

**UNIVERSITY OF NAIROBI**

**A CRITICAL ANALYSIS OF KENYA'S DISASTER MANAGEMENT STRATEGY**

**ALPHONCE NDAR**

**R50/21932/2019**

**SUPERVISOR**

**DR. KIZITO SABALA**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENT FOR THE AWARD OF MASTERS OF ARTS IN INTERNATIONAL  
STUDIES AT INSTITUTE OF DIPLOMACY AND INTERNATIONAL STUDIES,  
UNIVERSITY OF NAIROBI**

**December, 2019**

**DECLARATION**

This research project is my original work and has not been presented for any academic award in any other University or Institution of Learning.

Signature.....

Date.....

**ALPHONCE NDAR**

**R50/21932/2019**

This research project has been submitted for examination with my approval as University Supervisor.

Signature.....

Date.....

**Lecturer**

**Dr. KIZITO SABALA**

**Institute of Diplomacy and International Relations**

## **ACKNOWLEDGEMENTS**

This far, it is because of God's doing in my life. Secondly, I humbly acknowledge the work done by the dedicated lecturers who have been very supportive during the entire project. Dr. Kizito Sabala was my University Supervisor who tirelessly guided, supported and encouraged throughout the entire project. For my fellow students I salute you all for the warmth and support you gave me during the study period. You were such an inspiration. Thank you for the collaboration and networking during the project.

## **DEDICATION**

To my wife Cyndy and my daughters Sheila, Natasha, Chantaa and Simphiwe for their support and who have sacrificed so much during my studies.

## TABLE OF CONTENTS

DECLARATION .....	i
ACKNOWLEDGEMENTS .....	ii
DEDICATION .....	iii
TABLE OF CONTENTS .....	iv
LIST OF ABBREVIATIONS .....	vii
ABSTRACT .....	viii
<b>Chapter One .....</b>	<b>1</b>
<b>Introduction and Background to the Study .....</b>	<b>1</b>
1.0 Background of Study .....	1
1.1 Statement of the Research Problem .....	4
1.2 Objective of the Research Study .....	5
1.3 Research Questions .....	5
1.5 Literature Review .....	6
1.5.1 The Nature, Form of Actors and Institutions Engaged in Disaster Management .....	6
1.6 Gaps in the Literature .....	8
1.7 Conceptual Framework .....	9
1.9 Research Methodology .....	11
1.9.1 The Case Study .....	11
1.9.2 Data Collection and Instruments .....	12
1.9.2.1 Primary Data .....	12
1.9.2.2 Secondary Data .....	12
1.9.3 Data Analysis .....	13
1.9.4 Data Presentation .....	14
1.10 Chapter Outline .....	14
<b>Chapter Two.....</b>	<b>16</b>
<b>Nature, Form and Actors in Disaster Management in Kenya .....</b>	<b>16</b>

2.0	Introduction.....	16
2.1	Causes and Effects of Disasters in Kenya.....	16
2.2	Challenges to Disaster Management in Kenya .....	21
2.3	Conclusion .....	26
<b>Chapter Three .....</b>		<b>27</b>
<b>Effectiveness of the Disaster Management Regime in Kenya.....</b>		<b>27</b>
3.0	Introduction.....	27
3.1	Disaster Management in Kenya .....	27
3.1.1	Kenya’s Legal Framework for Disaster Management.....	28
3.2	Kenya’s Disaster Management Institutions .....	29
3.2.5	National Disaster Management Unit.....	31
3.3	Kenya’s Disaster Management Strategies .....	32
<b>Chapter Four.....</b>		<b>35</b>
<b>Enhancing Disaster Management in Kenya - Challenges and Opportunities.....</b>		<b>35</b>
4.0	Introduction.....	35
4.1	Resource constraints to Disaster Management in Kenya.....	35
4.2	Poor Policy Planning and Implementation .....	36
4.3	Poor Dissemination of Information .....	37
4.4	Absence of Governance in Disaster Prone Areas .....	38
4.5	Institutional and Policy Frameworks as Opportunities for Disaster Management in Kenya. .....	38
<b>Chapter Five.....</b>		<b>41</b>
<b>Summary, Conclusion and Recommendations.....</b>		<b>41</b>
5.0	Introduction.....	41
5.1	Summary .....	41
5.2	Conclusions.....	43
<b>Bibliography .....</b>		<b>45</b>

<b>APPENDICES .....</b>	<b>48</b>
Appendix I: Floods, Landslides and Drought Disasters in Kenya.....	48
Appendix II: Terrorism-Based Disasters in Kenya.....	49
Appendix III: Fire Disasters in Kenya .....	50
Appendix IV: Accident Disasters in Kenya.....	51
Appendix IV: Election Violence Disasters in Kenya .....	52

## **LIST OF ABBREVIATIONS**

**AAR** -African Air Rescue

**AMREF** - African Medical Relief Fund

**ASAL**-Arid and Semi-Arid Lands

**CBO**-Community Based Organizations

**DRR**-Disaster Risk Reduction

**EWS**-Early Warning Systems

**ICRC**-International Committee of the Red Cross

**KRCS**-Kenya Red Cross Society

**MDGs**- Millennium Development Goals

**MODP**-Ministry of Devolution and Planning

**MOICNG**- Ministry of Interior and Coordination of National Government

**NDOC**- National Disaster Operation Centre

**NGO**-Non-Governmental Organization

**OFDA**-Office of US Foreign Disaster Assistance

**RCAT**- Red Cross Action Teams

**USA**-United States of America



## ABSTRACT

The issue of disaster management has over the years posed immense challenges for actors in the international system both states as well as non-state actors. Disasters exist in various forms which include wildfires, droughts, famine, floods, hurricanes, earthquakes amongst others. Every continent on the planet, has faced disasters of one type or another and the capacity to recover from the negative effects of disasters has ranged from nation to nation based on the economic capacity of the state in question. For instance, nations in the developed world such as Japan which has been afflicted by earthquakes and the US which has faced challenges from hurricanes have been able to recover from the respective disasters due to their economic ability to do so. On the contrary nations in the developing world have on their part struggled to recover from disasters due to the challenge of resource scarcity to do so, poor or weak policy coordination amongst other challenges. Kenya has faced disasters of numerous kinds which have included terror attacks, drought and famine, floods, political skirmishes especially the unfortunate events of the post-election violence in Kenya in 2007/2008. The key objective of this study is to carry out a critically analyze Kenya's disaster management strategy with an aim of appreciating the strengths as well as weakness of the strategy if it indeed exists and if it does, address the weaknesses therein to make it more efficient. The three specific objectives will focus on the following. First, the focus will be on the nature and form of actors and institutions involved in disaster management globally. Secondly, the study will seek to appreciate the regimes focused on disaster management on the African Continent. Last but not least, the third objective will seek to assess the efficiency of Kenya's disaster management strategy to appreciate the strengths and weaknesses in order to look for avenues where it can be made more efficient. Data for purposes of conducting the study will be sourced from questionnaires to targeted respondents involved in the area of disaster management, as well as from secondary sources in the form of books and credible electronic journals. Data analysis will be conducted to be able to arrive at findings Finally, the study will be able to make recommendations towards enhancing policy approaches to disaster management in the country.

## Chapter One

### Introduction and Background to the Study

#### 1.0 Background of Study

Disaster management in the world over is a crucial undertaking because it is aimed at reducing the negative impact of such occurrences when emergencies happen.<sup>1</sup> In the event of a disaster, the first priority of various actors is to undertake mitigation of the damage that has already been visited by the disaster in question. During the response efforts, resources are pooled together and channeled towards addressing mitigating the losses encountered, with the resources being in the form of human as well as material.<sup>2</sup> Despite various efforts at disaster management especially in several countries, vulnerable groups remain helpless and do little when disaster strikes.<sup>3</sup> The help is short term and with few resilient measures.

The citizens of any given nation, have a contribution to make in terms of disaster management but it is the governments of individual states who possess the ultimate authority and resources to not only prevent disasters but also to craft strategies tailored towards mitigation and response to such occurrences.<sup>4</sup> Despite being prone to numerous disasters, Ecuador has put in place effective policies to guide their disaster management, where the public and private sectors collaborate in disaster management efforts strategies and programs that help to promote the identification, analysis as well as prevention and mitigation of all disasters and risks both during emergency

---

<sup>1</sup>Wilson. Sean A. et al “The lack of Disaster Preparedness by the Public and its Effect on Communities” *International Journal of Rescue and Disaster Medicine* [2008] Vol 7 Issue No 2 p. 102

<sup>2</sup>Herzog, J. R. “A Model of Natural Disaster Administration: Naming and Framing Theory and Reality *Administrative Theory and Praxis*-, Vol. 29, No 4[ 2007] p.586

<sup>3</sup> Ibid p. 589-600

<sup>4</sup> Hon. Esther M. Murugi (2010). National Disaster Management Policy of Kenya. Retrieved on 30<sup>th</sup> August 2018 from <https://www.scribd.com/doc/136662332/National-Disaster-Management-Policy-of-Kenya-Final-Draft-Oct-2010>

and in non-emergency situations.<sup>5</sup> With a population of about 190million, Nigeria has a national disaster management framework (NDMF) which they use for effective disaster management.<sup>6</sup> Studies conducted in the country have showed that emergency preparedness, public safety and provision of practical information can help when dealing with emergencies.<sup>7</sup>

Located in the eastern region of Africa and covering approximately 580,367 square kilometers and has been ranked no 48 it in terms of the largest country by area coverage.<sup>8</sup> According to the recently completed census, Kenya has a population of 49.7 million. Kenya’s population of about 52.57 million people and is ranked as the 27th most populated country in the world. Nairobi is the capital city of Kenya other cities are Mombasa and Kisumu. The figure 1 below depicts the map of Kenya.

Figure 1: The Map of Kenya



Source: Langat, (2016).

<sup>5</sup>Herzog, J. R. Op. Cit. (2007) p.586

<sup>6</sup> Ibid p. 23

<sup>7</sup>Langat, S. C. (2016). An Analysis of the Legal Framework Governing Disaster Management in Kenya p. 12

<sup>8</sup>Macharia, C. W. (2015). *An Investigation of Institutional Preparedness in Disaster Management in Public Secondary Schools in Murang’a East Sub-County in Murang’a County, Kenya* (Doctoral dissertation, Mount Kenya University).

Meadows, D. (2008) *Thinking in Systems: A Primer*. London: Chelsea Green.

About 70% of the disasters experienced in Kenya are related to water issues through droughts and floods which are the most prevalent leading to a huge loss of life and destruction of property.<sup>9</sup> Other disasters that are experienced often include road accidents, fire tragedies in homes, business centers or companies, collapsing poorly constructed buildings and disease outbreaks. Some of the disasters common in the country are shown in the figure below.

*Figure 2: Common Natural Disasters in Kenya (Drought and Floods)*



*Source: Coombs, (2018).*

Over the past decade, there have been numerous droughts that have devastated the north eastern part of the country. There was severe flooding in Kenya during the 2015 El-Niño rains that claimed more than 100 lives nationally<sup>10</sup>. The Violence experienced after elections in 2007-2008 that claimed the lives of close to a thousand people stands out as the most unfortunate case of politically instigated ethnic unrest in the history of the nation, that brought out the fragility of the nation in terms of disaster response<sup>11</sup>. Kenya has also suffered numerous terror attacks in part by bordering an unstable neighbor in the form of Somalia such as the Westgate Mall attacks of 2013

<sup>9</sup> Ibid p. 45

<sup>10</sup> Coombs, W. T. (2018). *Ongoing Crisis Communication: Planning, Managing, and Responding*. Sage Publications.

<sup>11</sup> Dunaway, M., Murphy, R., Venkatasubramanian, N., Palen, L., & Lopresti, D. (2017). Research Agenda in Intelligent Infrastructure to Enhance Disaster Management, Community Resilience and Public Safety. *arXiv preprint arXiv:1705.01985*.

and the Garissa University attacks<sup>12</sup>. This calls for a critical analysis of the frameworks used in managing disaster in Kenya so as to strengthen the rate of response to disasters.

### **1.1 Statement of the Research Problem**

In 2007, over 950 disasters were recorded in Kenya and amounted to losses worth US\$ 75 billion. When disasters occur, the developing countries and especially the poor in those countries are the most vulnerable. Kenya has faced several disasters both manmade and natural, in the course of its history and which have brought about the loss of unimaginable loss of life and destruction of property.

Some of these include the 1997 El Nino rains, the 2007/8 post-election violence that led to the death of about 1000 people, international displacement of persons in within the country as well as refugees fleeing to neighboring countries amongst others. Disasters have led to a regression of development in the country especially the aspiration of the nation to attain middle income status by the year 2030. Bad governance and attendant evils such as corruption, negative ethnicity *inter alia* has impaired the ability of the nation to respond to disasters in Kenya. Kenya has a National Disaster Management Unit, however, disaster management and response in the country is far from satisfactory.<sup>13</sup> It therefore becomes imperative to assess the existing disaster management strategy both at national as well as the devolved tier of governance as provided for in the 2010 Constitution, to better address existing weaknesses and enhance future responses to disasters in Kenya.

---

<sup>12</sup>Van Niekerk, D. (2015). Disaster risk governance in Africa: A retrospective assessment of progress against the Hyogo Framework for Action (2000-2012). *Disaster Prevention and Management*, 24(3), 397-416.

## **1.2 Objective of the Research Study**

The broad objective of this study is to critically analyze Kenya's disaster management strategy.

### **1.2.1 Specific Objectives**

Specifically, the study aims to:

1.2.1 To analyze the nature and form of actors and institutions involved in global disaster management.

1.2.2 To evaluate the efficiency of disaster management regime in Kenya.

1.2.3 To examine the challenges and opportunities for effective management of disaster in Kenya.

## **1.3 Research Questions**

1.3.1 What constitutes the nature and form of actors and institutions involved in global disaster management?

1.3.2 What How efficient is the Kenya disaster management regime?

1.3.3 What are the some of the existing challenges and opportunities for enhancing disaster management in Kenya?

## **1.4 Justification**

### **1.4.1 Academic Justification**

This paper shall enrich the field of academia by analyzing existing literature on disasters and management in the international system. This is in the aim of identifying the literature gaps that should be addressed by the academia for purposes of coming up with enriching the literature on disaster management. This will enhance scholarly to be undertaken in the direction of generating more knowledge on the area of disasters and disaster management to enhance better mitigation and responses to all actors involved.

## **1.4.2 Policy Justification**

This study aims to analyze the existing policy framework targeted towards managing disaster in the country. The purpose of the analysis is to identify existing policy gaps especially where weaknesses may exist with an aim of closing the policy gap in order to enhance the response to disasters in the country, the region and beyond.

## **1.5 Literature Review**

### **1.5.1 The Nature, Form of Actors and Institutions Engaged in Disaster Management**

At the global level, there exists the office for United Nations Disaster Relief. There is also the Red Cross Societies as some of the frameworks aimed at disaster management. These organizations noted that one of the key approaches to responding to disasters namely disaster preparedness was lacking in a majority of developing nations where many are considered as being disaster prone.<sup>14</sup> The United Nations had the 1990-2000 declaration as the as the Decade for Disaster Reduction, but it did not achieve the objectives that it sets.

Its successor, the International Strategy for Disaster Reduction has also been said to lack enough publicity on matters disaster management. The Millennium Development Goals were also critiqued for lacking a component addressing issues of disaster management, despite them being a key global concern.<sup>15</sup> Australia, Britain and the US have focused on training and education on matters of disaster management. For instance, a number of educational programmes dedicated to disaster management have been introduced at various levels of study at institutions of higher learning. In the same breadth, researchers have pin pointed the importance of lessons learnt in the course of dealing with disasters in the respective countries against the backdrop of

---

<sup>14</sup> League of Red Cross Societies, (1972). *A Guide to National Disaster-Prone Areas and Selected Countries*. Geneva

<sup>15</sup> Gilbert Burnham, Preventing Disaster: Realizing Vulnerability and Looking Forward. *Harvard International Review*. Vol.28, No.1 (SPRING 2006) p.84

acknowledging the increase in disasters in quantitative terms as well as worsening of the same in qualitative terms.<sup>16</sup>

### **1.5.2 Disaster Management in Kenya**

Draft disaster management policy in Kenya (2009) posits that, the nation has over the years faced increasing vulnerability to disasters due to a number of factors. The draft policy identified factors such as famine, poverty, drought, perennial flooding, existence of poor buildings and roads and other infrastructure and absence of vital services especially in the informal settlements as a combination that has served to predispose the citizenry to impacts of disasters.<sup>17</sup>

The government has been the primary actor that is tasked with the role of maintaining safety for Kenyans. Chapter 14 of the Constitution of Kenya, establishes the national interests in particular national that the state is supposed to preserve. These include, territorial integrity, property, peace, stability and prosperity of which disasters whether natural or manmade pose threats to.<sup>18</sup> The National Disaster Management Authority Bill 2019, seeks to establish a fully-fledged authority with the capacity to respond to disasters effectively. This authority is expected to liaise with county governments to carry out its mandate which includes establishment of a National Early Warning Disaster Management Information System, act as a centralized forum for dissemination of information related to disasters in the country amongst others.<sup>19</sup>

---

<sup>16</sup> Quarantelli, E.L. (1993), The Environmental Disasters of the Future Will be More and Worse, but the Prospect is Not Hopeless. *Disaster Prevention and Management*. Vol. 2, No.1

<sup>17</sup> GOVERNMENT OF KENYA (2009), Draft National Policy for Disaster Management in Kenya.

<sup>18</sup> Chapter 14, Constitution of Kenya 2010.

<sup>19</sup> National Disaster Management Authority Bill 2019, *Kenya Gazette Supplement No.17*, Nairobi (National Assembly Bills No.10)



### **1.5.3 Disaster Management - Challenges and Opportunities in Kenya**

Resource scarcity has been a thorn in the flesh for actors engaged in response to disasters in Kenya, with the state more often than not reaching out to well-wishers to come to its aid to enable responses to disasters. Absence of a comprehensive framework for disaster management has proven costly for the nation in its efforts towards responding to disasters. A case in point is the amount of money spent in responding to the 1999-2001 drought that costed the national economy billions of shillings and in its wake left about 4.5 million people in a dire situation, decimated about 60-70% of livestock in the pastoral regions of Northern Kenya and other areas that were worst hit.<sup>20</sup>

The disaster management regime in Kenya had been set up in manner that it operated on an *ad hoc basis* where efforts seemed to be scrambled when a disaster has already struck. This has seen the response efforts to disasters become characterized by confusion, poor coordination of the response activities. As Nyambega Gisesa points out, bureaucracy negatively impacts in delaying response to disasters where there has been seen to be competition as to which agency is supposed to respond to a crisis leading to a bad situation getting worse case in point the West Gate terror attack and the resultant confusion.<sup>21</sup>

### **1.6 Gaps in the Literature**

The reviewed literature lacks sufficient evidence on the existence of disaster management mechanisms at the regional level. This is critical due to the existence of a pattern of shared threats and disasters across the Horn of Africa region that Kenya can borrow from in order to

---

<sup>20</sup> Op. Cit. GOK, DRAFT NATIONAL POLICY FOR DISASTER MANAGEMENT IN KENYA

<sup>21</sup> Nyambega Gisesa, "Confusion played out between GSU and KDF during Westgate operation". Accessed from <https://www.standardmedia.co.ke/article/2000095786/confusion-played-out-between-gsu-and-kdf-during-westgate-operation> on 10/10/2019 at 3:04 pm

strengthen its own disaster response mechanism enabling it to also merge its efforts with regional actors in disaster management.

Literature is also lacking on the role that the private sector plays in disaster management as prominence is given to the public sector and especially the state. This is in full realization that, the state may lack the capacity in some areas to effectively respond to tragedies in Kenya, where some organizations such as the Red Cross has networks and experience in responding to some elements of disaster management.

## **1.7 Conceptual Framework**

Disasters and their occurrence have necessitated a conceptual approach in order to better understand them due to the complexity of the dynamics that characterize disasters. According to Waugh, the concept of disaster management needs to be appreciated from the perspectives of mitigation, planning, management, response and recovery sequence.<sup>22</sup> The public administration theory is premised on the understanding that, it is public actors and precisely the government which is the primary actor in disaster management. As such the public administration becomes the rallying point for responses, mitigation and pooling of efforts and resources to enhance disaster management.

The public administration theory is a tool that in essence should provide the way forward for disaster management in terms of the ideals to be pursued in the course of disaster management.<sup>23</sup>

The ideals of the public administration theory comprise protection of life, property and liberties enjoyed by citizens of a country in the event that a disaster befalls a country. These ideals should be applicable at various stages with reference to the phenomena of disasters namely, planning

---

<sup>22</sup> Waugh, W.L (2000). *Living with hazards, dealing with disasters: An Introduction to emergency management*. Armonk, NY: M.E Sharpe.

<sup>23</sup> H. George Fredrickson et.al. *The Public Administration Theory Primer* (3<sup>rd</sup> edn) (New York: Routledge, 2016) pp.1-6

mitigation as well as response. The goals of this theory include restoration of services in the event that a disaster has struck, as well as law and order in the post-disaster phase.<sup>24</sup>

The communitarian theory is anchored on the understanding of how responsibility is allocated in the event of a disaster. It provides a way of explaining how both the community and the government all have a responsibility in disaster management. It is a tool that explains responsibilities in managing disaster and how communities respond to the government and how communities respond to the government in the event it fails in its responsibilities. Etzioni further expands the understanding of this theory by use of the term authentic community which is appreciated as a community that is responsive when it comes to addressing the needs of its citizens.<sup>25</sup>

According to Gotham, critical theory offers categories and frameworks to analyze explain ways in which inequalities are infused in the operationalization of responses to disasters.<sup>26</sup> This tool is critical in analyzing the responses to the Hurricane Katrina disaster that struck the United States

## **1.8 Hypotheses**

The main hypotheses that this study seeks to test include the following:

- (i) A majority of the disasters that have affected Kenya are prevalently natural than man-made.
- (ii) The inability to effectively respond and mitigate disasters in Kenya, is largely attributed to a weak institutional and legislative framework.

---

<sup>24</sup> Herzog, Richard J., A Model of Natural Disaster Administration: Naming and Framing Theory and Reality. *Administrative Theory and Praxis*. Vol.29, No.4 (Dec.,2007). p 587

<sup>25</sup> Etzioni, A. (1996). The responsive community: A communitarian perspective. *American Sociological Review*, 61, 1-11

<sup>26</sup> Gotham, K.F. (2007). Critical theory and Katrina: Disaster, spectacle and immanent critique. *City*, 11. P.95

## 1.9 Research Methodology

### 1.9.1 The Case Study

The study will discuss the importance or the pros and cons of using case studies in social sciences. According to Coppola<sup>27</sup>, case study is a flexible but challenging methodology applied in social science research.<sup>28</sup> This is because of their intensiveness and use of multiple variables to get a complete phenomenon or event happening in space and time.<sup>29</sup>

Case study is grounded in, and can be applied to relatable, contemporary human circumstances and at the same time it provides in-depth relevant data.<sup>30</sup> Additionally, case studies provide a narrative format as well as descriptive analysis of data making the complex projects in science and technology to be accessible and interesting to different audience. The scope can range from brief descriptive to detailed account. It gives the researcher the freedom to gather multiple information types which makes the research design indispensable in exploring ideas and constructing theories.

On the cons side, tends to be too scientific and the findings may be biased. Critics also argue that the study of a single case provide no reliability or generality of the results. Some researchers contend that; the case studies approach is vital in developing explanatory theories whereas others argue that this approach can only suffice for explanatory purposes. However, it can be safe to state that, case studies have a potential for higher internal validity and lower external validity.

---

<sup>27</sup> Coppola, D.P. (2015), *Introduction to International Disaster Management*. Killington

<sup>28</sup> McDonough, J. and McDonough, S., (1997). *Research Methods for English Language Teachers*. London: Arnold.

<sup>29</sup> Ibid p. 26

<sup>30</sup> Ibid p. 45

## **1.9.2 Data Collection and Instruments**

This research study both primary and secondary sources of data. Being a case study, interviews and questionnaires were applied to collect primary data.

### **1.9.2.1 Primary Data**

Primary data is collected to address the research concerns. Primary data provides first-hand information as it comes from the first source.<sup>31</sup>

Primary data consolidates as well as serves to validate the outcome of a research endeavor. Additionally, it is worth noting that primary data and the way it is gathered follows a careful organization of variables and uses a well-defined process while considering the type of data that is to be gathered so that it reflects the closest picture on the ground as much as possible giving an advantage over secondary data.

primary data is however expensive to obtain, do data entry, validate, do analysis and report the findings. This study utilized Questionnaires and interview schedules to collect qualitative and quantitative data directly from respondents. The questionnaires comprised more of close ended questions with few open-ended questions. Barbie notes that close ended questions provide a more uniform response and thus easier to analyze.

### **1.9.2.2 Secondary Data**

Secondary data is gathered books, journals, publications *inter alia* and has relevance to the study objectives. Secondary data sources provide theoretical and empirical evidence and interpretation of primary data which support a specific thesis or a point of view. Other sources of secondary data include encyclopedias, monographs and dissertations.<sup>32</sup>

---

<sup>31</sup> William B “*The jurist*” *legal news and research*”, (2005) university of Pittsburg

<sup>32</sup> Ibid p. 23

The main advantages of secondary data include the view that it is easy to access. Via internet source and library. Secondary data is also less expensive and can be accessed free or at a low cost. It is also time-saving and can help to generate new insights and understandings from previous analysis. The researcher also lacks of control over data quality.

For secondary data, the desk review method not only focused on the strategies by the government but also the policies and the institutions that the state has created to help prevent, prepare, mitigate or rehabilitate the victims of disaster. The desk review method looked at the effectiveness of these policies as well as their limitations in order to find out what can be done to make disaster management strategies more relevant to the changing times in the country.

### **1.9.3 Data Analysis**

The technique used in data analysis Qualitative. It was used in analyzing the data in exploration of various concepts with the intention of providing more understanding of a topic as well as for the purpose of creating awareness of an existing concept. The data collected through desk reviews were analyzed through content analysis.

Content analysis is mainly used a research tool since it helps to make valid inferences by interpreting textual materials and it allowed the researcher to systematically evaluate past texts from various literatures associated with data management.<sup>33</sup> Content analysis helped the researcher to interpret responses from the literature gathered as well as to conduct an effective analysis of the data collected. This made it easier to make inferences on the data collected during the study.

---

<sup>33</sup> Ibid p. 17

#### **1.9.4 Data Presentation**

Data presentation was done qualitatively to examine the strategies and their efficacy in the country. Any quantitative information added was aimed at emphasizing the qualitative research. This is so since the study is aimed at examining the strategies themselves and not the quantitative effects of the strategies used in disaster management in Kenya.

The main method of data collection used will be a desk review. This will examine the different strategies used in Kenya to manage disasters. It will not just focus on the strategies by the government but also the policies and the institutions that the state has created to help prevent, prepare, mitigate or rehabilitate the victims of disaster. This desk review will look at the effectiveness of these policies as well as their limitations in order to find out what can be done to make disaster management strategies more relevant to the changing times in the country.

Data will also be gathered through observation people the roles that disaster management strategies have played towards relieving their suffering. This will include non-academic media footage from disasters in Kenya.

#### **1.10 Chapter Outline**

Chapter one comprises an introduction as well as the background to the study, statement of the problem, justification, conceptual framework, literature review, objectives of the study, relevant research questions, hypotheses and methodology that guides the study. Chapter two addresses the concerns contained in specific objective number one that looks at the nature, form and actors in disaster management in Kenya.

Chapter three assesses the Kenya's disaster management regimes and components. Chapter four provide data analysis on methods and strategies used at Kenya National Disaster Operations Centre. Finally, chapter five presents the findings and gives recommendations as well as

conclusions drawn from the study. This chapter recommends areas to be prioritized in future research.



## Chapter Two

### Nature, Form and Actors in Disaster Management in Kenya

#### 2.0 Introduction

Despite the recurrent disasters, developing countries do not have adequate preparedness to fight emergencies.<sup>34</sup> This is because some countries lack resources while others have not prioritized disaster preparedness. Despite their recurrence, states seem not to draw vital lessons to enhance their capacity to not only mitigate against disasters but to better prepare for future disasters.<sup>35</sup> Further still the interaction of various variables in relation to disasters their causes and response mechanisms need to be appreciated.<sup>36</sup> This chapter seeks to appreciate the nature, form as well as the actors in managing disaster in Kenya to better understand the challenge of disaster management in Kenya.

#### 2.1 Causes and Effects of Disasters in Kenya

Kenya is not immune from disasters that affect individuals and different sectors. Natural hazards are not harmful on their own until they interact with people, and cause damage and disasters. Disasters occur when the scale of their occurrence is high and when it impacts on vulnerable populations affecting their property and livelihoods.<sup>37</sup>

Vulnerability varies depending on location of the individual, social, environment, economic and political factors. Kenya faces several disasters, majority of which are related to weather. Drought impacts the arid and semi-arid areas. 80% of the land area in Kenya supports livestock

---

<sup>34</sup>GoK.(2010).National Disaster Management Policy of Kenya (Final Draft). Www.ecdho.org. Accessed on May 6, 2013.

<sup>35</sup> Ibid

<sup>36</sup>GoK.(2009). National Disaster Response Plan.www.noc.co.ke. Accessed on April 12, 2013. GoK.(2010). Kenya Population and Housing Census, 2009

<sup>37</sup>Mortimore,M.( 2009). 'Dryland Opportunities: A New Paradigm for People, Ecosystems and Development'. P. 233

production and is a home to more than 30% of Kenyans.<sup>38</sup> Even the resourceful areas are affected by disasters from time to time.<sup>39</sup> Disasters do not discriminate the rich or the poor. When it happens, everyone is affected. The difference comes in the levels of resilience. Disaster has increased with globalization and technological developments. Besides the natural disasters such as famine, drought, floods, there are others like collapsing of buildings, and bombings as a result of terrorism and disease outbreak such as cancer. The common disasters in Kenya are drought and desertification whose effects are increasing year by year affecting all the regions in Kenya. Approximately, over 4 million Kenya are suffering food insecurity because of drought.<sup>40</sup> The areas mostly affected by drought are coast region, Eastern, Rift Valley, and North Eastern Kenya.<sup>41</sup>

During 2000 - 2006, Kenya was faced with drought where over 7.9 million Kenya were provided with relief foods by Military through dropping s bags of maize and rice to the vulnerable populations in inaccessible areas<sup>42</sup>. They also dug boreholes and supplied water to the affected people and their livestock using their water boozers. They supplemented healthcare by providing healthcare services to the vulnerable women people, giving supplements to the malnourished children.

Floods are frequently experienced in Nyanza, Western, and the Coast Regions of Kenya. In the urban areas, poor planning, building and construction have caused poor drainage. Flooding is a perennial problem that that makes the government to incur high costs whenever it occurs. In

---

<sup>38</sup> Ibid p. 233

<sup>39</sup> Ibid p. 237

<sup>40</sup> Mutembei, H. M., Mulei, C. M., & Mbithi, P. F. M. (2015). Restoring community livelihoods and food security through livestock asset during drought disasters: case study of Mwingi, Kenya. *African Journal of Food, Agriculture, Nutrition and Development*, 15(3), 10047-10059 pp. 10048

<sup>41</sup> Carter, N (1991). *Disaster Management: A Disaster Manager's Handbook*. Manila: Asian Development Bank, 1991pp. 87

<sup>42</sup> Ibid pp. 90

1997-1998, the country experienced El-Nino rains which caused a lot of flooding. Whose effects are felt to date.<sup>43</sup>

Landslides, which are related to floods and happen as a result of heavy rains with poor drainage. Landslides are experienced in the areas exceeding 1590mm of rainfall per annum. These are areas in Meru, Murang'a, Nyeri, Kirinyaga, Mombasa and Kisii counties<sup>44</sup>. The most common cause of landslides is deforestation which results in the soil getting loose. Deforestation has been caused by people cutting trees to cultivate. Ideally, soils that are not covered with vegetation are prone to erosion during heavy rains. It has been estimated that Murang'a County has lost over 1 million m<sup>3</sup> of soil in an area of 30km sq<sup>45</sup>. This is serious environmental degradation that needs to be addressed<sup>46</sup>. In this regard, Kenya government must adopt policies that can help mitigate deforestation in the country.<sup>47</sup>

Kenya is also susceptible to to disasters caused by technical hazards from the scientific discoveries that have been gradually increasing in the global village. There is hazardous disposition of waste in the seas which have been caused by ineffective policing, alien invasive plant species have invaded water bodies like the case of water hyacinth that has invaded Lake Victoria and the case Mathenge trees in Baringo county. Others hazards include strong winds that damage building s and other infrastructure, frost and fog that can cause accidents to aero planes and vehicles due to poor vision, and hail stones. Street families are now emerging and witnessed in the major towns and cities in Kenya. They pose a huge social threat to our communities. The rising and falling sea and oceanic levels are likely to cause more harmful

---

<sup>43</sup> Ibid pp. 93

<sup>44</sup>Cuny F (1984) Disaster and Development. Oxford: Oxford University Press, 1983. Davis, Ian. Disasters and Settlements-Towards an Understanding of Key Issues. Oxford: Oxford Polytechnic, 1981. Pp. 76

<sup>45</sup> Ibid pp. 81

<sup>46</sup>Ibid pp. 81

<sup>47</sup> Ibid pp. 84

environmental effects to the human settlements established along the shoreline. We have accidents happening at the construction sites because people have failed to abide by the construction by-laws in Kenya.

The Transport sector has contributed to a lot of disaster through accidents in Kenya. The accidents range from road, marine, rail, and aviation. There are increased cases of reported accidents in transport sector which shows that this is a big challenge that leads to loss of life and property. There is therefore need for proper mitigation to prevent and respond to the accidents<sup>48</sup>.

Cancer cases in Africa have emerged as both an economic as well as a social burden. In Kenya the disease ranks as the third leading cause of death. A recent study by KNH indicated that the top five cancers common to Kenyans were: cervical which rated at 24.2 per cent, breast rated at 11 per cent, colorectal at 6.2 per cent, chronic leukemia at 5.4 per cent and stomach cancer at 5.2 percent.<sup>49</sup> In the recent years, In Kenya, cancer has become a disease that kills hundreds each day and has strained the health sector. It has been approximated that over 47 thousand Kenyans get cancer annually in Kenya while over 30 thousand die yearly. These numbers have increased as compared with six years ago. There are other epidemic diseases such as cholera, typhoid HIV/AIDS, malaria, food poisoning among others. These are potential national disasters.

Civil conflicts are emerging disaster in Kenya. They can either internally among communities or externally where they influence countries in the neighborhood. Conflicts can be fueled by scarcity for natural resources as is the case in Marsabit County and some other pastoral regions

---

<sup>48</sup> Op Cit Mutembei, H. M., Mulei, C. M., & Mbithi, P. F. M. (2015).p 10048

<sup>49</sup> Anderson, M. (1998) *Rising from the Ashes: Development Strategies at Times of Disasters*. Boulder: Westview Press and Paris: UNESCO Press, 19893

in Kenya. It can also be caused by political incitements as it was for the case of the post-election violence in 2007-2008 where over one thousand Kenyans lost their lives<sup>50</sup>.

Terrorism is another challenge that has in the past two and a half decade taken root in Kenya and with devastating consequences. Terrorism is about using force unlawfully to intimidate or coerce a government, and its citizens for social or political reasons. In 1998, the US Embassy in Kenya was bombed whereby 247 people lost their lives including loss of property and livelihood. Other terror incidents in Kenya include the attack on Garrisa University where students were shot and killed. In Afmadhow, Kenyan soldiers were attacked and killed by Al- Shabaab. The recent incident was the attack and killing of people at Dusit hotel in Nairobi. Al-Shabaab has always claimed the responsibility for the terrorist attacks in Kenya.<sup>51</sup> Going by such incidents, terror attacks cannot be ignored in Kenya. These incidences are a clear eye opener that Kenya needs to align strategies to deal with disasters and emergencies.

The Nyanza and rift valley region of Kenya has been very prone to volcanic activity and earthquakes. The damages and casualties associated with this type of disaster have been very minimal; however, precautions and safety measures need to be taken since we cannot predict what may happen in the future due to climate change, which is a global phenomenon.

The influx of refugees is also considered a national disaster. This is because they cause food security threats in the country. The increase in the number of asylum seekers in Kenya has in many ways been blamed for the increase in insecurity in the country with the intensified insecurity in both refugee camps and towns occasioned by the increase of small arms across leaky borders. It's a fact that Kenyan border points have become tremendously insecure a

---

<sup>50</sup>Op Cit Mutembei, H. M., Mulei, C. M., &Mbithi, P. F. M. (2015). 10048

<sup>51</sup> Anderson, M. (1998) *Rising from the Ashes: Development Strategies at Times of Disasters*. Boulder: Westview Press and Paris: UNESCO Press, 19893

scenario that in many ways has been brought about by mass movement of armed immigrants presumed to sneak in small arms that end up having devastating effects in terms of continued armed and ethnic conflict and crime near the border. Likewise, studies done on security threats arising from the influx in refugees numbers have shown that their influx to some extent is to blame for the spread of both civil war and interstate conflict.

## **2.2 Challenges to Disaster Management in Kenya**

In Kenya, there are several disaster management bodies, government agencies, international, and local organizations (NGOS). NCOs have played the greatest role in disaster and risk management in Kenya.<sup>52</sup> The government mandated with planning and managing disasters conduct independent activities at times.<sup>53</sup> There is need for proper coordination and management of resources by the government in dealing with disaster and risk occurring in the country.<sup>54</sup>

The President's office that coordinates all the bodies in managing disasters in Kenya. There are however many agencies that are mandated with disaster management in Kenya. The president's office is represented at the lowest administration levels which coordinate these programs. Whenever a disaster strikes, these lowest administration levels are the first to arrive at the scenes. And work with the community in managing the situation and preventing so that there is no further damage through loss of lives and property. The Ministry of State for Provincial Administration and Internal Security are represented from the village, ward, sub-location, location and county. These offices are very and can be mobilized within a short notice to respond to emergencies.<sup>55</sup> E.g., during the 1975 Nairobi bombing, the 1980 Norfolk Hotel bombing, the

---

<sup>52</sup>Mutunga, M. (2008) Kenya's *Development Strategies at Times of Disasters*. Nairobi: MasindeMuliro University: University Press, pp. 19

<sup>53</sup> Ibid pp. 23

<sup>54</sup> Bhattacharya S, (1972). *Psychometrics & Behavioural Research*, Sterling Publishers Pvt.Ltd.: New Delhi.

<sup>55</sup> Op Cit Mutunga, M. (2008). 25

1998 United States embassy bombings as well as the Westgate Mall shooting in 2013, the attack in Garissa in 2015 and the DusitD2 Complex Hotel attack on Tuesday, 15 January 2019, the military top management were been able to mobilize security officers to respond within the shortest time possible.<sup>56</sup>

In each administrative level in Kenya, there are Disaster management committees which have not been very active. The committees are comprised of members derived from, private sector, Community Based Organizations (CBOs), Non-Governmental Organizations (NGO)], and local leaders.<sup>57</sup> Most of these members lack proper training on Disaster Risk management and do not have resources to enhance participated in disaster risk management. They however have meetings that are done for routine purpose.<sup>58</sup>

Disaster management operations are coordinated under the ministry of devolution they are currently managing the strategic grain reserve (SGR) so that the country remains food secure. Today, the country has reserved 4 million bags of Maize, a number that must be retained each year. The government has plans of doubling this number with the increasing population and the increasing need for food.<sup>59</sup> The department also manages an early warning system (EWS) which updates weather and related disasters. The ministry is creating the department of mitigation and resettlement to take care of the impacts of disasters that have already happened. So far, we can say that the department has made progress in the Implementation of its roles. They have trained various communities on involvement in reducing the risk of disasters and early warning systems. Communities are vulnerable and by training them, they will be the first to respond and helped those affected, in the event of a disaster striking. Ten selected community members from the

---

<sup>56</sup> Ibid pp. 28

<sup>57</sup> Ibid pp. 31

<sup>58</sup> Sheridan, M. (2007). *Climate Change Killed off Dynasties in China, Mexico*. The Australian, 10. January 8.

<sup>59</sup> Ibid pp. 5

Budalangi have been trained on flooding and early warning systems from India<sup>60</sup>. The Ministry is joining forces with the Masinde Muliro University to train and sensitize communities on flooding so as to increase resilience when disaster strikes.<sup>61</sup>

The ministry is in the process of developing the National disaster response plan, a process that has consulted and included many stakeholders from the areas that are prone to disasters.<sup>62</sup>

The stakeholders involved are those that respond to disasters such as drought and famine by distributing relief and water to the affected.<sup>63</sup>

There are several challenges faced by the department in the course of executing their mandate. They do not have staff at the local levels, they rely staff from the Ministry of Interior to execute their activities in general management of disaster situations at the local level. The young ministry is however developing. The ministry has inadequate funds for management of its operations. Their timely and effective response to disasters events is hindered by lack of finances and relief supplies, which they do not have control over.

There are other departments, based in other ministries that are key when it comes to working of the DRR department. These include the National Disaster Operation Centre (NDOC) based at the Ministry of Interior and Coordination of National Government (MOICNG), Arid and Semi-Arid Lands (ASAL) in the Ministry of Devolution and Planning (MODP) and the Meteorology department which is under the Ministry of Environment and natural resources.<sup>64</sup> The National Disaster Operation Center that created in 1998 is also very key in responding to disasters. It was

---

<sup>60</sup>Mutunga, M. (2008) Kenya's *Development Strategies at Times of Disasters*. Nairobi: Masinde Muliro University: University Press, pp. 19

<sup>61</sup>Sheridan, M. (2007). *Climate change killed off dynasties in China, Mexico*. The Australian, 10. January 8.

<sup>62</sup> Anderson, M. (1998) *Rising from the Ashes: Development Strategies at Times of Disasters*. Boulder: Westview Press and Paris: UNESCO Press, pp. 53

<sup>63</sup> Smith, K. (1992). *Environmental Hazards: Assessing risk and Reducing disaster*. New York: Routledge. Thoreau Institute (TI). (2005). Lack of Automobility Key to New Orleans Tragedy. September 4

<sup>64</sup>Mutunga, M. (2008) Kenya's *Development Strategies at Times of Disasters*. Nairobi: Masinde Muliro University: University Press, pp. 19



created to respond to EL-Nino rainfall that caused damage to infrastructure and loss of lives.<sup>65</sup> They also helped in the 1998 bombing in Kenya. The National Disaster Operation Center works in coordinating and mobilizing resources and dissemination of information on disaster management.<sup>66</sup> They are the focal point when it comes to management if disasters and response in in Kenya. <sup>67</sup> They gather information through their Very High Frequency (VHF) communication system.<sup>68</sup> Lastly, they prepare inventory of resources utilized in disaster response, present the needs to donors, design evacuation plans situation reports on disaster situation in Kenya.

The body functions in preparing inventory for resources that are utilized in disaster response in the Kenya. They also develop Kenya's needs and present them to donors. mother duties are in preparation of evacuation plans, offering shelter to refugees in Kenya and preparing situation reports (SITREPS) on disaster in the country.

Besides the government bodies, there are NGOs and other private bodies that are very vocal in responding to disasters in Kenya. Founded in 1965, the Kenya Red Cross Society (KRCS) is very vocal in responding to disasters. The leading humanitarian organization in Kenya focuses to prevent and alleviate human suffering to the vulnerable communities. They train Red Cross Action Teams (RCATs) that offer relief in case of emergencies.

Red cross Kenya has a stock of supplies they get through their fundraising activities so that they always have supplies in case of emergencies. This they get from well-wishers and appeals from countrywide campaigns across their campaigns worldwide. They have social and health services

---

<sup>65</sup> Ibid pp. 23

<sup>66</sup> Ibid pp. 25

<sup>67</sup> Ibid

<sup>68</sup> Ibid p. 121

to empower communities in preventing disasters and promoting health living..<sup>69</sup> The society is well renowned in Kenya for their work in disaster management<sup>70</sup>.

The private companies and NGOs involved in disaster management in Kenya experience challenges as well. The country does not have well developed disaster management plans, there is no awareness on disaster occurrences and poor activation of the committees in management of disasters at the lowest public administrative level.<sup>71</sup> They lack adequate resources to enhance execution of their work through for logistics, transport to the disaster areas and inadequate or no technological on emerging threats that can be related to biology, chemistry and terrorism. Other challenges are poor infrastructure inadequate capacity and poor synchronization with the government departments mandated with disaster risk management. Even when their mandate is support and supplement government efforts, the bodies have challenges in obtaining information, more so when the information is confidential.<sup>72</sup> The coordinators from the government departments are not easy to identify which has led to delaying of work.

In Kenya, among the institutions, companies and organizations, there is poor implementation of rules and regulations related to disaster risk reduction. The same work places do not have full time staff to handles issues of risk management, including training of the staff. the organizations are constrained of communication machines. Kenya has Legislation against use of certain medical equipment within organizations. E.g. use of defibrillator machines within companies is

---

<sup>69</sup> Ibid

<sup>70</sup> Riebeek, H. (2005). *The rising cost of natural hazards*. NASA Earth Observatory. March 28. <http://earthobservatory.nasa.gov/Study/Risingcost/>. Pp. 34

<sup>71</sup> Ibid pp. 37

<sup>72</sup> Mutunga, M. (2008) *Kenya's Development Strategies at Times of Disasters*. Nairobi: Masinde Muliro University: University Press, pp. 19

prohibited, the machine can be very essential in saving lives during. In the developed countries, the machine is part of the components of first aid kit.<sup>73</sup>

### **2.3 Conclusion**

This chapter establishes that there are most common causes as well as types of disaster. The section has pointed out the actors that respond to disasters in Kenya. Kenya has many agencies involved in disaster management. The agencies are derived from both the public and the private sector. Most of the disasters experienced in Kenya are not unique to Kenya but also experienced in other countries. In some cases, the disasters are predictable, and preventable. They can also be managed to reduce their negative impacts to the vulnerable.

Kenya has a challenge in coordinating the various actors in disaster risk management.<sup>74</sup> There is a plethora of uncoordinated government sectors and NGOs that manage disasters in the country. This is because the DRR is not planned in the country's development planning. There is no systematic approach to the issues and therefore there is a big problem in in the bodies going about in undertaking their mandate. The affected therefore continue to suffer as there are no resources and officers to help them. The scattered departments within different ministries that deal with DRR management leads to uncoordinated approach and their work are rendered ineffective. This has resulted has frustrated the private sector that are very key in managing disasters.

---

<sup>73</sup>United Nations.(1989). Resolution 44/236. United Nations General Assembly. 85th Plenary M

<sup>74</sup> Ibid p. 53

## **Chapter Three**

### **Effectiveness of the Disaster Management Regime in Kenya**

#### **3.0 Introduction**

Disasters have continued to intensify in the country as well as the cost for their mitigation. Occurrence of natural disasters is expected to assume different dynamics, where evidence points to an increased frequency in disasters. Kenya in particular, has become more predisposed to disaster risk given to increased diversity, intensity and frequency of occurrence. However, there exists a disaster management regime in Kenya that consists various legislations, policies and strategies as discussed below.

#### **3.1 Disaster Management in Kenya**

A sizable number of disasters in Kenya are as water related effects such as floods and drought. Mismanagement of agriculture and environment has exacerbated the fragility in the nation's ecosystems. Climate change has exacerbated these hazards, intensifying the impacts of those disasters. Disasters attributed to human activities include accidents, fires, civil strife, terrorism and industrial accidents amongst others. Kenya is prone to disasters which impact the most vulnerable people disproportionately<sup>75</sup>. Consequently, for Kenya to be able to respond to disasters in a timely manner, the National Disaster Operations Centre has developed the National Disaster Response Plan.<sup>76</sup> The strategy is aimed at strengthening disaster preparedness and response at various.

The substance of disaster management constitutes knowledge and capacities developed by states, communities and individuals aimed at effective anticipation, response, as well as recovery from

---

<sup>75</sup>Mortimore, 2009

<sup>76</sup>GoK, 2010

potential, imminent disasters. Disaster management is aimed at mitigating the potential effects of hazards; enhance preparation to guarantee prompt and appropriate responses in the event of disasters. The disaster management cycle consists of three phases, namely prevention and preparedness, emergency/disaster response and recovery. This is to ensure appropriate disaster mitigation and response.<sup>77</sup> Some of the key areas of concern in the Kenya's agenda in disaster preparedness are worth of review in this chapter.

### **3.1.1 Kenya's Legal Framework for Disaster Management**

According to the constitution of Kenya, a government should be formed guided by the essential values of human such as equality, freedom, the rule of law; social justice and democracy are all enshrined in the Constitutional.<sup>78</sup> The judiciary, the legislature and the executive comprise Kenya's arms of government which are expected to operate as distinct, separate but interdependent entities.<sup>79</sup> All the laws of Kenya have been stipulated in the Constitution of Kenya. Additionally, there exists immense latitude given to senior government officials for purposes of making executive decisions. The Constitution provides for functions of the national and the county governments.<sup>80</sup> Functions that have not been designated to the county government is automatically reserved for the national government.

### **3.1.2 Kenya's Policy Framework for Disaster Risk Management**

Kenya has inadequate comprehensive legislation geared towards disaster management. One is under progress. The legal and policy frameworks to guide disaster management are scattered amongst several statutes and policy documents.<sup>81</sup> NDMU identifies the Constitution of Kenya as

---

<sup>77</sup> Allen,2015

<sup>78</sup>See, The Preamble of the Constitution of Kenya, 2010

<sup>79</sup>Constitution of Kenya, 2010, article 6(2)

<sup>80</sup>Ibid article 186

<sup>81</sup> Interview with the Deputy Director National Disaster Management Unit

the primary reference point for disaster management.<sup>82</sup> According to the constitution, every individual has a right to the “highest attainable standard of health”, “access housing, and to reasonable sanitation”, “right to food security and clean water.”<sup>83</sup> Citizens have a right to emergency medical treatment”.<sup>84</sup> Article 54 provides that, a state of emergency can be declared in when a state is “threatened by war, insurrection, invasion, disorder, disasters and public emergency”. Up on declaration of a state of emergency, declaration of the emergency shall be done within 14 days. During such a situation, certain rights can be derogated in order to provide an environment for better response to disasters.<sup>85</sup>As enshrined in the Constitution, there are two levels of government which serve several functions. The Schedule four of the Constitution, appreciates disaster management as a concurrent function both at national and local government.<sup>86</sup>The lack of a comprehensive disaster management framework necessitates the creation of rules to manage disaster response.

### **3.2 Kenya’s Disaster Management Institutions**

With regard to disasters, the draft NMDP has identified institutions as having primary and secondary roles in response to disasters. Different agencies provide emergency assistance as part of their mandate in disaster management. The government is the primary entity when it comes to disaster response and mitigation, with non-governmental agencies coming in to provide complimentary roles.<sup>87</sup> Response institutions are divided into sectors therefore creating effective inter-agency system for responding to emergencies. Kenya has over time deployed national institutions to different disaster management. Even though a majority of the responses has been

---

<sup>82</sup> Interview with officials of National Disaster Management Unit

<sup>83</sup>Constitution of Kenya, 2010, Article 43

<sup>84</sup> Ibid, Article 42(3)

<sup>85</sup>Constitution of Kenya, 2010, Article 54(5)

<sup>86</sup>See the Constitution of Kenya, 2010 fourth Schedule

<sup>87</sup>Draft National Disaster Response Plan 2008 p. 45

focused on droughts, a centralized coordinating agency beyond response to disasters has been lacking. In recent years a number of some institutions have come up and include the following:

### **3.2.1 The National Executive or the Presidency**

This institution comprises the National Cabinet and is chaired by the President. It is the highest decision-making institution on matters of disaster management. The NE, advises the President on matters to do with executive decisions which includes declaring emergencies and appealing for international assistance.<sup>88</sup> The Executive should meet twice a year, but situations may emerge that necessitates immediate convergence to come up with solutions. The Cabinet is tasked with overseeing the execution of decisions emanating from the Executive.

### **3.2.2 National Disaster Operations Center**

In 1998, the government of Kenya had an executive order to create the National Disaster Operations Centre (NDOC) which responded to the 1998-1999 El-Nino rains. The institution has since then been tasked with coordinating responses to the disasters. The major functions of the NDOC include, monitoring of all disasters on a full-time basis and mobilization of national resources to mitigate disasters. It coordinates and responds to activities in management of disasters. It works together with other stakeholders in sensitizing and informing the public on issues to do with disaster. Last but not least, it serves as the “National Drought Management Authority”.

### **3.2.3 Kenya Defense Forces**

KDF is very key in responding to disaster issues in Kenya. It is established under article 241 of the Constitution of Kenya, Act, and Cap 25 of 2012 Laws of Kenya. Their role is protection of

---

<sup>88</sup> Ibid interview

Kenya's territory".<sup>89</sup> As a secondary role, the KDF assists in responding to "emergency or disasters". They restore peace and order in areas affected with clashes internally. In the disaster stricken areas, KDF works with the national police.<sup>90</sup> The KDF can also be deployed to assist in disaster response outside the borders of Kenya at the request of affected nations.<sup>91</sup> Indeed, the KDF has been engaged in mitigation of disasters through provision of services such as in search and rescue. They provide medical services, construction of dams, bridges amongst others.

### **3.2.4 National Drought Management Authority**

The National Drought Management Authority (NDMA) was established in 2011 through the State Corporations Act under the Ministry of Devolution and Planning, following the 2011 drought. The NDMA leads in matters of drought preparedness and response in spaces such as the ASALs. NDMA coordinates policies aimed at drought response, and early warning systems. NDMA is not devolved. It has two coordinating bodies at the national level that brings together various stakeholders in drought preparedness.<sup>92</sup>

### **3.2.5 National Disaster Management Unit**

It was established in 2013 under the directive of the president. It is domiciled at the Ministry of Interior and Coordination of National Government and is responsible for disaster risk management in the country. The unit is led by the National Police Service, to execute their operations in dealing with disasters. NDMU established the Kenya's emergency response plan and the Standard Operating Procedures.<sup>93</sup>

---

<sup>89</sup>National Drought Management Authority Order, 2011, Legal Notice Number 171 of 2011

<sup>90</sup> Section 33 of the Kenya Defence Forces Act, Cap 25 of 2012

<sup>91</sup> Ibid Section 36

<sup>92</sup> Kenya National Bureau of Statistics, Centre for Training and Integrated Research in ASAL Development and Centre for Environment and Development, Bern University, 2016. Socio-Economic Atlas of Kenya.

<sup>93</sup> Ministry of Interior and Coordination of National Government & National Disaster Management Unit (NDMU), June 2014. National Emergency Response Plan & Standard Operating Procedures (Sops). Available at: <http://www.disastermanagement.go.ke/downloads/>



### 3.3 Kenya's Disaster Management Strategies

Some of the disasters experienced in Kenya are droughts and famine, accidents, floods, fires, landslides, human conflicts, HIV/AIDS, terrorism, oil spills, industrial accidents, among others. The intensity and occurrence of these disasters has increased with time. These disasters have impacted negatively on the economy of Kenya, as well as human security of the nation. According to reviews, the cost of responding to disasters has increased as appreciated over the years from the drought crisis of 1999-2001. It is appreciated that, had disaster management mechanisms been in place, approximately half of this amount would have been saved. Of concern, there are disasters that are emerging such as invasive plants as the hyacinth that is impeding access to Lake Victoria and the '*propaxisjuliflora*' (Mathenge) weed menace in parts of Rift Valley. Other disasters in Kenya are drug & substance abuse and human trafficking.

Responding to disasters require resources. Vulnerability of different communities is different because they all do not have equal resources to utilize in responding to the disasters. As such, investment in disaster management should be based on of the affected in different areas. For instance, people in the informal settlements are vulnerable to food insecurity, fire incidences, drug trafficking amongst other types of disasters. Those living in informal settlements and the ASALs are particularly vulnerable to disasters, poverty and other incidences.<sup>94</sup> Policy analysis and decision making should put them at the forefront and recognize climate change and climate change.

Reduction and management of Disaster a systematic process that requires f application of policies and strategies to minimize vulnerabilities and reduce risks. This can be achieved by proper preparedness, having prevention and mitigation strategies and recognizing the adverse

---

<sup>94</sup> Ibid p. 122

impacts of hazards bearing in mind sustainable development. The Disaster reduction approach has been adopted at the global level and by sectoral ministries towards Disaster Management in Kenya. Climate Change has emerged as challenge for actors engaged in disaster management and it is to human activities that directly or indirectly cause emission of greenhouse gases to the atmosphere. Greenhouse gases cause global warming, rising of the sea level.<sup>95</sup> Climate change has led to extreme weather patterns such as droughts which are disastrous.

Strategically, disaster management and planning is led by the government. It is a participatory process that is executed through development partners, CSOs and international agencies. The government also plays a key role in pooling resources for disaster response. In achieving SDGs, amongst other objectives, an effective Disaster Management system has provided an imperative for the creation of a safe, resilient and sustainable society.<sup>96</sup> Development partners that assist Kenya to respond to disasters and emergencies include the UN, Kenya Food Security Meeting (KFSSM), Kenya Food Security Steering Group (KFSSG) and the Arid Lands Resource Management Project (ALRMP)

### **3.4 Conclusion**

In conclusion, evidence in commitment as well as the participation of numerous stakeholders in the current disaster management efforts, indicates the diversity and good-will of various actors in Kenya. They undertake disaster-related activities, which comprise a host of activities such as, conflict resolution operations, Environmental Impact Assessments and Audits, law enforcement

---

<sup>95</sup> Mutembei, H. M., Mulei, C. M., & Mbithi, P. F. M. (2015). Restoring community livelihoods and food security through livestock asset during drought disasters: case study of Mwingi, Kenya. *African Journal of Food, Agriculture, Nutrition and Development*, 15(3), 10047-10059 pp. 10048

<sup>96</sup> Ibid p. 151

and crowd control, 'search and rescue', and evacuation, anti-terrorism surveillance, first aid services, firefighting, and peace building<sup>97</sup>.

The existing Disaster Management system and its attendant objectives have led to the effective identification of disaster sub-regions, the management for all disasters as well giving guidelines for co-ordination of Disaster Management activities. The system also promotes regular consultations with stakeholders and relevant Ministries, towards co-ordination of interventions and promotion of partnerships with stakeholders for improved action.

This has led to proper facilitation and easy accessibility to information and knowledge gathered through research for Disaster Management in the country. However, it should be noted that the country lacks a coordinated policy and legal basis and it necessitates the creation of effective Disaster Management mechanisms in the country especially borrowing from developed countries such as US and UK.

---

<sup>97</sup> Ibid p. 189

## Chapter Four

### Enhancing Disaster Management in Kenya - Challenges and Opportunities

#### 4.0 Introduction

Disasters and their occurrence have in various cases impacted negatively on the spaces that their effects have been visited upon. This chapter aims to assess the challenges that disasters have brought to the nation as well as the existing opportunities for the enhancement of response mechanisms to disasters. It also seeks to appreciate the efficiency of various institutions involved in managing disaster such as the Kenya National Disaster Operations Centre.

#### 4.1 Resource constraints to Disaster Management in Kenya

Disaster management in Kenya is challenged by inadequate funding of institutions involved in management of disasters. Disasters have necessitated the establishment of institutions in Kenya to act as a mechanism for responding to disasters. The National Disaster Operations Centre (NDOC) was established in late 1998 by the GOK to respond to the 1997-1998 impacts of El-Nino.<sup>98</sup> Its key function is to help coordinate disaster challenges such as floods in the country. Following the 1998 terror attack on the US embassy in Kenya, the mandate of the institution was expanded and currently, the NDOC is the main government agency mandated with coordinating and responding to disasters in Kenya. The core functions of the NDOC include monitoring all disasters on a full-time basis as well as mobilize resources nationwide to combat rapid onset disasters<sup>99</sup>. It is also mandated with the coordination and response to disaster management activities in the country as well as collaborates and network with other stakeholders. Finally, it is

---

<sup>98</sup> Anderson, M. (1998) *Rising from the Ashes: Development Strategies at Times of Disasters*. Boulder: Westview Press and Paris: UNESCO Press, 19893

<sup>99</sup> Ibid p. 114

tasked with sensitizing and informing the public on disaster related issues.<sup>100</sup> Lack of resources has impaired the ability of this key institution in operationalization of its mandate to the fullest extent and address the challenge in a timely manner. This includes the ability of access to the latest equipment that are used when responding to disasters as well as better technology to monitor and disseminate information related to disasters in order to alert the public in good time and mitigate damages that may occur.

#### **4.2 Poor Policy Planning and Implementation**

The challenge of disasters in the country has over the years served to expose the extent of poor planning and response to disasters in Kenya. Part of the challenge can be attributed to the challenge of lack of resources to mitigate and respond to disasters.<sup>101</sup> Alongside the existence of underfunded institutions in the country, poor policies have affected coordination of response efforts and mitigation of disasters in Kenya.

Poor policy formulation and challenges of implementation can also be attributed to lack of competent planners within various sectors and institutions involved in policy formulation. The major cause can be attributed to the nature of appointment to positions of authority and decision making in matters related to disasters in Kenya. This is because for the longest period the process of appointment has been riddled by corruption as well as political patronage which have proven costly for the nation where individuals lacking the relevant skills and experience are appointed to key decision-making positions.

Also related to the challenge of having incompetent decision makers is the decisions that emanate from the institutions headed by such individuals. For instance, poor infrastructural planning in the country has impaired the ability to respond effectively and in a timely manner to

---

<sup>100</sup> National Drought Management Authority Order, 2011, Legal Notice Number 171 of 2011

<sup>101</sup> Ibid, p. 7

disasters in the country. A case in point is the way part of the city of Nairobi is planned this is in light of the manner in which construction of buildings has been approved by past individuals at the physical planning department of Nairobi city.

In several instances, fire engines, ambulances have been unable to access areas where disasters have struck within the city such as in slum areas and other parts of the city. This is because of the obstruction by buildings that have encroached on spaces that should create ease of access to areas that have been affected by disasters. It becomes indicative that some corrupt officials were able to approve the encroachment of public spaces such as road reserves that has constantly compounded response efforts to disasters in Kenya. Also, the purchase of substandard equipment such as dysfunctional fire engines can be attributed to corrupt individuals involved in the tendering process.

#### **4.3 Poor Dissemination of Information**

Information and the ability to disseminate it to the relevant actors be they respondents or those impacted upon by a given disaster, marks all the difference when responding to a disaster. Information given by decision makers is key when responding to emergencies.<sup>102</sup> The challenge of poor information dissemination has impaired the ability to respond to disasters as well in the coordination of disaster response activities in the country. Poor information dissemination has been blamed as well for confusion amongst members of the public impairing the effectiveness of disaster response strategies.<sup>103</sup>

According to reports by the ICRC, it is important that disaster response includes early warning signs to improve awareness among various people in the society. It is also worth noting that there

---

<sup>102</sup> Anderson, M. (1998) *Rising from the Ashes: Development Strategies at Times of Disasters*. Boulder: Westview Press and Paris: UNESCO Press.

<sup>103</sup> Ibid p. 114

are various factors considered by the public when reacting to a disaster. One needs to consider the significance of the act, level of confidence of the threat on the communities affected and local authorities giving information regarding disaster occurrence<sup>104</sup>

#### **4.4 Absence of Governance in Disaster Prone Areas**

According to interviews conducted on disasters in Kenya, one of the greatest impediments to disaster response is the lack of government presence in areas prone to disasters. This is because of the traditional centralization of governance by the national government in urban areas where the focal point was far away from the actual spaces where disasters strike. From questionnaires issued to those affected by disasters, the only semblance of order not just in terms of security and governance in the remote areas, is in the form of non-governmental organizations rather than state agencies.

This has created a sense of mistrust and lack of confidence in the state agencies due to a perception of neglect and marginalization by the state on the part of those affected by disasters. As earlier appreciated, it is the government that lies at the forefront of disaster response and coordination of related activities. Indeed, according to the questionnaire, the Red Cross Society scores highly when it comes to confidence by citizens in matters disaster response be it hunger, floods, terror attacks, collapsed buildings *inter alia*.

#### **4.5 Institutional and Policy Frameworks as Opportunities for Disaster Management in Kenya**

In the past, there has been a lack of proper legal and policy frameworks for purposes of management of disasters in the country. This had resulted in the duplication of efforts as well

---

<sup>104</sup> Ibid p. 118

misdirection of energies and resources towards disaster management. At times, the lack of proper policies has increased the vulnerability of several parts that are disaster prone in Kenya.

Despite this, there are various policy documents that have been adopted to promote and improve disaster management in the country.<sup>105</sup> The policy document recognizes the Government Development Plans and various policies, and policies such as the 1965 sessional paper no. 10 on African Socialism and how they influence planning in Kenya.<sup>106</sup> The 1981 and 1994 National Food Policies, the 2003 Poverty Reduction Strategy Paper (PRSP) of and the Economic Recovery Strategy for Wealth and Employment Creation of 2003-2007. Vision 2030, the Strategy for the Revitalization of Agriculture 2004-2014, (SRA) and the National Food and Nutrition Policy of late 2007. There is also the Environmental Management and Coordination Act No.8 of 1999, the Forest Act, The Kenya Red Cross Society Act (Cap 256) and the water Act (Cap 372).<sup>107</sup> These policies are mostly used to guide the management disaster programs in the country.

There are several government and NGO bodies working on disaster risk management. These are NDOC, ARLMP; there is also the National Aids Control Council (NACC) and NEMA. Moreover, there is Local Government, and the ministries working therein.

#### **4.6 Technology uptake in Kenya as an Opportunity for Enhanced Disaster Response.**

The uptake of technology in the country amongst the population especially mobile phones has enhanced the speed at which information can be disseminated particularly that which relates to disasters. The accessibility to internet in the country as well as social media has created a platform, where citizens can not only interact amongst themselves but also agencies both state

---

<sup>105</sup> Anderson, M. (1998) *Rising from the Ashes: Development Strategies at Times of Disasters*. Boulder: Westview Press and Paris: UNESCO Press, 19893

<sup>106</sup> Ibid

<sup>107</sup> Ibid p. 130



and non-state, whenever a disaster strikes. This enables the speedy response to disasters as well as creating a platform where an impending disaster can be reported to the relevant actors for appropriate action to be taken as well as mitigate against the worsening of a situation that has already occurred. A case in point is where a fuel tanker has overturned on the Nairobi-Nakuru highway and the speed at which relevant authorities were able to respond to that crisis before it could head the way of a similar incident in Sachangwan.

#### **4.7 Conclusion**

In conclusion, it has become possible to appreciate that there exist numerous challenges in Kenya on matters disaster management. These range from poor policy planning, and implementation which forms one of the first lines of defence when it comes to disaster response and management. Absence of a semblance of governance in various spaces has proven to be a major impediment to disaster response as this coincides with the absence of critical infrastructure to enhance the speed and the ability to relay information in the event of a disaster, conduct of evacuation activities amongst others. This has left the few actors present on the ground overwhelmed by the magnitude of disasters at times besides being underfunded in most instances. However, opportunities exist to enhance management of disasters and response in the country. These include the creation of a devolved system of government under the new constitutional dispensation. This will allow county governments to customize responses to the specific disasters that characterize the various counties within Kenya. Technological uptake within the population is a welcome development especially on matters to do with reporting of incidences that may evolve into future disasters, thereby enabling prevention mechanisms as well as mitigation tools to be put in place.

## **Chapter Five**

### **Summary, Conclusion and Recommendations**

#### **5.0 Introduction**

This chapter is subdivided into three major sections which include summary of issues that the study has interrogated with respect to disaster management in Kenya, challenges encountered as well as existing opportunities to strengthen disaster management and response in Kenya. Secondly, the conclusion which seeks to give closure to the agenda of disaster management in the country. Last but not least, this chapter aims to make recommendations targeted in the direction of influencing policy formulators and decision makers on alternative approaches to disaster management in order to help reduce, control and prevent future disasters in the country.

#### **5.1 Summary**

The study was conducted in five chapters which shall be summarized as follows. Chapter one of this study contained the proposal of the study which served to lay the foundation upon which the study is to be conducted. Alongside the preliminary pages that contain the declaration, dedication, acknowledgement and the abstract, chapter one includes introduction to the study that outlines the Proposal that introduces the problem of Disaster management, the conceptual framework which provides the lens used to understand the challenge of disasters and how to manage them. This chapter also includes the statement of the research problem that contextualizes the challenge of disaster management within Kenya.

This chapter also contains the objectives of the study which comprise the main objective and specific objectives. Literature is also reviewed with reference to the specific objectives. Subsequently, gaps were identified in the literature, where the study is expected to fill the existing gaps for various ends especially policy formulation. The conceptual framework upon

which the study is premised upon is included in this chapter as well as the hypotheses and methodology that the study shall apply to arrive at the intended objectives. Finally, this chapter contains the chapter outline that lays out the succession of chapters of the study and the issues to be discussed in each specific chapter.

Chapter two of the study is based on the first specific objective identified in chapter one, which discusses the Nature, form and those that form part in Kenya's disaster management. This chapter identifies the causes and effects/impacts of disasters in Kenya. These are political or economic or social, and other cause of vulnerability to different people in the population.

Chapter three of this study analyzes the effectiveness of disaster management regimes in Kenya. This chapter acknowledges the existence of different regimes in Kenya that have been constituted to enhance responses to disasters in the country. These include institutions, policy frame works as well as disaster management strategies put in place and an assessment of their effectiveness is conducted in this chapter.

Chapter four assesses the challenges as well as the opportunities that can be exploited by various actors on issues to do with disaster management in Kenya. This chapter acknowledges the inefficiencies that exist in respect to disaster management as a result of poor policy planning and implementation as well as implementation. Also, poor dissemination of information has been highlighted as a challenge that complicates response to disasters by various actors. Despite the challenges, opportunities exist to enhance better mitigation of future disasters in the country. These were identified in the form of an enhanced technological uptake amongst the citizenry as well as the advent of devolution that creates frameworks for disaster response closer to the people and spaces that they impact upon and especially those that faced marginalization in the past.

## **5.2 Conclusions**

In conclusion the issue of disasters and management of the same have traditionally not been given the attention and priority that it deserves given the impact of disasters on Kenya's national security. Despite the semblance of frameworks and approaches resorted to by various actors in Kenya both state and non-state actors, effective response to the challenge of disaster have been found to be wanting. It has also been appreciated that disasters are as a result of both natural and man-made causes and intensity in terms of the quantity seems to be enhancing especially the frequency.

Also, the nature of the disasters seems to be worsening due to poor responses in previous disasters as well as lack of full recovery from past disasters. Policy planning, implementation as well as coordination of responses have also been impaired by challenges such as corruption, bureaucracy *inter alia*. Indeed, duplication of institutions acting as different sources of information has compounded mitigation of disasters in the sense where confusion has emerged when it comes to responding to disasters.

## **5.3 Recommendations**

### **5.3.1 Integration of Disaster Management in Kenya**

There is need for the integration of efforts in managing disasters in Kenya to eliminate different reference points for direction in case of disaster occurrence. This will be vital in eliminating bureaucracy and the attendant confusion of having different centers of decision making. This will enhance coordination of response to disasters by members of both the public as well as private sectors.<sup>108</sup>

---

<sup>108</sup> Ulfat, S., Shaheen, R., Riaz, R., & Said, A. B. (2015) Knowledge, Attitude and Practice of Nurses Regarding Disaster Management: A Study from Peshawar KPK. *International Journal Endorsing Health Sciences. Res*, 3 (3), 12-4.

### **5.3.1 Proper Allocation of Resources**

There also exists the need to enhance proper allocation of resources to the area of disaster management especially in vulnerable and disaster-prone areas of the country. This calls for increased budgetary allocations to disaster management units in Kenya for effective prevention, response and recovery.

### **5.3.2 Public Awareness and Resilience Building**

The government should also focus on providing the public with up to date as well as credible information on matters to do with how to cope and address issues of disasters in the country. This is critical for purposes of influencing positive behavioral attitudes from the public by giving them the opportunity to make the right decisions and in good time.<sup>109</sup>

### **5.3.4 Adoption of Effective Disaster Management Laws and Policies/ Strategies**

There is need for urgent policy shifts in matters of responding to disasters given the frequency and intensity in the occurrence of the same. The creation of a Disaster Risk Management Policy will go a long way in enhancing alleviation of suffering and losses in the event of disasters in the country. This makes take the form of having an insurance fund to compensate those afflicted by disasters in the country.

---

<sup>109</sup> Langat, S.C. (2016). An Analysis of the Legal Framework Governing Disaster Management in Kenya.

## Bibliography

- Ackoff L, (1961). *The Design of Social Research*, University of Chicago Press: Chicago.
- Allen, T. (1978). *New Methods in Social Research*, Praeger. Publication: New York.
- Anderson, M. (1998) *Rising from the Ashes: Development Strategies at Times of Disasters*. Boulder: West-view Press and Paris
- Baker, R. & Howell, A. (1958). *The Preparation of Reports*, Ronald Press: New York.
- Barzun, J & Graff F. (1990). *The Modern Researcher*, Harcourt, Brace Publication: New York.
- Berelson C & Colton R (1978). *Research and Report Writing for Business and Economics*, Random House: New York.
- Best J & Kahn J. (1986). *Research in Education*, 5th ed., Prentice–Hall of India Pvt Ltd: New Delhi.
- Bhattacharya S, (1972). *Psychometrics & Behavioral Research*, Sterling Publishers Pvt. Ltd.: New Delhi.
- Bolin, B., & Kurtz, L. C. (2018). Race, class, ethnicity, and disaster vulnerability. In *Handbook of disaster research* (pp. 181-203). Springer, Cham.
- Burgess E (1960). *Research Methods in Sociology*, New York Philosophical Library: New York.
- Carter, N (1991). *Disaster Management: A Disaster Manager's Handbook*. Manila: Asian Development Bank
- Chaturvedi, J. (1970). *Mathematical Statistics*, Nok Jonk Karyalaya: Agra.
- Coombs, W. T. (2018). *Ongoing Crisis Communication: Planning, Managing, and Responding*. Sage Publications.
- Coppola, D. P. (2015). *Introduction to International Disaster Management*. Killington.
- Cuny F (1984) *Disaster and Development*. Oxford: Oxford University Press, 1984.
- Davis, Ian. *Disasters and Settlements-Towards an Understanding of Key Issues*. Oxford: Oxford Polytechnic, 1981.
- Cutts, Bethany B., Andrew J. Greenlee, Natalie K. Prochaska, Carolina V. Chantrill, Annie B. Contractor, Juliana M. Wilhoit, Nancy Abts, and KaitlynHornik. "Is a Clean River Fun for All? *Recognizing Social Vulnerability in Watershed Planning*." *Plops ONE* 13, no. 5 (May 2018): 1–21
- Diamond, I. & Jeffries, J. (2000). *Beginning Statistics: An Introduction for Social Scientists*. London: Sage.
- Dunaway, M., Murphy, R., Venkatasubramanian, N., Palen, L., & Lopresti, D. (2017). Research Agenda in Intelligent Infrastructure to Enhance Disaster Management, Community Resilience and Public Safety. *Ar Xiv preprint arXiv:1705.01985*.

- Field, A. & Hole, G. (2003). *How to Design and Report Experiments*. London: Sage.
- Gillham B. (2008). *Developing a Questionnaire – Real World Research*. London: Continuum International.
- GoK. (2008). Building Resilient Communities in Kenya. Strategic Plan 2008 – 2012. marsgroupkenya.org/pdfs/2011/01/Ministry. Accessed on June 12, 2013.
- GoK. (2009). National Disaster Response Plan. www.noc.co.ke. Accessed on April 12, 2013.
- GoK. (2010). *Kenya Population and Housing Census 2009*.
- GoK. (2010). National Disaster Management Policy of Kenya (Final Draft). www.ecdho.org. accessed on May 6, 2013.
- Grossman, R. I. (2018). Disaster Management. *Radiology*, 180413.
- Herzog, J. R.(2007). “A Model of natural Disaster Administration: Naming and framing Theory and Reality *Administrative Theory and Praxis-*, vol. 29, No 4. 586-604
- Hon. Esther M. Murugi (2010). National Disaster Management Policy of Kenya. Retrieved on 30<sup>th</sup> August 2018 from <https://www.scribd.com/doc/136662332/National-Disaster-Management-Policy-of-Kenya-Final-Draft-Oct-2010>
- Hoy, W. (2009) *Quantitative Research in Education: A Primer*. London: Sage.
- ICRC, *Introduction to Disaster Preparedness: Disaster Preparedness Training Programme*. 17
- Jackson, S. F., Fazal, N., Gravel, G., & Papowitz, H. (2016). Evidence for the Value of Health Promotion Interventions in Natural Disaster Management. *Health Promotion International*, 32(6), 1057-1066.
- King, N. & Horrocks, C. (2010) *Interviews in Qualitative Research*. London: Sage.
- Langat, S. C. (2016). An Analysis of the Legal Framework Governing Disaster Management in Kenya.
- Macharia, C. W. (2015). *An Investigation of Institutional Preparedness in Disaster Management in Public Secondary Schools in Murang'a East Sub-County in Murang'a County, Kenya* (Doctoral dissertation, Mount Kenya University).
- Meadows, D. (2008) *Thinking in Systems: A Primer*. London: Chelsea Green.
- Menya, A. A., & K' Akumu, O. A. (2016). Inter-Agency Collaboration for Fire Disaster Management in Nairobi City. *Journal of Urban Management*, 5(1), 32-38.
- Mortimore, M. ( 2009). 'Dryland Opportunities: A New Paradigm for People, Ecosystems and Development'.
- Moses, Akali. (2013). Disaster Preparedness and Response Strategies in Kenya. 10.13140/2.1.1751.0724.
- Mutembei, H. M., Mulei, C. M., & Mbithi, P. F. M. (2015). Restoring community livelihoods and food security through livestock asset during drought disasters: case study of Mwingi, Kenya. *African Journal of Food, Agriculture, Nutrition and Development*, 15(3), 10047-10059.

- Oloruntoba, R., Sridharan, R., & Davison, G. (2018). A Proposed Framework of Key Activities and Processes in the Preparedness and Recovery Phases of Disaster Management. *Disasters*, 42(3), 541-570.
- Rancourt, Marie-Ève, Jean-François Cordeau, Gilbert Laporte, and Ben Watkins. "Tactical Network Planning for Food Aid Distribution in Kenya." *Computers & Operations Research* 56 (April 2015): 68–83.
- McDonough, J. and McDonough, S., (1997). *Research Methods for English Language Teachers*. London: Arnold.
- Riebeek, H. (2005). *The Rising Cost of Natural Hazards*. NASA Earth Observatory. March 28. <http://earthobservatory.nasa.gov/Study/Risingcost/>.
- Sheridan, M. (2007). *Climate Change Killed Off Dynasties in China, Mexico*. The Australian, 10. January 8.
- Simpson M & Tuson J, (2003) *Using Observations in Small-Scale Research: A Beginner's Guide*. Glasgow: University of Glasgow.
- Smith, K. (2005). *Environmental Hazards: Assessing Risk and Reducing Disaster*. New York: Routledge. Thoreau Institute (TI). Lack of Auto-Mobility Key to New Orleans tragedy. September 4. [www.ti.org/vaupdate55.html](http://www.ti.org/vaupdate55.html).
- Ulfat, S., Shaheen, R., Riaz, R., & Said, A. B. (2015). Knowledge, Attitude and Practice of Nurses Regarding Disaster Management: A Study from Peshawar KPK. *Int J Endorsing Health Sci. Res*, 3(3), 12-4.
- United Nations, Department of Humanitarian Affairs. (1992). Internationally Agreed Glossary of Basic Terms Related to Disaster Management (DNA/93/36). Geneva: United Nations.
- UN/ISDR (2003). *Disaster Reduction in Africa* ISDR Informs Issue No.3 2003, Majestic Print Works Ltd, Nairobi p 4.
- United Nations Development Programme (UNDP). (2004a). Human development report 2004. <http://hdr.undp.org/reports/global/2004/>.
- United Nations Development Programme (UNDP). (2004b). *Reducing Disaster Risk: A Challenge for Development*. New York: Bureau for Crisis Prevention and Recovery.
- United Nations. (1989). Resolution 44/236. *United Nations General Assembly*. 85th Plenary M
- Van Niekerk, Dewald. "Disaster Risk Governance in Africa. " *Disaster Prevention & Management* 24, no. 3 (August 2015): 397–416.
- Vernon T & Howard L. (1984). *Business Research Methods*, Grid, Inc.: Columbus.
- William B "The Jurist" *Legal News and Research*", (2005) university of Pittsburg
- Wilson. Sean A. et al (2008). "The Lack of Disaster Preparedness by the Public and its Effect on Communities" *Internet Journal of Rescue and Disaster Medicine*, Vol 7 Issue No 2



## APPENDICES

### Appendix I: Floods, Landslides and Drought Disasters in Kenya

*Figure 1: Landslides Disasters in Kenya*



*Source: Bolin & Kurtz, (2018).*

## Appendix II: Terrorism-Based Disasters in Kenya

*Figure 2: Terrorism-Based Disasters in Kenya*



*Source: Menya & K'Akumu, (2016).*



### Appendix III: Fire Disasters in Kenya

*Figure 3: Fire Disasters in Nairobi Kenya*



*Source: Grossman, (2018).*

## Appendix IV: Accident Disasters in Kenya

Figure 4: Accident Disasters in Nairobi Kenya



Source: Mutembei et al, (2017).



## Appendix IV: Election Violence Disasters in Kenya

*Figure 5: Election Violence Disasters in Kenya*



*Source: Menya & K'Akumu, (2016).*