Laws of Kenya have provisions that give local authorities the mandate to provide disaster mitigation, although they do not mention disaster management in the main Act. Sections 154 (d), 160c, 160K, 179, 166 give provisions for disaster management. Other pieces of legislation include Environment Management Act of 1999, Kenya Red Cross society Act (Cap 256), the Water Act (Cap 372) if the disaster is at the local level, the prime responsibility for handling the problem rests with the specific local authority. When the severity of the event is greater than the local government can handle, it must inform the province and request appropriate kinds of assistance. The Minister of State for Special Programmes has the power to declare a "state of disaster". In terms of the Act, there is no provision for funding from national government.

In terms of the Local government Act: If persons, organizations, or bodies suffered damage as a result of a disaster, the local government concerned can, according to this Act, request the provincial administration to approach the Ministry of State for Special Programmes to take necessary steps to declare the event to be a disaster. The Ministry of State for Special Programmes will advise the President who can declare an event to be a National Disaster. Financial assistance can be given from the disaster relief fund to victims of a disaster on an ex-gratia basis for damages or losses. The present legislative framework can be a source of confusion as it introduces many levels, where decisions could be taken. It does not provide a clear-cut delineation of authority and process for the declaration of a "state of disaster".

In other words there are no clear criteria for when the state should intervene. For instance, the National disaster Relief Act gives the Minister in charge the power to declare a state of disaster, but lacks further powers to instruct other line Ministries which actions need to be taken by them. A further weakness is that in the event of a disaster, fund-raising and the provision of financial disaster relief to victims cannot be undertaken within the framework of "National Disaster Relief" legislation but is addressed under a separate Act -the Agriculture Act, the Livestock Act, among others.

The National Disaster Risk Reduction Strategy (NDRRS) was developed in 2009 to ensure that disaster reduction measures are mainstreamed in all development activities in the country to spearhead and adopt a holistic and integrated approach to Disaster Management. This is a paradigm shift, from the erstwhile relief-centric response to a proactive prevention, mitigation and preparedness-driven approach for conserving developmental gains and to minimize loss of life, livelihoods and property. The policy talks of people centred early warning system for preparedness and response but what we see missing here is the empowerment of the people in order for them to prepare appropriate response.

The (NDRRS) policy looks into ways of involving and enlisting cooperation from all stakeholders in order to shift from the relief-based approach to preparedness and prevention and to mainstream mitigation measures into the developmental plans and programmes. Again the policy seeks to harmonize the activities of the many institutions dealing with Disaster Management which are currently uncoordinated, reactive and sectorial. What is required is strict implementation and mainstreaming of appropriate policies and legislation for disaster risk reduction.

2.4 Challenges and Opportunities

The overall objective of disaster management is to progressively minimize the impact of disasters on populations and environment. On the other hand, vulnerability to disasters can only be decreased if the factors that contribute to it are tackled.

Although a policy on disaster management has recently been developed, the main challenge for the government is to promote a culture of prevention, preparedness and resilience at all levels through knowledge, innovation, education and encouraging mitigation measures based on technology, traditional wisdom, environmental sustainability, mainstreaming disaster management into the developmental planning process, establishing institutional and technological frameworks to create an enabling regulatory environment and compliance, ensuring efficient mechanism of hazard identification, assessment and monitoring of disaster risks, developing contemporary forecasting and early warning systems backed by responsive information communication technology.

The above interventions are intended to:

- Ensure efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- Undertake reconstruction as an opportunity to build disaster resilient structures and habitats for ensuring safer living.
- Promote a productive and proactive partnership with the media and the private sector for disaster management.

The proposed National Disaster Management Authority (NADIMA) is mandated to deal with all types of disasters; natural or man-made. However, such other emergencies including those requiring close involvement of the security forces and/or intelligence agencies such as terrorism (counter-insurgency), law and order situations, serial bomb blasts, hijacking, air accidents, port and harbour emergencies and forest fires are on the increase and have not been clearly addressed in the current policy.

When they occur, they are only handled by National Crisis Management Committee (NCMC) which has to be set up to deal with the specific occurrence.

2.5 Theoretical Framework

In order to create an academic context for the study, the researcher identified a theoretical framework to analyse the study. The theoretical framework that was used for the purpose of this study is the Social Capital Theory.

The choice of Social Capital Theory was motivated by the fact that it encourages the involvement of local people in identifying and solving problems. It was also motivated by the fact that The Social Capital Theory enables individuals and/or groups through collective action to reach desirable outcomes (Silici n.d:2). Public awareness seeks to prepare people for collective efforts in dealing with emergencies.

There is a saying that 'Knowledge is Power' which therefore makes public awareness an important component of disaster risk reduction by empowering the communities at risk. It is also believed that education is the development of knowledge and skills to empower people and allow responsible decision-making (Nielsen & Lidstone 1998).

The study also utilized SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis to assess the policy alternatives used by government in addressing drought disasters. The SWOT analysis helped to determine the effectiveness and impact of the drought policy. The Ministry's internal analysis of management will provide an assessment of strengths or weaknesses while the external analysis will deal the external environment- the area of activity.

The Social Capital Theory, which is "about the value of social networks, bonding similar people and bridging between diverse people, with norms of reciprocity" (Claridge 2004), is deemed as the appropriate theoretical framework for this study, in order to create an academic context. Public awareness is linked to 'The Social Capital Theory' which describes the pattern and intensity of networks amongst people and shared values which arise from those networks. United Nation International Strategy Disaster Risk (UNISDR, 2009) defines public awareness as the extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards. The Social Capital Theory therefore clearly links with public awareness since they both have an interest in improving the well being of local people involved in identifying and solving problems affecting the community. The theory also promotes a sense of belonging, valuing diversity in others and similar life opportunities (Babb 2005:11).

2.6 Social Capital Theory in context of disaster management

Disasters can cause both physical damage and losses incurred by social units and the disruption of the unit's routine functioning and within its network of other social units. Whenever there is a natural and man-made disaster, people help one another before they are supported or replaced by government entities (Schellong 2007:2).

Schellong (2007:2) indicates that if there are problems or dissatisfaction among residents, they would not be able to help each other during emergencies. He uses an example that during the Kobe earthquake in 1995, many people had weak links with the larger community and that had enormous influence on the speed of recovery.

Schellong (2007:2) quotes Buckland and Rahman (1999) that vulnerability to hazards is directly related to a community's level of development. The level of development is commonly evaluated by economic and social indicators of the community.

Furthermore Silici (n.d:3) adds that social interactions may positively contribute to the well-being of given groups or individuals by generating enhanced knowledge about other agents, reduced transaction costs, risk mitigation, improved access to information and technological knowledge and reduction of collective action dilemmas. Communities and their social networks are very important during and after disaster. The impacted community is a direct and active participant at all phases of dealing with a disaster which are: preparedness, response, recovery and mitigation. According to Schellong (2007:4) out of the four phases above, response phase presents the most socially complex phase of the disaster spectrum.

He adds that disasters usually affect the entire community or large segments of social units and are present when the established social systems of the community abruptly cease to operate. Even during this phase social networks continue to operate while new ones are formed because the community needs to initiate recovery in order to meet their needs. Schellong (2007:5) 26 quotes Haines, Hurlbert and Beggs (1996) that disaster victims and their social networks mostly become resources. He refers to a study of the Flint-Beecher tornado of 1953 where 927 casualties were rescued by spontaneous local groups. These informal groups tend to be based on some previously existing social relationships in the community, such as family, the neighbourhood, the school, friendship bonds and work association.

Social networks model realise social networks in a visual environment. They assist each member in creating or seeking a network of friends, acquaintances, people who share the same interests or are of interest to the member. According to Schellong (2007:4) social capital lowers the transaction costs of information acquisition.

He adds that, one means by which information can be acquired is by use of social relations that are maintained for other purposes. The social networking services such as Facebook, Twitter and others are used to gather information on users' social contacts, their interests, construct interconnected social networks and reveal to users how they are connected in the network (Schellong 2007:3). These social networks can be used as a platform for sharing and discussing information on disaster management issues.

The elements of Social Capital Theory underpin the principles behind public awareness as advocated by this study. The pre-disaster stage may be faster and more effective using social networks which will enhance collective actions undertaken by people during emergency situations

2.7 Resilience and Adaptation Theory

Resistance is an unlikely course for individuals and communities (and actually even for emergency systems) in the aftermath of disasters, which brings us to the notion of transient dysfunction, similar to Dohrenwend's (1978) concept of the transient stress reaction. Disaster research indicates that the most typical pattern is for distress to be nearly universal in the first weeks or months post-disaster, even though only a minority of participants experience criterion-level psychopathology (Norris et al. 2002a,b).

Most longitudinal disaster studies find that an event's adverse effects dissipate over time, leaving only a minority of communities and a minority of individuals within those communities chronically impaired. Most of the time—especially if the severity of the stressor has lessened and resources have been replenished—transient dysfunction is followed by a return to pre-disaster levels of functioning. The process that produces adapted outcome is resilience; the more rapid the return to pre-event functioning, the greater the resilience. In his influential paper on psychological resilience, Bonanno (2004) differentiated between recovery and resilience trajectories. The former he characterized as involving a period of dysfunction lasting several months or more, followed by a gradual return to pre-event functioning. A trajectory of resilience, on the other hand, may involve transient perturbations, lasting as long as several weeks, but it generally involves a stable trajectory of healthy functioning. Most research does not clearly distinguish between these two trajectories.

Our primary point here is that resilience does not preclude dysfunction or distress. It is now commonly accepted in the disaster field that some distress is a normal reaction to an abnormal event (Flynn 1994). However, the dysfunction or distress is transient, followed by a return to functioning. Post-event functioning may not be the qualitative equivalent of pre-event functioning when there is a need to adapt to an

altered environment. The phrase "new normal" was heard often in the aftermath of the September 11th terrorist attacks, as people speculated on America's capacity to adapt to the ongoing threat of terrorism and the demands and inconveniences of heightened security (Redlener and Morse 2006).

We do not characterize this adaptive trajectory as "growth," although others might legitimately dispute this choice (Brown and Kulig 1996/97; Linley and Joseph 2005). Adapted functioning is not necessarily superior in level or character or effectiveness to pre-event functioning; it is simply different.

The alternative outcome to renewed and adapted functioning is persistent dysfunction. It results from "vulnerability," defined roughly as the antonym of stress resistance or resilience. We say little about vulnerability in this paper, but it has been and should remain an important concept in hazard management (Cutter et al. 2003,2006).

In the mental health arena, for example, researchers have proposed that the appropriate individual outcome is minimal impairment of functioning despite distress, rapid recovery from distress, no distress at all, and adversarial growth (Bonanno, 2005; Linley and Joseph, 2005; Litz, 2005). In practice, resilience often has been operationalized as the absence of psychopathology, which is highly inadequate (Rutter1993).

A strict focus on prevalence of disorders may cause us to erroneously or prematurely conclude that a community has recovered from the event when there is still considerable distress, dysfunction, or dissatisfaction present, and it dismisses the adverse consequences of suffering that does not qualify for strict definitions of pathology. Here, we first discuss individual resilience-outcomes and then turn our attention to community resilience-outcomes.

2.8 Summary and Gaps to be filled by the study

The literature reviewed allows the study to look at theories that relate to past findings and views by various authorities regarding disaster. Various authors have indicated their studies were based on diverse backgrounds including the concept of public awareness as a technique and a tool which disaster management stands on. When the public is aware of the causes of disasters and how to handle such

disasters, it becomes easier and practical to handle them when they occur. Indeed it is the safest and the easiest of techniques to apply for any administration or Government as it helps in identifying circumstances which can provide room for disaster as well as indicating as an early warning sign for disaster. Once identified as a potential disaster, management and prevention mechanisms would then be implemented to address such disasters which would have otherwise caused massive destruction. Therefore, it is incumbent upon managers, both in the private and the public sectors to implement public awareness campaigns as advocated by the Social Capital Theory in order to prevent disasters and militate against any adverse effects caused whenever they occur.

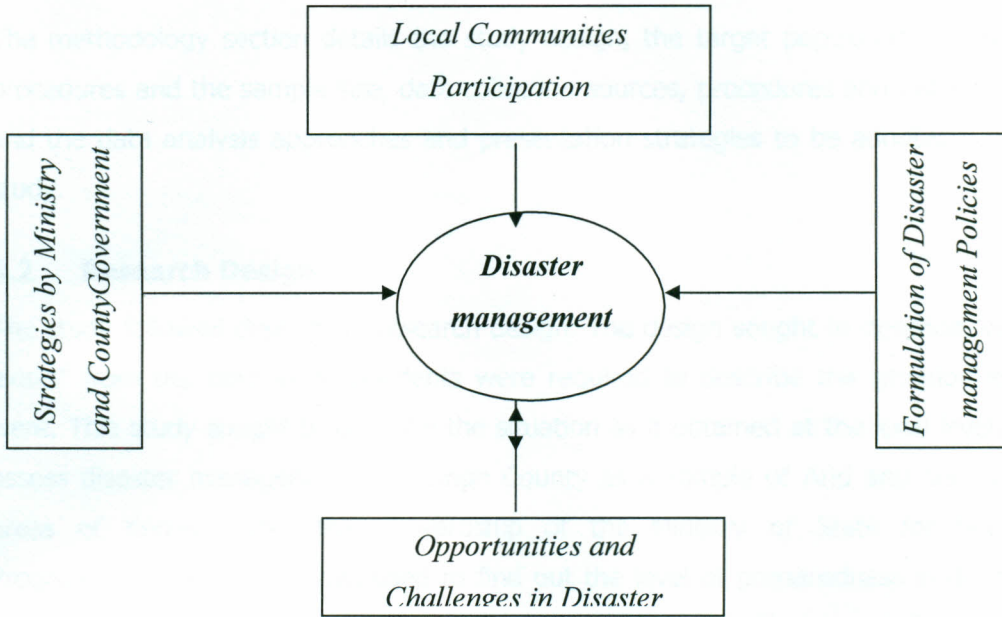
The study therefore sought to address the shortfall in identifying the challenges and opportunities that exist for the Government to be able to manage the disasters that strike quite often. The research further assumed that few studies have considered deeply the Kenyan disaster challenges and come up with suggestions on disaster opportunities that can be exploited by the Government as proposed by this study.

Source: Researcher (2013)

2.9 Conceptual Framework

The relationship between the dependent and independent variables of the study are represented in a schematic diagram below to highlight the nature of their relationship.

Figure 1: Conceptual Framework



Source: Researcher (2013)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The methodology section details the study design, the target population, sampling procedures and the sample size, data collection sources, procedures and instruments and the data analysis approaches and presentation strategies to be adopted by the study.

3.2 Research Design

The study followed descriptive research design. The design sought to describe "what exists" from the field as respondents were required to describe the situation as it were. This study sought to describe the situation as it obtained at the local levels to assess disaster management in Baringo County as a sample of Arid and Semi Arid areas of Kenya under the stewardship of the Ministry of State for Special Programmes. The design was used to find out the level of preparedness in disaster management, the challenges that the Ministry faced in handling these disasters in Arid and Semi-Arid Lands especially Baringo County and the opportunities offered by these disasters.

3.3 Site of Study

The Site of the research is Baringo County. Kabarnet is the County Headquarters. The area covered by the study is eastern side of the county covering the stretch of Lakes Bogoria and Baringo. Tenges, where mudslides are a frequent phenomenon is about 30 km from Kabarnet atop the Tugen hills which divides the Rift Valley into two. To the west is Kerio Valley and to the east is the other part of rift valley. It is this area that the research was based. This Site comprises several ethnic pastoralist groups who usually engage in cattle rustling. The land is dry and experiences drought which causes competition for water and pasture (resources).

3.4 Target Population

According to Kombo and Tromp (2010), a population is a group of persons who have something in common. The study targeted population that was directly involved in the management of disaster and hence most knowledgeable on how the country responds to disaster in Baringo County, the challenges that they have faced and continues to face and the opportunities that exist for the county as it continues to

handle and respond to disasters that seem to increase in intensity and frequency. The study therefore targeted the employees that were directly involved with disaster and members of the National Disaster Management Authority as well as the NGOs and disaster agencies present in Baringo County dealing with disaster management in the County including the Ministry officials.

3.5 Sampling and Sampling Design

Since census was not tenable, the study from the Ministry in charge of disaster management for the time being. However, the study sought to obtain information from all the members of the National Disaster Management Board since they are few and all can be interviewed.

From the Ministry, the study used purposive sampling on at least 20 employees (out of 180) who are directly involved in the management of disasters. The study also sampled respondents from Baringo County including the

Governor and his deputy, the county executives as well as the Departments charged with disaster management totalling 35 and another 10 from the NGOs and other agencies. Thus in total, the study sampled 65 respondents. The study sought to assess the extent to which early warning signs, disaster response, management, recovery and resettlement of disaster victims and monitoring and evaluation of programmes and disaster situations are utilized by the Ministry as well as the County Government of Baringo:.

3.6 Data Collection Tools

Both primary and secondary data were sourced for the study. Primary data was collected using structured interviews and questionnaires because they are self explanatory, time saving and are suitable for large populations. The respondents were given instructions in the questionnaire which were dropped and picked from them after a week. The language used was simple and readily understood by both the researcher and the respondent. Interviews were conducted on the Governor and the members of the National Disaster Management Board. Secondary data was collected from the libraries, journals and other organizational reports from the Ministry and various departments concerned with disasters.

3.7 Data Collection Techniques

The researcher first sought permission from the Ministry officials before distributing questionnaires to the respondents within the Ministry. This enabled the respondents fill the questionnaires without fear since they were already informed that the authority has been granted for the data collection. The questionnaires were distributed and respondents given a week's time to complete them after which they were then collected. For the County officials, the researcher sought for authority from the office of the Governor using the introductory letter form the University.

The researcher also monitored the occurrence of any disaster so as to accompany the officials as they respond to or monitor and evaluate the progress of such activities. This facilitated the researcher to observe the response itself.

The questionnaires were first piloted with 10 potential respondents and analysis done on them to check on the validity and reliability of the instrument. Modification was then done to ensure that the instrument became reliable and valid for purposes of collecting and producing accurate and reliable responses.

3.8 Ethical Considerations

It was crucial to uphold the ethical principal especially when dealing with any research. Permission was sought before the interviews and confidentiality of all information and the knowledge that results from the study was stored for a period and would be shared with Kenyatta University where the researcher is a student. Data was kept in a password-protected file and eventually deleted after some time in order to protect either the information or the author. It was mandatory and necessary to maintain ethical standards which should be well clear and signed agreements with research assistant.

McLeod (1994) states that a feasible research adheres to professionalism, obligation to respondents and potential users of the research findings. He continues to argue that it is impossible to design an ethically neutral research but the study attempted and sought to ensure that this study minimized any ethical malpractice.

CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

The chapter provides analysis of the data based on the structure of the questionnaire. The data was analyzed and presented in line with the main areas and variables. The research sought to obtain data from respondents. The chapter is divided into four sections.

4.2 Data Analysis and Presentation

Data obtained from the study was then sorted, coded, entered, cleaned and analyzed using descriptive statistics with the aid of computer applications - Statistical Package for Social Sciences (SPSS) and Ms Excel for data presentation. This included measures of central tendencies, the mean as well as the standard deviations to identify any consistency or difference between the variables of the study.

Quantitative analysis was used on data to establish patterns, relationships and trends from the information gathered. Qualitative analysis was also used to analyse the data obtained through open ended questionnaires and observation. It was then presented in form of frequency tables, percentages, bar graphs and pie charts.

4.3 Personal Information

The study sought initially to profile the respondents in terms of gender, age, marital-status, length of stay at the County and the academic qualifications. The majority of the respondents were male (63.6%) while the remaining 30.9% were female.

Table 2: Gender of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	5.5	5.5	5.5
Male	35	63.6	63.6	69.1
Female	17	30.9	30.9	100.0
Total	55	100.0	100.0	

Source: Research Data (2013)

In terms of the age brackets, the majority were aged below 25 years (45.5%) while those aged between 36 and 45 years represented 32.7%. Another 8 respondents representing 14.5% said they were aged between 46 and 55 years.

Source: Research Data (2013)

In terms of marital status, the majority (37) or 67.3% said that they were married while 17 of the respondents were single. Only 1 respondent indicated others but did not specify.

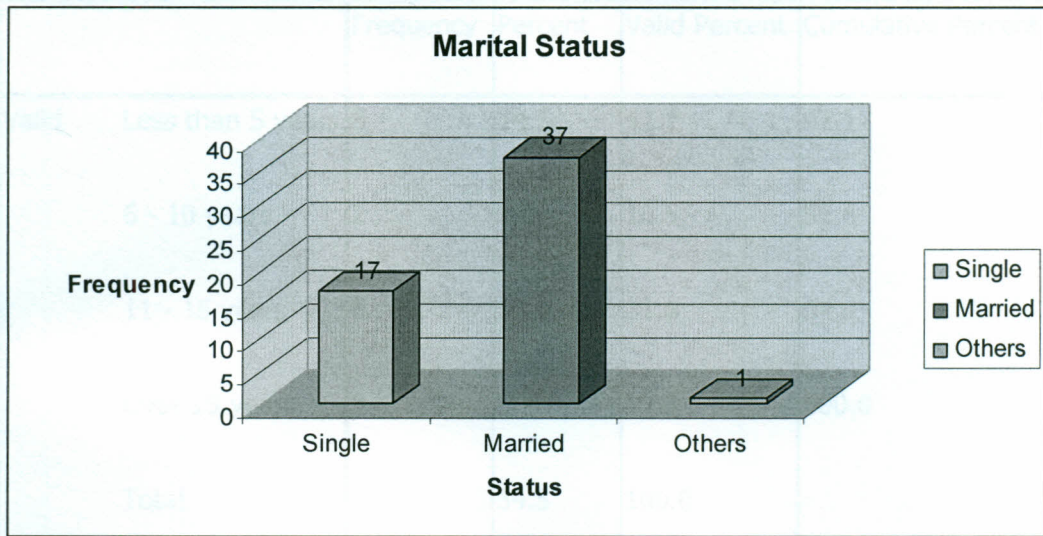
Table 3: Ages of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 25 years and Below	25	45.5	46.3	46.3
26 - 35 years	2	3.6	3.7	50.0
36 - 45 years	18	32.7	33.3	83.3
46 - 55 years	8	14.5	14.8	98.1
55 years and above	1	1.8	1.9	100.0
Total	54	98.2	100.0	
Missing System	1	1.8		
Total	55	100.0		

Source: Research Data (2013)

In terms of marital status, the majority (37) or 67.3% said that they were married while 17 others said that they were single. Only 1 respondent indicated others but did not specify the specific marital status.

Figure 2: Marital Status of Respondents



Source: Research Data (2013)

When the respondents were asked how long have they worked at the County in the related areas of disaster management, majority of the respondents (36) did not respond to this question while for those who responded, 8 said that they had worked for a period less than 5 years, 6 had worked for between 11 and 15 years, 3 had worked for a period of more than 15 years and the other 2 had worked for a period between 6 and 10 years.

Table 4: Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5 years	8	14.5	42.1	42.1
	6 - 10 years	2	3.6	10.5	52.6
	11 - 15 years	6	10.9	31.6	84.2
	Over 15 years	3	5.5	15.8	100.0
	Total	19	34.5	100.0	
Missing	System	36	65.5		
Total		55	100.0		

Source: Research Data (2013)

On the highest academic qualifications, the majority of them (58.2%) said that they had secondary level of education while another 12 others mentioned that they had other qualification which they specified as Diploma from different institutions. Another 10 respondents indicated that they were graduates with at least a bachelors' degree. Only 1 respondent said that they had A level Certificates (Form Six).

Table 5: Academic Qualifications

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Secondary	32	58.2	58.2	58.2
Form Six	1	1.8	1.8	60.0
Bachelors	10	18.2	18.2	78.2
Others	12	21.8	21.8	100.0
Total	55	100.0	100.0	

Source: Research Data (2013)

4.2.1 Descriptive Analysis

The study sought specific issues regarding disaster experiences in Baringo County. The respondents were initially asked to list the various types and nature of disasters which they had experienced. The majority listed floods as the most common in Marigat and Tenges divisions and that this is continuous and recurrent disaster. Then landslides were also highlighted by the respondents as common in Tenges Division because of the human activity on the edges of cliffs and hills causing reduction of the forest and vegetation cover. Drought was also indicated as the most common especially for the East Baringo and the North Baringo where a lot of livestock die every year for lack of water and grazing fields. These areas also witness a lot of conflicts due to fights over water and grass resources which are scarce. The menace of cattle rustling is a disaster between the inhabitants of the County and the neighbouring Counties of Turkana, Pokot and Samburu. Drought and cattle rustling were indicated as quite regular and rampant in the County. When the respondents were asked to rate the management of disaster in Baringo County, majority of them (49.1%) rated it as poor while another 30.9% rated it as fair. Only 10 respondents (18.2%) rated the management of disaster as being good while only 1 respondent said he did not know.

Table 6: Rate of Disaster Management in Baringo

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Good	10	18.2	18.2	18.2
Don't Know	1	1.8	1.8	20.0
Fair	17	30.9	30.9	50.9
Poor	27	49.1	49.1	100.0
Total	55	100.0	100.0	

Source: Research Data (2013)

When asked why they had rated the management of disaster as they did, they said that the response is always very low and slow. They also mentioned lack of sufficient facilities and equipment within the County for fighting and managing the disasters. For those who rated the management of disasters as good, they said that action has always been undertaken in case of disasters and that the various reports to relevant institutions on disasters, including cattle rustling, have always been implemented by the relevant Government departments. They also cited the cooperation between national Government and other institutions in the fight against these disasters. It was pointed out that there already exists an established County disaster management committee which indicates the commitment to fight these disasters within Baringo County. When the respondents were asked if they thought disaster could be managed effectively within the County, the majority (50.9%) of them strongly agreed that the management can be done effectively while another 25.5% agreed. Only 8 respondents (14.5%) strongly disagreed that disaster can be effectively managed.

Table 7: Effective Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	28	50.9	54.9	54.9
	Agree	14	25.5	27.5	82.4
	Disagree	1	1.8	2.0	84.3
	Strongly Disagree	8	14.5	15.7	100.0
	Total	51	92.7	100.0	
Missing	System	4	7.3		
Total		55	100.0		

Source: Research Data (2013)

The study also sought the extent to which the respondents agreed or disagreed that disaster management is affected by the following various factors at the Ministry. The standard deviation of 1.3 is relatively higher indicating the respondents were not quite uniform in their response. Respondents on averaged agreed (2.1) that Government legislation affected though As regards the County needs affecting disaster management, the respondents on average agreed (2.2) that it did affect the management of disasters within the County. The standard deviation was lower indicating that the respondents have been more uniform in their response.

Regarding the leadership style at the County and at the Ministry affecting disaster management, the respondents were more resolute in agreeing (2.0) that it did affect the management of disaster with a standard deviation of 1.2 showing that the respondents were also somewhat uniform with this response. On the view that lack of ICT systems to monitor disasters and give early warning signs including weather forecasts, the respondents agreed (1.7) that there is a lack of use of ICT and with a

standard deviation of 1.14, it is evident that the respondents were actually in agreement on this.

Table 8: Factors Affecting Disaster Management

		Government legislation	County Needs	Leadershi p style	Lack of ICT systems	Level of trainin g	Lack of equipmen t	Financial constrain ts	Lack of public awareness
N	Valid	54	53	52	55	55	53	54	55
	Missing	1	2	3	0	0	2	1	0
Mean		2.1296	2.2453	2.0769	1.7091	2.5455	2.0000	1.8889	1.7091
Std. Deviation		1.37424	1.29949	1.29624	1.14944	1.37192	1.46760	1.43628	1.14944
Skewness		1.117	.780	1.144	1.741	.661	1.214	1.352	1.893
Std. Error of Skewness		.325	.327	.330	.322	.322	.327	.325	.322

Source: Research Data (2013)

When asked if the use of ICT in management of disaster is still wanting, 69.1% of the respondents strongly agreed while another 16.4% agreed that it is still wanting. Only 4 respondents (7.3%) strongly disagreed while another 1 respondent (1.8%) disagreed.

Table 9: ICT Use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	38	69.1	70.4	70.4
	Agree	9	16.4	16.7	87.0
	Don't Know	2	3.6	3.7	90.7
	Disagree	1	1.8	1.9	92.6
	Strongly Disagree	4	7.3	7.4	100.0
	Total	54	98.2	100.0	
Missing	System	1	1.8		
Total		55	100.0		

Source: Research Data (2013)

When asked whether there is lack of necessary legislation to manage disasters both at the National and the County levels, the majority of the respondents (45.5%) strongly agreed that there lacked sufficient legislation to fight disasters while another 32.7% agreed. Six (6) of the respondents disagreed with this and argued that there was necessary legislation for disaster management. Some 9.1% of the respondents did not know if there existed necessary legislation to address disaster within both levels of Governments.

Table 9: Necessary Legislation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	25	45.5	45.5	45.5
Agree	18	32.7	32.7	78.2
Don't Know	5	9.1	9.1	87.3
Disagree	6	10.9	10.9	98.2
Strongly Disagree	1	1.8	1.8	100.0
Total	55	100.0	100.0	

Source: Research Data (2013)

Asked whether the capacity of the employees involved is below par and cannot deal effectively with management of disasters and that limited the management of disaster, the majority (43.6%) also strongly agreed that the employees had low capacity for disaster management. Another 27.3% of the respondents agreed that there was indeed low employee capacity to fight disasters. However another 10 respondents, representing 18.2% disagreed with this with another 1 respondent strongly disagreeing. They argued that the staff had the capacity and the necessary training to manage disasters. Five (5) respondents said that they did not know if really the capacity of the staff was wanting.

Table 10: Employees Capacity

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	24	43.6	43.6	43.6
Agree	15	27.3	27.3	70.9
Don't Know	5	9.1	9.1	80.0
Disagree	10	18.2	18.2	98.2
Strongly Disagree	1	1.8	1.8	100.0
Total	55	100.0	100.0	

Source: Research Data (2013)

The study also asked the respondents if they thought that disaster has been evolving over time and therefore requires mutating programs to handle the different phases, to which the majority (65.5%) strongly agreed and another 21.8% agreed. Only 3 of them said that they did not know, but 3 others said that they disagreed. Thus it is a forgone conclusion that the majority of the respondents agreed that disaster has been evolving over time and therefore requires mutating programs to handle the different phases.

Table 11: Evolution of Disaster Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	36	65.5	66.7	66.7
Agree	12	21.8	22.2	88.9
Don't Know	3	5.5	5.6	94.4
Disagree	3	5.5	5.6	100.0
Total	54	98.2	100.0	
Missing System	1	1.8		
Total	55	100.0		

Source: Research Data (2013)

The study was also interested in finding out whether challenges existed in management of disasters, and majority of 47.3% strongly agreed and a further 30.9% agreed that there were challenges in the management of disaster both at the National and the County levels of Government. Seven (7) other respondents said that they did not know if there existed challenges in the management of disaster in Kenya. Only 3 respondents disagreed with this and another 1 strongly disagreeing that there were challenges in the fight against disaster.

Table 12: Challenges in Disaster Management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	26	47.3	48.1	48.1
	Agree	17	30.9	31.5	79.6
	Don't Know	7	12.7	13.0	92.6
	Disagree	3	5.5	5.6	98.1
	Strongly Disagree	1	1.8	1.9	100.0
	Total	54	98.2	100.0	
Missing	System	1	1.8		
Total		55	100.0		

Source: Research Data (2013)

When the study asked whether there were opportunities in the management of disaster for the Government to capitalize on, the majority (32.7%) strongly agreed while another 25.5% agreed that there were opportunities in disaster management. However, 10 respondents said that they did not know whether there were opportunities for the Government to capitalize on or not. Eight (8) respondents representing 14.5% disagreed while the remaining 4 respondents strongly disagreed that there existed opportunities in disaster management.

Table 13: Opportunities for Government

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	18	32.7	33.3	33.3
Agree	14	25.5	25.9	59.3
Don't Know	10	18.2	18.5	77.8
Disagree	8	14.5	14.8	92.6
Strongly Disagree	4	7.3	7.4	100.0
Total	54	98.2	100.0	
Missing System	1	1.8		
Total	55	100.0		

Source: Research Data (2013)

Nearly all the respondents (85.5%) and 10.9%, strongly agreed and agreed respectively that disasters were disastrous on the economy and productivity of Kenya and had really impacted negatively on the lives of individuals affected by these disasters. Only 2 respondents (3.6%) said that they did not know if the disasters were disastrous on the economy and productivity of Kenya or not.

Table 14: Effects of Disasters

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	47	85.5	85.5	85.5
Agree	6	10.9	10.9	96.4
Don't Know	2	3.6	3.6	100.0
Total	55	100.0	100.0	

Source: Research Data (2013)

When the study sought to find out whether disaster management enhances good managers – employees relations, 29.1% strongly agreed, 27.3% agreed, 16.4% strongly disagreed, 10.9% disagreed while the remaining 7 respondents (12.7%) said they did not know if the management of disaster enhances good managers – employees relations

Source: Research Data (2013)

The study sought to enquire from the respondents if the responses they had given in the questionnaire would be anything different for Baringo County, to which the majority of the respondents would not be different, but the remaining 14 respondents (25.5%) felt the responses would be different for the County.

Table 15: Good Relations

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	16	29.1	30.2	30.2
Agree	15	27.3	28.3	58.5
Don't Know	7	12.7	13.2	71.7
Disagree	6	10.9	11.3	83.0
Strongly Disagree	9	16.4	17.0	100.0
Total	53	96.4	100.0	
Missing System	2	3.6		
Total	55	100.0		

Source: Research Data (2013)

The study sought to know from the respondents if the responses they had given in the questionnaires would be anything different for Baringo County, to which the majority (74.5%) said that it would not be different, but the remaining 14 respondents (25.5%) said that the responses would be different for the County.

Table 16: Different Responses for Baringo

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	14	25.5	25.5	25.5
No	41	74.5	74.5	100.0
Total	55	100.0	100.0	

Source: Research Data (2013)

When asked further the reasons for the responses to be different for Baringo County, the respondents indicated the poor means of communication or dissemination of information between the organizations managing disasters and the Government and the County; the poor infrastructure within the County and specifically the poor road network; poor coordination of disaster management strategies; the low level of disaster mitigation and preparedness.

When asked if they were aware of the legislations in disaster management and mitigation, the majority of the respondents (41) representing 74.5% said that they were not aware while another 18.2% (10) said that they were aware of the legislation governing disaster management.

Table 17: Awareness of Legislation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	10	18.2	19.6	19.6
No	41	74.5	80.4	100.0
Total	51	92.7	100.0	
Missing System	4	7.3		
Total	55	100.0		

Source: Research Data (2013)

When asked what steps the Government of Baringo County undertakes to effectively and efficiently manage disaster, the respondents said that the County Government of Baringo should construct roads to enhance faster mobility and response; enhance communication channels of disaster to and between relevant responders; allocation of more funds for disaster management; institute relevant legislation and policies to cover disaster and disaster management within the County.

When asked about the opportunities that exist in disaster for the Government of Kenya to exploit for the benefit of the county and its citizens, the respondents said that Government should work jointly with other non-state actors like Red Cross, World Vision, to empower the youth and women; facilitate and enhance irrigation programs to counter drought and famine; facilitate data maintenance for disasters; develop and utilize early warning signs to increase regular monitoring, evaluation and response.

On whether the training and capacity of the disaster management staff affect the management of disasters in Baringo County, majority of the respondents (50.9%) said that it affects to a great extent while another 16.4% said that it affects to some extent. Another 18.2% said that it affected to a little extent while 7.3% of them said they did not know if it affected. Only 3.6% of the respondents said that it did not affect.

When asked to suggest steps the County should undertake to combat frequent and recurring disaster water shortage in order of priority, the respondents mentioned that the County Government should enhance disaster response, enhance identification and distribution of seeds to farmers for crop production and finance the farmers. They also mentioned that the County Government should improve management of water; develop irrigation schemes and provide and protect drought resistant crops and livestock which are high yielding and resistant. The respondents also said that in order to fight and address drought management in the county, there is need to empower individual farmers through training and extension services and strategies to control soil erosion to enhance crop production within the County.

Table 18: Staff Capacity and Disaster Management

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Great Extent	28	50.9	52.8	52.8
Some Extent	9	16.4	17.0	69.8
Don't Know	4	7.3	7.5	77.4
Little Extent	10	18.2	18.9	96.2
No Effect	2	3.6	3.8	100.0
Total	53	96.4	100.0	
Missing System	2	3.6		
Total	55	100.0		

Source: Research Data (2013)

When asked to suggest steps the County should undertake to combat frequent and recurring disasters within Baringo in order of priority; the respondents mentioned that the County should allocate funds to disaster response; enhance sensitization and civic education on disasters; fight corruption and finance the farmers. They also mentioned need to ensure proper management of water; develop irrigation schemes and develop and promote drought resistant crops and livestock which are high yielding and resistant. The respondents also said that in order to fight and address drought challenges in Baringo County, there is need to empower individual farmers through increased irrigation schemes and strategies to control soil erosion to minimize incidences of landslides within the County.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This Chapter provides a summary of the findings that the respondents provided, conclusion derived from the various variables that the study sought to study and the recommendations from the conclusions drawn for each of the variables. The chapter also suggests areas for further research since it was not possible for this study to completely exhaust issues to do with disaster management.

5.2 Summary of Findings

The study sought initially to profile the respondents in terms of gender, age, marital status, length of stay at the County and the academic qualifications. For gender, the majority were male (63.6%) while 30.9% were female. The majority of respondents were aged below 25 years (45.5%), 32.7% were aged between 36 and 45 years and 14.5% were aged between 46 and 55 years. On marital status, majority (37) were married while 17 others were single. On education, 58.2% had secondary education as the highest, 12 had Diploma qualifications and 10 were graduates with at least a bachelors' degree.

5.2.1 Disaster challenges

On the various aspects of disaster management in Baringo County, recurrent floods were listed as the most common disaster in Marigat and Tenges divisions. Landslides are common in Tenges Division due to human activity on the edges of cliffs and hills which reduce forest and vegetation cover. Drought is also common in East and North Baringo where a lot of livestock die every year for lack of water and grazing pastures leading to conflicts for scarce resources. Cattle rustling were identified as disaster occurring between the inhabitants of the County and neighbouring Counties of Turkana, Pokot and Samburu. Drought and cattle rustling are quite regular in the County but the respondents indicated that for cattle rustling has been drastically reduced due to regular police patrols and numerous peace meetings.

As regards the ratings for disaster management in the County, 49.1% rated it poor while 30.9% rated it fair. Only 18.2% rated disasters management as good explaining the poor rating is always due to very low and slow response and lack of

sufficient facilities and equipment within the County to fight and manage the disasters. Majority of respondents (50.9%) strongly agreed that the management of disasters can be done effectively while 25.5% agreed.

5.2.2 Disaster Management Policy formulation

When respondents were asked about their opinion on factors affecting disaster management in Baringo County, they agreed (2.1) on average for Government legislation and noted also that County needs effect disaster management (2.2).

Regarding the leadership style, the respondents agreed (2.0) that it did affect disaster management at the County and the Ministry levels and agreed (1.7) also that lack of ICT systems to monitor disasters and give early warning signs including weather forecasts affect disaster management. This view is supported by the result that 69.1% of the respondents strongly agreed that the use of ICT in management of disaster is still lacking and 16.4% others agreed. Asked about the need for necessary legislation to manage disasters both at the National and the County levels, 45.5% of the respondents strongly agreed while another 32.7% agreed. The majority of respondents (43.6%) strongly agreed that the employees had low capacity for disaster management while 27.3% agreed. Majority of respondents (65.5%) strongly agreed that disasters have been evolving over time and therefore require mutating programs to handle the different phases while 21.8% agreed.

5.2.3 Disaster Strategies

On finding out whether challenges existed in the management of disasters 47.3% of the respondents strongly agreed and a further 30.9% agreed that challenges exist. But when asked whether opportunities exist for the Government to exploit and capitalize in disaster management, 32.7% of the respondents strongly agreed while 25.5% agreed but 18.2% said that they did not know whether there were opportunities for the Government to capitalize on or not. However, majority of the respondents(85.5%) and 10.9%, strongly agreed and agreed respectively that disasters were disastrous on the economy and productivity of Kenya and had really impacted negatively on the lives of individuals affected by these disasters.

On the other hand, 29.1% strongly agreed, 27.3% agreed, 16.4% strongly disagreed, 10.9% disagreed while (12.7%) did not know that disaster management enhances good managers – employees relations.

When asked if the responses they gave for Baringo North would be different for Baringo South, 74.5% said that it would not be different yet 25.5% said that the responses would be different. They indicated poor means of communication or dissemination of information between the organizations managing disasters and the Government as well as within the County; the poor infrastructure and specifically the poor road network; poor coordination of disaster management strategies and also the low level of disaster mitigation and preparedness as the main challenges for

Baringo County in managing disasters. On whether they were aware of legislations for disaster management and mitigation, 74.5% were not aware while 18.2% said that they were aware.

On whether the training and capacity of the disaster management staff affect the management of disaster in Baringo County, 50.9% said that it affected to a great extent, 16.4% to some extent and another 18.2% said that it affected to a little extent.

5.3 Conclusion

From the foregoing summary of results and findings, the study concludes that there is need to enhance gender parity in disaster management in order to get a fair mix of the gender and ages of the staff involved in disaster management since the majority (45.5%) seemed young (below age 25 years). On marital status, the ratio between married and single respondents is sufficient considering the age distribution. However, there is a major need to enhance the capacity of the respondents since majority (58.2%) had secondary education. This means the level of knowledge and skill among the disaster management staff was minimal, inhibiting their response to disasters.

5.3.1 Disaster Challenges

Baringo County can be concluded to have major disasters in form of recurrent floods in Marigat and Tenges Divisions; landslides in Tenges Division caused by human activity on the edges of cliffs and hills thus reduction of the forest and vegetation cover. Drought in East and North Baringo where a lot of livestock die every year for lack of water and grazing pastures. This leads to conflicts and competition for scarce resources. The cultural and traditional practices have sustained the disaster of cattle rustling between the inhabitants of the County and across the neighbouring Counties.

The rating for disaster management in the County is poor (49.1%) and fair (30.9%) according to respondents. The explanation given is that response is always very low and slow and lacks sufficient facilities and equipment within the County for fighting and managing the disasters and hence need to enhance the response and provide additional facilities and equipment for the County. This position agrees with the majority of respondents (50.9%) strongly agreed that the management of disasters can be done effectively while 25.5% agreed.

5.3.2 Disaster Management Policy formulation

Respondents agreed that in Baringo County, Government legislation (2.1); County needs affect disaster management (2.2); leadership style at the County and at the ministry is affecting disaster management (2.0); and (1.7) agree that lack of ICT systems to monitor disasters and give early warning signs including weather forecasts, affect disaster management. Indeed, 69.1% of the respondents strongly agreed that the use of ICT in management of disaster is still insufficient and 16.4% others agreed. 45.5% of the respondents strongly agreed that lack of necessary legislation to manage disaster both at the National and the County levels while another 32.7% agreed affected disaster management while another 43.6% strongly agreed that the employees had low capacity for the disaster management.

Majority of respondents (65.5%) strongly agreed that disasters have been evolving over time and needed mutation of programs to handle the different phases. Majority respondents (47.3%) strongly agreed that challenges existed in management of disaster while 30.9% agreed that there existed challenges, but when asked whether

there existed opportunities for the Government to exploit and capitalize in disaster management, 32.7% of the respondents strongly agreed while 25.5% agreed. Disasters were disastrous on the economy and productivity of Kenya and had really impacted the lives of individuals who have been affected by these disasters with 85.5% strongly agreeing and another 10.9% agreeing.

5.3.3 Strategies Employed

Majority of the respondents (74.5%) said that their responses would not be different for Baringo County, while the remainder 25.5% said that the responses would be different. Poor means of communication or dissemination of information between the organizations managing disasters and the Government as well as within the County, the poor infrastructure within the County and specifically the poor road network, poor coordination of disaster management strategies and also the low level of disaster mitigation and preparedness as the main challenges for Baringo County in managing disasters. Majority of the respondents (74.5%) also were not aware of the legislations in disaster management and mitigation while 18.2% said that they were aware.

The respondents recommended that the Government should work jointly with other non-state actors like Red Cross, World Vision, empower the youth and women, facilitate and enhance irrigation programs to counter drought and famine, facilitate and enhance data maintenance for disasters, develop and utilize early warning signs and enhance regular monitoring of disasters and evaluation of responses to such disasters and evaluation of responses to such disasters for better future responses in order to exploit for the benefit of the county and its citizens. On whether the training and capacity of the disaster management staff affect the management of disasters in Baringo County, 50.9% said that it affected to a great extent, 16.4% to some extent and another 18.2% said that it affected to a little extent.

5.4 Recommendations

The study recommends that there is need to enhance gender parity in disaster management and also the need to get a fair mix of the ages of the staff involved in disaster management. There is a major need to enhance the capacity of the respondents since majority (58.2%) had secondary education.

This means the level of knowledge and skills among the disaster management staff was minimal, inhibiting their capacity to respond adequately to disasters.

5.4.1 Disaster challenges

Baringo County experiences major disasters in form of floods in Marigat and landslides in Tenges divisions which are frequent and recurrent.

Landslides in Tenges division are due to human activity on the edges of cliffs and hills which cause reduction of the forest and vegetation cover. Drought in East and North Baringo where a lot of livestock die every year for lack of water and grazing fields has led to many conflicts in competition for resources which are scarce. Another disaster is cattle rustling between the inhabitants of the County and across the Counties with neighbours like Turkana, Pokot and Samburu. There is need therefore to restore the environment by managing human activities, build gabions and other soil erosion control strategies in order to reduce the frequency and severity of the floods, landslides and drought. There is also need to continue holding frequent public peace meetings along the borders and within the County to eventually curb the cattle rustling menace which has rocked the County for many years. However, maintaining peace among communities is a long lasting solution to the conflict and cattle rustling problem.

Since the ratings for disaster management in the County is poor (49.1%), there is need to enhance response rates by facilitating the disaster management function in form of increased equipment, facilities and budget to improve disaster management.

5.4.2 Disaster management policy formulation

The research findings indicate the need for enhanced and targeted Government legislations to facilitate coordination of disaster requirements at the County and ministry in charge of disaster management. The survey indicated the need for more involvement and application of ICT systems to monitor disasters and give early warning signs and weather forecasts to management disaster. There need

to facilitate and build the capacity of employees involved in disaster management to be able to handle disasters within the County. The survey findings indicate the possible opportunities for the Government to exploit and capitalize in disaster management in order to minimize the disastrous impact on the economy and livelihoods productivity of citizens. It points out the need for enhancing communication and dissemination of information between the organizations managing disasters and the Government and County. The other areas identified for better facilitation and coordination of disaster management strategies include the reconstruction of infrastructure and disaster preparedness and mitigation as the main challenges for Baringo County. The County Government needs to create public awareness about their roles and the legislations that guide and govern disaster management at both levels of National and County Governments.

5.4.3 Strategies recommended

From the respondents viewpoint, they recommended that the Government should work jointly with other non-state actors like Red Cross, World Vision; empower the youth and women; facilitate and enhance irrigation programs to counter drought and famine; facilitate and enhance maintenance of data on disasters; develop and utilize early warning systems for regular monitoring of disasters and evaluation of responses to such disasters to better guide future responses in order to benefit the County and its citizens.

5.5 Suggestions for further Research

The study sought to be conclusive enough in its quest to find out the issues to do with management of disasters within Arid and Semi Arid Areas (ASALs) and specifically Baringo County. It is suggested that further research be conducted based on the following:

1. The integration of National and County Governments disaster management functions for a better coordinated preparedness, response and mitigation.
2. The role of the public in disaster management
3. The role of traditional / indigenous knowledge in disaster management.

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I am a student at Kenyatta University pursuing an Executive Master of Public Administration (EMPPA). I am currently carrying out a study on the role of the Ministry of State for Internal Security. The success of the research substantially depends on your cooperation. I hereby request you to respond to the questionnaire attached as honestly and fully as possible and to the best of your knowledge. There are no correct or wrong answers.

The questionnaire is designed for the purpose of this study only, therefore the responses will be strictly confidential and anonymously given. No name will be recorded.

APPENDICES

Appendix 1: Letter to Respondent

J. Binsai Chepsongol

P.O. BOX 25102-00603

NAIROBI

Dear Sir/Madam,

RE: RESEARCH PROJECT

I am a Postgraduate student in Kenyatta University pursuing an Executive Master of Public Policy and Administration (EMPPA). I am currently carrying out a study on Disaster Management in Kenya: The Opportunities and Challenges for the Ministry of State for Special Programmes. The success of the research substantially depends on your cooperation. I hereby request you to respond to the questionnaire attached as honestly and duly as possible and to the best of your knowledge. There are no correct or wrong answers.

The questionnaire is designed for the purpose of this study only, therefore the responses will absolutely be confidential and anonymously given. No name will be required from any respondent.

Thanking you in advance.

Yours faithfully,

J. Binsai Chepsongol

Appendix 2: Questionnaire

SECTION A: BIO DATA

1. What is your gender? Male Female

2. Within which age bracket do you fall?

Age (Years)	25 and below	26 – 35	36 – 45	46 - 55	Above 55
Response					

3. What is your marital status?

Marital Status	Single	Married	Widowed	Divorced	Other(s)
Response					

4. For how long have you worked at Ministry in charge of Disaster?

Length (Years)	Less than 5	6-10	11-15	Over 16
Response				

5. What is your highest educational standard?

Academic Level	Primary	Secondary	Form Six	Bachelors	Others (Specify)
Response					

SECTION B: DISASTER MANAGEMENT

Serial	Disaster	Place (Division)	Frequency
1			
2			
3			
4			
5			

6. What are some of the disasters witnessed frequently in Baringo and where?

7. How would you rate the management of disaster in Baringo County?

Excellent Good Don't Know Fair Poor

What reasons would you have your answer as in 7 above?

.....

.....

.....

.....

8. To what extent do you agree disaster management is affected by the following factors at the Ministry?

Factor	5	4	3	2	1
Government Legislation					
Department needs and policies					
Leadership and Management Style					
Lack of competent Information and Communication Technology systems					
Level of Training of Employees					
Lack of Equipment and Machines					
Financial Constraints and Limitations					
Lack of Public awareness and participation in disaster management					

Where 5 – Strongly Agree, 4 – Agree, 3 – Don't Know, 2 – Disagree and 1 – Strongly Disagree

9. To what extent do you agree with the following statements as regards disaster management in Kenya in general?

Statement	5	4	3	2	1
The disasters in Kenya can be managed effectively					
The use of Information and Communication Technology for early signs warning and identification is wanting					
Disaster Management lacks the necessary legislation and effective laws					
The capacity of employees involved is below par and cannot deal effectively with management of disasters					
Disasters evolve over time and therefore requires mutating programs to handle the different phases					
Various challenges exists in disaster management					
Opportunities exists in disaster for the Government to capitalize on					
Disasters have disastrous effects on the economy and productivity of Kenya					
Enhances good managers – employees relations					

Where 5 – Strongly Agree, 4 – Agree, 3 – Don't Know, 2 – Disagree and 1 – Strongly Disagree

10. Could the responses be different for Baringo County?

Yes No

If yes, explain

.....

11. Are you aware of Government legislation and Department policies which governs the disaster management at the County Level? Yes

No

If yes, please list them

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

12. What are some of the challenges that the management of disaster in Kenya has?

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

13. What steps, in your opinion, should the Government of Baringo County undertake to effectively and efficiently manage disaster?.....

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

14. What opportunities exist in disaster for the Government of Kenya to exploit for the benefit of the county and its citizens?

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

15. To what extent does the training and capacity of the disaster management staff, affect the management of disaster in Baringo County?

Extent	Great	Some	Don't Know	Little	No Effect
Response					

16. What steps in order of priority should the County undertake to combat frequent and recurring disasters within Baringo?

.....

17. What other opinion would you have as regards this study but which might not have been captured?

.....

THANK YOU FOR YOUR TIME AND RESPONSES

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CITY CAMPUS