

**AN EVALUATION OF THE LAW RELATING TO THE
MANAGEMENT OF WATER-RELATED DISASTERS WITH
SPECIFIC REFERENCE TO DROUGHTS AND FLOODS IN
KENYA.**

**A THESIS PRESENTED IN PARTIAL FULFILLMENT FOR THE
DEGREE OF MASTER OF LAWS, UNIVERSITY OF NAIROBI.**

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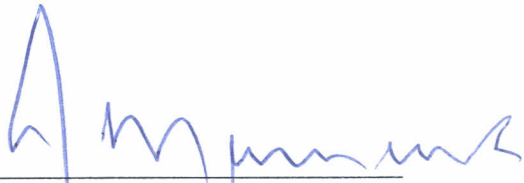
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DEDICATION

This work is dedicated to these people who I love[d] very much.

To my Mum; you are my inspiration

To Tom [posthumously] for lighting my candle for the world to see.

To My Children, Chrispin and Cathleen for denying you the care at the time of this study

ACRONYMS

APFM	Associated Program on Floods Management
ASAL	Arid and Semi- Arid Land
Cap	Chapter
IGAD	Inter-Governmental Authority on Development
EMCA	Environmental Management and Coordination Act
FAO	Food and Agriculture Organization
GEF	Government Environment Facility
GOK	Government of Kenya
MWRMD	Ministry of Water Resources Management and Development
NGO	Non- governmental Organization
NDMS	National Disaster Management Secretariat
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
IUCN	Inter Universal Council of
U.S	United States of America
UNOPS	United Nations Office for Project services
WMO	World Meteorological Organization

STATUTES

KENYA

1. Agriculture Act Cap 318
2. The Constitution
3. The Chiefs Act Cap 128
4. Draft National Disaster Management Bill
5. Environmental Management and Coordination Act No. 8 of 1999
6. Grass Fires Act Cap 327
7. Kerio Valley Development Authority, Cap 441
8. Lake Basin Development Authority Act Cap 442
9. Land Acquisition Act Cap 295
10. Preservation of Public Security Act cap 57
11. Physical Planning Act Cap 286
12. Rivers and Lakes Act Cap 409
13. Water Act No. 8 of 2002

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1. Andrapradesh Immigration (Levy of Betterment Contribution) Act 1955.
2. Assam Land (Requisition and Acquisition) Act 1964
3. Assam Wasteland Act 1954

4. Andhra Pradesh Famine Relief Fund Act 1958
5. Andrapradesh Immigration (Levy of Betterment Contribution) Act 1975.
6. Bengal Irrigation Act 1876
7. Bengal Embarkment Act 1882
8. Bihar Irrigation Act 1997
9. Bihar Restriction of Uses of Land Act 1948
10. Bihar and Orissa Natural Calamity Act 1934
11. Bengal Famine Insurance Fund Act 1938
12. Bihar Immigration Act, 1997.
13. Calcutta Metropolitan Planning Area [Use and development of Land] Control Act, 1965.
14. Damodar Valley Corporation Act, 1948.
15. Flood Plain Act 1978
16. Guyar Management in India government of India Ministry of Home Affairs .<http://www.unisdv.org/eg/mdgs-dm/India-napoa>.
17. India Constitution

18. Indian Forest Act 1927
19. Land Acquisition Act 1894
20. Northern India Canal and Drainage Act 1873
21. National Integrated Drought Information System Act of 2006, House Report 109-503
22. Orrisa Irrigation Act 1959
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CHAPTER I

1.0 INTRODUCTION

Droughts and floods are both natural and manmade catastrophes that have pervaded human lives even before the beginning of the recorded history. These two calamities have been common events throughout the world and beyond all doubt, they have affected human living conditions and sustainable socio-economic development¹.

Occurrences of droughts and floods have lead to destruction of property and loss of lives as people get displaced from their homes². However the most perplexing and bizarre thing about these calamities that have adverse impacts on humanity and environment is that, in most cases they normally occur in sequence, so that after heavy floods what follows is a very severe drought resulting into a vicious cycle of loss of lives and destruction of property³.

Kenya is not immune from these natural catastrophes and has had enough shares of droughts and floods which seems to be supplementing one another and have cost the country great financial loss in terms of

¹ See keynote speech delivered by Maria Mutagamba, the Uganda's Minister of State for Water at the International Conference on Fresh Water in Bonn, Germany from 3rd to 7th December 2001. www.usd.ca/sd/water-2001

² From 1992 to 2001 a reported 1.2 billion people were affected and 96,500 killed by flooding alone. The adverse potential of flooding includes loss of life and property; disruption of economic activity; mass migration of people and animals; environmental degradation relating to the spreading of pollutants by means of floodwaters; and a shortage of food, energy, water and other basic needs. See International Federation of Red Cross and Red Crescent Societies, 2002. World Disasters Report: Focus on Reducing Risk, Geneva Switzerland.

³ The two natural catastrophes have often been described as twin calamities with grave effects on humanity, see <http://www.wmo.int/apfm>

destruction of infrastructure, crops, livestock, land waste and loss of human lives⁴.

From time immemorial societies have developed various mechanisms to deal with these natural and manmade calamities, although most of these are temporary measures which are defensive and reactive in nature intended at assisting the victims who are displaced either by flood or are fleeing from severe drought.

In Ancient Egypt the bible records that Joseph, one of the sons of Jacob who was sold in Egypt as a slave, took a precautionary measure against the adverse effect of drought by storing food that saved the Egyptians from the effect of severe drought that persisted in the land for seven years⁵.

In order to manage the impact of droughts and floods in Kenya, the government has been putting in place some *ad hoc* measures aimed at assisting those directly affected by the droughts or floods such as helping in evacuation of the victims and providing relief food, clothes and temporary shelter. The country has also been able, at times with the help of donors, to put up some economic measures like building up

⁴ Recently the Government announced that the country needs Kshs 100 million to repair roads destroyed by the recent floods, see Daily Nation 23rd December 2006 "Roads ruined by rains to be repaired " report by Patrick Makoyo.page 25.

⁵ King James Bible version Genesis chapter 41, C.E.M Publishing, 2001,.Goodyear: Arizona.

dams and dykes⁶ but all these are defensive and reactive measures being done through various ministries not in a coherent and structured manner and are devoid of proper legislative back up.

The country has also come up with a National Policy aimed at assisting victims affected by the droughts and floods in arid and semi-arid areas⁷. This policy paper though comprehensive and capable of providing great assistance to disaster victims lacks proper legislative back-up and implementation mechanisms. Currently there is a draft bill pending to be published which if published, passed and implemented can put in place legal mechanisms and structures through which this national policy paper can operate⁸.

This paper will look at the relevance of law in management of droughts and floods, the socio, economic and environmental effects of these natural calamities, a comparative study of framework in other jurisdictions, and the way forward for Kenya. This paper also sets out to analyze and discuss in detail the legislative and institutional framework that exists in Kenya for the management of droughts and floods, the adequacy or otherwise of these frameworks.

⁶ The Government has been putting up dams and dykes in places normally affected heavily with floods like in Nyando and Budalangi.

⁷ The policy mainly deals with sustainable development of the Arid and Semi Arid lands of Kenya see Oxfam briefing paper on addressing chronic under development on Kenya's Arid lands titled "Delivering the Agenda" 16th May 2006. www.usd.ca/sd/water. See also Onywere Simon, The Status of Disaster Management in Kenya: The Need for Training Programme, Kenyatta University, School of Environmental Studies and Human Sciences.

See also <http://www.itc.nl/unlo/dgim/unedra/workshop>

⁸ The Draft National Disaster Management Bill, 2000

This paper then takes the view that with a proper legislative mechanism in place to deal with droughts and floods, we will not have to witness temporary and poor response to these natural and human induced calamities and we will not have government measures being made as a reaction to the adverse effect of droughts and floods but our legal system will put proactive role of law into use like rules will be in place defining what to be done before, during and after occurrence of droughts and floods.

1.1 BACKGROUND TO THE PROBLEM

Every year in Kenya people have had to grapple with myriad problems caused by the effects of droughts and floods. During the year 2007 in Budalangi⁹, some people are still living in camps after being displaced from their homesteads by the raging floods and when there are no floods you will find people fleeing away from severe famine¹⁰ due to drought.

Apart from the loss of lives, the Government has also been incurring heavy losses in repairing roads destroyed by heavy floods and budgeting for the relief food to be given to the people affected by the severe famine or displaced by floods. This year (2007), the Government is sourcing for funds to improve the state of the roads destroyed by the recent floods

⁹ Budalangi and Nyando areas are normally heavily affected by the droughts and floods in Kenya, although the problem is all over the country. From the recent rains, which started in August 2006 to December 2006, many people were displaced see Daily Nation 24th April 2007 "Floods Displace 1,800 families" by Nation team and Kenya News Agency page 2.

¹⁰ In 2003, out of Budalangi's population of 53,000 nearly floods displaced 25,000. 10,000 people were accommodated in the D.O's camp, necessitating health emergency measures to control possible outbreaks of malaria, bilharzias, cholera and other water borne diseases see Daily Nation, 24th September 2003.

and it is estimated that Kshs.100 million is needed to repair the roads damaged by floods all over the country¹¹.

These environmental catastrophes happen unabated with no clear measures to mitigate the losses incurred by the country despite the fact that Kenya has established legal system capable of promulgating legal mechanisms that can give clear guidance on how to approach and manage droughts and floods before they happen, when they happen and after they have happened.

The existing Government approach to drought and flood management is often slow response or no response at all to the plight of people affected by these calamities. The country has also witnessed a situation where relief would only come to the people affected by droughts and floods after heavy publicity by the media as was apparent during the famine in 2002¹².

The underlying problem is lack of clear and systematic approach to droughts and floods management in the country backed by dearth of appropriate legislative and institutional framework capable of dealing with the drought and floods, frameworks that can create institutions and allocate them responsibilities so that they can be given the

¹¹ The statement made by the Minister for Roads Simeon Nyachae while inspecting roads destroyed by the recent floods in Nyanza province, see Daily Nation December 23, 2006.

¹² Ibid.

responsibility of ensuring proper response to the management of these two calamities.

1.2 STATEMENT OF THE RESEARCH PROBLEM

The temporary and uncoordinated approach already alluded to by the Government in the management of droughts and floods in Kenya reveals the extent that Kenya Government is ill equipped in tackling the effects of natural and human induced calamities like droughts and floods that have adverse effect on its environment and people. This has often led to poor response or no response at all whenever these natural calamities strike, with consequences of greater economic loss to the country¹³.

The objective of this thesis therefore is to analyze the existing legislative and institutional framework that deals with the management of droughts and floods, and consider the prospects of using legislative measures as an appropriate and effective mechanism in the management of droughts and floods in Kenya.

The scope of this study is to look at the legislative framework in the management of droughts and floods as it obtains in Kenya, the role that law can play in providing a focus and certain/systematic approach in dealing with the entire management of droughts and floods.

¹³ According to the First National Water Resources Management Strategy first draft, 2003 [unpublished], the El Nino induced floods of 1997-1998 caused some US \$ 151.4 million in public property damage. See also Onywera Ibid p.2

The study shall also endeavor to look at the legislative and institutional responses in other countries in managing droughts and floods, the socio-economic impacts of these natural calamities and the Government's response in Kenya whenever they occur

1.3 THEORETICAL FRAMEWORK

Every society's response to disasters, be they natural or human induced depends on several factors such as the existence or non-existence of laid down policies governing the management of that disaster, the enforcement mechanisms, the magnitude and the effects of the disaster on the society.

In such circumstances and depending on the legislative framework and institutional arrangements in place, the response may be temporary and reactive in nature, where proper legislation and institutional framework is lacking or response may be pre-determined by existing legislative framework and structures put in place to manage the disaster and this will determine the effectiveness or otherwise on how a country manages the effect of a disaster.

Drought and flood are two natural and human induced disasters that have along history of leaving massive destruction in the society whenever they occur and not properly managed. The effects may vary

from one country to another depending on the legislative framework and institutional arrangements in place to deal with the disaster. Records of major disasters in the past indicate that there were 113 disaster events between 1960 and 1990 with 34,823 people killed in the developed countries as compared to 793,616 killed in the developing countries¹⁴.

A study on the effects of 1998 El-nino induced floods and the 1992 drought indicates impact variation. Their impacts on food security, water availability, infrastructure, local economy and conflict was more extensive and destructive in Kenya and other developing countries devoid of legislative enabled disaster management structures as compared to countries with clear policies like China¹⁵.

Studies have revealed that the effect of drought on livelihood of people also differs from one country to another depending on the country's capacity to effectively prepare for and respond to the effects of drought¹⁶. Therefore the number of people affected by drought and the types of impacts experienced will vary per region. For example, disasters triggered by prolonged drought in Africa¹⁷ can severely harm countries' development and contribute to malnutrition, famine, and loss of life,

¹⁴ UNESCO/UNEP, Natural Disaster and Environmental Connect; Environmental Education Newsletter, Volume 13, No.4 December 1988, UNESCO, Paris France.

¹⁵ See Linking Climate Change Adaptation and Disaster Risk Management: Kenya country study [2006] www.climaterag.org/essd/env/varg.nsf/

¹⁶ United Nations, International Strategy for Disaster Reduction "Drought Risk Reduction Framework and Practices: Contribution to the implementation of the Hyogo Framework for Action" May 2007. www.unisrd.org

¹⁷ In 2006, extreme drought affected several countries in the Horn of Africa especially hard hit were people in the countries of Ethiopia, Somalia, Kenya, Eritrea and Djibouti.

emigration and complex situations whereas droughts in developed countries primarily result in economic losses¹⁸.

This varying trend in the effects of natural and man-made hazards is believed to depend on among other things the governance, organizational, legal and policy framework¹⁹. Countries with proper drought and flood management legal framework have established clear set of principles or operating guidelines to govern the management of drought and flood, their impacts as well as the development of a preparedness plan that lays out a strategy to achieve these objectives a position which is lacking in Kenya. Decisions, which are made within an established legal framework dealing with the management of droughts and floods, will bind the rank and file of the society. This will often result into quick decision-making in response to the occurrence of the calamity, certainty in implementation of the decision taken and clear definition of the responsible authority.

In this respect the established legal framework will set a yardstick by declaring authoritative principles the country has put in place to manage such calamities²⁰. Examples of the standards every legal

¹⁸ Ibid page 1

¹⁹ Others include risk identification, assessment monitoring and early warning, knowledge management and education, reducing underlying risk factors etc. see www.unisdr.org/hfa. Hyogo Framework for Action 2005-2015.

²⁰ APFM Technical Document No. 2, Flood Management Policy Series; 'Legal and Institutional Aspects of Integrated Flood Management' Associated Programme on Flood Management. Geneva, Switzerland January 2006.

framework that deals with natural and man-made disasters like drought and flood should put in place are:

- Permanent and central institution for management of these calamities
- An integrated approach to flood and drought management
- Provide coordinated local, regional and national system of management of floods and droughts
- Set up permanent disaster response mechanisms that involve community participation.
- Provide quick state relief provision and rehabilitation to the people affected by these disasters through legally mandated relief fund.

1.4 LITERATURE REVIEW

There is a general consensus all over the world that the Government and non governmental organizations involved in floods and droughts management have always approached these natural and man-made calamities through social and economic solutions and very little effort has been given as to the relevance of legislation in providing a systematic and pragmatic integrated solution to proper management of these calamities²¹.

²¹ Associated program on floods management (APFM), Community approach to flash floods APFM news no. 11 August 2006; www.apfm.info see also WMO, *Legal and Institutional Aspects of Integrated Flood Management* Case studies APFM Technical Document No.2, Flood Management Policy Series, Associated Programme on Flood Management, World Meteorological Organization, Geneva, 2006.

The foregoing statement explains lack of adequate literature on this subject from the legal point of view particularly in the developing countries like Kenya. The little contribution on the subject presents the situation as it obtains in foreign countries like Japan and India and a lot of literature available still presents the evolving idea on the relevance of law in floods and droughts management and most of them are policy papers some of which are yet to be put into practice.

One of the relevant documents is a paper titled 'Legal and Institutional Aspects of Integrated Floods Management'²². This paper provides a clear step meant to bring legal measures into the realm of floods and droughts menace. However it is only geared towards raising of the awareness of policy makers regarding the need for an appropriate legal framework for integrated flood management. The paper does not provide specific role legislation can play in addressing floods and droughts management and the kind of legal framework needed. Such is the void needed that this research paper seeks to fill.

An article on floods management in China provides insight into structural and non-structural measures that the Chinese Government has taken in floods management²³. The paper contributes to this research work by acknowledging the need for the legal and institutional

²² Ibid (published by the Associated Program on Floods Management (APFM), World Meteorological Department, Geneva Switzerland.

²³ Gouying L: Flood Management in China and the Work of Ministry of Water Resources in China, World Meteorological Organization Bulletin, see www.chinamaze.com

framework for putting floods and droughts management plans into practice. Although the paper does not suggest the legal framework needed, it subscribes to the notion that the obligations of the government and non governmental agencies dealing with droughts and floods management and their responsibilities can only be better defined through legislation as well as economic and administrative instruments.

In the article titled 'Floods and Droughts Mitigation and Response in the United States'²⁴ produced by the United States Army Corps of Engineers, the legal inputs in droughts and floods management is discussed in addition to the other traditional responses to these calamities like building of flood control dams and reservoirs, flood walls and channel improvement along the major rivers systems. The paper highlights congress legislation that has been made to authorize the United States Army Corps to provide technical assistance to state and local officials, flood fighting materials e.g. sandbags, pumps and emergency contracting help to reinforce damaged levees and seepage terms²⁵.

The legislation also provides the United States Corps with authority to perform post floods response and drought assistance. This literature is vital and of great assistance to this research as it provides direct and active role that legislation can play in floods and drought management

²⁴ Ming T. Tseng US Army Corps of Engineers, Washington DC {2000}
www.lanl.gov/chinawater/documents/fdm

²⁵ ibid

before, during and after happening of these natural calamities. The paper is of a United States setting but it can offer great assistance to the way forward in developing a legal framework for the management of these natural calamities in Kenya since their occurrence is not limited to geographical boundaries. From the foregoing revelations, it is evident that no major focus has been given to the role of law in droughts and floods management in our jurisdiction.

Another important literature on disaster management is the Government Sessional Paper No. 6 of 1999 on Environment and Development²⁶. This Sessional Paper covers areas like environment and development, poverty reduction, land based resources and disaster management among other issues. The paper was developed by the Government and set out comprehensive policy guidelines towards achieving sustainable development, and in response to the increasing concerns regarding the effects of development on the environment.

The most relevant part of this literature for the purposes of this research is part titled land degradation, drought and desertification which deals with Government policy on drought and embodies the Government desire to formulate a drought preparedness policy and development of drought and desertification, monitoring and early warning systems. The paper also addresses the government plans on disaster management, which

²⁶ Kenya Sessional Paper No. 6 of 1999 on Environment and Development, Ministry of Environmental Conservation, Box 67839, Nairobi, Kenya

includes plans to develop a comprehensive policy, legal and institutional framework for managing disaster.

The importance of this paper is that it highlights some major structural, institutional and legal measures that the government can put in place to minimize the effect of drought and flood and to that extent it is of much relevance to this research.

Another article, which is of great relevance, is paper of the United Nations Development Programme project, which involves the governments of Ethiopia, Kenya, Mozambique and Zimbabwe²⁷. The paper focuses on addressing the impacts of climate change on land degradation and food security touching on issues like early warning systems.

The paper recognizes that failure to take into account the characteristics of African climate in land use planning and farm management has exacerbated the impacts of past droughts. Relevance of the paper is that it provides for some practical steps to management of drought as a natural disaster.

United Nations Development Programmes report titled "Kenya National Disaster Profile"²⁸ that gives profile of natural disasters in Kenya is also

²⁷ UNDP, GEF, UNOPS "Coping with Drought and Climate change"

²⁸ See www.ke.undp.org/kenya_disasterprofile.pdf

of great input to this research. This paper provides chronological events of natural disasters like flood, drought and landslides from 1970s to the year 2004. The paper is of great assistance as it outlines some environmental, social and economic impact of these calamities in Kenya as will be discussed in the first two chapters of this research. However the paper does not provide for legal measures that can be put in place to contain these calamities or reduce their impacts, a vacuum that this research paper intends to fill.

The problem of recurrent floods in western Kenya and particularly along the Lake Victoria basin has caused great loss of lives of many people, destruction of crops and suffering to many people. Research on practical approach to contain this phenomenon has been done by many organizations, among them world meteorological organization.

In the article entitled Strategy for Flood Management for Lake Victoria Basin Kenya, there are various structural and non-structural measures that are being proposed to help curb the problems caused by the recurrent flood in this part of the country.

This paper is of great relevance for this research as it gives the background of the disasters like flood and drought along the Lake Victoria Basin, their causes, impacts management strategies and

limitations thereof. The paper also provides a lot of insight to the social and environmental and economic impacts of flood along the Lake Victoria Basin.

This research takes a different approach to a natural and man-made disaster management by having a critical look at the legislative and institutional framework in Kenya and the role they can play in providing a clear, consistent and structured approach to addressing the menace caused by droughts and floods in Kenya. ✓

1.5 OBJECTIVES OF THE RESEARCH

- 1 To identify the role of law in management of droughts and floods.
- 2 To identify and propose the legal and institutional frameworks that is necessary to provide clear and better approach to flood and drought management.
- 3 To unearth the inadequacies existing in Kenya laws and the institutions that manage floods and droughts by analyzing the existing laws and institutions that deals with management of droughts and floods in Kenya and other selected jurisdictions.
- 4 To analyze the socio, economic and environmental impacts of droughts and Floods in Kenya.

1.6 BROAD ARGUMENT LAYOUT

Kenya as a country has not envisaged that proper laws can play a great role in management of droughts and floods and can go along way in providing clear and integrated structured responses to these calamities, which is proactive in nature. The legal situation that obtains in the country currently is not able to provide clear, pragmatic and structured approach to droughts and floods management.

1.7 HYPOTHESES

1. The existing legal and institutional frameworks that operate for management of droughts and floods in Kenya are inadequate and inappropriate.
2. Appropriate legislations are necessary to provide mechanisms for proper management of droughts and floods in Kenya.

1.8 ISSUES FOR STUDY/RESEARCH QUESTIONS TO BE ANSWERED

The following are the main issues related to the problem in this thesis.

- (i) In what ways does the legislative and institutional framework that exists in Kenya adequately provide effective response to droughts and floods?
- (ii) Do the legislative and institutional framework that obtains in Kenya adequately manages pertinent issues relating to droughts and floods such as putting in precautionary measures to minimize the occurrence of droughts and floods, providing quick economic

- assistance to the victims, addressing environmental problems arising, resettlement of the displaced victims etc?
- (iii) What proposals could be made for a better legislative and institutional framework to supplement the frameworks in place?
- (iv) What role the law plays in the management of droughts and floods?

1.9 METHODOLOGY

During this research the following methods will be applied.

(a) Secondary data collection methods.

[i] Media news.

[ii] Library Research.

[iii] Internet searches.

1.10 CHAPTER BREAKDOWN

CHAPTER 1 explains the basis of the study bringing out the Introduction, Statement of the Problem, objectives, theoretical framework, Hypothesis, Justifications, Literature Review, Issues for study/Questions to be answered and Methodology to be used in this research.

CHAPTER 2 discusses the Socio, Economic and Environmental Impacts of Droughts and Floods in Kenya, Methods of Droughts and Floods Management and The Role of Law in Droughts and Floods Management.

CHAPTER 3 tackles the Legal and Institutional Framework in the management of Droughts and Floods in Kenya and analyze the Inadequacy or otherwise of the legal and Institutional Frameworks existing in Kenya.

CHAPTER 4 looks at the Legal and Institutional Frameworks in the Droughts and Floods Management in a Comparative analysis of India, Japan and South Africa jurisdictions.

CHAPTER 5 comprises the Conclusions and Recommendations.

CHAPTER 2

SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF DROUGHTS AND FLOODS IN KENYA.

2.1 Introduction

The social, economic and environmental impacts of recurrent drought and floods in Kenya have captured attention of the civil society, Kenya Government and International Organizations concerned with helping people affected by natural and human induced disasters. I am inclined to adopt the definition given by South African Act, as it is broader²⁹. The Kenyan draft bill defines disaster as ‘a progressive or sudden, widespread or localized, natural or human-made event including not only prevalent drought but also severe frosts, hailstorms, pest infestations and crop disease, landslides, mudslides, floods and other similar natural or human-made events’³⁰

The impacts of disasters on the economy, environment and social developments are too severe to be dismissed lightly. The effects of the heavy floods in December, 2006 experienced in areas of North Eastern,

²⁹ The South African Disaster Management Act 2002 in sec. 1 defines disaster to mean a progressive or widespread or localized natural or human-caused occurrence which-

- a) causes or threatens to cause;
 - i) death injury or disease
 - ii) damage to property, infrastructure or the environment or
 - iii) disruption of the life of a country

see <http://sandmc.pwr.gov.za>

³⁰ National Disaster Management Bill, 2000, prepared by Office of the President Kenya (unpublished)

Coast, Nyanza, Western, Central and Rift Valley provinces are still being felt today with varying intensity. The same applies to the most recent severe drought that Kenya experienced in 2004³¹ in wider parts of Eastern, Nyanza, parts of Right Valley and Coast provinces which left a multitude of social, environment and economic effects on the people staying in these places.

The core of this chapter is to identify and analyze the social, economic and environmental impacts of droughts and floods on the lives of Kenyans and to the country as a whole in terms of economic costs, disruption of social life and wastage of resources like land, forest and water collection points. This chapter undertakes to analyze those impacts in Kenya as a whole not giving special focus to a particular area, the reason being that floods and droughts do occur in so many different parts of the country (Kenya) and with almost similar effects.

Although it is understood that there are some areas, which are more prone to floods such as Budalangi in Western province and Nyando in Nyanza province, those areas on the other hand are not severely affected by recurrent droughts like some parts of Eastern Province, North Eastern, Coast and Nyanza provinces.³² However before delving into the

³¹ The Red Cross Society has played a vital role in supplying relief food, mosquito nets, medicine, vehicles, water cash monies and temporary shelter to people affected by floods and drought in Kenya. The reliefs have always been channeled through Kenya Red Cross Society from Red Cross Movement Partners like American Red Cross, British Red Cross, Danish Red Cross, Finish Red Cross, German Red Cross etc. See Daily Nation, March, 29, 2007, "Kenya Red Cross Society Floods Intervention October 2006-January 2007 Moving from saving lives to livelihoods" by Paul Birech Pgs. 32 – 33.

³² UNEP (2000) Devastating Drought, Environment Impacts and Responding Nairobi, Kenya P. 17.

impacts of these two natural phenomenon it would be pertinent to attempt a definition for some of the terms used.

2.2 The Definition Problem

Most of the Organizations and research papers dealing with mitigation measures or intervention on droughts and floods affected people hardly give attention to the definition problems of these two terms. For a country to put in place effective intervention measures, it is pertinent that these terms be clearly defined and the context in which they are understood by the stakeholders³³.

2.2.1 Drought

In Kenya there is no legislative instrument dealing particularly with droughts and therefore lack of set definition. Drought is predominantly a natural phenomenon with social, economic and environmental dimension and is responsible for causing severe hardships to the most vulnerable people particularly elderly, children, women, landless and the poor. It is mainly associated with dryness of land due to lack of rainfall, leading to crop production failures in rural areas and starvation of human and livestock. However drought can also be caused or facilitated by human induced factors like deforestation, bad agricultural practices and lack of proper physical planning.

³³ In this context stakeholder is understood to mean individuals affected by drought and floods and the government.

According to United States Weather Bureau, drought is defined as continuous lack of rainfalls, which seriously affects the plant, and animal life of a place by depleting water supplies for domestic and commercial purposes in a particular region where rainfall is normally sufficient for such purpose.³⁴ Hewitt (1979) provides somewhat similar definition of drought by stating that drought is simply a period in which moisture availability falls below the current requirements of some or all the living communities in an area and below their ability to sustain the deficit without damage, disruption or excessive costs.

The United States National Integrated Drought Information System Act of 2006 defines drought in Section 2 to mean “A deficiency in precipitation that leads to a deficiency in surface or subsurface water supplies and that causes (or they cause) substantial economic or social impacts or physical damage or injury to people, property or the environment³⁵.

Drought is considered to be the most important natural cause of famine; most of the great famines in Kenya history have been precipitated by

³⁴See Ullah Jam Inam. The Economic and Social Impact of Drought on the Rural Poor: The case of Pakistan, University of Birmingham, Journal, 2004 p.6

³⁵See House Report 109-503-National Integrated Drought Information System Act of 2006. on the same note the UNDP, 'Kenya Natural Disaster Profile' defines drought as 'the naturally occurring phenomenon that exists when precipitation that have been significantly below normal recorded levels causing a seriously hydrological imbalances that adversely affects land resources production system'. See also UNEP [2000], Devastating Drought, Environmental Impacts and Responses Nairobi, Kenya P.17

drought³⁶ and at the same time research has revealed that it is also one of the most complicated and least understood of all natural calamities unlike flood which is easily recognized hazard and its impact is immediately visible³⁷.

2.2.1 (a) Type and Characteristics of Drought

Generally droughts are classified into three categories³⁸:

(i) Meteorological Drought

It causes a significant decrease (more than 25 percent) of rainfall in rotation to the normal rainfall in an area. It precedes other droughts. Perhaps it can be declared as the onset or development of subsequent drought in terms of severity and intensity.

(ii) Hydrological Drought

When meteorological drought is prolonged, it results in subsequently depletion of surface water. Consequently drying up of reservoirs, lakes, streams and rivers and fall in ground water level.

(iii) Agricultural Drought

It is a stage when soil moisture and rainfall are inadequate during the cropping season leading to stress, crop wilting and failure, which in turn causes food scarcity and insecurity. In terms of

⁶ The 1984, 1988, 1992, 1999-2001 famines

⁷ National Disaster Management Committee; Drought Impact Report U.S. Drought Monitor. A Comparison of Drought, Floods and Humans in the United States.

⁸ Ibid, See also Kenya Natural Disaster Profile UNDP (Enhanced Security Unit) www.ke.undp.org/kenyadisasterprofile.pdf.

security agriculture drought leaves drastic impact on the livelihoods of the landless and small landholders particularly.

It is believed that extent and scarcity of drought can be analyzed and measured by careful examination of the following indicators, which can also be termed as early warning indicators;

1. The pattern, variability and scale of rainfall.
2. The scale of cultivation and grass growth.
3. The scale and exact time of migration of population and livestock
4. The availability and market values of food for population and livestock.³⁹
5. The scale of malnutrition and general health conditions of the residents of the drought-prone areas.
6. The scale and trends of dropouts from primary schools in areas prone to droughts⁴⁰.

An important characteristic of drought as experienced in Kenya and the world at large is its creeping nature as its effects accumulates slowly.

Unlike floods, drought always has a slow onset, which could be predicted. Its slow, creeping nature allows sufficient time to the policy planners to devise critical and effective drought management strategies. However, one particular drawback of this crawling and creeping nature

³⁹ Like migration of wild beast from Tanzania to Kenya which signal the onset of droughts at Serengeti National park, see Daily Nation 17th January 2007." The Maasai Mara, Our glory and Our shame" by Ndung'u Njaga.

⁴⁰ Ibid

of the drought is that this particular nature of drought is not properly acknowledged by the policy makers and constant controversy and hesitation is usually associated regarding official admission by the government and policy planners about the existence of drought.

2.2.2 Flood

Just like the position of drought, Kenya is devoid of legislative framework that defines this natural catastrophe despite its recurrent effect on the country. Floods occur due to natural factors like flash floods, river floods and coastal floods. They may also occur due to human manipulation of watersheds, drainage basins, deforestation, unplanned building, uncontrolled population growth⁴¹ and flood plains⁴². For example, in some cases floods have occurred in the river basins even with normal rains because of excess surface water run-offs occasioned by deforestation, land degradation upstream.

Floods following torrential rainfall affect Kenya. These forces thousands of people living in the lowlands to move to higher grounds⁴³. The people affected are mostly in Western and Nyanza provinces and in Tana River Districts. In Nyanza province River Nyando is notorious for bursting its banks during the rainy season while in Western province Budalangi area is the most vulnerable region with recurrent flood problems

⁴¹ Due to the population growth, there has been a noticeable rural urban migration in the arid and semi-arid areas affecting the ecosystems of these regions and rendering them more vulnerable to disasters such as drought and environmental degradation.

⁴² Like intensive economic use of the flood plains for agriculture and livestock farming.

⁴³ Daily Nation 16, December 2006 pg 16.

displacing large number of people⁴⁴. Generally floods in Kenya exhibits three characteristics:

1. Flash floods - usually occur in a flash without much warning as a result of an accelerated run off, dam failure etc.
2. River floods – are slow onset as they build slowly, usually occur over a long period when a river breaks its banks and are seasonal⁴⁵.
3. Coastal floods – occur along the coast due to wave activity resulting from tropical cyclones, tsunamis and storm surging⁴⁶.

2.2.3 Management

Management has been aptly defined⁴⁷ as the act or skill of dealing with a situation that needs to be controlled in some way. In the context of our research work the term refers to the structures, policies, ways and methods of addressing pre-flood and drought, flood and drought and post flood and drought situations.

2.3 Social impacts of drought and floods in Kenya

Social impacts of drought and floods mainly include: Public safety, health, loss of lives and livelihood, migration of people, conflict in use of

⁴⁴ In 2007 in Budalangi the floods have displaced a bout 40,000 people a about 10,000 acres of farmland destroyed. The problems in Nyando river plains and the Budalangi divisions are aggravated due to breaks in the dykes during the 1997-1998 Elnino floods that had not been repaired see Daily nation April 24,2007 P.2 also WMO” Strategy for Flood Management for Lake Victoria Basin”, Kenya, 2004 P.6

⁴⁵ This is a very common characteristic of floods in Budalangi and Nyando plains. In Budalangi the current floods are caused by River Nzoia which has burst its banks and broke a dyke at Swalwanga point near makunda, see Daily Nation 24, April 2007 P.2

⁴⁶ Paul Andre de la porte (edt) “Kenya Natural Disaster Profile” UNDP, Enhanced Security Unit. See also www.undp.org/kenyadisasterprofile.pdf.

⁴⁷ Longman Dictionary of Contemporary English [3rd edt] Addison Longman Limited: Edinburg gate:England [1995].

scarce water resources, reduced quality life, interruption of studies family life and general displacement.

(a) Loss of Lives

Floods and Drought in Kenya have caused the country great loss of human lives as people got swept away by floods or succumb to the flood related diseases like cholera, malaria and the recent Rift Valley Fever. As a result of drought severe famine have been experienced in several parts of the country leading to loss of lives and disruption of social and family lifestyle⁴⁸. The loss of lives is normally accelerated due to nature of floods in some regions. In Lake Victoria basin for example most of the run off is generated in the upper catchment's, which receives much higher rainfall than the plains in downstream reaches. As a result population living in the plains is often taken unawares, causing considerable loss of human lives and livestock.⁴⁹

In the recent floods that came between October and December 2006 heavy down pour were experienced in the country causing heavy flooding. It is believed that about 144 people died as a result and 733,000 people were displaced⁵⁰. The worst hit areas like North Eastern, Coast, Nyanza, Western, Central and Rift Valley provinces had heavily

⁴⁸ Areas which are prone to drought are Eastern, N.Eastern Coast, parts of R.Valley while areas prone to floods include Budalangi, Nyando, Rachuonyo and Tana River.

⁴⁹ WMO 'Strategy for Food Management for Lake Victoria Basin, Kenya. September 2004'

⁵⁰ See Daily Nation, Thursday March, 29, 2007

suffered successive drought over the past decades thereby weakening the ability of the local communities to withstand the disaster⁵¹.

In 2002 floods, about 175,000 people were reported severely affected by the floods and 50 reported dead⁵². Kenya's record of flood disaster indicates the worst floods recorded in 1961 – 1962 and 1997 – 1998, the latter one being the most intense, most widespread and the most severe. During this season, the flooding was associated with the El-Nino phenomenon, a weather pattern that affects most parts of the World⁵³. During the El-Nino floods about 1.5 million people were affected and many were reported dead or injured⁵⁴. Similarly about 70% of Kenya's land mass is affected by drought. This covers most parts of Rift Valley, North Eastern, Eastern provinces and Coast province⁵⁵.

The drought is experienced on a cyclic basis major ones coming every ten years and the minor ones happen almost every three to four years. The 2004 drought that left many people dead is a replica of the previous cycle of severe drought that affects the country every decade as

⁵¹ A total of 32 District in North Eastern, Coast, Western, Nyanza, Eastern, Rift Valley and Central Province were affected by floods.

⁵² David Rowan, Kenya hit by floods WSW.org. International Committee of the fourth International (ICA). These floods affected Kenya's eight Provinces of Lake Victoria in Nyanza Province to the Coast Province.

⁵³ El-Nino is a disruption of the ocean – atmosphere system in the tropical pacific having important consequence for weather around the globe. It may cause increased rainfall in some areas and drought in others thus changes the normal weather pattern.

⁵⁴ See Kenya Natural Disaster Profile UNDP P.24

⁵⁵ Also classified as arid and semi-arid land

experienced in 1974, 1984 and 1994⁵⁶. Statistically 75% of Kenya's population earns its living from Agriculture which in turn depends on rainfall. Due to the vast areas prone to drought a bigger number of population is often faced with starvation incase of drought⁵⁷. The 1983 – 1984 drought and the 1999 – 2000 ones are recorded as the most severe resulting in loss of human lives and livestock. After the El-Nino Induced rains of 1997 and 1998 Kenya experienced prolonged drought in many areas leading to famine and starvation⁵⁸.

Study reveals that most of the deaths that result from these natural calamities occur due to related diseases such as cholera⁵⁹, malaria and dust related diseases apart from direct succumb to hunger and being literary swept away by floods⁶⁰.

In the current floods in Budalangi, the residents have been assured of enough drugs to contain any possible outbreak of waterborne diseases⁶¹. The table below presents chronology of natural disaster in Kenya,

⁵⁶ Ibid

⁵⁷ Ibid

⁵⁸ UNDP, WMO, GOK, IGAD and DMCN (May 2002) Factoring weather and climate information and products into Disaster Management Policy. A contribution to strategies for Disaster reduction in Kenya. P3, Nairobi, Kenya.

⁵⁹ Like during floods water contamination occur due to submerged latrines resulting in a sharp decline in sanitary and hygiene conditions. Water supply intakes, wells and boreholes are destroyed results into a heavy upsurge of diarrhea diseases, malaria and cholera. See Daily Nation, March 29, 2007.

⁶⁰ Kenya has even lost a member of parliament through floods when his vehicle was swept a way by swollen river.

⁶¹ Statement by Busia District Medical officer of Health, Silas Ayunga while addressing residents of Budalangi who have been displaced by floods and are camping at Makunda Secondary School, see Daily Nation 24, 2007

showing approximate number of people that have been affected by floods and drought since 1975 to the year 2000.

1974-1976	Central, Eastern, Western, Coast	Famine in eastern province. Water shortages, migration of people and livestock.
1980	Eastern province	Large food deficits
1992- 1994	Northern, Central, Eastern provinces	4.7 million people dependent on and water rationing
1999- 2000	Countrywide except west and coastal belt	

Gathara(1995) as modified by UNEP and GOK, Dec 2000, Devastating Drought in Kenya, Environmental Impacts and Responses, p 18, Nairobi, Kenya.

Other adverse social impacts of drought and flood in Kenya include migration and conflict between water users Kenya has experienced a lot of conflict over water and pasture resources between the pastoralists during droughts as they fight over the diminishing but invaluable resources for their survival and survival of their livestock. This in most cases has even led to death in some parts of North Eastern and Eastern Provinces⁶².

Due to severe drought the pastoralists and other affected people have been forced to migrate to other districts in search of greener pasture and

⁶² Daily Nation 11th December 2004.

food and this has also led to increased urbanization as the people in rural areas affected by severe famine move to urban centers for food⁶³.

Collorary to this are other social problems like disruption of learning process as families move from disaster affected areas, public health risks and deepening poverty⁶⁴ Nutritional problems arising from lack of food as the floods and drought destroyed food resources. There are also increased diseases and epidemics especially water related ones like typhoid and dysentery due to contamination of water resources⁶⁵.

2.4 Economic impacts of drought and flood in Kenya

Droughts and floods produces a complex set of impacts that permeate many sectors of the economy particularly infrastructure and agriculture as water is integral to the ability to grow crops and therefore ensure food security⁶⁶. In Kenya, the occurrence of drought and floods do adversely affect food security due to crop production failures and consequent food price hikes. These natural calamities destruct livelihoods and drain years of economic gains and development. They cause destruction of infrastructure like roads, rails and telecommunication lines⁶⁷. Extreme weather and climate events influence the entire economy, which

⁶³ Daily Nation 16th December 2006. p. 16

⁶⁴ FAO – Drought Impact Mitigation and Prevention in the Limpopo River basin

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ See Daily Nation 16th November 2006 “State to repair roads damaged by rains in coast” page 20.

depends mostly on Agricultural products like cash crops, food crops and animals⁶⁸.

Every year around United States \$ 1 million is spent on relief and rehabilitation of displaced people. In Kano plains for example, 500 people are affected every year by flood spills of Nyando River. The average annual damage is about U.S\$850,000 with annual relief and rehabilitation measures costing U.S\$600,000⁶⁹ and in the current Budalangi floods the government has already sent 480 and 200 bags of maize and beans respectively to the displaced families and is looking for Kshs 6 billion from World Bank for construction of dams.⁷⁰

Floods cause a lot of losses in Kenya especially because they have become perennial and seem to weaken the community's ability to cope each time they hit. This has been evident especially in parts of Western province like Budalangi and Nyanza province where the recent floods have destroyed food crops, displaced people and infrastructure⁷¹.

According to the first Natural Water Resources Manager most strategy, the El-nino induced floods of 1997 – 1998 caused some US\$151.4

⁶⁸ It is believed that Agricultural supports up to 75% of the Kenyan population including those who reside and work in urban centers, accounts for approximately one kind of the Gross Domestic Product (GDP), enjoys more than more than two kinds of labour force and about 70% of the export earnings. It generates almost all the country's food requirements and providing a significant proportion of raw materials for the agro-based industries. But Agricultural in turn depends on rainfall and due to the vast areas prone to drought, Kenyans vulnerability to food security is highest among the pastoralists and small-scales (ASALS) of the country. See [http // kenyawe.com](http://kenyawe.com), Agriculture / Overview of Agricultural in Kenya 2003.

⁶⁹ WMO, 'Strategy for flood management for L. Victoria basin, Kenya.2004

⁷⁰ Floods displace 1800 families, Daily Nation April 24 2007 by Nation team and Kenya News Agency page 2..

⁷¹ Ibid P.2

million in public property damage⁷² Currently, the government is sourcing for funds to repair the roads and buildings which were destroyed by the 2006 floods and it is estimated that Kshs. 100 million is needed for repair of the roads damaged by the floods all over the country⁷³.

Among other economic impacts of floods are:

- Loss of livelihoods including destruction of crops, death of farm animals, loss of fishing equipment.
- Destruction of settlement and houses.
- Erosion of productive layers of the soil rendering the soil less productive.
- Loss of food reserves⁷⁴.

The 2003 floods in Kenya after heavy rains left over 20,000 people homeless, and over 10,000 hectares of crops destroyed and roads rendered impassable in Western and Nyanza provinces⁷⁵.

Droughts have also had almost similar economic impacts in Kenya. Most of the droughts do occur after heavy floods, which finds when the Society's ability to prevent natural disaster has been greatly weakened

⁷² Onywera Simon, the status of Disaster Management in Kenya: The need of Training Programmes, Kenyatta University, School of Environmental Studies and Human Sciences. Department of Environmental Planning and Management. See also http://www.itc.nl/umu/dgm/unedra/workshop/docs/session_3/onywere

⁷³ Daily Nation December 23, 2006.

⁷⁴ Ibid

⁷⁵ USG/FEWS NET – Nairobi – <http://www.nosa.gov/produced/fews/briefing.html>. floods Advisory for Greater Hon of Africa 7 – 9 May, 2003.

leading great loss of livestock, low yields or no yields at all from agricultural activities due to low moisture content in the soil.

Drought also increases livestock diseases like foot and mouth lumpy and skin disease⁷⁶. Other economic impacts of drought in Kenya have been identified⁷⁷ as price hikes for commodities like cereals and food products while prices of livestock depreciate because they are emaciated and unhealthy. In addition drought leads to over reliance on relief supplies from the government and other aid agencies⁷⁸ and it generally lead to high rate of poverty. During the 1999-2001 droughts, the Kenya government spent estimated 300 Million Kenya Shillings to provide food and other related assistance to more than 4.2 million people affected by famine. The famine necessitated the government to provide food and non-food assistance to the affected population⁷⁹.

2.5 Environmental impacts of droughts and floods in Kenya

In Kenya the adverse effect of droughts and floods on the environment, which in turn threatens, people's lives have been witnessed through desertification, adverse climate phenomenon, land slides, improper land use and change in water quality and quantity.

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P. O. Box 30197
NAIROBI

⁷⁶ Ibid. Other diseases like tsetse flies' infestation and food and mouth disease are also common in drought conditions.

⁷⁷ Ibid

⁷⁸ Like World Food Programme, Red Cross Society.

⁷⁹ Speech by Hon. Murungaru, former Minister of Internal Security, Kenya at the Second International Conference on Early Warning. <http://www.ewc2.org/uploads/opening-stmnt>.

As a result of heavy floods in various parts of the country caused by high rainfall, regions like Muranga, Kirinyaga, Nyeri, Meru and Kisii have experienced landslides⁸⁰ which are also attributed to geology and soil types of these regions which make them most vulnerable to land slides whenever there is flood⁸¹. Between the year 1999 and 2000 it is believed that about 7 million Kenyans were affected by landslides, which were accelerated by heavy flooding mostly in Central province⁸². In Muranga District there are reports of whole families being buried in the long rains of April and May in 2002 and 2003⁸³.

Land degradation is another problem caused by heavy floods or drought. Floods will normally wash away the topsoil through soil erosion leaving the soil without fertility. Land degradation and soil erosion in particular poses one of the most serious threats to sustained food production and Kenya's development in general⁸⁴.

Droughts have contributed to environmental loss through loss of biodiversity examples forest fires, damage to plants and animals and their habitat, air and water quality decline. Sometimes the environmental effect is only temporary and conditions return to normal when the drought is over but sometimes the drought impacts may even

⁸⁰ Landslides are described as the downward movement of soil and rocks resulting from naturally occurring vibrators, changes in water content removal of natural support loading with weight and weathering of human manipulation of water courses and composition of the slope

⁸¹ <http://info.worldbank.org/floods/docs/library/1/148>

⁸² UNFPA, ALRMP (2002)

⁸³ Ibid

⁸⁴ Anderson Ekboma, point of departure of a discussion of poverty and environmentally sustainable development, 2002. [http://www.hgo.sel/ \(natural kowini/eev/helped/sil/env/policy.P.2](http://www.hgo.sel/ (natural kowini/eev/helped/sil/env/policy.P.2)

become permanent with adverse effect on human and animal population⁸⁵.

The consequences of droughts and floods on the environment also includes polluting water sources either as the water sources dry up or the sewage and waste disposal pipes burst up due to heavy floods and mix into the main water sources like rivers. There are also widespread destruction of natural storage capacity due to severe catchments degradation, threatened lakes and encroached recharge areas, wetlands and flood plains. The weaknesses of the water allocation and pollution control systems. These consequences of disasters are devastating especially in countries like Kenya where the ability to prepare for, respond to, and even mitigate their effects is very limited⁸⁶.

2.6 The role of Law in Droughts and Floods Management

The role of law in a civilized society cannot be underrated. Law as a primary norm which stipulate sanctions⁸⁷ has played a vital role in putting into effect the rules that society believes are important for creating social order and these legal rules have also reflected societal values and how the society responds to natural calamities that adversely affect human life socially, economically and politically.

⁸⁵ Like the drying up of some rivers extint of some underground species, etc.

⁸⁶ Speech by Hon. Murungaru at the Second International Conference on Early warning. <http://ewc2org/upto> and / opening stant.

⁸⁷Hans Kelsen, General Theory of Law and State (1949) P. 63 The Law Book Exchange: New Jersey. Also cited in H.L.A Hart,The Concept of Law ,Oxford University Press;Oxford, (1961) P.2

At first glance natural and human induced calamities like droughts and floods appear entirely unconnected, however as comparative study from different jurisdictions demonstrates, floods and droughts cannot be managed effectively without understanding the role that legal norms can play in addressing myriad of problems caused by these calamities.

At present, when floods and droughts continue to pose significant and complex challenges worldwide, for both developing countries like Kenya and developed countries, the big question is whether law has any role to play in the disasters management? The roles that law can play in effective and integrated management of droughts and floods have been identified as follows:

- (a) Legal framework can identify and protect all stakeholders' interests.

An effective legal framework can play role of identifying and protecting the interests of all stakeholders.⁸⁸ In this aspect a statute of parliament has the capacity to identify the people and regions, which are prone to and vulnerable to drought and floods in the country.

The law will further identify the interests of these people, their economic activities and social life, which are normally affected by the adverse impacts of floods or droughts. These are things, which can be well laid out in a legal framework that is objectively meant to guide the country

⁸⁸ World Meteorological Organization, "Legal and Institutional Aspects of Integrated Flood Management", Geneva, Switzerland, 2006.

in the management of droughts and floods. On this context the law can put in mandatory obligations for the government ministries and department concerned with management of floods and droughts to take into account the views of individuals at the local, regional and national level on the best and effective methods of controlling or minimizing the effects of droughts and floods to ensure stakeholders participation in droughts and floods management⁸⁹

(b) Establishing legal rules and institutions levels.

Through a well-formulated legal framework, rules can be set out on how to deal with these calamities where and whenever they occur. The pre-flood and drought measures and post-flood and drought measures can be laid down to provide certainty and predictability on addressing these disasters. The rules are important to identify the role of each stakeholder in drought and flood management including the place and role of non-governmental organizations, like the Kenya Red Cross Society⁹⁰. Collorary to this, the rules can also provide use of

⁸⁹ A good example here is the South African Disaster Management Act which recognizes that disaster management frame-work must take into account the community approach in disaster management in section 7, while at section 17 the National Disaster Management Centre is mandated to collect information on indigenous knowledge relating to disaster management.

⁹⁰ This is one of the non-governmental organizations that provide humanitarian relief to the people affected by disaster like flood and drought. In Kenya section 5 of the Red Cross Act Chapter 256 mandates the organization to provide relief to victims of catastrophes or disaster, carry on and assist in the work for the improvement of health, the prevention of disease and the reduction of suffering in times of peace and war, provide aid to the sick, wounded and non-belligerent in times of war. A parliamentary legislation on disaster would provide on how this organization and other humanitarian organizations can be integrated in disaster management.

precautionary measures [principle]⁹¹ which the government and every person living in areas prone to natural disasters are required to play as proactive measures to mitigate or minimize the impacts of droughts and floods once they occur.

These measures may include safe land use methods, building of dams and water reservoirs, storage of relief food, good farming systems, afforestation, and population control and building plans etc. At the same time the law can establish regional and national institutions with sole mandates of addressing problems that are caused or may be caused by floods and droughts. Law is needed to clearly identify the institutional response of government to floods and drought occurrence so that the government and agencies created to deal with drought and flood management can be motivated to act under mandate created within a legal framework⁹².

Law as an integral component and as a vehicle for orderly change provides a pragmatic concept, which can be used by a country to

⁹¹ The precautionary principle can broadly be defined as the imposition of “controls in advance of complete scientific understanding.”¹³ In the context of environmental protection, Principle 15 of the Rio Declaration provides that:

“where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” A precautionary approach could equally be taken with respect to the protection of human life or property. Article 3(3) of the United Nations Framework Convention on Climate Change 14 states that: “The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.”

⁹² Ibid

develop a more comprehensive and integrated approach towards floods and drought management at the local, regional and national levels.

(c). Identifying and providing collaboration mechanisms

Putting in place an integrated approach to floods and droughts management expects various roles to be played by a complex set of actors to ensure coordination and corporation across institutional and disciplinary boundaries. At government level whether national, regional or local, decision making must be coordinated such that decisions take account of any impacts on floods and droughts management and control.

This main-streaming of floods and droughts management might involve a number of government bodies for example those responsible for spatial planning and land use; drainage, building regulation, environmental conservation and impact assessment, meteorological and hydrological forecasting and warning, relief provision centers, information collection centers and other departments or centers concerned in one way or another in drought and flood management⁹³. For this liaison to work effectively, *it becomes necessary to have a legal framework that identifies these departments and collaboration mechanisms for the society to have effective response to floods and droughts occurrences*⁹⁴.

⁹³ Like the South African Disaster Management Act creates several department or centers dealing with disaster management like intergovernmental committee on Disaster management, National Disaster management centre, provincial disaster management centre and municipal disaster management centre.

⁹⁴ Ibid see also WMO, MWRMD, APFM "Strategy for Flood management in Lake Victoria Basin, Kenya" P.53

It has been recognized that relevant bodies concerned with floods and droughts management must be aware of their functions and role in flood and drought management and individuals must also be aware of their responsibilities, rights and powers with respect to flood and drought management whether at the planning stage, during flood and drought events themselves, or in the post-events appraisal process⁹⁵. Standards of performance along with clear definition of duties, rights and power of the various bodies and appropriate for their regeneration functions can all be set out in law. Similarly law can clearly establish detailed procedures and requirements regarding monitoring of compliance.

[d] Emergency responses and relief provision centres.

In emergency responses to droughts and floods the law has vital role to play in ensuring that the people who are likely to be affected are warned early enough before the calamity takes place. The effectiveness of flood and drought emergency warnings is governed by similar consideration, as the aim is to reach as many people as possible in the area that is expected to be affected. The success of flood and drought management warning is dependent upon their coverage and invisibility, as well as the ability of the population at risk to receive and adequately react upon a warning, in addition to the effectiveness of the action taken.

⁹⁵ Disaster Management Act No. 57 of 2002 sections 3-35

In this context the law has a role to ensure that body or bodies responsible for issuing flood and drought warnings have clearly defined responsibilities and the resources and technology commensurate with carrying them out. The law also has a role to clearly set out escalation procedures taking into account the magnitude of the event⁹⁶. The consequences of failing to issue, a warning, or issuing a late warning can only be clarified by law⁹⁷. On the same note legislative framework will also provide for relief provision centers and obligation on the government whenever disaster occurs.

[e] Decision Making and Communication Process

The law also has a role to play in decision making and communication process relating to the evacuation of areas in imminent danger of flooding or drought. The law should create procedure backed by provisions on Institutional authority or Institutional authority on Institutional level for the decision and equipping authorities with the legal means to enforces an evacuation order and maintain law and order in evacuated areas. Like, the law need to clarify the responsibility of the State in declaring emergency in the areas affected by these natural calamities.

Under statutory provision agendas concerned with providing flood and drought forecasts and warnings may be under a more general statutory

⁹⁶ This is set out in the South African Law, The Disaster Management Act.<http://san.dmc.pwr.gov.za>

⁹⁷ Ibid

obligation to publicize information relating to flood and drought risk or warning as part of the definite of their functions⁹⁸. Warnings must be in a language that the local population will understand, and must take into account literacy rates and the media available in the affected area.

From the foregoing it is clear that law can play active role in floods and drought management, major ones being establishing institutional frameworks, protecting rights and creating responsibilities and providing mechanisms for dispute settlement.

⁹⁸ Like South Africa National Water Act, 13, 1998 in 5. 145 for broad duties imposed on Water Management Institutions to make information regarding floods available <http://www.gov.za/>.

CHAPTER THREE

THE LEGAL AND INSTITUTIONAL FRAMEWORK FOR THE MANAGEMENT OF DROUGHT AND FLOODS IN KENYA:

3.1 LEGAL FRAMEWORKS

As mentioned in the previous chapters, Kenya is devoid of legislative framework purposely meant for the management of flood and drought. This has also meant that the few institutional frameworks that deal with floods and drought are established on *ad hoc basis* and operate by executive order without legislative foundation, for instance, the Disaster Risk-Reduction Programme and Arid and Semi-Arid Land Resource Management Project both operating under the Special Programs Ministry within the Office of the President. Most of the disaster response initiatives in Kenya have tended to be uncoordinated and short-term measures, mainly in the form of emergency relief services to the worst affected areas⁹⁹.

Decisions as to how to manage drought and flood before, at and post flood and drought period is normally made in *ad hoc* manner which has been reactive, and highly centralized. Such kind of programme have done little, if anything, to reduce the impacts of future droughts and floods, which are expected to occur with higher frequency and intensity

⁹⁹ Suda .A. Collete, Natural Disaster Preparedness, Environmental Degradation and Sustainable Development in Kenya. Institute of African Studies, University of Nairobi, July 2000.

which in practical application may substantially reduce flood occurrence in such designated areas. The Act also recognizes the need for community participation in the management of water resources and therefore provides that a water catchment management strategy is to provide public and communities to participate in managing the water resources within each catchment's area¹⁰³.

This Act empowers the Minister to formulate and publish National Water Resources Management Strategy for protection, conservation and controlling of water resources in Kenya¹⁰⁴. The Water Resource Management Strategy is to prescribe the principles, objectives, procedures and institutional arrangements for the management, protection, use, development, conservation and control of water resources¹⁰⁵.

In as far as controlling the floodwater is concerned, section 19 of the Act empowers the water resources management authority¹⁰⁶ to put up state schemes for the purposes of identification and development of a retarding basin for the control and management of floodwater or any other measures for its control for disposal.

¹⁰³ Section 15 (3) (c)

¹⁰⁴ Section (14)

¹⁰⁵ Section 13 (3) even goes far to provide for identification of areas, which should be designated protected areas and ground water conservation areas.

¹⁰⁶ A body corporate institution established by Section 7 of the Act.

Therefore by virtue of this provision the law recognize need to put up structural measures for controlling and management of flood water and the duty to do that may be undertaken by the government through the Ministry of Water¹⁰⁷. Water management is essential to disaster reduction be it natural or human induced disaster. Water is essential for human survival but at the same time when it is not well controlled it can cause flood, which can be very adverse to human life, property and environment.

It is worth to note that the Act defines water resources to include artisan basin or other body of flowing or standing water¹⁰⁸ and this has a great relevance to the flood control as by interpretation the flood water is part of water resources which the Act seeks to manage and control. However, as far as drought is concerned the statute leaves it at the discretion of the Minister to declare that a drought exists in a certain area. Section 2(2) provides that

“...a drought shall be deemed to exist in any area when the Minister upon such information as seems to him sufficient, by order published in the gazette declaring that drought exist in that area.”

Section 108 empowers the Minister where there is an exceptional shortage of rain or unforeseen circumstances a serious deficiency of

¹⁰⁷ Section 22 empowers the Minister concerned to construct and maintain upon any and such may deem necessary or desirable for the purposes of any state scheme.

¹⁰⁸ Section 2

water for essential domestic purposes; the Minister may declare a state of emergency among other orders¹⁰⁹.

3.1.2 Environmental Management and Co-ordination Act No. 8 of 1999

The Environmental Management and Co-ordination Act also has some relevance when it comes to the management and control of drought and flood in the country. The Act, which is meant to provide legal and institutional framework for the management¹¹⁰ of the environment can play a big role in addressing impacts of flood and drought on the environment. It has elaborate provisions for protection and conservation of the natural environment with respect to rivers, lakes and wetlands¹¹¹.

The Act recognizes the need for public participation in the management of environment and therefore makes principles of public participation a guiding principle to Courts when determining on environmental matters. As seen from the previous discussion flood and drought are two natural phenomenons that have adverse effect on environment as they adversely affect large population of people. Therefore for the management policies and mechanisms to be effective, people affected or likely to be affected must be involved to curb or minimize effects of these natural and

¹⁰⁹ Like ordering for supply of water to the areas affected.

¹¹⁰ See the preamble to the environmental management and Co-ordination Act.

¹¹¹ The Act defines wetland to means areas permanently or seasonally flooded by water where plants and animals have become adapted.

human induced calamities and therefore the provision of Section 5 which embodies the principles of Public participation is very important.

Section 42 of the Act protect rivers, lakes and wetlands which normally have a direct bearing on the occurrence of flood in Kenya and empowers the minister to declare any of such area a protected area. This is very important in controlling human activities in such areas, which may make such places more vulnerable to drought or flood. The Act provides that in doing that the interest of the communities' resident around the lakeshore, wetland, coastal zone or riverbank is taken into account.

The Act also provides for protection of hillsides, hilltops, mountain areas and forests so as to protect water catchments areas among other things¹¹². The state of the forests and management of wetlands plays a vital role in regulating the effects of floods and drought. Forest destruction has been on the increase as the human population increases which translate into the need for more land for cultivation and settlement. These are human induced factors with very adverse impact on the environment as large tracts of land are left bare for soil erosion and no water catchment areas that can reduce drought.

¹¹² Section 44

3.1.3 The Preservation of Public Security Act Cap 57

This legislation which is generally meant for the preservation of the public security defines preservation of public security in broad terms to include *inter alia* the provision of administrative and remedial measures during periods of actual or apprehensible national danger or calamity, or in consequence of any disaster or destruction arising from natural causes¹¹³. The relevance of this legislation in drought and disaster management cannot be underrated when it is put into action. The Act also recognizes the need to protect the fundamental rights and freedoms of individuals including the securing of safety of persons and property¹¹⁴.

It is well recognized that occurrence of drought and flood normally leaves behind mass destruction of property and loss of lives if the disaster is not well handled; this negates the rights, which are protected by this Act and the Constitution, the supreme law of the land. Some limitations, which can make this legislation not to be effective, are the requirements of the involvement of the institution of the President in making orders as to its operations¹¹⁵. This can sometimes make the response to be slow or not appropriate to the situation on the ground.

¹¹³ Section 2[g] of the Preservation of Public security Act Chapter 57

¹¹⁴ Section 2[b] and [c]

¹¹⁵ Section 4

3.1.4 The Physical Planning Act Cap 286

The purpose of this Act is set out in its preamble that is to provide for the preparation and implementation of physical development plans and connected purposes. It is useful in the management of drought and flood in so far as controlling human activities that contribute to the cause of these disasters. The act provides in Sec 5 that the Director shall advise the Commissioner of Lands and the local authorities on the appropriate use of land.

That Sec 25 gives the contents of PDP to include the manner in which land in the area may be used, while sec 29 (f) gives the local authority powers to reserve and maintain all the land planned for open spaces, urban forests and green belts. In section 36 there is provision for requiring an Environmental Impact Assessment.

The schedule of the Act gives specifics on what physical planning entails especially the conservation of the natural resources beauty of the area including lakes, inland waters, hill slope and bank of rivers.¹¹⁶ Therefore if the physical planning is properly carried out and the plans implemented accordingly, most of the human activities such as bad agricultural practices, deforestation, population and land imbalance would be controlled and or avoided thus reducing the risk of occurrence of these disasters. *It can be used as a proactive measure.*

3.1.5 The Chiefs Act (Chapter 128)

The Act, which states in its preamble that its main aim is to make provision in regard to the powers and duties of Chiefs. The statute in section 7 empowers a Chief to employ any person to assist in carrying out the duties imposed on the chief by this statute.

The most relevant provision of this statute that relates to management of natural and man-made disaster is section 12 which empowers the minister to authorize the chief to secure the assistance of any person to perform any work that is necessary to manage any fire, flood, earthquake, violent epidemic or epizootic disease or something that would endanger the existence of the whole or any part of the population.

The Act further provides that the Minister is to provide food, housing and transport to such kind of a person who helping in times of disaster and in addition, the person who renders such services in times of disaster is to be paid from the public funds. The limitation is that the Chief can only mobilize the community or people to work after getting a written consent from the Minister. And this can come later because of the channels involved. By virtue of section 13, the Act empowers the Minister by notice in the gazette to authorize any Chief to issue orders requiring people in the society to offer services for conservation of natural resources, but such work must be in the interest of the community and such persons shall be paid.

However, section 17 brings some limitation by empowering administrative officer to cancel any order issued by the chief or direct the chief to refrain from enforcing the order. Failure to comply with the order issued by the chief is an offence punishable by fine not exceeding Kshs. 500/=.

3.1.6 The Grass Fires Act Cap 327

This piece of legislation is meant to control grass fires. Section 3 prohibits setting fire to any vegetation¹¹⁷ without authority to do so unless the vegetation belongs to the person who is burning it. The law further requires every person who want to burn vegetation to give at least two days notice to all owners of adjoining land and the notice must be delivered by hand.

This statute by extension can be used to prevent burning of vegetation, which may cause environmental destruction resulting into drought or even flood in some areas. The statute makes it an offence to burn vegetation without authority and due notice to the occupier of the adjoining land.

The Act further empowers the local authority to order for the construction of firebreaks by the owners or occupiers of land situated in

¹¹⁷ The Act in section 2 defines vegetation to include any tree and any part thereof and any bush, shrubs, brushwood, undergrowth, grass crops and stubble.

some areas¹¹⁸ and can prohibit the burning of vegetation within any area it has declared a state of danger within its jurisdiction¹¹⁹. The statute can be used to prevent forest fires and any other fire that can destroy vegetation, which can result into drought because of the destruction of trees, or flood where the land is left bare.

3.1.7 The Land Acquisition Act Cap 295

This is another statute that can be used by the government to provide settlement for the people who are affected by floods or drought. Section 6 the minister in charge of land matters is empowered to direct the commissioner of land to compulsorily acquire any land to be used for public benefit. Such compulsory acquisition must be only for public benefit and full compensation must be paid to all persons who have interest in the land compulsorily acquired¹²⁰.

This statute can be of great assistance in resettlement of the people who live in areas prone to floods or droughts, which will help in reducing deaths and destruction of property caused by these natural and man-made calamities. The land can also be acquired to carry out activities that will facilitate the prevention of these disasters such as planting trees, construction of dykes or irrigation and any other related objectives.

¹¹⁸ See section 8

¹¹⁹ Section 11

¹²⁰ Section 8 of Land Acquisition Act

3.1.8 The Agriculture Act Cap 318

The Act sets out one of its role in the preamble as providing for conservation of the soil and its fertility with the accepted practices of good land management. Section 48 provides for preservation of the soil and its fertility. Under paragraph [1], whenever the Minister considers it necessary for the purposes of the conservation of the soil or the prevention of the adverse effects of soil erosion on any land, he may with the concurrence of the central agricultural board make rules for any or all of the following matters:-

- (a) Prohibiting, regulating or controlling... “The breaking or clearing of land for the purposes of cultivation, for the protection of land against storms, winds, rolling stones, floods or landslips and for the maintenance of water in a body of water within the meaning of the Water Act....”¹²¹

- (b) Requiring, regulating or controlling....‘Afforestation or reforestation of land, protection of slopes and catchment areas, drainage of land or controlling the use of land for any agricultural purposes’.¹²²,

The foregoing provisions of section 48 if properly applied would help in the management and control of floods and droughts as it provides for

¹²¹ Section 48 para [i] A, D

¹²² Section 48{b}

regulation of human activities of land use and in so far as human interference with nature contribute to drought and floods.

In part VIII of the Act is provision on ensured production of a sufficiency of food crops for the requirements of Kenya. If observed, the lack of food, which results after drought and flood, would be a thing of the past. This is because the country will produce enough from the areas conducive to feed other parts that are dry or flooded.

However it has its limitations as well. Under section 50-52 the orders cannot be made without consultations and they are subject to appeals. Secondly, it is restricted to agricultural land only. Further, the issue of food sufficiency production is still dependent on other factors such as good weather and availability of land.

It would also be worth to mention the role played by Lakes and Rivers Act¹²³. This statute, which is meant to regulate dredging and use of stream vessels on certain lakes and rivers¹²⁴ seeks to protect the riverbed and lakes from activities that would change the situations of the Lake or river without license from the minister concerned.

Other laws that may have some link to control and management of droughts and flood and particularly flood only provides for the

¹²³ Chapter 409

¹²⁴ See the preamble to the Act which appears to Lake Naivasha and River Ozi and Tana

construction of any work necessary for the protection and utilization of the water and soil¹²⁵ and particularly the Tana and Athi River Development Authority requiring the authority to coordinate Schemes which will allow utilization of water to the best advantage in addition to construction of any works necessary for the protection and utilization of water and soil¹²⁶.

3.1.9 National Disaster Management Bill, 2000

This bill has not been published from its inception though if it is and passed into law, it would contribute greatly to disaster management. In its preamble, it aims is to establish a Disaster Management Agency, to regulate its powers and functions and to make provision with respect to emergencies arising out of disasters. The Agency shall prepare a national disaster management plan to cover requirements for disaster management including prevention, mitigation, preparedness, response and recovery measures.¹²⁷

In part IV of the Bill, the Minister responsible shall ensure that adequate measures are taken by the Government agencies to prevent, mitigate, prepare for, respond to and recover from the effects of disaster; coordinate the activities of the government agencies carrying out their statutory functions, powers and responsibilities in taking such

¹²⁵ See The Lake Basin Development Authority Act Chapter 442. See 8 (9)

¹²⁶ See also The Kerio Valley Development Authority Act Cap. 441.

¹²⁷ Section 6(i) of the National Disaster Management Bill, 2000 (Not Published)

measures and foster and facilitate the participation of other agencies in measures taken by the government for disaster prevention¹²⁸.

The bill provides for the creation of a secretariat charge with the duties of facilitation; briefing the national disaster management committee on progress and major problems; warn the public of impending disaster and assess its effects in the country among others¹²⁹.

In sections 17 – 22 the system of management is decentralized from national level to committees at the provincial, district, city/municipal/urban council, local communities/families and volunteers' levels, setting out the part each committee is to play. This recognizes the fact that each and every person has a role to play in prevention and mitigation of disasters.

The Bill provides for establishment of Relief Fund and Trust Fund to meet immediate disaster needs and moneys required for the discharge of the liabilities of the National Disaster Management Agency.¹³⁰ The Fund is also to compensate any person injured in the cause of carrying out related duties of disaster prevention and mitigation.

¹²⁸ Section 8 *ibid*

¹²⁹ Section 16 *ibid*

¹³⁰ Part V of the bill, *ibid*

Finally, the bill provides for offences and penalties against a person who fails with its provisions. For instance, a person who without lawful excuse, fails to comply with lawful order given under the bill commits an offence and on conviction is liable to a fine of KShillings 110,000 or to imprisonment for 3 years or both.¹³¹It does recognize the role played by other laws and therefore provides that it shall not alter or affect provisions of other existing Acts¹³².

3.2 INSTITUTIONAL FRAMEWORKS

Sessional paper No.6 of 1999 on Environment and Development:

This paper outlines what the Government intends to do in as far as disaster management is concerned. The Government policy includes proposal to¹³³:

- a) Develop a comprehensive policy, legal, and institutional framework for managing disaster;
- b) Strengthen public awareness services on disaster response and management;
- c) Build capacity for disaster preparedness, response, and management;
- d) Install appropriate monitoring and early warning equipment areas prone to disaster; and enforce building standards for resistance to earthquakes;

¹³¹ Section 39, *ibid*

¹³² Section 43 *ibid*

¹³³ Government of Kenya, Ministry of Environmental Conservation, Sessional Paper No.6 of 1999 on Environment and Development.

- e) Support and encourage scientific studies on disasters and their risk management in order to avert or reduce their effects;
- f) Enhance regional and international cooperation in disaster management; and
- g) Develop and maintain inventories on zones prone to disasters
- h) Coordinate, establish and maintain a National Seismological Network under the Ministry responsible for environmental matters, to monitor seismicity, prepare seismicity maps and maintain an inventory of seismic data;
- i) Improve on building codes taking into consideration risk factors posed by seismicity and other natural hazards;
- j) Identify potentially geohazardous areas;
- k) Create awareness of potential geohazards; and
- l) Strengthen the capacity and preparedness of national institutions to respond to the occurrence of geological hazards.

With regard to the institutional arrangements that have been put up to manage drought and flood the situation is no better than the state of the legislation framework. The few institutions, which are there, operate within the respective ministries except for the Special Programme Ministry, which falls under the office of the President.

The ministry of State for special programmes as an institution that deals with management and control of natural disasters including drought

and flood was created in 2004. This institution is mandated to carry out the following programmes in disaster management initiations;

3.2.1 Disaster Risk Reduction Programme

This involves the coordination of the disaster risk reduction in the country through sustainable development policies, prevention, mitigation and preparedness. It also involves development and strengthening of institutions and mechanisms in the country that can contribute to the building of resilience to hazard¹³⁴. The programme also involves incorporation of risk reduction approaches into the design of emergency preparedness response and recovery programmes in the reconstruction of affected communities.

3.2.2 Arid and Semi-Arid Lands Resources Management Project

This Programme is aimed at dealing with among other things natural resources and drought management. The Natural Resource and Drought Management component is aimed at mitigating the impact of drought by strengthening the community capacity to manage natural resources.

The institution aims at putting up community level institutions to coordinate droughts, monitor information flow, mitigation and response to disasters. The policy making for the disaster management under this

¹³⁴ Daily Nation, 3rd May, 2007

institution lies on the Disaster Management Committee, which is also mandated to direct plans for disaster preparedness¹³⁵.

3.3 AN ASSESSMENT OF THE ADEQUACY OF THE LEGAL AND INSTITUTIONAL FRAMEWORKS IN KENYA

The position in Kenya concerning the legal and institutional arrangements in the management of drought and floods presents a jurisdiction where there is no clear approach in the management of natural disasters. From the foregoing chapter, the role of law as evidenced from the various statutes discussed is only limited to management of various resources like water, forest and environment in general and it is only by extension that these statutes can be said to be dealing with management of drought and floods.

The Kenya Constitution, which is the supreme law of the land, is silent on disaster management in Kenya. The same Constitution, which seeks to protect right to life and property,¹³⁶ fails to recognize that these fundamental rights can only be enjoyed in an environment where there are adequate measures in place to deal with environmental factors that may threaten their existence.

¹³⁵ See Mumma A.: Legal and Institutional Frameworks Relating to Disaster Preparedness And Emergency Response in Kenya, Draft prepared for the Institute for Law & Environmental Governance. (unpublished).

¹³⁶ Section 71 and 75 respectively

At least in some jurisdictions like India it has been recognized that right to life includes right to clean and healthy environment¹³⁷ which can only be obtained when factors that can adversely affect environment like drought and flood are dealt with appropriately and effectively. In this respect there is greater need for constitutional recognition of the state obligation in the management of natural disaster like drought and flood.

With respect to statute, although Water Act and Environmental Management and Coordination Act mention drought and flood in their provisions, they are devoid of measures meant to guide the existing institutions on how to address flood and drought situations. It is recognized that the legal liabilities and state obligation in drought and flood management can be clearly spelt out in the statutes as recognized in the South Africa Disaster Management Act.

The pre-flood and drought provisions may range from rules on data collection on land and rivers, laws establishing or streamlining flood and drought forecasting and warning system at different levels taking suitable structural measures and carrying out land-use planning before any havoc is caused. During floods, the law needs to provide for measures to be taken such as the evacuation of people and their belongings including animals.

¹³⁷ Olga Tellis and Others –v- Bombay Municipal Corporation and others ALR 1986. See also Article 21 of the Indian Constitution.

Water Act has some provisions that can be used to control the floodwater¹³⁸ but these provisions are more focused towards preservation of water as a resource than addressing problems, which may be caused by the floodwater. Although Section 19 of the Act recognized the need to identify and put up a state scheme for the purpose of controlling and management of floodwater, the law fails to put up non-structural measures meant to prevent or reduce the occurrence of flood in the first place.

There is no provision for pre-flood measures like whether forecast warning to the people likely to be affected by flood and provision of materials assistance to flood victims or rehabilitation on process for the flood victims. However, the position taken by Water Act should be understood from the point that the Act is mainly concerned with management of water resources and that include harnessing of flood water and not preventing or reducing flood impact¹³⁹. It is not appropriate for the flood/drought situations.

But in the absence of a legislative instrument dealing specifically with flood as a natural disaster this Act can be used to some extent to provide for structural measures like dams that can be used to reduce the negative impact of flood water and even to bring up positive use of flood water.

¹³⁸ Sections 11, 15, 13 and 22

¹³⁹ As clearly spelt out in the preamble to the Act.

The protection of water catchment areas provided for by the Act is very important as that can help in reducing drought in some areas, which are caused by deforestation. Although the Act recognizes the possibility of the occurrence of drought in Kenya it leaves it at the discretion of the Minister to declare that a drought exist in a certain area.¹⁴⁰ Here the law fails to provide what minister or the state is required to do after a place is declared to be affected by drought. Unlike the South African and India position there is no statutory obligation on the part of the state to offer relief food to the people affected by the drought. Equally the law fails to provide for appropriate measures needed to reduce the impact of drought like early drought warning, rehabilitation and assistance to people living in drought affected areas. The law also fails to provide for an Institution mandated specifically to keep the Minister informed about the whether pattern.

The Environmental Management and Co-ordination Act is equally devoid of specific provisions that are needed to address the flood and drought situations. As discussed from previous chapters, flood and drought normally have adverse impacts on environment but although this Act seeks to protect wetlands, rivers and lakes¹⁴¹.

It fails to provide for structural and non-structural measures, which can help mitigate the effects of flood and drought on the environment.

¹⁴⁰ Section 2 (2)

¹⁴¹ Section 42

The only institutional arrangement established to deal with flood and drought situations in Kenya operates within the ministry of special programmes as discussed in the previous chapter. However the shortfall with this institution is that it lacks legislative back up. The institution was created and operates not within a recognized legislation framework but as a department within a Ministry. This means that without statutory recognized functions and duties by this institution as far as management of drought and flood is concerned there is no basis upon which the institution can be held liable if it fails to act in a flood or drought situation or where it delays or poorly handles these situations.

Lack of statutory backup also means that the institution may not clearly know its defined role and boundary in its attempt to address flood or drought situation. Collorary to this is the absence of statutory relief fund meant to assist and rehabilitate the people affected by drought and flood.

Therefore this institution can only be left to share the little money that may be allocated to the Ministry of Special Programmes. Lack of clear legislative framework, which could provide for other policies and procedures also means that this institution might not have a clear integrated approach to flood and drought management. This also includes lack of proper coordination with other concerned ministries and stakeholders.

Effective and well-coordinated management of drought and flood in any given situation can only be of relevance when the people who are affected are involved. The India and South African natural disaster management laws recognize the role of community participation and therefore provide for their involvement.

The role of the State in coming up with an institution that is responsible for analyzing environmental data and reviewing the information between the socio-economic impacts of climate, drought and desertification so that the information can be used to make concrete action is also recognized at the international level at chapter 12 of the Agenda 21¹⁴² and Principles 9 and 22 of the Stockholm Declaration. In this aspect Government is required to strengthened the capacity of national institutions to carry out the above activities and this can only be possible where there is a clear legislative framework establishing the national institution and provides for framework that it operates like the institutions created by the South African Disaster Management Act discussed in the next chapter.

The important role of the state in drought management is also emphasized by Chapter 12:48 Agenda 21 which provides *inter alia* that.

In drought prone areas the Government is required to: -

¹⁴² Nicholas A Robinson Edn Agenda 21: Earth's Action Plan, IUCN Environmental Policy and Law Paper No. 27, P. 187.

- (a) Design strategies to deal with national food deficiencies in periods of production shortfall. Strategies, which should deal with issues of storage and stocks, imports facilities, food storage, transport and distribution.
- (b) Improve national and regional capacity for agro-meteorology and contingency crop planning. This deal with frequency, content and regional coverage of weather forecasts with requirements of crop planning and agricultural extensions.
- (c) Prepare rural projects for providing short-term rural employment to drought-affected households. The loss of income and entitlement to flood is a common source of distress in times of drought. Rural works help to generate the income required to buy food for poor households.
- (d) Establish contingency arrangements, where necessary for food and fodder distribution and water supply.
- (e) Establish budgeting mechanisms for providing at short notice resources for drought relief.

Principle 9 of the Stockholm Declaration recognize that environmental deficiencies generated by the conditions and under development and natural disasters pose grave problems and therefore needs financial and technological assistance to supplement the domestic effort of the developing countries. Principle 22 therefore requires states to cooperate

to develop the international law regarding liability and compensation for the victims of pollution and other environmental damage¹⁴³.

These are international obligations aimed at providing measures for drought management, which Kenya cannot shy away from. There is clear need for legislative framework through which Kenya can carry out its international obligation. As far as flood management is concerned the State's role to put in place structural and non-structural measures is clearly needed.

By virtue of provisions of Water Act, all water resources is vested on the state. Section 3 vests every water resource in the state and by extension floodwater is part of water resource although not clearly stated in the Act¹⁴⁴. This should also mean that the state should also be responsible for the management and control of floodwater so as to prevent or mitigate its adverse effect on population, economy and environment.

Some of the efforts that the Government has made in coming up with policies, though not very effective have also to be appreciated. In June 2006, the Government came up with the National Policy on Disaster Management which is aimed at providing *inter alia*, linkages between

¹⁴³ The United Nations Conference on Human Environment in Stockholm 1972 set the scene for international activities at the regional and global level and presents some of the most important soft law which have contributed immensely to the development on international Environmental law. see generally Malcolm Shaw, International law 4th Ed, Cambridge Univ. press, p.92-93.

¹⁴⁴Section 2 defines water resources to mean any lake, pond, swamp, marsh, stream, water courses, estuary, aquifer artesian basin or other body of flowing or standing water, whether above or below ground.

disaster management and national planning, establishing institutional framework to manage disasters and provide disaster management culture, training, research and information dissemination, community awareness and preparedness.

The policy paper defines disaster as a serious disruption of the functioning of a society or community causing widespread human, material or environmental loss, which exceeds the ability of the affected society or community to cope without outside intervention¹⁴⁵. A critical look at this policy document presents one of the best non-structural methods of tackling disaster; however this has not been effective. The recurrent floods in Budalang`i and other flood prone areas are still causing havoc unabated.

My considered opinion is that any policy however sound it may be can only be effective when it is founded or backed up by legislative measures. Policies, which are created in a vacuum with no legislative sanctions, are just paper ideas, which cannot be of great help to a country in times of disaster. The Government seems to have recognized this vacuum and therefore has come up with a Bill on national disaster management.

The Draft National Disaster Management Bill 2000 is still unpublished seven years since it was drafted. It defines a disaster as a natural or

¹⁴⁵ See Mumma A. *ibid*

human caused occurrence whether actual or imminent [such as drought flood, fire, storm, drought, earthquake, explosion or accident] which:

- [a] Endangers or threatens the safety or health of persons or animals in any part of the nation or
- [b] Destroys or damages or threatens to destroys or damage property or the environment in any part of the nation.

The Bill presents a positive step towards coming up with a legal framework that may make a major contribution in managing disaster in Kenya. As to its effectiveness or otherwise that will have to wait until when it will become law in the country. One wonders why this Bill has been pending for so long and this supports this researchers view that the government has not recognized that law plays a major in the management of disasters specifically drought and flood and the existing ones are inadequate and inappropriate.

CHAPTER 4

LEGAL AND INSTITUTIONAL FRAME WORKS IN THE MANAGEMENT OF DROUGHT AND FLOODS IN KENYA:

4.0 Introduction

Disasters and law are two vastly different topics, which at first glance appear entirely unconnected. However as the present chapter demonstrates, droughts and floods cannot be managed effectively without understanding the laws that apply, from local regulations to international treaties¹⁴⁶. To be able to appreciate the role of law in managing natural calamities like drought and flood in as far as establishing the rules and institutional frameworks that counter the effects of these natural calamities it would be pertinent to have a comparative study of the situation as it obtains in other jurisdictions as discussed below from the perspective of three countries in different continents. The following countries will be compared: - India, Japan and South Africa.

India represents a second world country with long history of natural and manmade calamities, drought and flood being the major ones and it is also one of the few Asian countries with several legislations dating as early as the 18th century which have put in place institutional framework to counter the effects of these calamities hence it represents

¹⁴⁶ APFM document no 2: 'Legal aspects of integrated flood management', Geneva Switzerland, January 2006

a very good comparative basis. Japan on the other hand is one of the most developed countries with recurrent flood situation. It has been able to put legislation measures that minimize the effects of the flood on its citizen.

South Africa is an African country with a fast track development on the legislative measures and such include laws that creates institutional framework that manage disaster such as drought and flood thus provide a good learning experience for Kenya.

4.1. INDIA¹⁴⁷

A series of international conferences and declarations over the last decade or so has emphasized the need for a comprehensive approach to flood and drought management including not only the structural measures but also non-structural measures such as land use regulation and guidance, disaster and warning systems and natural risk management systems, in harmony with the environment and different water uses¹⁴⁸. This holds true for India. This part of the research paper presents legal liabilities and state obligations in pre-flood and drought, flood and drought and post flood and drought situations in India.

¹⁴⁷ India has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions, floods, droughts, cyclones etc. About 60% of its landmass is prone to earth quakes, over 40 million hectares is prone to floods, and about 68% of the total area is prone to drought. In the decade of 1990 – 2000, an average of about 4344 people lost their lives about 30 million people were affected by disaster every year. see <http://www.wisdr.org/eng/mdsys.drr/national-reports/india-report/> ministry of home Affairs, Government of India.

¹⁴⁸ The Kyoto Ministerial Declaration 2003. Other examples include the Hague Ministerial Declaration, 2000, the International Conference on Water and Sustainable Development, The plan of implementation of the 2002 World Summit on Sustainable Development

The legal basis for the management of natural disasters and particularly flood in India is founded on the Constitution, which is the supreme law of the land, which provides that the primary responsibility for flood control lies with the States¹⁴⁹. Such a provision is lacking in our own Constitution meaning our law does not give it weight as in India.

The statutory state responsibility in flood and drought management can be classified in four distinct categories;

- [1] Drainage, canal and embankment works
- [2] Relief programme and embankment works
- [3] Demarcation of flood plains and land use control
- [4] Evacuation programme

4.1.1 Drainage, Canal and Embankment Works

All the states' legislations invest the state machinery with the duty to identify the areas that can be affected by floods and drought and require them to build embankments. **The Bengal Irrigation Act, 1876** mainly provide for the construction, maintenance and regulation of canals. The Act includes provisions for construction of flood embankments¹⁵⁰ and other drainage works.

¹⁴⁹ See Article 248 of the Indian Constitution read together with entry 97 in the Union list under the seventh schedule of the Constitution.

¹⁵⁰ Here flood embankments have been defined as any embankment constructed or maintained by the Government in connection with any system of irrigation works for the protection of lands from inundation or which may be declared by the state government to be maintained in connection with any such system and includes all grovees, spurs, dams and other protective works connected with such embankments, section 3 (4)

Under the Act the canal officer or any other person authorized by the canal officer is empowered to enter upon the land for examination and inquiry in connection with an existing or projected canal and flood embankment¹⁵¹.

As far as drought is concerned the statute provides for the construction, maintenance and regulation of canals and for the supply of water from them, including the fixing of a levy on water for this purpose. In the case of an accident happening or being about to happen to a canal or flood embankment, the canal officer is authorized to enter upon the land adjacent to such a flood embankment or canal and may execute any work necessary for the purpose of preventing such an accident or of repairing any damage done¹⁵².

During the entry or survey of the canal officers, if any damage is done to a crop, trees or building or other property the canal officer will tender compensation to the proprietor or occupiers¹⁵³. The Act also provides for prohibits the obstruction of any river, stream or natural drainage course. Whenever the state government believes that the obstruction has caused, or may cause injury to the public health, inconveniences to the public, or damages to any land irrigated by such a canal.

¹⁵¹ Section 33.

¹⁵² Section 35

¹⁵³ Sections 37 – 38 of the Act.

The Bengal Embankment Act, 1882: This Act provides for the construction, maintenance and management of embankment and watercourses. The Act vests certain powers in the collectors¹⁵⁴ such as:

- Removal or alteration of any embankment or obstruction of any kind which is likely to cause loss of property by interfering with the general drainage or the flood drainage of any tract of land;
- Construction of any sluice or watercourse or alteration or improvement of any public watercourse for the improvement of public health or protection of any village or cultivated land.
- Alteration of any road, which interferes with the drainage of any tract of land or construction of any watercourse under or through such a road.

The collector is required to prepare estimates of the cost of such works, including the cost of establishment charges¹⁵⁵. The Act also provides that any person desiring a sluice to be made in any public embankment for this purpose of drainage or irrigation, or a new embankment to be executed, or existing areas to be improved, repaired or enlarged may make an application to the collector who will then decide if the work is to be done¹⁵⁶.

¹⁵⁴ Section 7

¹⁵⁵ The collector is also required to prepare plans, specifications and survey maps depicting the boundaries of the lands likely to be affected by the above schemes.

¹⁵⁶ section 18

The Northern India Canal and Drainage Act 1873. This important piece of legislation is intended to regulate irrigation, navigation and drainage of all rivers, streams flowing in natural channels and all lakes and other collections of still water in the states concerned¹⁵⁷. The Act applies to flood control as is evident from the definition of drainage works, which includes escape channels from canals, dams, weirs, embankments, sluices or gynes and other works from the protection of lands from flood or from erosion, constructed or maintained by the state¹⁵⁸.

The Act empowers the State Government to prepare schemes for drainage works necessary for the improvement of any land, or for the protection from flood or other accumulations of water or from erosion by a river. The Act also empowers the state to prohibit the formation of, or remove any obstruction in any river, stream or drainage channel, whenever it appears that it has caused or may cause any damage to any lands or the public health, or inconvenience to the public.

The establishment of dams, embankments and drainage works require huge areas of land. The area requiring flood control works may or may not be in a government possession. In the realization of this there is a central enactment empowering the state governments and flood control commission to acquire land for any public purpose; namely the Land

¹⁵⁷ The Act also extends to other states like Uttar Pradesh, Punjab, Haryana and Delhi.

¹⁵⁸ Section 3 (3)

Acquisition Act, 1894. Most States laws like the Bihar Irrigation Act 1997, the Orissa Irrigation Act 1959 and the Assam Embankment and Drainage Act, 1954 all have references to the Land Acquisition Act for the purposes of acquiring land. This Act invests special powers in the District Collector to take immediate possession of any land in cases of emergency¹⁵⁹.

The Assam Land (Requisition and Acquisition) Act 1965 and the Wagaland (Requisition and Acquisition) Act, 1965 gives the respective states special powers to requisition land, if in the opinion of the state government, it is necessary.

- (a) For flood control and anti-erosion measures including embankment and drainage.
- (b) For providing land individually or in groups to landless, flood affected or displaced persons.
- (c) For giving such land to a registered society working for the rehabilitation of flood affected or displaced persons¹⁶⁰.

In 1997, the State of Bihar enacted the **Bihar Irrigation Act** to consolidate the laws relating to irrigation, embankment, and drainage, among others to ensure that there is enough water for irrigation purposes in order to prevent shortage of food due to drought. The Act

¹⁵⁹ Section 17 (a) of the land Acquisition Act, 1894.

¹⁶⁰ Section 3 of Assam and the Wagaland Acts

has provisions whereby the State Government may prohibit the formation of an encroachment on the river, stream or natural drainage course. The State is also empowered to remove the encroachments so formed¹⁶¹

4.1.2 Relief Programme and Rehabilitation

In India jurisdiction, certain laws provides for the establishment and maintenance of relief funds to be utilized on occasion of serious famine and distress caused by floods or other natural calamities in the state. These include the Andhra Pradesh Famine Relief Fund Regulation 1937, and the Bombay State Famine Relief Fund Act, 1958. Under all these laws, it is incumbent upon the state to establish a famine relief fund. Such funds are to be utilized only for the relief of famine and distress caused by serious floods and other natural disasters.

The Orissa Regulation mandates that every year the State Government shall place an amount of 87.5 million rupees to the credit of the Fund and the said expenditures shall be a charge on the consolidated fund of the state¹⁶². The Orissa regulation specifically adds that the Fund can also be used for construction or repair of embankments after serious floods¹⁶³. The 1936, Andhra Pradesh Act specifies that, if the fund

¹⁶¹Sections 16 – 17

¹⁶² Section 7 (2)

¹⁶³ Section 5 (iii) of the Orissa Famine Relief Fund Regulation, 1937

exceeds 4 million rupees¹⁶⁴, the government may utilize the excess to meet expenditure on protective irrigation works and other works for the prevention of famines. The funds can also be used for protective irrigation works, prevention of famines, granting of loans etc.

The Bengal Famine Insurance Fund Act, 1938 provides for the establishment and maintenance of the Bengal Famine Insurance Fund. The proceeds of the Fund are required to be spent on the relief of famine and diseases caused by serious floods and natural disasters, among other things¹⁶⁵. The initial contribution to the Fund is required to be made by the states¹⁶⁶. The Act further provide that if the amounts of the Fund made up at the end of the year show that the balance to the credit of the Fund falls short of 1.2 million rupees, the deficiency shall be made up by a contribution from the revenues of the State¹⁶⁷.

The United Provinces Acquisition of Property (Flood Relief Act 1948) was promulgated to provide immediate relief to flood affected areas. For that purpose it contains detailed provisions regarding immediate requisition and acquisition of land for building sites and building materials for the purpose of rehabilitation of flood affected people. This Act has a direct relevance both during floods and in post-

¹⁶⁴ Section 5

¹⁶⁵ Section 5

¹⁶⁶ The Act specifies that the initial amount required to be contributed by the state is 1.2 million rupees, (Section 4).

¹⁶⁷Section 7 of the Act

floods situations. The Act specifically provides that no order made in exercise of the powers conferred by or under this Act shall be called in questions in any Court¹⁶⁸.

The legal framework also provides for the rehabilitation of persons affected by flood and other natural disasters. The Bihar and Orissa Natural Calamities Loans Act, 1934 enables the State Government to grant loans to the owners of buildings, which have been damaged or destroyed by natural disasters¹⁶⁹. Under the Act the affected owner¹⁷⁰ is required to submit an application to the collector¹⁷¹. The collector, after proceeding in the prescribed manner, may grant the loan the collector is also required to determine the need for the loan, the adequacy of the security paid, the total amount to be advanced and details of the repayment among other things.

The Gujarat Disaster Management Act provides for effective management of disasters to mitigate their effects and for administrating, facilitating, coordinating and monitoring emergency relief during and after the occurrence of disasters. The Act defines disasters as including “actual or imminent event whether natural or otherwise occurring in any part of the state” and causing widespread loss or damage to property,

¹⁶⁸ Section 12

¹⁶⁹ See Paragraph 12 of the Act.

¹⁷⁰ The affected owner has been defined as the owner of a building which has been damaged or destroyed by an earthquake or other natural calamity (Section 2 (a))

¹⁷¹ Section 3 of the Act

human life and environment. The Act also seeks to provide for implementing and monitoring measures for rehabilitation and reconstruction in the aftermath of the disasters. This also provide for community participation in disaster management. It specifically provides for capacity building of the groups of local community to cope with any disaster.

The Act provides that community groups and youth organizations and voluntary organizations including Non-government organizations¹⁷² may assist the state in disaster management activities like capacity building, relief works and training activities. Interestingly, the Act makes the citizens duty bound to assist the Collector or the Commissioner in disaster management activities whenever their assistance is demanded¹⁷³.

4.1.3 Demarcation of flood plains and land use control

Various statutory provisions cast obligations on the state governments to construct flood control projects in various states and demarcation of flood plains. **The Orissa Hydro-Electric Projects and Flood Control Works (survey) Act, 1961**, provides for the survey and investigation of the sustainability of lands required for the establishment of flood control

¹⁷² Section 30

¹⁷³ Section 31

works. This Act defines flood control works as including all works and construction for the purpose of controlling floods¹⁷⁴.

In certain states, there is legislation providing for the levy of betterment contributions from the owners of lands who have benefited by flood protection works constructed by the government, Andhra Pradesh Irrigation (Levy of Betterment Contribution) Act 1955. The Bihar Act defines “flood protection works” as including embankments dams, barrages, sluices and other works constructed or maintained by the state government for the protection of building from floods and erosion¹⁷⁵.

The legal framework in India also recognizes the impact of flood plains on human habitation, roads. Industries, public buildings. In order to restrict these activities¹⁷⁶ the state of Manipur has enacted specific piece of legislation from this purpose, namely the **Flood Plain Zoning Act, 1978**.

¹⁷⁴ Section 2 (c) orissa hydroelectric projects & flood control works (sunny) Act, 1961.

¹⁷⁵ The Act makes a distinction between flood protection works in rural and in urban areas. In rural areas if the cost of the flood protection work is less than 500,000 rupees then no betterment contribution is to be charged. In the Andhra Pradesh Act the sum is as low as 150,000 rupees. These activities in the states of manifest has enacted a specific piece of legislation for this purpose, namely the flood plain zoning Act, 1979

¹⁷⁶ Generally speaking the flood plain should not be used for residential purposes or building construction or for public and social institutions like schools, hospital etc. However, Agriculture, especially cultivation of seasonal crops can be permitted.

This Act empowers the state to notify and demarcate the flood plain areas after proper survey and prohibit or restrict the use of land therein. The land use on flood prone areas is also restricted by legislative framework in such states. The Bihar Restriction of Uses of Land Act, 1948 empowers the State Government to declare any land to be “a controlled area” and prohibits any person to “erect or re-erect any building, or make or extend any excavation, or lay out any means of access to road in a controlled area bought with the previous permission of the controlling authority in writing¹⁷⁷.

Likewise the Calcutta Metropolitan Planning Area (Use and Development of Land) Control Act, 1965¹⁷⁸ provides for controlling the use and development¹⁷⁹ of land in the Calcutta Metropolitan Area. Under this Act, the State Government may declares an area as a controlled are if it thinks that the use and development of the land requiring to be controlled under the Act with a view to securing its many development. The Government is empowered to issue regulatory or prohibitory directions in relation to the controlled areas regarding matters such as use of land for agricultural, communal, industrial, residential or other purposes, the erection of buildings, land allotment for roads, gardens, or other purposes¹⁸⁰.

¹⁷⁷ See section 2 to section 6 of the Bihar Restriction of uses of land Act 1948

¹⁷⁸The Act extends to the whole of west Bengal.

¹⁷⁹The Act defines development to mean we carrying out of building, engineering, mining or other operations in, on or over, under land or the making of any material change in any building or land (S.2(e)).

¹⁸⁰ Section 4 of the Act.

4.1.4 Evacuation programmes

Apart from legally mandated relief assistance, drainage works and demarcation of flood plains another important aspect of flood management is the immediate evacuation of people from lands affected or threatened by flood. In the state of Uttar Pradesh a specific piece of legislation, the Uttar Pradesh Flood Emergency Powers Evaluation and Requisition Act 1951, provides for the protection of life and property from danger caused or threatened by floods¹⁸¹. The Act empowers the District Magistrate to take certain measures in cases of flood emergencies:

- To compulsorily evacuate people from land and property in areas threatened by floods.
- In order to accommodate the people so compulsorily evacuated, the district magistrate may take possession of any premises other than those used for religions worship and private dwelling houses.
- The district magistrate may also order requisition of boats¹⁸²
- The district magistrate may also order the diversion of the flow of flooded water or the removal of any wall, embankment or object which is causing obstruction to the flow of such water in order to prevent danger to life or serious damage to property in the Public interest.

¹⁸¹ See Preamble of the Act.

¹⁸² The Act also provides for payment of compensation to the person whose premises or boats have been requisitioned under the Act.

The foregoing statutes equip the state officials with wide powers during emergencies like flood. There are no specific qualifiers built into these statutes and judicial review is also circumscribed to a great extent. Besides, they also lay down an essentially “may” regime, leaving ample scope for administrative discretion.

The administrative agencies are required to act in a fair, just and reasonable manner. The Patna High Court in a case where ¹⁸³ land had been acquired for flood affected people who were rehabilitated elsewhere, held that if the purpose for which the land is to be acquired is not fulfilled, the acquisition is held to be incomplete. These provisions can help enable the administrative agencies to act diligently in a fair manner during floods or in post flood situations.

4.1.5 INSTITUTIONAL FRAMEWORKS

The institutional mechanisms carrying out response, relief and rehabilitation of the people affected by natural disasters generally have been well established in India since independence. These mechanisms have proved to be robust and effective in so far as response, relief and rehabilitation areas concerned¹⁸⁴.

¹⁸³ Ram Krishan Singh and others vs. State of Bihar Air 1995 Patna 73.

¹⁸⁴ See Disaster Management in India, Government of India Ministry of Home Affairs. <http://www.unisdr.org/eng/mdgs-drn/national-report/india-report>

At the national level, the Ministry of Home Affairs is the model ministry for all matters concerning disaster management. The Central Relief Commissioner (CRC) in the Ministry of Home Affairs is the Nodal Officer to coordinate relief operations for natural disasters. The CRC receives information relating to forecasting / warning of natural calamity from India Meteorological Department (IMD) or from Central Water Commission of Ministry of Water Resources on a continuing basis.

The Nodal Officer is responsible for preparing sectoral action plan / emergency support Function Plan for managing disaster. Then there is the National Crisis Management Committee, which gives directions to the government departments for specific action for meeting the crisis situation.

In the federal set up of India, the basic responsibility for undertaking measure, relief and rehabilitation are handled by institutions established by the state legislations under respective department of relief and rehabilitation. Some of the notables' institutions are: the requisitioning Authority established by the United Provinces Acquisition of property (flood relief) Act.

The authority comprises of the collector and an assistant collector. The Act empower the said Requisition Authority with a number of discretionary functions which may be taken for public purposes "Public

Purpose” for, land acquisition and requisition has been given a very specific meaning including only” provision of village sites or repair or construction of houses for persons affected by floods¹⁸⁵. Under this Act the Authority may take the following measures:

- Order the requisition of any land or building material by serving proper notice on the owner or the person in possession of the land or building materials. However, the land requisitioned¹⁸⁶ under the said Act can only be used only for the construction of houses or village sites for flood affected people.

The Act provides immunity to this Institution while carrying out its activities under the Act. It provides that no suit, prosecution or other legal proceedings may be laid against the requisitions authority or the compensation officer or any other person for anything which is done or intended to be done in pursuance of the Act¹⁸⁷.

In as far as flood plains are concerned the Flood Plain Zoning Act 1978 establishes the Flood Plain Zoning Authority. The Authority is responsible for carrying out the surveys of land and rivers and classifying the land with reference to relative risk and permitted land use, and publishing the result for references. The **Damodar Valley Corporation Act, 1948** also provides for the establishment of another

¹⁸⁵Section 2 (f) of the United Provinces Acquisition of property (Flood Relief) 1948

¹⁸⁶ Section 13

¹⁸⁷Section 12 of the DVC Act

institution, the Damodar Valley Corporation. One of the functions of the corporation is to promote and operate schemes for flood control, irrigation and drainage in the Damodar River and its tributaries, and afforestation to control soil erosion in the Damodar River¹⁸⁸. For that purpose it can take up the construction of dams and drainage canals. The corporation is mandated to prepare an annual report, in which the details of all activities taken up by the corporation shall be given, including flood lands¹⁸⁹.

Issues pertaining to interstate rivers are of immense significance for India as it is these rivers which are the main prime carriers of flood water in the country. In that backdrop there has been enacted the River Boards Act 1956 which establishes the River Boards for the Regulation Aid Development of interstate river valleys.

The Board consists of the chairman and other members as the central government may think fit. They should have knowledge or experience of irrigation, flood control, soil erosion etc they are empowered to tender advice to the interested governments include Promotion and Operation of Schemes for Flood Control, drainage, promotion of afforestation and prevention of soil erosion¹⁹⁰.

¹⁸⁸ Section 12 of the DVC Act

¹⁸⁹ Section 45

¹⁹⁰ Section 16 (d) (e) and (f) of the Act.

The State of Gujarat has Gujarat Disaster Management Act, which provides for effective management of disasters to mitigate their effects and for administering, facilitating, coordinating and monitoring emergency relief during and after the occurrence of disasters. The Act establishes the Gujarat State Disaster Management Authority¹⁹¹. This Authority consists of the Chief Minister as an Ex-Officio Chairperson and includes two other ministers, the Chief Secretary and the State Relief Commissioner¹⁹² among other State officers.

The Authority acts as a central planning, coordinating and monitoring body for disaster rehabilitation, reconstruction and assessment¹⁹³. It is also required to collect analyze and study the data on all aspects of disasters¹⁹⁴.

Every department of the State Government under the supervision of the State Disaster Management Authority is required under the Act to prepare a disaster management Plan, setting out the Strategies and procedures in the event of a disaster and fixing the roles and responsibilities of the department in respect of emergency relief and post disaster recovery and rehabilitation¹⁹⁵. The Act describes in detail the

¹⁹¹ Section 6 of the Gujarat Disaster Management Act, 2003

¹⁹² The State Government may appoint a State Relief Commissioner under the Act (Section 1). The Act also set out in detail the commissioner's powers and functions (sections 21-22)

¹⁹³ Section 12 (2)

¹⁹⁴ Sections 13

¹⁹⁵ Sections 5 (2) of the Gujarat Disaster Management Act, 2003

powers and functions of Local Authorities¹⁹⁶, State Relief Commissioner¹⁹⁷, Collector¹⁹⁸ and Chief Executive Officer¹⁹⁹ in the event of a disaster. It also fixes duties on the police force, fire services, home guards, civil defence²⁰⁰, public and private sector enterprises²⁰¹, and citizens²⁰².

In conclusion the foregoing study reveals that the legal regime seeking to address various aspects of flood and drought management reveals that different States have different laws dealing with wide range of issues from land use planning, compulsory evacuation to relief provision to the people affected by these natural calamities. In almost every State the law gives full powers to the State Government to undertake the required measures in any area whenever disaster occurs.

The study also reveals that the legal regime vest in the state officials powers to deal with natural calamities like identification of areas suitable for flood works, initiating the schemes for such works, requisite and acquisition of lands etc. which the laws dealing with structural measures have some space for involving people, especially by way of

¹⁹⁶ Sections 25 - 26

¹⁹⁷ Sections 20 - 21

¹⁹⁸ Sections 23 - 24

¹⁹⁹ Sections 20

²⁰⁰ Section 27

²⁰¹ Section 29

²⁰² Section 31

inviting comments or obligations and mandating service of notice to those affected, the laws with respect to rescue and relief for the victims of natural disasters gives complete powers to the state officials, such as under the United Provinces Acquisition of property (Flood Relief Act, 1948 or the Uttar Pradesh Emergency Powers (Evacuation and Requisition) Act, 1951.

4.2. JAPAN

Legislation on disaster management and particularly flood management in Japan has a long history. However, the social changes of modern days such as land use, habitation, urban development, devastation, climate change and other environmental impacts have brought new policies and even various pieces of legislation.

The River Law, 1896²⁰³ was the first to be enacted pieces of legislation against a background of flood disaster across Japan to be a model statute for public domain management.

This law was totally revised to strengthen the water use system as well as flood control, introducing the river administrator jurisdiction. The purpose of this statute is to contribute to land conservation and the development of the country and thereby to maintain public security and

²⁰³ This piece of legislation was totally revised in 1964 and last amended in 1997.

promote public welfare, by administrating rivers comprehensively to prevent damage due to floods, high tide etc, to utilize rivers properly, to maintain the normal function of the river water and to maintain and conserve the fluvial environment.²⁰⁴

The Meteorological Service Law was enacted in 1952 to ensure sound development of the national meteorological service through establishing a fundamental system of the service, and thereby to contribute to the enhancement of public welfare, by promoting the prevention of disasters²⁰⁵.

Another law, which provides for comprehensive disaster management is the Basic Law for Disaster Countermeasures²⁰⁶ for the purpose of protecting the land, the lives of citizens and their property. This law aims to establish the necessary systems through the state, local government and public corporations making clear their responsibilities and to provide for disaster prevention planning, preventive, emergency and restrictive measures, financial and banking support and other basic matters necessary for disaster countermeasures, and thereby arrange and promote a comprehensive and well organized disaster prevention

²⁰⁴ World Meteorological Organization, legal and institutional aspects of integrated Flood Management Case Studies. P. 41.

²⁰⁵ Ibid

²⁰⁶ Enacted in 1961

administration with a view to the preservation of the social order and the security of public welfare²⁰⁷.

Under the statute the state and local governments are particularly responsible for matters such as:

- Scientific research on disasters and their prevention as well as its actualization.
- Forest conservation, flood prevention and other matters relating to land preservation.
- Improvement of disaster forecasting and warning.
- Spreading of ideas about the importance of disaster prevention among other things.

Also there is the **Disaster Relief Law of 1947**, which was meant to give urgent relief by the state with the cooperation of local governments, the Japanese Red Cross Society and other organizations thereby to protect the soft wars and to maintain the social order. Actual aid mainly consists of surplus such as food and water and the cost is borne by the state.

Other statutes include Public Infrastructure Restoration Law²⁰⁸ for restoration of major infrastructure like roads, parks destroyed by major

²⁰⁷ Ibid

²⁰⁸ Enacted in 1951

disasters. Similar measures are stipulated for agriculture, forestry and fishery and for public school facilities²⁰⁹.

The Disaster Condolence Money Payment Law²¹⁰ stipulates payment of condolence money to the families of victims and to those seriously injured in mind or body by major natural disaster, which includes drought and flood and the giving of supporting loans to families who have suffered from natural disaster in general.

Under institutional framework, River Law establishes river administrators organization that determine the design flood discharge and other matters which provide the basis for the basic river management policy for river works and river maintenance for the improvement of the river.

The river improvement plan is designed to enable the integrated administration of rivers, with special consideration given to taking the measures necessary to prevent and mitigate damage for those areas where disaster frequently occurs owing to precipitation²¹¹, topography, geology and other conditions.

²⁰⁹ Law for loan reducing to Agricultural, Forestry and Fishery workers affected by Natural Disasters (1955).

²¹⁰ 1973

²¹¹ This is one of the major causes of drought

- To establish and maintain meteorological and seismological observation networks.
- To establish and maintain the centralized systems for forecasting and warning of meteorological prevention, tsunami and storm surge.
- To establish and maintain the systems of quick exchange of information relating to observations, forecasts and warnings of meteorological phenomena.
- To establish and maintain the systems of quick exchange of seismological and volcanological observations.
- To standardize the methods for meteorological observations and the announcement of their results.

4.3 SOUTH AFRICA

South Africa faces increasing levels of disaster risk. It is exposed to a wide range of weather hazards including drought, cyclones and severe storms that trigger widespread hardship and devastation. Droughts of varying extent are a regular occurrence in South Africa. The Climate is semi-arid with an average rainfall of nearly 500mm which is highly variable²¹².

The legal and institutional framework on Drought and Flood Management in South Africa is founded on the comprehensive

²¹² See Backeberg G. R. and Vilifoen M. F, Drought Management in South Africa; Paper presented at a Workshop of the ICID Working Group on Irrigation Under Drought and Water Scarcity. Tehran, I.R. of Iran, 13 – 14 July, 2003.

legislation governing disaster management, **The Disaster Management Act, 2002**²¹³ which was promulgated in January 2003. The Act provides for:

- An integrated and coordinated disaster risk management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, preparedness, rapid and effective response to disasters and post-disaster recovery.
- The establishment of National, Provincial and Municipal Disaster Management Centers
- Disaster Risk Management Volunteers
- Matters relating to these issues²¹⁴.

The main objective of this statute is to establish integrated institutional capacity within the national sphere to enable the effective implementation of disaster risk management policy and legislation²¹⁵. It is worth to note that this Act provides for a very broad definition of disaster to include both effects of drought and flood discussed in the foregoing chapters. Section 1 defines disaster to mean a progressive or sudden, widespread or localized, natural or human caused occurrence which: -

- (a) Causes or threatens to cause
 - (i) Death, injury or disease

²¹³ Act No. 57 of 2002

²¹⁴ As provided for, in the Preamble to the Act.

²¹⁵ Ibid

- (ii) Damage to property, infrastructure or the environment or
 - (iii) Disruption of the life of a community; and
- (b) Is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using their own resources.

The Statute goes far to define disaster management to mean a continuous and integrated multi-sectoral, multi-disciplinary process of planning and implementation of measures aimed at: -

- (a) Preventing or reducing the risk of disaster
- (b) Mitigating the severity or consequences of disasters
- (c) Emergency preparedness.
- (d) A rapid and effective response to disaster
- (e) Post disaster recovery and rehabilitation.

This Act approaches the disaster management by allocating a responsibility on the national executive to co-ordinate and manages disaster irrespective of where it occurs and develop national disaster management framework²¹⁶, which takes into account the recommendations of intergovernmental committee on disaster management²¹⁷ and public comments on the framework developed.

The National Disaster Management Framework must provide a coherent, transparent and inclusive policy and must inject a proportional

²¹⁶ Section 6, which provides that the Minister must provide a national disaster management framework.

²¹⁷ Section 7

emphasis on disaster of different trends, severity and magnitude that may occur in South Africa²¹⁸.

The Act further provides that emphasis must be given to measures that reduce the vulnerability of disaster prone areas, communities and households. In order to provide legal and institutional framework that would provide integrated approach to disaster management, which includes management of floods and drought, this statute establishes 3 level institutions at the provincial level, municipal level and national level. Each institution is given a direct responsibility, which it must carryout with respect to prevention, mitigation and management of disaster.

4.3.1 National Disaster Management

At the national level, the Act puts in place the National Disaster Management Centre²¹⁹ as an Institution within the public service with the main objective of promoting an integrated and co-ordinated system of disaster management, with special emphasis on prevention and mitigation²²⁰. This institution is composed of the head approved by the Minister and other employees of the state appointed by the Director

²¹⁸ Section 4 of the Act creates Intergovernmental Committee on Disaster Management which consists of the cabinet ministers involved in Disaster Management and the committee has a duty to advise and make recommendations to the cabinet on issues relating to disaster management and establishment of a national framework for disaster Management aimed at ensuring an integrated and uniform approach to disaster management in South Africa. See also S. 26.

²¹⁹ Section 8 (i)

²²⁰ Sections 9

General²²¹. This National Institution is empowered and obligated to do *inter alia*,

- (a) Specialize in issues concerning disaster management.
- (b) Monitor progress with post-disaster recovery and rehabilitation.
- (c) Make recommendation regarding the funding of disaster management.
- (d) Promote recruitment, training and participation of volunteers in disaster management.
- (e) Promote research into all aspects of disaster management.
- (f) Promote disaster management, capacity building, training and education in South Africa.

The institution is also obligated to develop a disaster database where information concerning disasters that occur or may occur in South Africa can be found. This includes information relating to early warning, prevention and mitigation, areas and communities vulnerable to disasters, emergency disaster response and indigenous knowledge relating to disaster management²²².

Section 20 of the Act, obligate the institution to assist communities, non-governmental organizations and individuals in prevention and

²²¹ Sections 10 and 12 of the Act

²²²Section 17

mitigation of disaster by determining the level of risk, increasing the capacity of communities to minimize the risk and impact of disaster²²³.

It must also classify and record disaster and give annual report to the minister of disasters that occurred in the year, effects, severity and the way the problems was addressed which report must be tabled in the Parliament within 30 days after receipt from the National Disaster Management²²⁴.

It is also worth to note that incase of a national disaster²²⁵ the Minister is mandated to issue directions concerning the release of any available resources of the national government to people affected, release of personnel organ of the state for giving emergency services, evacuation of people in affected areas and facilitation of response and post-disaster recovery and reliability and any step to facilitate national assistance.²²⁶

4.3.2 Provincial Disaster Management

At the Provincial level, the Act makes it mandatory for each Province to establish and implement a framework for disaster management aimed at

²²³It must also initiate development and implementation of appropriate prevention and mitigation methodology and Management of high risk development.

²²⁴ Section 24

²²⁵It is the Minister who has power to declare a disaster, a national disaster but the power must be exercised according to procedure laid by this Act.(Sections 26 and 27).

²²⁶ Section 27

ensuring an integrated and uniform approach to Disaster Management involving all sectors at the Provincial level²²⁷.

The Act then creates provincial disaster management centre at each province. This institution like national disaster management centre must promote integrated approach to disaster management, prevention and mitigation in the province, provide information centre on impending disasters and disaster management in the province. Initiate and provide funding and it must liaise with national disaster centre and municipal disaster management centre in performing its functions²²⁸. This institution is also required to provide prevention and mitigation measures to non-governmental organizations, communities and individuals in the province with the disaster²²⁹.

The institution is required to assess the magnitude and severity or potential magnitude and severity of the disaster and inform the national centre in addition to alerting disaster management role players in the province. It is also required to initiate the implementation of any contingency plans and emergency procedures applicable in the circumstances²³⁰.

²²⁷Section 28

²²⁸ Section 30 And 32

²²⁹Section 33

²³⁰ Section 35

Section 38 of the Act requires each provincial organ to prepare a disaster management plan setting out its role and responsibilities regarding emergency response and post disaster recovery and rehabilitation, its capacity to fulfill its role and responsibilities, particulars of its disaster management strategies and contingency strategies and emergency procedures in events of a disaster including measures to finance these strategies²³¹.

The Act also makes it a primary responsibility of the executive of a province to coordinate and manage provincial disasters that occur including declaring a disaster a provincial disaster²³².

4.3.3 Municipal Disaster Management

The Act creates the lowest level of disaster management at the municipal level. Each metropolitan and district municipality is required to establish and implement a framework for a disaster management in the municipality aimed at ensuring an integrated and informed approach to disaster management in its area²³³. The Act then creates municipal disaster management centre with similar functions like the national and provincial disaster management centre but now at the municipal level²³⁴.

²³¹ Section 38 and 39

²³² Section 40 and 41. The premier of a province is specifically mandated to declare a provincial state disaster.

²³³ Section 42

²³⁴ Section 43, 55

The Act requires the national, provincial and local organs of the state to financially contribute to responses efforts and post-disaster for recovery and rehabilitation and the national government may contribute to alleviate effects of local and provincial disasters²³⁵. For disaster management preparations, the Act requires a municipality to establish a unit of volunteers to participate in disaster management in the municipality²³⁶ and the registration of all volunteers must be maintained by the national centers.

Finally the Act makes it an offence in case of failure to comply with any measures made by national disaster management centre or by provincial or municipal disaster management centers, where such measures is meant to help in effective and integrated management of disaster²³⁷.

From this discussion on the comparative analysis, we can learn from them that they are a step ahead in terms of their legal frameworks for management of droughts and floods. For instance India has the duty imposed on the state and given a legal backing in their Constitution as well as the specific laws.

²³⁵ Sections 56 and 57

²³⁶ Sections 58

²³⁷ Section 60

From the South African jurisdiction, we see the Law establishing the institution from the national level to the municipal level, as well as setting their roles. They have also included the role of the community participation in prevention and management of disaster which totally lacking in our legal frameworks. Unlike our existing legal frameworks, the legal provisions in the jurisdictions discussed are specific on how to manage pre, present and post drought and flood situations.

CHAPTER FIVE

5.0 RECOMMENDATIONS

From the discussion in this thesis, it is clear that apart from natural factors, human activities also contribute to the occurrence of drought and flood. It is also true that laws are put in place to regulate human behaviour to bring order in society. It has been shown that law plays an important role for management of drought and floods by managing human actions that contribute to the causes of the disaster.

This research is of the view that the existing legal and institutional frameworks are inadequate and or inappropriate. It is evident that the law has not been applied in drought or flood prevention or control. What is evident are policy statements by government issued to manage the disaster in emergency situations. From the foregoing account in this research a number of specific recommendations have emerged. The adoption of these recommendations, it is hoped, will enable Kenyans not only to put up structural and non- structural measures meant to counter droughts and floods but also to ensure that law plays a very proactive role in the prevention, preparedness, mitigation, response to and recovery from these disasters.

5.1 Capacity Building / Creating Awareness: -

There is urgent need to build capacity technically and education of all

communities especially of those mostly affected by the drought and flood as well as the institutions established to deal with the two disasters. This can be a government mandate and volunteer group, which can be provided for in the legislative framework.²³⁸

In terms of capacity building of the communities, the relevant legal institutions need to be mandated by law to educate members of the communities commonly affected on the tips of the on set of either floods and drought and what they can do to prevent or manage the menace when it occurs.²³⁹ For instance, advice the flood victims to move to higher ground when heavy rains begin to fall, identify ways of engaging in bailer trade to help during drought situations. To generally synergies with members of the public, especially those in the catchment areas to avoid bad agricultural practices as well as deforestation.

The capacity of nearly all government institutions needs to be sensitized that they have a role to play in prevention and or management of drought and flood. This is because when these disasters strike their effect is felt in vast in all spheres of human and environment for which the government institutions are set to man.

²³⁸ The South African Disaster Management Act, 2002: sec 27 and 33 makes it mandatory for national and provincial disaster centres to carry out capacity building which includes giving guidance to the organs of the state, private sector, NGOs, communities and individuals on how to assess and prevent or reduce the risk of disaster.

²³⁹ Section 16 (7) of the draft bill 2000, the National disaster management secretariat to coordinate training and education for the staff of government NGO, volunteers and other local agencies involved in disaster management.

However the specific institutions dealing with the environment need to be technically, and financially equipped to improve on the enforcement and implementation of the existing laws for prevention of drought and floods. Some laws existing are not appropriate unless an extra input is added.

I say this because for instance most of our chiefs¹ are not aware that they can exercise their powers under section of the Chief's Act to order for planting of trees or supervise the cutting down trees. Further those officers who are informed do not have the means to enforce the laws hindered by absence of funds on transport.

5.2 Lobbying Parliament to pass Disaster Bill 2000 into Law

This Bill was drafted way back in 2000 however to date, it has not been published. Very few people including our Members of Parliament know very little or none on the relevance and importance of this law.

The passing of this Bill into law will add to and or better the management of disaster especially drought and flood as it comes with clearly set roles of what the institutions and the people affected can do. Further, our failure on disaster management has been contributed to by lack of specific law on it.

There has been laxity on implementation or enforcement of policies as the legal backing is spread out in various Acts of parliament. The persons to lobby should be environmentalists who are aware of the existence of this bill in support with any members of the public that will give their input to sensitize and put pressure on government to publish this bill. Lack of political goodwill also sometimes weakens the effectiveness or role of the law. The executive's input is thus very important

The existence of a law in South Africa vide the South African Disaster Management Act has shown that having a specific statute make law play an important role in prevention and management of drought and floods in a consistent, predictable and comprehensive manner.

5.3 Undertaking further Research and Networking: -

The causes of drought and flood keep changing. For instance last year (2006) several parts of Eastern and North Eastern province experienced such serious drought never experienced before.²⁴⁰ Likewise, floods this year (2007) affected many areas especially along the coast where it was associated to be a result of global warming.

These changes can only be prevented or affected if continuous research is conducted to keep up with new policies and or laws are updated to

²⁴⁰ Ibid p. 16

help slow down or stop some of the factors contributing to the changes. For instance, global warming is such a continuous process that no specific act/omission can be alluded to result into it. Further undertaking legal research would expand the knowledge on the role of law in managing drought and flood through publications in the media and Internet.

Research as well as networking is also important. We need to network both locally and internationally with other research institutions as well as learn from other jurisdictions on how they implement their laws to achieve the goals of prevention and management of droughts and floods.

5.4 Compensation: -

There is need to put in place a law that requires government to set up a fund to compensate victims of disaster. The draft bill 2000 supports this by creating relief fund and trust fund requiring contribution from government, donors and collection of penalties from individuals or institutions whose activities are deemed to endanger the environment thus a contributing fact to cause of drought or floods.²⁴¹

Such an institution if created will also help in the enforcement or implementation of laws for the prevention and management of drought

²⁴¹ In section 27 establishes the national disaster relief fund and trust fund.

and flood as well as improve the livelihoods of the persons affected and thus reduce their negative effects on human and the environment.

5.4 Strengthening/ Implementing existing laws (statutes)

There are sectoral laws discussed in this paper that can be made appropriate to empower the community, government and non-governmental organizations in disaster prevention. For instance, the Water Act 2002 need to be amended to empower local communities to be able to participate in flood prevention as well as being involved in disaster management strategies.²⁴²

Other statutes which need to be implemented include Chiefs Act to enable it empower the chiefs to help in training the people on disaster management methods and have access to government facilities that can be available within the division which can be used in disaster management strategy. These laws but are not actively applied towards disaster prevention and preparedness.

²⁴² Prof Mumma A.:An Analysis of the implications of Kenyas water Act for the Rural poor, paper presented at the International workshop on African Water Laws on 26 to 28 Jan 2005 Gauteng, South Africa. www.nri.org/waterlaw/workshop

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