



FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF LOCAL GOVERNANCE STUDIES

**1. AN ASSESSMENT OF FLOOD DISASTER MANAGEMENT
STRATEGIES AND THEIR EFFECTIVENESS. A CASE OF
TSHOLOTSHO RURAL DISTRICT**

BY

MACLEAR KHUMALO

(R122651W)

**A DISSERTATION SUBMITTED TO THE FACULTY OF SOCIAL SCIENCES IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS OF BACHELOR OF SOCIAL
SCIENCE HONOURS DEGREE IN LOCAL GOVERNANCE STUDIES**

SUPERVISOR: MR CHAKUNDA

ABSTRACT

The study presents the introduction of the research in chapter one, justification of the study, research questions and objectives are well articulated. Chapter two of the study consists of theories underpinning the disaster risk management. Conceptual framework in chapter two seeks to invite the reader to understanding various concepts and the language of the nature of disaster and methods used to reduce its impact on livelihoods of the people living in flood disaster areas. Disaster Risk Reduction theories are presented and their critics and their applicability in different countries (developed and developing) as they are not universally applicable. The fact that disaster risk management requires strong financial base put developing countries at stack because of financial constraints they face, they always look for external aid to play a major role in the process. In the long run the concept of dependency syndrome is proliferated and deepens the level of vulnerability. However if all stages of disaster risk reduction well undertaken effects of disaster can be reduced. That is to say if structural and non-structural disaster mitigation strategies are undertaken in good faith and with commitment and political will flood disaster impacts can be reduced. The study appreciate that flood disaster have catastrophic effects both in developed and developing world but their impact are worse in developing countries especially in Africa. The area under study is located in one of the poor provinces in Zimbabwe with poor quality of education let alone scarcity financial resources; this means the area is vulnerable to natural disaster because the socio-economic livelihoods of the inhabitants depend on natural resources to survive. Some of the research findings are that the people living in flood prone areas are adamant to vacate the place because it is fertile so subsistence farming is booming. Those willing to vacate the place are interested only to be resettled in fertile areas with water and other basic services because their socio-economic livelihoods depend on subsistence farming. Therefore the study among other solutions, recommends that development of infrastructure, community participation, effective early warning is necessary in Tsholotsho, District and in Zimbabwe at large.

TABLE OF CONTENTS

ABSTRACT	I
TABLE OF CONTENTS	II
LIST OF FIGURES.....	V
LIST OF TABLES.....	VI
DECLARATION.....	VII
LIST OF ABBREVIATIONS.....	VIII
ACKNOWLEDGEMENTS.....	IX
DEDICATIONS.....	X
CHAPTER ONE.....	page 1
1.1 Introduction.....	1
1.2 Background of the study.....	2
1.3 Problem statement.....	4
1.4 Research objectives.....	5
1.5 Research questions.....	5
1.6 Significance of the study.....	5
1.7 Scope of the study.....	6
1.8 Limitations.....	6
1.9 Delimitations.....	7
1.2.1 Summary.....	7
CHAPTER 2.....	page
2.0 Introduction.....	8
2.1 Conceptual framework.....	8
2.2 Disaster.....	8
2.2.1 Hazard.....	9
2.2.2 Vulnerability.....	10
2.2.3 Coping Capacity.....	11
2.2.4 Risk.....	11
2.2.5 Flood.....	12
2.2.6 Disaster Risk Management.....	12
2.2.7 Disaster Preparedness.....	13
2.2.8 Flood Vulnerability	13
2.2.9 Nature of Floods.....	16
2.3. Theoretical Framework.....	17

2.3.1 Complexity Framework.....	17
2.3.2 Sustainable Livelihoods Theory.....	18
2.3.3 Disaster Pressure and Release theory.....	20
2.3.4 Towards a Rights-Based Approach in Disaster Risk Reduction.....	21
2.3.5 Flood Disaster Management Case Studies.....	23
2.3.6 Disaster Risk Management at Global Level.....	23
2.3.7 Flood Disaster Management in Bangladesh.....	24
2.3.8 Floods Disaster Management in India.....	26
2.3.9 Disaster Management in Zimbabwe.....	27
2.4 Vulnerability Assessment.....	29
2.4.1 Political will.....	30
2.4.2 Community Participation.....	31
2.4.3 Evacuation.....	31
2.4.4 Early Warning.....	32
2.4.5 Infrastructural Development.....	32
2.4.6 Summary.....	32
CHAPTER THREE.....	page
3.0 Research Methodology.....	33
3.1 Introduction.....	33
3.2.1 Research Design.....	33
3.2.2 Population and Sampling.....	33
3.2.3 Research Instruments.....	35
3.2.4 Data Collection Procedures.....	36
3.2.5 Data Presentation and analysis procedures.....	36
3.2.6 Editing.....	36
3.2.7 Classification of Data.....	36
3.2.8 Data entry.....	36
3.2.9 Conclusion.....	36
CHAPTER FOUR.....	page
4.0 Data Presentation and Analysis.....	37
4.1 Introduction.....	37
4.2.1 Demographic data for Respondents.....	37
4.2.2 Years of experience of CPU respondents.....	37
4.2.3 Levels of educations of the respondents.....	38

4.2.4 House and property destruction as a result of floods per village.....	39
4.2.5 Vulnerable groups.....	40
4.2.6 Legislation awareness.....	41
4.2.7 Effects of Floods.....	42
4.2.8 Sources of information regarding flood disaster cases.....	42
4.2.9 Satisfaction of institutional capacity by CPU members.....	43
4.3 Early Warning.....	43
4.3.1 Community Participation in Disaster Risk Management.....	44
4.3.2 Respondents willing to vacate flood prone areas.....	44
4.3.3 Objectivity in disaster relief and resource distribution.....	46
4.3.5 Participation in infrastructural development without reward.....	46
4.3.6 Solutions to flood disaster.....	47
CHAPTER FIVE.....	page
5.0 Summary, Conclusion and Recommendations.....	48
5.1 Introduction.....	48
5.2 Conclusion of Research.....	48
5.2.1 Recommendations.....	49
REFERENCES.....	53
APPENDICES	
APPENDIX 1.....	57
APPENDIX 2.....	59

LIST OF FIGURES

Figure: 4.4 Levels of education of the respondents

Figure: 4.5 Houses and property destruction due to flood disaster

Figure: 4.6 Vulnerable groups

Figure: 4.7 Respondents aware of the civic right to protection against disasters

Figure: 4.2.1 Satisfaction of CPU respondents in terms of institutional capacity for DRM

Figure: 4.2.4 Respondents willing to vacate flood prone areas

Figure: 4.2.5 Objectivity and fairness in resource distribution in response to flood disaster

LIST OF TABLES

Table: 4.2 Demographic data for respondents

Table: 4.3 Years of experience by CPU respondents in their organisations

DECLARATION

I Maclear Khumalo registration number R122651W, hereby declare that the work contained in this research is the result of the author's original work it is submitted for the Bachelor of Social Science Honours Degree in Local Governance Studies, at Midlands State University, Gweru, Zimbabwe. To the best of my knowledge, it has not been submitted before, for any degree or examination in any University.

Date.....

Name..... Signed.....

LIST ABBREVIATIONS AND ACRONYMS

CPU	CIVIL PROTECTION UNIT
CDERA	CARIBBEAN DISASTER EMERGENCY RESPONCES AGENCY
DCPC	DISTRICT CIVIL PROTECTION COMMITTEE
DRM	DISASTER RISK MANAGEMENT
GWP	GLOBAL WATER PARNERSHIP
HFA	HYOGO FRAMEWORK OF ACTION
MDG	MILLENIUM DEVELOPMENT GOALS
UNDP	UNITED NATIONS DEVELOPMENT PROGRAMME
<i>UNISDR</i>	<i>UNITED NATIONS INTERNATIONAL STRATEGIES DISASTER REDUCTION</i>
<i>USAID</i>	<i>UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT</i>
<i>ZDF</i>	<i>ZIMBABWE DIFENCE FORCES</i>
<i>ZINWA</i>	<i>ZIMBABWE NATIONAL WATER AGENCY</i>
<i>ZRP</i>	<i>ZIMBABWE REPUBLIC POLICE</i>

ACKNOWLEDGMENTS

Special thanks to the Omnipotent, Omnipresent, Almighty God for the wisdom, tenacity and resilience that enabled me to carry out the research. I owe a great debt of utmost gratitude to my supervisor Mr. V. Chakunda for his unwavering academic guidance throughout the research project. My further acknowledgements for the support in my research are due to my valued respondents from Tsholotsho District, ward six community members and District Civil Protection Committee members.

Assistance from friends and colleagues is highly appreciated in the carrying out of the research. Last but not least, I would like to express my sincere appreciation and profound gratitude to my family members whose names cannot be uttered without deepest emotions and reverence; the Khumalo family, my father and mother for their financial support and encouragement they provided throughout the research. Without the help of these afore mentioned individuals the research project would have been ill-advised and poorly equipped. In fact it might not have happened at all.

DEDICATIONS 1

Dedicated to my family; daddy, mum, Hazel, Charlotte and Lindokuhle 'Spinoza' Mkhaliphi Khumalo

CHAPTER I

INTRODUCTION

1.0 INTRODUCTION

The floods disaster occurrence worldwide has been attributed to many factors, both human and natural. Natural changes as well as those brought on by development activities affect flood plains and there is a need to understand and identify appropriate development and natural resource management practices for the affected areas (Pawaringira 2008). In Tsholotsho District, short-term incessant rainfalls are the main cause of floods and they have been an anathema to human socio-economic livelihood causing gross suffering and starvation both to human and domestic animals. All this is attributed to ineffective disaster risk management strategies by the responsible authorities who are more reactive than proactive and lack resources. However many scholars are in congruity that it is hard to stop floods from occurring but their impact can be reduced if necessary measures are being taken faithfully.

The study will go further to analyse the legal framework on disaster and its impact on disaster risk management as well as the Local Government, Public Works and National Housing ministry mandate in tackling all civil protection matters. The role of other government departments and private organisations will also be appreciated in the study as they play a very crucial role in disaster risk management process. It is at the core of the study to identify and give solutions to ameliorate the problems associated with flood occurrence in Tsholotsho as well as analysing the existing structures and mechanism, their effectiveness, relevance and significance in stopping the wrath of flood which is inimical to development.

1.1 BACKGROUND OF THE STUDY

Tsholotsho is one of the seven Rural Districts Councils in Matabeleland North Province located in the North-western part of Zimbabwe. In terms of climatic conditions the district falls under region five, receiving on average 650 mm per annum (Rusike et al 2004 quoted in Pawaringira 2008). This is anecdotal evidence that the area under study is drought prone on the other hand incessant and erratic rainfall usually precipitate in summer time causing the prevalence of floods. To make matters worse flood occurrence coincides with ploughing season, thereby adding salt to the wounds by destroying both crops and infrastructure. The socio-economic position of Tsholotsho is based on subsistence farming and Diaspora for employment. Mostly women suffer

directly the most in terms of natural disasters where as men are affected indirectly as they are employed in neighbouring countries namely South Africa and Botswana.

Zimbabwe has experienced flood disaster over the past years amongst other flood disaster prone countries worldwide such as Bangladesh, India, and Pakistan etc. Integrated Flood Management in Zimbabwe (2004) cites two types of floods that usually occur in Zimbabwe; seasonal flood that occur normally in January or February at the peak of rain season and cyclone induced flood that occurred in 2000(cyclone Eline) and cyclone Japheth which caused flooding in Guruve and Muzarabani area. These floods caused gross human suffering in the areas mentioned.

Scientifically flood occurrence can be attributed to drainage patterns and the soil type. Poorly drained soils are easily hit by floods. Flood prone areas in Tsholotsho are located in Kalahari Sands and land is used for agriculture with millet, sorghum and maize being the main crops being planted (subsistence farming). Meyers et al quoted in (Pawaringira 2008) asserted that soils in the rest of Tsholotsho area are mainly derived from felsic (gneissic) rocks giving rise to Kalahari Sands. There are two common rivers in Tsholotsho, Gwayi River which flows northwards to Zambezi River and Manzanyma River flowing into Botswana.

Tsholotsho District is located in flat terrain and the causes of floods has been attributed to siltation of streams and rivers, incessant rainfalls, poor cited settlements for example in ward 8 Gariya and Butabubili located in floodway, spilling of dams (Dam Gariya) and ward six. In 2000-2001 during rainy season flood disaster occurred in ward six and destroyed crops and vegetation, houses destroyed, domestic animals such as goats and poultry drowned to death. Ward 12 also succumbed to flood disaster in 2005 and early 2011 and houses and crops destroyed. Ward eight recently suffered from flood occurrence in early 2014 as a result of spilling of dam Gariya and incessant rainfall and also destroyed houses and crops and claimed one life. Disaster reduction methods have been employed including considering re-locating the affected communities but people in those respective communities seem to be adamant due to cultural and traditional thinking that vacating those places will be tantamount to abandoning their ancestors.

Therefore, having said this, it is clear that the impact of flood disaster is undesirable and catastrophic therefore measures to reduce its negative impact need to be given full attention it

deserves. This calls for multi-sectoral approach in a bid to prevent and minimise the impact of floods disaster using a holistic approach and implementation of disaster management strategies inter alia, structural and non-structural mitigation strategies, disaster prevention, disaster preparedness, risk management, response/reaction, disaster recovery and salvage. Structural measures include construction of physical or hard infrastructure, i.e dams, fire guards and terracing whereas non-structural strategies include crop diversification, drought resistant crops, building codes, forecasting and warning.

The aforementioned aspects serve as a backdrop of the study as they are the main pillars in which disaster management hang on. It is worth noting that in disaster risk reduction endeavour, each and person in the country has a role to play especially the affected communities should be fully included in policy formulation, implementation and monitoring and evaluation. Top-down approach is likely to yield unfruitful results because it does not foster full participation and ownership of disaster management tools and policies by the victims.

1.2 PROBLEM STATEMENT

There is much concern that despite the disaster risk management being strategies designed and implemented in Tsholotsho, floods continue to negatively impact on the development of the affected communities. Destruction of crops, vegetation, loss of lives, loss of livestock just to mention a few experienced over the years in Tsholotsho and more recently last year in 2014 makes the existing disaster management strategies questionable especially the Meteorological department responsible for weather forecast and early warning. As such, costs have mostly been confined to damaged livelihoods, hence responses to such disasters have largely been reactive than proactive since disaster management is largely biased towards emergency response rather than mitigation (Madamombe, 2004).

It appears that there is lack of political will in terms of response to flood disaster in Tsholotsho and bureaucratic reporting structures seem to create a problem because it delays the declaration of flood hazard as a disaster. Therefore the gist of the study will be deeply imbued in discovering faults in the existing disaster management strategies and finding possible solutions that will see CPU go a long way in ameliorating the impacts of the flood disaster in Tsholotsho. In addition in most developing areas especially in Africa there is a syndrome of reactivity in responding to

disaster to the extent that much responsibility is given to humanitarian organisation thereby perpetuating donor syndrome and reducing the states to mere charity cases.

1.3 RESEARCH OBJECTIVES

- To analyse the impact and effectiveness of the disaster mitigation strategies that have been employed in Zimbabwe at district level.
- To examine the capacity of Civil Protection Unit in disaster risk reduction and management in Zimbabwe.
- To address the loopholes and gaps existing in Civil Protection Unit strategies reducing the impact of flood disaster in Zimbabwe at district level.
- To identify the most vulnerable group at community level
- To assess the influence of politics and the provisions of legal framework in Civil Protection matters

1.4 RESEACH QUESTIONS

- How effective is the Civil Protection Unit in risk disaster reduction?
- What are the causes of the failures of CPU in civil protection matters?
- Are the affected communities given room for full participation in policies that seek to reduce the impact of floods in their respective areas?
- Does the people living in flood prone areas willing to vacate the areas?
- What is the best solution for the challenges faced in flood disaster management?

1.5 SIGNIFICANCE OF THE STUDY

The research is of paramount importance to the Tsholotsho flood prone communities as well and to Civil Protection Unit because it seeks to establish loopholes in the processes and mechanisms that have been put to place in flood management in Tsholotsho. The approach being used in disaster risk management from policy formulation to implementation will be deeply examined. The study also seeks to expose the civil protection authorities to the significance of prioritising and adoption of Internet Communication tools for forecasting in line with Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim-Asset) on electronic governance (E-Governance).

In addition the research is aimed at raising national consciousness in making disaster risk management a national priority not only on paper but practically. More importantly is disaster preparedness and resilience to build and maintain a sustainable coping capacity though not taking anything away from response when disasters occur. A more sustainable holistic disaster management system is deemed to be the best way to go. The study also touches on the importance of a viable vulnerability assessment to locate the marginalised groups in society who are prone to flood disaster and taking action against negative results discovered. Communities who are sidelined politically, socially and economically because of their geographic location or political stance will be discussed. Top-down approach is vilified in the study and community participation in disaster management should no longer be rhetoric and a suitable environment for community based disaster management should be created.

Although the economic situation of the country is trailing but a platform for a source of funds generated at community level must be put in place to counteract subsidy and donor syndrome and encourage self reliance. Proper management of financial and material resource distribution should be forged to ensure that resources are committed to those who are in dire need of assistance. The information gathered will go a long way in assisting civil protection responsible authorities in mapping and adopting of new ways of tackling flood disaster.

1.6 SCOPE OF THE STUDY

The study is concerned more on analysing the effectiveness of the existing disaster risk reduction methods and disaster mitigation strategies in Tsholotsho. The following are the issues to be discussed fully in the study:

- Strength and Weaknesses of the civil protection unit strategies relating to floods.
- The role of the inhabitants of the affected communities
- The most affected group in a community
- Impact of international or regional disaster risk reduction organisations and how Zimbabwe has managed to implement strategies propounded by international organisations.
- legal framework and the relevance of local government in disaster mitigation

1.7 LIMITATIONS

The following challenges were encountered by the researcher:

- Primary sources were hard to access and elicit information because that some of the information is confidential especially the political influence in disaster risk management.
- Financial problems exerted pressure in the carrying out of the research; transport costs to remote areas coupled with lack of transport due to poor roads were a bit problematic.

1.8 DELIMITATIONS

The research targeted groups included traditional leaders, ordinary people, District Civil Protection Unit Committee, and other government departments and line ministries involved civil protection matters. CPU members were easily accessible and provided valuable information and community members showed keen interest in answering interviews.

1.9 SUMMARY

The above chapter is focused on the introduction to the study and background of the research topic, the statement of the problem, the objectives that this study is seeking to achieve, the research questions that the research is seeking to answer, reasons justifying the research, limitations that the researcher might encounter and lastly the delimitations. The following chapter focuses on reviewing literature relating and provide various scholarly material, case studies and theories in disaster risk management.

CHAPTER 11

LITERATURE REVIEW

2.0 Introduction

The chapter seeks to establish conceptual and theoretical framework pertinent to disaster risk management. Focus will be put on assessing case studies of other countries around the globe on flood disaster management and how they have managed to tackle their impact. Various scholars and articles shall be cited in this chapter, their views are essential in understanding flood disaster management and disaster in general.

2.1 Conceptual Framework

2.2 Disaster

Khan (2008) asserted that the term disaster owes its origin to the French word “Desastre” which is a combination of two words ‘des’ meaning bad and ‘aster’ meaning star. Thus the term refers to ‘Bad or Evil star’ (Khan 2008). The above definition only communicates the negative or adverse effects but does not give the whole process of what lead to disaster. Disaster according to United Nations International Strategy for Disaster Reduction (UNISDR) (2002) entails a serious disruption of a functioning community or a society involving wide spread human and material environmental losses and impacts which exceed the ability of the affected community to cope using only its own resources. In this regard disaster is any natural or human caused event which causes gross suffering to humanity and impact negatively to the environment to the extent that it surpasses the level or capacity at which the affected community can cop using its own resources to reduce or survive its catastrophic ramifications.

USAID (2011) points out that disaster impacts may include loss of life, injury, disease and other negative effects on human physical, mental and social well-being together with the damage of property ,destruction of assets , social and economic disruption and environmental degradation. Floods can impact negatively on socio-economic development of the immediate community and environment of a country at large (Pawaringira, 2008). Mozambique Disaster Recovery Framework (2014) describe disaster as an event that disrupt normal life, causing physical damage and loss to property and infrastructure, and possibly causing emotional trauma and loss of livelihood to impacted communities. Disaster in this case is viewed as an inimical

phenomenon that is undesirable and an anathema to humankind. Infrastructural destruction, environment depletion, loss of life etc are the problems brought about disaster. According to National Emergency Management Committee of Australia (2010) disaster is a serious disruption in a community, caused by the impact of an event that requires a significant coordinated response by the State and other entities to help the community recover from the disruption. Disaster need to be explained in the context of variables that lead to it. United States Agency for International Development (USAID) (2011) asserted that disaster can be determined by presence of three variables: hazards (natural or anthropogenic): vulnerability to hazard; and a coping capacity linked to reduction, mitigation and resilience to the vulnerability of a community associated with the hazard in question. Therefore Khan (2008) is of the view that a disaster happens when a hazard impacts on the vulnerable population and causes damage, casualties and disruption. It is paramount to the study to understand the following concepts and how they relate to each other: disaster, hazard and vulnerability.

2.2.1 Hazard

Hazard is a potential of an event be it human induced or naturally caused to result in serious intensive negative consequences to the people and to the environment in general. A very comprehensive definition of a hazard developed by UNISDR (2009) which conceptualised it as a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage , loss of livelihoods and services, social and economic disruption , or environmental damage. In this regard disaster owes its existence to the level or impact of a hazard occurrence and a degree of exposure of a community to a potential damaging hazard that surpass the community's capability to cope using its own resources. Hazard then become a disaster when it negatively impact on human socio-economic life in such a way that it exceeds their capacity to survive using their own resources.

It is worth noting that the causes of hazards are both human and natural. Khan (2008) pointed out that natural hazards are hazards which are caused because of natural phenomena (hazards with meteorological, geological or even biological origin). For instance, cyclone, volcanic eruptions and tsunamis are classic examples of natural caused disasters. According to Khan the socio-natural hazards and floods are one of them because their causes are both natural and human induced. Manmade hazards are hazards which are due to human negligence. Manmade hazards

are associated with industries or energy generation facilities and include explosions, leakage of toxic waste, pollution, dam failure, wars or civil strife, etc (ibid).

2.2.3 Vulnerability

Khan (2008) defined vulnerability as “the extent to which a community, structure, services or geographic area is likely to be damaged or disrupted by the impact of particular hazard, on account of their nature, construction and proximity to hazardous terrains or a disaster prone area.” The area under study is vulnerable to flood disaster because of its proximity to Gwayi River. Wisner et al (2003) states that vulnerability involves a combination of factors that determine the degree to which someone’s life, livelihood, property and other assets are put at risk by a discrete and identifiable event (or series or ‘cascade’ of such events) in nature and in society. Therefore vulnerability can be understood as the condition of people that enables a hazard to become a disaster (Tapsell 2010). This implies that vulnerability is viewed in the context of one’s capacity or economic position to react to a potential damaging event in given situation. USAID (2011) categorized factors that form the bases of vulnerability; socio-economic, physical and environment factors. Poor economies for instance in rural areas where shelters are mostly built using mud and grass such structures are easily affected by floods whereas in urban areas houses are built using cement which is much stronger than mud in this case rural areas are more vulnerable to flood disaster because of their dependency on natural resources.

In addition the influence of politics can determine vulnerability of a constituency in the sense that people who reside in politically incorrect constituencies are more vulnerable in missing out on developmental programmes. Pawaringira (2008) considers vulnerability as the degree of loss resulting from a potential phenomenon or the impact of hazard has on people, infrastructure and the economy. In this case vulnerability depicts the degree of exposure of a potential damaging hazard to the community. Therefore the effects of a disaster are determined by the extent of a community’s vulnerability to the hazard (USAID, 2011). Disaster then becomes an outcome of an arrangement, equation or combination of hazards, conditions of vulnerability and lack of capacity or ability to muzzle the potential negative consequences of risk using available resources.

It should be noted that vulnerability can be calculated before and after a hazard occurrence, that is to say the capacity of a community at risk of a potential damaging event can be perceived before the event through vulnerability assessment. It could be the economic situation of the place obviously remote rural areas are vulnerable to disaster because they depend on natural resources to survive. Vulnerability after the occurrence of a hazard is determined by the amount of resources committed in response to a hazard. In this case Tapsell (2010) vulnerability can also be defined in terms of the likelihood of the outcome of the losses of a system measured in the form of economic or human life losses.

2.2.4 Coping Capacity

Betera (2011) describes coping capacity as a combination of strengths, resources, skills, or knowledge available within an individual, community, society, organisation or country to reduce illness, disability or death or death from hazards and promoting health, safety and security. According to Khan (2008) capacity can be defined as “resources, means and strengths which exist in households and communities and which enable them to cope with, withstand, prepare for, prevent, mitigate or quickly recover from a disaster”. In this case coping capacity can be termed to mean physical or economic stamina of a certain area to survive the adverse effects of disaster. That is to say coping capacity in disaster management relates to the ability of people of community, using their strengths and resources available, to face, survive and manage adverse or negative conditions of a disaster.

However when people in a certain area are affected by hazard to the extent that they fail to rescue themselves from damages caused by a hazard using resources at their own disposal, then it means they are vulnerable and their coping capacity is poor or weak. Good coping capacity then will mean a community with enough resources to co-exist with a hazard and finding better solutions to avoid its catastrophic ramifications. In this context coping capacity can be promoted through disaster preparedness, response and resilience. For instance construction of a robust infrastructure prior and after a disaster can improve coping capacity of a certain vulnerable area or community.

2.2.5 Risk

Risk is the combination of the probability of an event and its negative consequences (UNISDR 2009). Risk is the likelihood of a specific hazard occurring and its consequences for the people

and property (Twigg 2001). There is an element of congruence between scholars in defining risk as associated with the losses to be experienced. According to Khan (2008) also appreciate the element of losses when he defined risk as a “measure of the expected losses due to a hazard event occurring in a given area over a specific time period. Crichton (1999) again posits that risk is the probability of loss, and depends on three elements, hazard, vulnerability and exposure. Risk in this context relates to the notion of ‘probability’ or ‘chance’ (Othman et al 2013). (Ibid) It is, however, not only the probability of the occurrence of a flood; but also the consequences that would be brought by the flood. It is the impact of this risk upon the community and its surroundings that would affect the quality of life (Othman et al 2013). Risk is often confused with vulnerability, although the two are inter-related but they are different. Risk might be defined simply as the probability of occurrence of an undesired event (but might) be better described as the probability of a hazard contributing to a potential disaster...importantly, it involves consideration of vulnerability to the hazard (Stanchion 1997). In this regard both probability and consequences of a hazard or disaster determine the level of risk.

2.2.6 Flood

Most relevant to the study is the definition of floods which is considered by Pawaringira (2008) as the overtopping of a river or stream banks, inundation by tidal waters or water from any source, statistical occurrence and economic loss. Flood then can be defined as the level at which water exceed the drainage system’s capacity infiltrate. Guidelines for Planning Authorities (2009) states that flood constitutes a temporary covering of land by water and presents a risk only when people, their property and or environmental assets are present in the area which floods. Therefore floods can be said to refer to huge amount of water in a short span of time, causing land surface to be submerged underwater at-places, where, land surface is usually not places with water. These flooding waters become a disaster only when it happens in a situation where there is vulnerability, and the lack of capacity of the community to deal with it causing serious consequences on the human and natural environment (Othman et al 2013).

The above definitions embrace not only the amount of rainfall but time frame; this implies that heavy rains that precipitate in huge volumes in a very short period of time are the chief cause of floods and they become disaster only when they affect humans livelihood and environment. For instance flood induced disaster in early 2000 as a result of Cyclone Eline caused serious

destruction in the communities who reside in the Eastern and South-eastern of Zimbabwe, 2,7 million people were affected directly and indirectly, their personal and collective losses ranged from death of immediate families, loss of livestock ,damage of households, bridges, dams e.t.c (Civil Protection Zimbabwe 2000). In Tsholotsho, flood occurrence has been attributed to overflowing of rivers, (Gwayi River, Manzanyma River) and spilling of dams (Gariya dam) as a result of short-term incessant rainfall. A more viable and working system of Flood disaster management become necessary in such scenario.

2.2.7 Disaster Risk Management

Disaster risk management includes prevention, mitigation, preparedness, response and damage control to reduce the adverse effects and impacts of a disaster. In short, such disaster management stages can be classified into before, during and after event activities (Osti and Muyake 2011). Structural and non-structural measures form the basis of disaster management. Structural means, infrastructure i.e dams, road etc where as non-structural mean planning, awareness, early warning and forecasting etc. A non structural measure entails systematic procedures of implementation or employing informed decisions and policies to prevent or, respond to disasters and increasing indigenous knowledge on disaster so as to halve the impact of the present or future disaster. Early warning, sensitization, evacuation and policies are other elements of non structural measures in disaster risk management.

2.2.8 Disaster preparedness

Disaster preparedness is also part of disaster risk management but it is necessary define it alone. Osti and Muyake (2011) stipulate that disaster preparedness can be referred to as all measures taken to prepare in advance aiming at reducing the impact of possible disasters. According to Twigg (2001) preparedness entails specific measures taken before disasters strike, usually to forecast or warn against them, take precautions when they threaten and arrange for the appropriate response (for example organising evacuation and stockpiling food supplies). In this case disaster preparedness depicts both structural and non-structural measures taken to avoid the adverse impacts of a disaster.

2.2.9 Flood vulnerability

United Nations Development Programme (UNDP) (2004) brought forward that “natural disasters exert an enormous toll on development...they pose a significant threat to prospects of

achieving Millennium Development Goals in particular, the overarching target of halving extreme poverty by 2015". However, although floods affect both developed and developing countries but it is a reality that poor (developing) countries suffer the most in terms of resilience. Benson 1998 quoted in Twigg (2001) appreciates that developing countries are hit hardest, although most of the economic losses are felt in wealthier countries, but the economic impact of disaster in developing countries is also severe, and the relative impact is often greater. In this case developing countries will probably fail to meet the target as a result of natural disasters. Zimbabwe and Mozambique are one of the countries in Southern Africa that have been hit by a series of flood disaster in the past years causing gross human loss, loss of lives, destruction of crops and loss of livestock.

Kovac and Sandink 2013 has it that in Canada there have been six disasters since 2005 that resulted in more than one billion economic losses. Four of these large disasters occurred in Alberta in 2005, 2010 a storm in Calgary, the 2011 wildfire in Slave Lake, and the 2013 flood (Kovac and Sandink 2013). More so in Mozambique three biggest floods have been recorded in 21st century; 2000/2001, 2007/2008 and most recently of 2013 floods of which economic gains in the country are significantly undermined as a result of recurrent water and weather related hazards; consequent economic losses are estimated to average 1.1 percent of Gross Domestic Product (GDP) annually (Recovery Framework for Mozambique 2014). The afore mentioned examples of flood occurrence case studies indicate that although Canada have experienced flood disaster over the years impacting negatively in terms of resources used costing large amounts of financial resources in response and recovery but resilience and recovery measures will never be the same with that of Mozambique.

For instance in Mozambique World Bank estimated the relative impact of various shock on poverty; floods and cyclones were estimated to have strongest impact at the household level, reducing expenditures by about thirty two percent and contributing more than two points to the poverty rate furthermore when facing a shock, poor households are often forced to sacrifice their long-term interests for the sake of immediate needs ,for example withdrawing children from school to supplement household labour, or by selling or consuming productive capital (Recovery Framework for Mozambique 2014). This implies that flood have a long lasting impact in developing countries as compared to developed world because the poor economic status of most

developing countries is then muzzled to fully recover from the effects of disaster. Therefore the impact of disasters is not felt evenly within countries (Twigg 2001).

Blaike et al quoted in Twigg (2001) posits that “...it is the weaker groups in society that suffer worst from disasters in society; the poor (especially), the very young and very old, women, the disabled and those who are marginalised by race or caste”. This is a reality in most developing countries especially in rural remote areas with poor infrastructure when hit by floods children do not attend school because of poor or no infrastructure in terms of bridges and proper roads and some become drop outs due to lack of financial difficulties as parents would be trying to recover from destruction caused by floods. This is further supported by Olowu (2010) for developing countries such as in the African continent, the weaknesses of state infrastructures, absence of appropriate legal and policy framework and sometimes inadequate resources partly render them vulnerable to the gory consequences of large-scale disasters.

In West Africa and Sahel the sub region’s vulnerability to lack of access to basic services, political instability, conflicts, poor governance, weak economies dependent on international markets, high population growth and a trend towards urbanisation and rural exodus...as of 2010, all of the countries in the sub region, with the exception of Cape Verde, were among the countries with lowest level of human development(Disaster Management Strategy in West Africa and the Sahel FAO(2011-2013) (2011). In Zimbabwe, Tsholotsho districts communities affected by floods recorded poor attendance in schools and these adverse effects are translated to future generations and they are likely to influence education and health outcomes.

In addition in most developing countries women are the most vulnerable group in societies especial in rural communities. Tapsell et al (2010) pointed out that while all people living in hazard areas are vulnerable, the social impacts of hazard exposure often fall disproportionately on the most vulnerable people in society – the poor, minorities, children, the elderly and disabled. Tapsell give a comprehensive insight of vulnerability in a given society. Some scholars bring in gender issues in vulnerability, with the women being the most victims of disaster. This is common in developing countries mostly in rural areas where gender policies face resistance or ignorance.

According to Integrated Flood Management in Zimbabwe (2004) women are the most affected since they are responsible for day-to-day management of the families such as looking after the health of the child and securing food for the family. In the area under study (Tsholotsho) mostly due to poor economic situation of the country men have migrated to South Africa and Botswana for employment leaving their spouses behind who always bear the brunt of floods whenever they occur. There is a need for vulnerability assessment to ascertain and identify areas prone to flood disaster and taking remedial actions to help those in need of assistance. United Nations Guidelines for Flood Losses(undated) asserted that flood management is an end-to-end process for recognising the risk associated with floods through a suite of plans, the processes involves, pre-disaster-preventive measures and preparedness, during flood-disaster relief, response and mitigative actions; and post disaster–rehabilitation, reconstruction, economic recovery, and efforts to asses and fine-tune preventive measures.

2.3. Nature of Floods

Before attending to the flood disaster management it is critical to understand the root causes of floods. The causes of floods vary from places to places, natural and human factors constitute the occurrence of flood depending on the geographical location of a place. Cyclones are not directly caused by human activities where as riverine floods is partly caused by human activities. Various scholars acknowledge the immense contribution of human activities and natural causes to the flood proliferation. Global Water Partnership (2000) asserted that variations in water flows and groundwater re-charge whether of climatic origin or due to land mismanagement, can add to droughts and floods events which can have catastrophic effects in terms of large scale of human loss of life and damage to economic, social and environmental systems.

Khalezamann (1994) has it that flooding is one such water-related environmental problem magnitude of which is very much dependent on land-use practices in the watershed of each rivers or streams. In this case developmental activity that is practised on drainage pattern has a potential of causing floods. State of the Environment and Policy Retrospective: 1972-2002 further observes the same notion that clearing of vegetation may also increase run-off and soil erosion and damming of rivers and draining of wetlands reduces the environment's natural ability to absorb excess water, enhancing the impacts of floods. According to United States of America National Research Council (2004) on Reducing Future Flood Losses one biggest

concern is development that paves open land, resulting in an increase runoff and has a potential to promote much floods with greater destructiveness as well as the potential to increase the size of or reshape floodplains.

For instance agricultural activities such as ploughing may cause soil pan that may contribute to flood occurrence. Natural Soil Resources Institute (2011) defines a pan as a well-defined layer forming in the soil (plough pan and iron pan) and impedes the passage of water through the soil. Riverine floods occur when the amount of runoff originating in a watershed (the area that collects and directs the surface runoff into the rivers, streams and lakes that drain it) exceeds the capacity of natural and constructed the drainage system (Khalezamann 1994). In Tsholotsho District floods occurrence owes its existence to various factors i.e incessant rainfalls that cause over flowing of rivers to the dams leading to dam burst causing serious destruction to the communities nearby dams and agricultural practices such as deforestation (clearing the land for farming) and siltation of rivers and dams.

2.3.1 Theoretical framework

2.3.2 Complexity Theory

The complexity theory was propounded and developed in the 1990s stresses out the relationship between hazards and vulnerability as a result of how nature and society relates. Complexity theorists posit that disasters are an end product of humans' developmental activities and environment. Human actions resulting from faulty decision making conspire with hazard levels, (Hillhorst 2003). This means that natural hazards have become more frequent and more devastating due to factors such as soil erosion and environmental degradation for instance ploughing near river banks, clearing of land for farming (deforestation) among other factors precipitate the proliferation of floods. This has the important implication that vulnerability might not just be understood as how people are susceptible to hazards, but can also be considered as a measure of how well the environment fares around society (Oliver- Smith 1999). This theory has proved more relevant for this study as it can guide development practitioners not only to focus on how devastating natural hazards can become but also to limit human activities which exacerbate the impact of these disasters.

Complexity theory is of paramount importance in disaster studies because it provides an entry point to describe the emergence of disasters as the interaction between sub-systems of nature and how society interacts with the environment, (Hillhorst, 2003). In this case human developmental activities on flood plains can increase the impacts of flood disasters when they occur. Increasingly, complexity sciences are being put forward as alternatives to the classic ways of analysing disasters. Comfort (1994), suggested that complexity sciences offers a “meta-framework” to bring together a number of ways of understanding disasters. As such the framework uses ideas of emergence, self-organisation, adaption and networks.

Emergence is increasingly important in how people understand the dynamics of a crisis as argued by Hillhorst (2003) who says that disasters caused by natural hazards result from the complex interactions of nature and society. The theory approaches disasters as part of ongoing dynamic processes of global change, shaped by contextual factors such as demographic shifts, natural resource dependency, urbanization and climate change. In the developing world especially Africa dominated by rural areas depends on nature to survive, for example subsistence farming.

Moreover, the other area of relevance of complexity in natural disasters is in understanding the importance of self-organisation in the process of response and adaption after a disaster. The argument put forward by Comfort (1994) is that self-organizing capabilities within communities are central to both pre-disaster resilience and mitigation efforts. Self-organisation, in Comfort’s view is largely determined by the capacity to exchange and act on incoming information across different levels as effective local response is based on timely exchange of information between local actors. However the theory is compatible with the developed world, because developing countries lack financial resources to fully install technological infrastructure, therefore most remote areas are highly affected by the impacts of disaster due to poor flow of information. According to Comfort (1994), when the complexity of interacting scientific, social, political and economic conditions exceeds the existing capacity for organizational control, decisions taken by local actors govern the direction of the evolving process. This leads to the notion that investment in improving capacity for organizational response at local level is likely to see the greatest benefit to the communities affected by natural hazards. Thus creating community based disaster risk management structures is essential and top-down approach is inimical to an effective disaster risk management.

However, on the other hand it should be pointed out that the complexity theorists overlooked the importance of institutions. This is rooted on the fact that local actors work in accordance with larger institutions. Moreover, Green and Warner (1999) suggest that the complexity theory is far less clear about the required policies to overcome vulnerability. In order for disaster risk reduction measures to be effective in promoting economic development, the formulation of relevant policies should be the main basis. Furthermore, Hillhorst (2003) argues that complexity theory is divided by an old schism between structure and agency thinking. Much of complexity theory is based on 'system-thinking' as it denies agency and diversity and puts unwarranted boundaries around people and phenomena and it is not universally applicable to all countries. In this regard, the study of social domains may be a way out of this problem, since it allows us to focus on the everyday practices and movements of actors negotiating the conditions and effects of vulnerability and disaster.

2.3.3 Sustainable Livelihoods Theory

Since the complexity theory has some weaknesses, there is a need to shift focus towards the sustainable livelihoods theory which explores how different factors and actors interrelate towards the achievement of sustainable development when communities are faced with shocks such as natural hazards. It is of paramount importance to note that communities adopt a number of strategies and activities in order to make a living so as to increase their coping capacity and enhance resilience. All these activities together comprise their livelihood. People, particularly the resource poor, seldom have only one way of making a living. When faced with shocks such as natural hazards, they adopt a range of strategies which depends on their assets, skills, social standing, time of the year and access to services. According to Chambers and Conway (1991), sustainable livelihoods are those that can avoid or resist stresses and shocks, maintain or enhance its capabilities and assets and provide sustainable opportunities for the next generation. In this regard, all efforts geared towards sustainable human development should consider livelihoods and capabilities of the affected communities as the first priority.

The Sustainable Livelihoods theory helps highlight the fact that communities engage in their livelihoods under different types and levels of vulnerability, with natural hazards being among some of the shocks and stresses that communities go through. This means that the approach takes a holistic view of how people make their living, and recognizes the broad range of assets and

activities required to survive. Furthermore, the theory draws attention to how policies and institutions, vulnerability context, livelihood assets, strategies and outcome interrelate in shaping a particular kind of societal context. As such, the theory takes a holistic approach that seeks to involve all the stakeholders involved in development and it is very essential for human development.

A disaster occurs when the impact of a hazard on a section of society (causing death, injury, loss of property or economic losses) overwhelms that society's ability to cope using available resources. That is where the linkage between livelihoods and disasters comes into being. Development work aims to strengthen or buttress communities' resilience and capabilities in the face of shocks and stresses disasters and hazards (Musarurwa and Lunga 2012). In this regard, sound development practices should therefore put more emphasis on strengthening communities' capacity for coping with disruptions to their livelihoods, and this is better achieved by adopting the livelihood centred approach that puts people's context at the centre of analysis and also to inform development interventions.

Furthermore, the theory focuses on the impact of different policy and institutional arrangements upon people/households and upon the dimensions of poverty they define. It also attempts to identify the most pressing constraints faced by, and promising opportunities open to, people regardless of where these occur. It builds upon people's own definitions of these constraints and opportunities and, where feasible, it then supports people to address/realize them. As such long term livelihood strengthening can be part of disaster risk reduction, integrated with development work (Twigg 2004).

On the other hand, however, the sustainable livelihood framework has been criticised by opponents who have stressed that the framework puts too much emphasis on the micro level, for example, the local community instead of focusing on macro level, for example, state or international society. Krantz (2001) argues that it might not have any real impact working on the micro level since changes have to come from above. It can also be argued that even though the sustainable livelihood framework is a useful tool for pointing out the interrelatedness between micro and macro levels, it does not give any guidelines for actually changing the politics on macro level in order to ensure the sustainability of the interventions on communities. Thus the framework can be seen as a useful tool to analyse and plan development activities, but not as the

solution to all problems, especially in countries with a weak state capacity that undermines the sustainability of development activities, (Clark and Carney, 2008). In order to take into consideration the weaknesses of the sustainable livelihoods framework, there is a need to shift focus towards the disaster pressure and release model.

2.3.4 Disaster Pressure and Release Theory

The Disaster pressure and release theory (PAR), first published in 1994 by Blaike et al and then in 2004 by Wisner et al, has become the internationally accepted model for the explanation of the progression of vulnerability and the progression to safety (risk reduction). The model explains disaster risks from a macro perspective. The PAR theory argues that disasters occur at the tangent between two opposing forces, those of natural hazards and the processes that generate vulnerability. It is when these two forces coincide that a disaster happens (Blaike et al 1994). The theory indicates that there are certain underlying causes, dynamic pressures and unsafe conditions which contribute to vulnerability. The Pressure and release theory indicates that there are certain underlying causes, dynamic pressures and unsafe conditions which contribute to vulnerability which in turn retards rural development. Linking the above to a hazardous trigger event increases the risk in communities. Vulnerability is depicted in the model as the progression of three following stages:

a).**Underlying causes** -are a set of well-established, widespread economic, demographic and political processes within a society and the world economy that give rise to vulnerability (and reproduce vulnerability over time) and affect the allocation and distribution of resources between different groups of people

b).**Dynamic pressures** - the processes and activities that transform the effects of the root causes into vulnerability and channel the root causes into particular forms of insecurity related to hazards such as population growth, deforestation and a decline in soil productivity. These might include a lack of training, appropriate skills and local conditions of markets and policies

c).**Unsafe conditions**-are the specific forms in which the vulnerability of a population manifests itself in time and space in conjunction with the hazard. This may occur through such processes as fragile local economic conditions, lack of disaster planning and preparedness and a fragile environment

The Pressure and release theory shows that the progression of vulnerability plays integral part in understanding community vulnerability and why communities are susceptible to disaster risks. From the model it is therefore clear that the main focus in reducing risks in communities and to promote sustainable rural development is to address a significant number of development and socio-political issues (UNDP 2004). As such, the pressure through the progression of vulnerability needs to be reversed. In order to reduce the risk of communities in accordance with the Pressure Model one needs to engage in certain risk reduction activities such as addressing the root causes, reducing pressures and achieving safe conditions as postulated by Wisner et al (2004). As such, the pressure and release model is relevant for every effort geared towards the reduction of risks associated with natural disasters as it calls for the reduction of vulnerabilities. This is an essential aspect for sustainable rural development.

Although the PAR theory provides us with an understanding of disaster risk reduction within different societies, it was never meant to address disaster risk reduction on a strategic level, but rather within at risk communities.

2.3.5 TOWARDS A RIGHTS-BASED APPROACH IN DISASTER RISK REDUCTION

Despite the vast amount of research conducted in the field of disaster risk reduction and in the integration of a rights-based approach sustainable development, little has been written about rights based approach to disaster risk reduction within disaster management systems vis- a-vis human development. According to Boesen and Martin, (2007), the idea that such rights as shelter, food and security should be met and protected during and after disaster events and should be a familiar concept towards disaster risk reduction. While human rights should be the foundation of any development interaction, they are often overlooked due to ignorance. This is particularly pertinent in the field of disaster management despite the fact that disaster-affected communities are those whose rights are most in danger of not being met.

Orlando (2010), pointed out that the command and control model which comprises a centralized response with a few selected experts using orders down to responders, employees or the public, has historically been the standard when providing support to communities. However in contrast, a rights based approach to disaster risk reduction is one that positions the human rights of community members as central to the development of that community. This is in contrast to the

previous 'needs' frameworks, which positioned community members as passive receivers of goods and services, (Boesen and Martin, 2007).

Moreover, a rights-based approach shifts the emphasis from impact and influence on communities to protection and fulfilment of the community rights. Within this framework, governments, development agencies and other stakeholders should have legal obligations to provide not only assistance, but to promote and protect the rights of citizens before and after the emergence of natural disasters, (Gunawan et al, 2011). This stems the knowledge that community members understand their own needs better than others and are able to address issues in a manner that is practical and sustainable for that community. More so, local authorities and central government have a mammoth task to make the legal instruments accessible to every individual and communicated in such a way that everyone understands the stipulations. This boosts the citizens' confidence to stand up for their rights. Unfortunately in countries with marginalised people on the basis of political affiliation, historical factors, tribe, and race just to mention a few will always find it hard to fully install effective disaster risk management. Therefore creating a robust financial source, leadership commitment and political will, enforcement of rules and regulations, fair distribution of national resources, prioritising disaster as part of national sustainable development plan, ensuring involvement and participation of the flood victims in disaster management can go a long way in making management of disaster a success story.

Kovac and Sandink (2013) calls for a variety of tools that should be included in a comprehensive flood management strategy-risk mapping, flood forecasting, land use planning, building codes, defensive infrastructure, public awareness, and a variety of actions. In other words disaster management, which is defined by National Emergency Management Committee of Australia(2010) as arrangements about managing the potential adverse effects of an event, including, for example , arrangements for mitigating, preventing, preparing for, responding to and recovery from a disaster, is necessary.

United Nations Guidelines for Reducing Flood Losses (undated) appreciates the dire need for the effective planning for mitigation measures that require an understanding of the factors that contribute to losses due to flooding, the following are the solutions: removal of certain structures from the floodway, flood proofing of structures from the floodplain, introduction of structural

measures such as levees, dams and constructed channels, controlling land use practices within basin, and applying flood forecasting and warning systems linked to response. As suggested by USAID (2011) that disaster requires a very broad multi-sectoral and multidisciplinary focus where the structural engineer, politician, social worker, agricultural extension worker and even kindergarten teacher all have equally important roles in ensuring natural hazards do not become disasters.

2.3.6 FLOOD DISASTER MANAGEMENT CASE STUDIES

2.3.7 DISASTER RISK MANAGEMENT AT GLOBAL LEVEL

International, or, regional, or intergovernmental cooperation is necessary in disaster risk management. At global level United Nations established an International Strategy for Disaster Reduction (ISDR) a global platform aimed at helping all communities to become resilient to the effects of natural disasters to the management of risk prevention into sustainable development (State of the Environment and Policy Retrospective; 1972-2002). Hyogo Framework of 2005 Olowu (2010) represents a strong commitment from the international countries to address disaster reduction and to engage in a determined, results-based plan of Action. Building relationships at international level raise consciousness among nations to prioritise disaster risk management in line with 2016-2030 sustainable development goal number seventeen that stresses out the need for global partnerships for goals.

At intergovernmental level for instance in Caribbean states Kirton (2013) “...Caribbean governments and major stakeholders have considered regional approaches to the development of comprehensive disaster management to be of the utmost importance for example Caribbean Disaster Management Responses Agency (CDERA)”. Building global partnerships and co-operation in dealing with disaster related matters is essential and it reduces financial burden on governments in countries hit by disaster. In addition ways of preventing or responding and resilience are better discussed at international level.

2.3.8 Floods Disaster Management in Bangladesh

Bangladesh is one of the unfortunate among other countries in terms of flood disaster. The geographic location and geo-morphological conditions of Bangladesh have made it one of the

most vulnerable to climate change and variability. Two thirds of its territory is less than five metres above sea level (Majumder 2013). This put the country at flood disaster risk. Khalezamann (1994) also brings out two types of flood that occur in Bangladesh; annual floods (barsha) that inundate up to 20% of the land area and low frequency floods of high magnitude that inundate more than 35% of the area (bonna).

A plethora of frequent natural disasters, growing population, and inadequate resilience to economic shocks, renders Bangladesh particularly vulnerable and fall prey to, and exposed to, climatic change risks. It is ranked as the 5th country in the World Risk Index and ranked 1st (of 162) for floods, 6th (of 89) for cyclones, and 3rd (of 76) for Tsunami, and 63rd (of 184) for drought (Majumder 2013). This implies that Bangladesh is one of the most flood prone areas in the world. (ibid)Natural disasters have had an enormous impact on the lives and livelihoods of the Bangladeshi people. Below is the disaster management by different stakeholders according to Majumder (2013):

Government Disaster Response-The Government of Bangladesh has implemented a number programmes to safeguard its people against impacts of disaster and to strengthen the capacity of its people to survive the wrath of disaster. For instance among other programmes, Group Development program and Vulnerable Group Feeding Program for instant response during flood disaster are the programmes provided by the government. Although the food program give subsidy only to poor and not necessarily the one highly affected by the disaster but it is very essential in reducing the level of social vulnerability because creates food security and enhance coping capacity. However, such programmes have a tendency of creating a dependence syndrome whereby people always waiting for the government to provide for them.

Vulnerable Group Development (VGD)-The VGD program exist to empower women skills and increase their efficiency through training, formation of capital by motivating savings and providing scope for future micro credit. In addition one of the significant goals of the program is to instil and raise social consciousness and awareness on disaster management and nutrition through training in groups. This enhances human development, disaster preparedness, resilience and capacity building to reduce vulnerability.

Vulnerable Group Feeding (VGF)-The program's main focus is to offer food aid and basic needs to the selected households whom their agricultural production have been severely disrupted by flood disaster. According to Majumder (2013) VGF began in the mid-1990s and has continued since then through supplementary food aid from the World Food Programme. This reflects the importance of humanitarian organisation in disaster response.

Social Safety Nets in Bangladesh-The Government of Bangladesh (GoB) allocated 15% of the total national budget for social protection programs, roughly 2.5% of GDP in 2011-12 (Majumder 2013). The following programs are included with the social safety nets: Test Relief (TR), is a food transfer program for those of working age to create employment for the poor in the rainy season to construct, develop and maintain rural infrastructure which has considerably lighter labour requirements compared to Food for Work Programmes (FFW). The allocation of 15% of national budget is an epitome of a committed country to disaster risk management as it leads to infrastructural development.

The Safety net programs in Bangladesh have become successful to a certain extent in Disaster Risk Reduction (DRR) according to Majumder (2013). The beneficiaries have been able to increase household income and recover their livelihood. Women empowerment, improved health conditions at households level, income generation, and revived the traditional system of in-family care are the positive recorded as a result of safety nets programmes in Bangladesh. In terms of gender the program has empowered women to take part in decision making and engage income generating projects. This reflects a working and effective system of disaster risk reduction as it has yielded positive results and other countries prone to not only flood disaster but other disaster should follow the suit.

Coping Strategies-Various measures have been implemented at households' level before the occurrence of floods to halve its negative effects. Measures involve raising the level of the homesteads, storage of food and other essential goods, harvesting crops, storing dry food and drinking water, collecting fuel, repairing shelter, keeping livestock/poultry in a safe place, and fodder preservation etc. This has been useful in reducing the effects of disaster as revealed by a baseline survey of affected households that showed the following coping strategies: 64% of households raised their homestead, 28% raised their plinth level of dwelling house, 22% stored food and other essential households items, 22% stored dry food and drinking water, 85%

collected fuel and cooking ovens, 37% kept fodder, 3% hold cash and another 19% takes 'other' steps (such as keeping bamboo and ropes ready) as measures to face risk of impending flood. In addition this anecdotal evidence that the efforts of the disaster prone communities should not be overlooked in disaster risks reduction because they contribute immensely in halving the effects of disaster.

Humanitarian aid- Bangladesh according to Majumder was the 22nd largest recipient of official humanitarian aid in 2010 at US\$84 million (of total aid US\$1.4 billion). From the year 2000 to March of 2013, Bangladesh received \$678m in humanitarian aid for flood and cyclone related disasters. Humanitarian aid for the most recent disaster, the 2012 prolonged floods in the north and south of Bangladesh, totalled \$5,848,778. Committed food aid for the year 2008-2009 was \$180 million and of that amount \$52 million was dispersed. Such large sum of money shows that humanitarian organisations are of paramount importance in giving assistance when ever disaster strike.

2.3.9 Floods management in India

In terms policy and legislation Bhaduri (undated) has it that in India Disaster Management ACT of 2005 was passed as a legal basis to manage disasters. The (NDMA) has the responsibility of laying down the policies, plans and guidelines for effective Disaster Management. Below are other stipulations of NDMA:

- Importance of non-structural measures which are very effective in reducing loss of life and property and can be implemented in a short time.
- Proposed to set up establishment of River Basin Organizations as a mechanism for interstate coordination.
- Proposed to set up a National Institute of Flood Management for taking up training, research and development activities related to floods and their management.
- The guidelines envisage that the states will enact and enforce the flood plain zoning regulations on the lines of model bill circulated by the ministry of water resources.

This reflects the importance of legislation, increasing knowledge and public awareness, commitment and in disaster management to minimise the impact of flood disaster. Training of staff to increase their grasp in disaster related matters is essential. Below is the flood disaster

management strategies employed India in response to 2005 flood disaster according to Nandy (2006);

Government Action-In terms of response the Indian government intervened during 2005 floods in India by assisting affected communities with cash and food. Nandy (2006) has it that in 2005 a total of 14.8 million CHF was disbursed and wheat, rice and cooking fuel.

Humanitarian Aid-Delegation of Humanitarian Aid Department of the European Commission conducted need-based assessment in Maharashtra State. United Nations Children's Fund (UNICEF) initiated inter-agency coordination role by organising meetings in Mumbai. Catholic Relief Services and CARITAS provided assistance in Ratnagiri, Mumbai, Thane, Raigad and Pune. This shows that Non Governmental organisations are essential especially in response.

National Capacity Building,- Within Mumbai, the Brihan Municipal Corporation (BMC) engaged sanitary teams in collecting garbage and cleaning drains. According to BMC, 100, 000 metric tonnes was collected. The government initiated more than 401 relief camps throughout the state approximately 213, 000 people are in the camps. Hygiene awareness campaign was initiated by the government through mass media.

Branch Capacity Building-At local level a comprehensive Maharashtra branch Action was included in the previous information Bulletin No. 9. Apart from the relief distribution undertaken, the Maharashtra State branch organized a press conference on 6 August, which was attended by the chief minister of Maharashtra, federation vice-president and IRCS vice-chairman, federation's head of Asia Pacific department and acting head of delegation (India) along with representatives from American and Canadian Red Cross. A private contribution of INR 5 crore (CHF 1. 5 million) by Reliance Industries was announced along with a pledge of CHF 2 million by the Federation from available fund.

2.4.1 Disaster Management in Zimbabwe

Coordination

In terms of non-structural mitigation measures there is a need of a working system in terms of policy, procedures, planning and coordination. Gumbo (2006)categorised various agencies and government departments and subdivision committees in Zimbabwe, which are early warning unit responsible for weather and flood forecast (Meteorological Department and ZINWA), search

rescue and relocate victims and providing security during floods (ZDF, ZRP, Civil Aviation and Ambulance Services) and the health and social services unit responsible for assessing the needs of the flood victims, provide social/psychological support during and after floods (Ministry of Health). The ministry of Local government, Public Works and National Housing coordinate the activities of the various aforementioned sectors. In many cases the various departments and government line ministries above are reactive rather than proactive in disaster related matters. In 2001 flood disaster ZDF, ZRP, Civil Aviation and Ambulance Services departments were major players in terms of rescuing the victims.

Institutional framework

Also pertinent to are committees responsible for planning such as National Civil Protection Coordinating Committee which is mandated to produce a National Civil Protection Plan, Provincial Civil Protection Planning Committee and District Civil Protection Planning Committee. The composition of the above mentioned committees include government senior officials (including politicians), parastatals and non-governmental organisations with the help of private sector and other international and regional disaster risk reduction organisations. Planning is inclusive in disaster risk reduction; the community is represented by traditional leaders and elected leaders at District level.

Humanitarian Aid

International, regional and local aid organisations have played a major role in assisting victims of disasters. In fact in most development countries who are financial incapacitated aid organisations are very important. ORAP, World Vision, CRS, UNICEF, Red Cross, Private Sector (business community and the general populace) are the important organisations to note. In case of 2001 and 2014 floods NGOs assisted in form of finance, temporary tents, food, clothes, and utensils, blankets etc.

Legal Framework

The legal framework and other mitigation strategies in disaster management are in place including international conventions on disaster but lacks enforcement and financial backing. This is evidenced on the USAID(2011) findings that the 2000s saw a number of declarations , policies

, strategies, plans and programmes developed, yet little real implementation of the above is evident on the African continent, despite a number of inter-regional and high level discussions and forums of collaboration. This makes the common saying that “it is better to own 10% of a functioning mouse than to own 90% of a dead elephant” true because plans, regulations and strategies are as good as a dead elephant if left unimplemented.

The Civil Protection Act Chapter 10:06, Rural and Urban Councils Acts, Environmental Act Chapter 20:27, Forest Act Chapter 19:05 and Mines and Minerals are the various legal frameworks used in civil protection matters. The Ministry of Local Government, Public Works and National Housing has a mandatory role in co-coordinating function all civil protection matters in the country (Civil Protection Act 10:06 No. 5 of 1989). This signifies that Civil Protection Committees do not work in isolation of other various government lines ministries in civil protection matters, departments of the following ministries comes into play also: health, foreign affairs, state security forces(Zimbabwe Defence Forces and Zimbabwe Republic Police) and mining

In Zimbabwe according to Civil Protection Chapter 20: 06 Section 27 (1989) the president is mandated to declare if he considers fit, any occurrence that causes gross suffering of human beings and economic disruption and the expiry or the commencement of the declaration. In other words the impact and level of a hazard is deemed a disaster in regards to its effectiveness in causing gross human suffering and economic loss of which in Zimbabwe with the influence of parliament the president declare such disruptive events as disaster.

However, the Civil Protection Act provides that all levels of government produce operational, emergency, preparedness and response plans which are to be activated during disasters but little has been done in making a follow up. Many government departments have poor or no civil protection plans. Therefore lack of commitment due to some reasons for instance low remuneration might be the cause of the flaws incurred on civil protection matters.

2.4.2 Vulnerability Assessment

Being aware of the current situation of a flood disaster prone area is of paramount importance so as to reduce future and present damages. Therefore ways should be found to identify social

vulnerability and resilience on the basis of a variety of factors for example individual, household, community and region. (Tapsell 2010) This means that the impact of floods can be reduced through an integrated political and socio-economic vulnerability assessment that helps to form systematic disaster preparedness and response processes. This vulnerability assessment should result in positive recommendations that will help in disaster preparedness, response, and prevention if possible, response and resilience. This needs a stable financial base not only relying on humanitarian aid. However countries with financially crippled governments find it hard to reduce the socio-economic and physical vulnerabilities they always look for aid.

Global Water Partnership (2000) acknowledges the financial predicaments faced by developing countries by postulating that the challenge in managing variability (erratic and short term rainfalls) is clearly in the poorest countries with the least financial and human resources to cope with the problem. This means that although poor countries may recover from disaster with the help from aid but resilience is compromised in terms of long term effects of a disaster because lack of financial resources. Osti and Miyake(2011) “disaster management in Philippines emphasis is made on “self reliance”, “self help” and “mutual assistance” at local level, particularly in the utilization of resources”. The situation is in developing countries self reliance is a challenge because economic situation is not conducive and the donor syndrome issue.

2.4.3 Political will

Global Water Partnership (2000) posits that forging political will to act; in a world of scarce resources-financial as well as natural-political attention and commitment are vital to ensure good decision making and the necessary investments in the development and management of water. According to Civil Protection Act the hierarchical structure in disaster management from the Directorate to the Minister and then to the President gives the president power to reside over civil protection matters which is not bad. However the president is a political figure, which means the declaration of a disaster depend on the discretion/willingness of the president of which humanitarian matters can play a second fiddle to politics and disaster related matters can be made an underling of politics.

Political consensus is necessary in disaster mitigation because changes in government can radically disrupt both preparedness plans and the administrative structures of disaster planning at all levels. Other problems may arise as a result of political positions of local governments in

relation to the central government for instance in Bangladesh, changes in government saw the replacement of experienced staff with inexperienced staff (Interworks on Disaster Management Training Program 1998).

2.4.4 Community participation

Shaw and Phong (2012) assert that local communities should not be passive recipients or, victims, but be active partners with a real voice and some power. According to United States of America National Research Council (2004) on Reducing Future Flood Losses public participation was major component of Tulsa's planning efforts. Citizen advocates played a critical role in pressing for tough flood mitigation activities for example, flood channel and river bank cleanups became common. In this case people when involved are willing to participate fully in the implementation process by even providing free labour. Involving community in policy formulation and implementation enhance public awareness and education. In India community participation has been prioritised by awareness raising concept of community participation in areas of disaster risk reduction and management by adopting specific policies, attribution of roles and responsibilities and the delegation of provision of the necessary authority and resources at grass root level (Bhaduri undated).

Osti and Miyake maintain that "there is a consensus that conventional flood management with attributes such as techno-centric, top-down, and focused on reactive intervention, has proven ineffective to deal with floods". In this regard participation useful in promoting a better understanding of the threats of disaster, enlighten the communities on their current situation and capacity to halve risk and revamping a collaborative venture in reducing disaster risk and the ownership and commitment towards achieving disaster management goals.

2.4.5 Evacuation

Various scholars agree that natural hazards cannot be avoided but their impacts on human lives can be minimised through evacuating and relocating people who live in floodplain and along riverbanks to safe settlements. According to a review report on operational flood management methods and models by Flood Risk Analysis and Management Methodologies (FRAMM) (2007) evacuation involves moving people from their houses or places of business to 'safe' locations, out of flood risk area where they are able to shelter until it is possible and appropriate for them to return. Evacuation can be implemented before and after

flood disaster it is a response to the immediate or forecast threat of flooding that is expected to pose a risk to life, health on wellbeing.

Evacuation can also be associated with early warning systems and forecast. However this can be compromised by the culture and religion, people may be adamant to vacate the place if major follow ups are not taken to communicate the dangers of not vacating the place. Restriction of development on high hazard prone areas: anthropogenic activities on unsuitable lands exacerbate disaster putting the built-up and population at high risk. This could be made possible by strategies such as: Scientific vulnerability assessment and micro zoning of disasters, Incentives and disincentives efforts to discourage (Bhaduri undated).

2.4.6 Early Warning

This involves making people who are likely to affect by a disaster alert so as to protect their socio-economic life. The media plays a very crucial role in transmitting information to the people to raise their consciousness to anticipate disaster. Meteorological department take lead in weather forecasting and reporting. However advanced technology is required in predicting climatic conditions changes therefore meteorology departments should keep abreast with changing dynamics of technology.

2.4.7 Infrastructural development

In his risk reduction strategies Kirton (2013) recommended adoption of building codes based on local hazard risk assessment. However in less developed world especially in Africa dominated by rural area it is difficult to implement the standard of a building it is rather possible in an urban set-up. Most people in rural areas are impoverished they depend on nature to build shelters free of charge therefore limiting them to a building material which requires financial backing is not fair unless the government finance the initiative of which governments are also financially ill equipped. Engaging private players and Nongovernmental organisations in infrastructural development is essential. Damming and construction of weirs require enormous financial resources therefore private players can chip in.

2.4.8 Summary

Developing a holistic approach, as elaborated above, in enforcing the law especial environmental laws, sourcing funds and generating funds locally rather than depending solely on international humanitarian aid is the remedy in revamping and forging a sustainable disaster management in

Zimbabwe. Flood hazard modelling is essential in managing disaster. Some of the causes of flood disaster can be avoided such siltation of dams by removing silt however financial and material shortages comes into play.

CHAPTER III

METHODOLOGY

3.0 INTRODUCTION

There are various approaches to research methodology and these include qualitative approach and quantitative approach. Qualitative approach can be described as a method which seeks to understand a given research problem or topic from the perspectives of the local population it involves. Qualitative research is effective in obtaining culturally specific information about the values, opinions, behaviours, and social contexts of particular populations (Bernard 1995). The strength of qualitative research is its ability to provide complex textual descriptions of how people experience a given research issue. It provides information about the “human” side of an issue – that is, the often contradictory behaviours, beliefs, opinions, emotions, and relationships of individuals. On the other hand, quantitative research collects numerical data that is analysed using mathematically based methods.

Therefore, for the purpose of this study, a mixed approach was used. A mixed methods research design can best be understood as a procedure for collecting, analysing and in single study to understand a research problem (Creswell, 2012).

3.1 Research Design

The study employed the case study research design. There are multiple definitions and understandings of the case study. According to Bromley (1990), it is a systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest. Babbie (2010) research design involves set decisions regarding what topic is to be studied among what population with what research methods for what purpose. Gray (2009) a research design is the overarching plan of data collection, measurement and analysis of data. According to Punch (2005) research design means all issues involved in planning and executing a research project – from identifying the problem through to reporting and publishing the results. A research design therefore can be described as a framework of a comprehensive course of action of how the research will be carried out, using what, why, when and how. For this type of research, data comes largely from documentation, archival records, in-depth interviews, questionnaires direct observations and participant observation.

3.2 Population and sampling

A research population refers to the total set of units in which the investigation is interested in or the researcher is interested in, (MugoFridah, 2002). The unit of analysis can vary from an individual to a corporation. In this particular study the units of analysis was Civil Protection Unit (District Civil Protection Unit Committee) and community members in Tsholotsho Rural District. It is worth noting that is very difficult to if not impossible to study the entire population when conducting research and because of that researchers use samples as a way to gather data. Therefore a sample is simple a subset of the population being studied.

According to Patton (1990), sampling can best be understood as the act, process or technique of selecting a suitable representative part of a population for the purpose of determining parameters or characteristics of the whole population. In qualitative research only a, sample (that is, a subset) of a population is selected for any given study. The study's research objectives and the characteristics of the study population (such as size and diversity) determine which and how many people to select.

The study employed probability and non-probability sampling techniques which include stratified sampling, purposive sampling and snowball sampling to 10 household respondents on the basis of location, status, age, gender and class. However, it is important to note that a household does not exist as a separate entity and as such 5 respondents will be derived from Civil Protection Unit members. To understand disaster risk reduction policy implications and the effects of natural disasters on livelihoods amongst households in Zimbabwe stratified sampling was used. According to Castillo (2009), this a probability sampling technique in which the researcher divides the entire target population into different subgroups, or strata, and then randomly selects the final subjects proportionally from the different strata. This type of sampling is used when the researcher wants to highlight specific subgroups within the population (Castillo, 2009). In this regard, households were divided according to gender, age and class whilst key informants such as Civil Protection Unit members were be considered much in this study.

With reference to purposive sampling MugoFridah (2002) is of the contention that it is the most important kind of non-probability sampling, because researchers rely on their experience, ingenuity and or previous research findings to deliberately obtain participants in such a manner that the sample obtained may be regarded as representative of the relevant population. In this

regard the researcher gathered data from the Civil Protection Unit members as they are major players in disaster risk reduction.

Moreover, snowball sampling was used in the study. Patton (1990), clearly articulates that snowball sampling is a technique for gathering research subject through identification of initial research subject who is used to provide the names of other actors. These actors may then open possibilities for an expanding web of contact and inquiry. This will be important in the sense that the researcher will be referred to individuals or departments with relevant information on disaster risk reduction and development. As for community members snowball sampling was used whereby community members directed the researcher to the community leaders. Again CPU members were useful in assisting the researcher to approach relevant departments

3.3 RESEARCH INSTRUMENTS

Technique of collecting data

Primary sources/ data were used. Questionnaires as defined by Ray (2004) as a method where questions are delivered (generally mailed) to the respondents, who note down their responses on it and send it back to the researcher were used. As such open ended questionnaires were used and administered on a face to face and paper and pen basis to the members of the Civil Protection Unit who were the key respondents. As for interviews David and Cutton (2004) posits that interviewing involves asking people questions, but it is equally listening carefully to the answers given. This type of research instrument is more of question and answer session where by the research asked the questions and the respondents answered on a face to face basis. Semi-structured interviews were conducted with the community members in ward 6, Tsholotsho, District. In addition the interviews served a very significant purpose in eliciting qualitative data from the disaster prone community members. As elaborated by Punch (2014) that the interview is the most prominent data collection tool in qualitative research and it is a very good way of accessing people's perceptions, meanings, and definitions of situations and constructions of reality. Bryman (2012) posits that it is the flexibility of the interview that makes it so attractive.

The research also used secondary or pre-collected data to collect information which is the core of the data to cross check with the validity and reliability of primary sources. These include Government reports UNISDR and UNDP reports, Civil Protection Unit reports, and World Bank

reports. This data was supplemented by relevant library data gathered from published books, unpublished books, articles, government records, relevant research and seminar papers, annual reports, magazines, newspapers and journals.

3.4 Data presentation and analysis procedures.

According to Creswell (2005), data analysis mainly entails the process of bringing order, structure and meaning to the mass of collected data. Therefore in this particular study, the researcher used thematic analysis. Braun and Clark (2006) note that, this is understood as a descriptive presentation of data and is widely used in qualitative data. Common themes were discussed from the data gathered on disaster risk reduction strategies and their effectiveness using thematic analysis. In analysing qualitative data it offers an accessible and theoretically flexible approach.

3.5 Editing

This step in analysis was to edit the raw data gathered during data collection. Editing helped the researcher to detect errors and omissions and correct them correct then when possible. The researcher was responsible for deciding which of the responses were consistent with the intent of the research questions, assumptions, hypothesis as well as the purpose of the study. When the raw data was collected and edited it was then put into an ordered form (ascending or descending order) so that it can be looked at more objectively.

3.6 Classification of data

Data was then classified, according to similar characteristics and grouping it into various classes. The items in different classes differed from each other on the basis of some characteristics or attributes such as age, gender and years of employment in the organisation

3.7 Data entry

In data entry, information was coded or assigned a numerical code so that the data could be more easily fitted into the appropriate categories. To couple the presentation methods of detailed explanation of the findings was offered. Therefore in this research data was presented in pie charts tables and graphs.

3.8 CONCLUSION

This chapter outlined the researcher's justification and analysis of the research design used, population, research instruments and the sampling techniques employed. Data collection methods and instruments were discussed and justified. The research is made up of both primary and secondary sources to collect, therefore an integration of secondary and primary data was then assembled. Primary data serve the purpose of supplementing and complementing secondary sources so as to give a detailed and comprehensive document.

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

This chapter presents the overall findings of the research. The research was carried out in Tsholotsho District, at wards six 8 and from civil protection members. Research findings are going to be analyzed and interpreted. The data was collected in form of questionnaires and interviews. Data is presented using tables, bar graphs and pie charts.

4.1 Demographic data for respondents

RESPONDENTS	TARGET	PERCENTAGE ACHIEVED %
Males	10	90%
Females	10	50%

Table 4.2 shows the target of respondents and the rate of actual respondents the researcher managed to get hold of. Data was collected in ward six and District Civil Protection Committee Members and table 4.3 present the summary. Statistics reviews that 90% were males and 50% were females this shows that male was the large group which responded to the interviews and questionnaires. This can affect the results of the research since it is biased towards males and gender imbalance in both community and employment sector

Table 4. 2 Years of experience by Civil Protection Unit Respondents

CPU department Respondents	Years of experience
Health	1-5
Social Service	5-10
Meteorology	10-15
Local Government	15-20

Table 4.3 shows that respondent from health department is the least experienced with average of 1 to 5 years this means that the respondent did not experience floods disaster that occurred in 2001 ward six therefore his assessment is based on 2014 floods disaster that occurred in ward 8 which were mainly caused by Dam Gariya burst. The aforementioned respondent was followed

by another one in the Social service department with an average 5-10 years of experience then meteorology 10-15 and lastly local government 15-20. Respondent from local government is the most experienced therefore information from local government is of great importance to the study though not taking anything away from the other respondents.

4.4 Levels of education of the respondents.

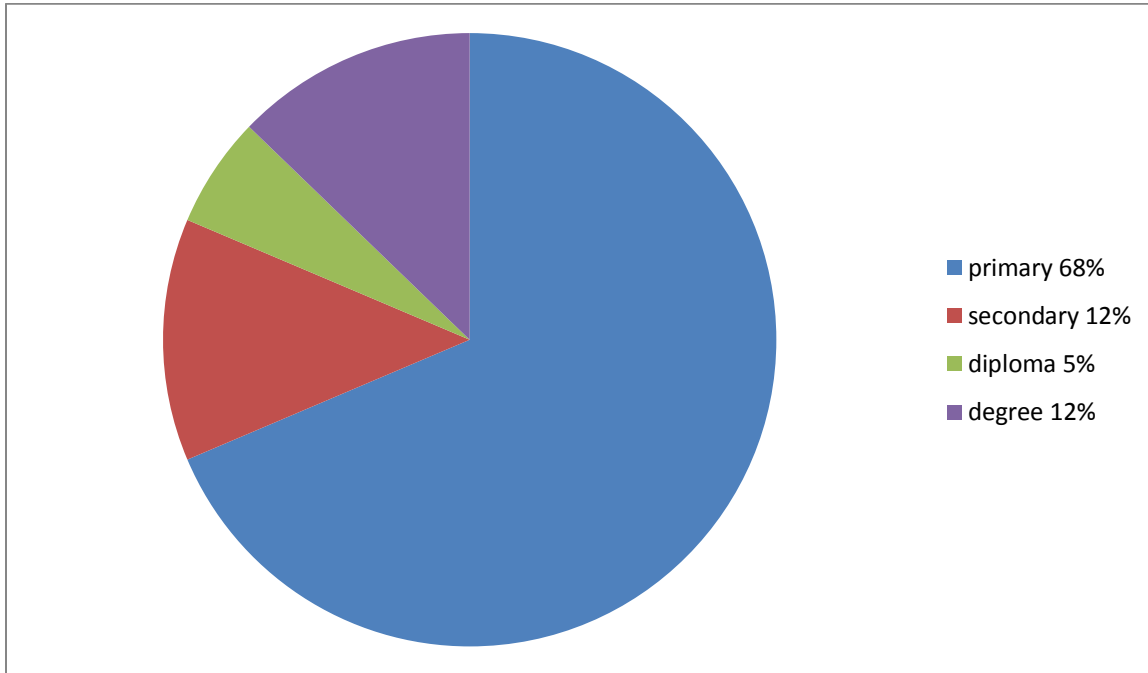


Fig 4.4 categorized the level of qualification of the overall respondents interviewed. 68 % of the respondents in ward 6, 8 and 12 completed primary level but never proceeded to secondary level mainly due to lack of financial and history of liberation struggle affected their education. 12 % of the respondents have secondary qualification these also belong to communities but they were fortunate to progress to secondary level. 5% hold diplomas, these are from Civil Protection Unit and 12% hold degrees these constitute senior local government management.

4.5 Houses and property destruction as a result of 2001 flood disaster in ward six per village

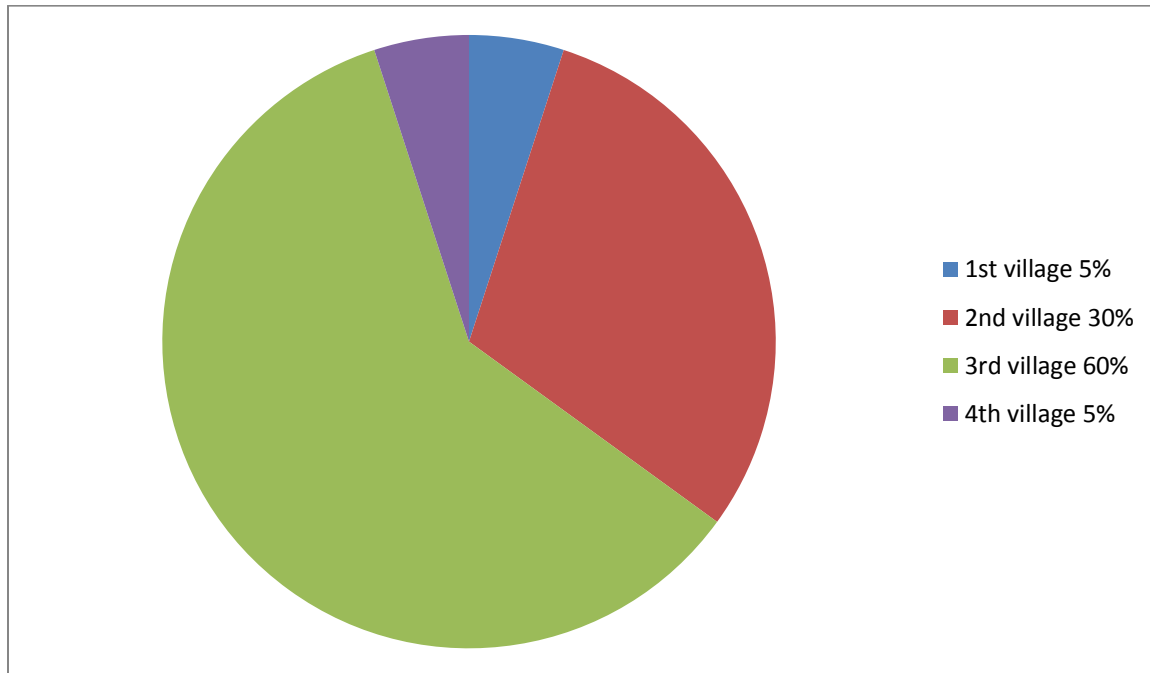


Fig 4.5 shows the amount of households destroyed as a result of 2001 flood disaster in Tsholotsho District, ward six. 1st village experienced 5% of destruction because it is located far from Gwayi River and most of the houses are built with cement. 2nd village recorded 30% of houses destroyed because of its proximity to the river. 3rd village enormous figure because of its close adjacent to Gwayi river and it is located where the river is mostly silted and with huge trees that have grown inside the river cause water to spill out of the river finding its way to the village. Gwayi River and Umguza River meet before the third village therefore the pressure increases causing over flowing of Gwayi River eventually causing floods to be more inherent with serious negative impacts. Type of buildings in the village is dominated by traditional type of houses mud, wood and grass. The fourth village destruction of houses and property amounted to only 5% mainly because the village is located far from the river as compared to other villages and some households are built on highlands reinforced with wood.

4.6 Vulnerable groups as a result of floods

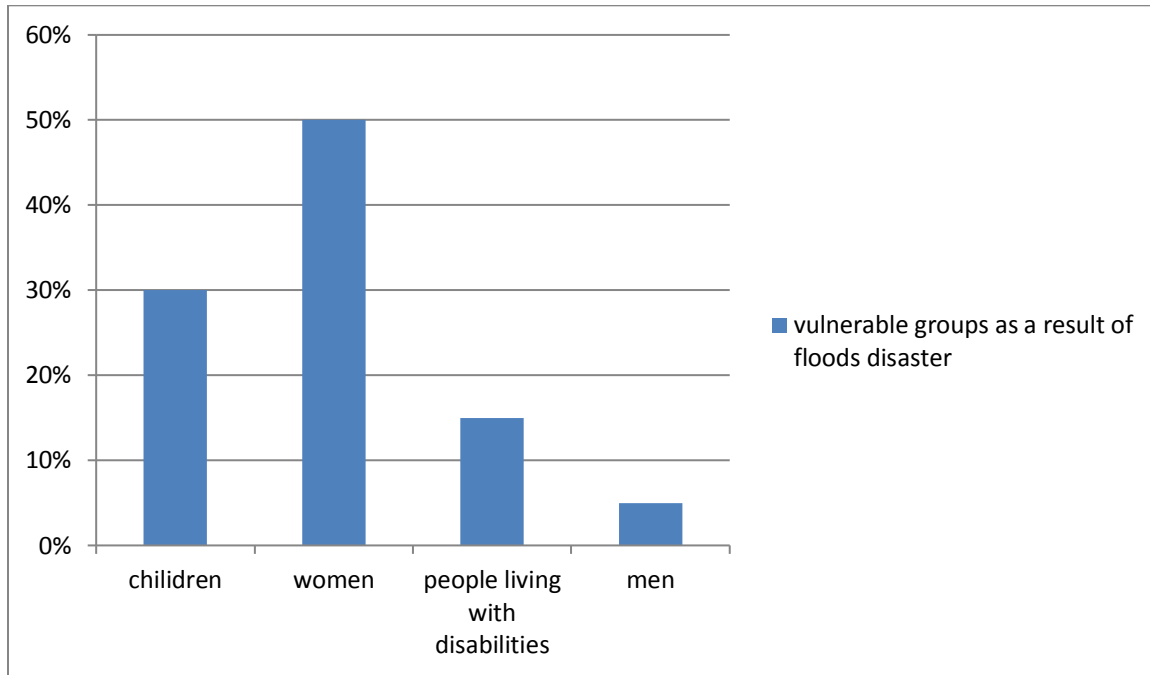


Fig 4.6 presents the level of social vulnerability of ward 6. Children level of vulnerability amounts to 30% because during flood occurrence they do not access school for education. This has long-term effects because when children do not attend schools it means their right to education is compromised and quality of education is also affected. Women are the most vulnerable group with 50% because the set up of ward six societies is based on male dominance, female are responsible for everyday running of households' i.e cooking, taking care of children, fetching water e.t.c. During floods occurrence women do not access water points and health facilities. People living with disabilities are at 15% because during floods they find it hard to access sanitation services due to their situation. Due to adverse economic they face, people living with disabilities lack proper health facilities. Men are at the bottom of the list in terms of flood vulnerability because of their physical makeup is not out rightly affected as compared to the other groups.

4.7 Respondents aware of their civic right to protection from disaster

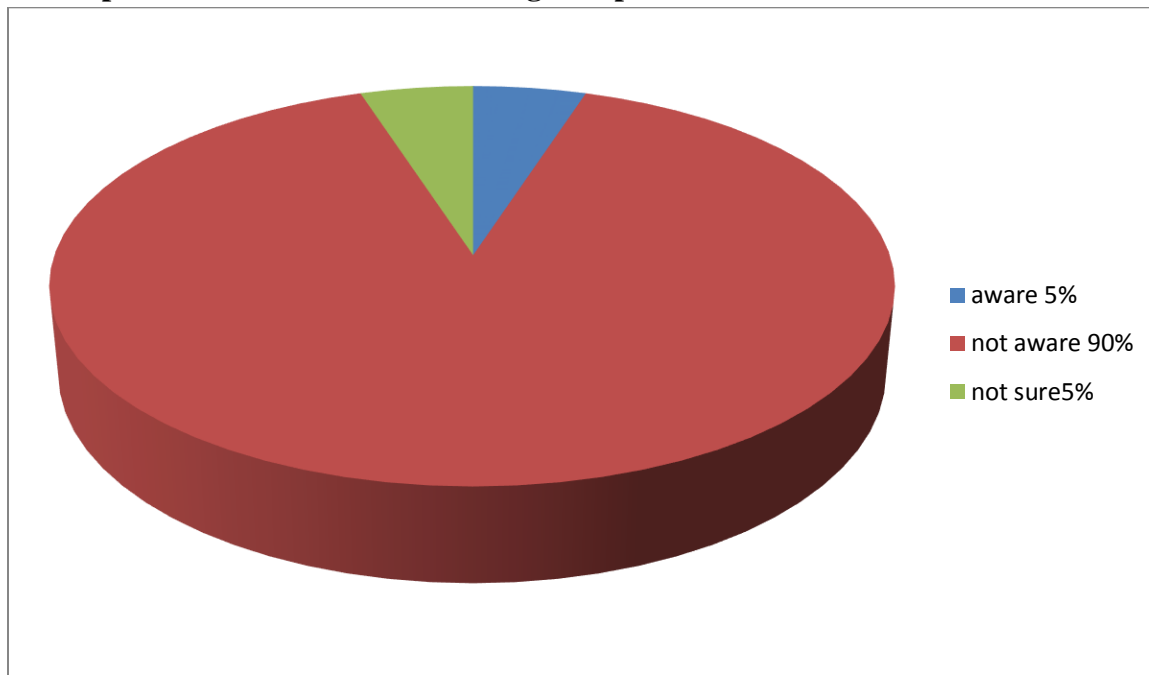


Fig 4.7 shows the legal knowledge at community level. Only 5% of the respondents expressed their knowhow of their civic right to protection from disasters by the government. These respondents consist of traditional leaders' i.e headmen and village head. 90 % of the entire respondents showed no knowledge of any legal rights for protection against disasters because of that the area is remote and there is lack of education. Most of respondents did not attain secondary level education because of that unavailability of secondary schools and poor economic situation to access secondary education. Lack of awareness and education of by local authorities of legal instruments to the people is probably the root cause of lack of knowledge of legislation by the public.

Therefore lack of knowledge by indigenise people is problematic to disaster risk management because people do not exercise their rights and lack confidence in taking part in disaster management initiatives. 5% of the respondents interviewed were not sure whether the government is mandated to protect them from disaster as per constitution and Civil Protection Act. The findings contradict with Rights Based Approach discussed earlier on chapter 2 in the

sense that these affected communities cannot stand up for their rights to civil protection if they are not aware of the legal instruments that grant them such rights.

4.8 Effects of floods

Most of the respondents expressed discomfort on the effects of flood disaster. Economic losses were cited as a result of flood disaster specifically on the agricultural sector. The entire respondents from ward 6 pointed out subsistence agriculture as their only source of income so the effects of floods leave the socio-economic livelihoods with a huge dent. This shows that the area is vulnerable and its coping capacity leaves much to be desired.

Although aid is given to the inhabitants in ward six but most of the respondents showed keen interest on sustainable disaster management and development other than to relying on aid because aid is not given on a regular basis and it is based on the donor's desecration. This shows that disaster risk management has less attention to capacity building and resilience let alone preparedness as postulated by Madamombe (2004), that the Civil Protection Unit and local institutions have focused much on the mitigation efforts without trying to prevent communities' vulnerability against these hazards before they take place. Such a response has contributed to more detrimental effects such poverty, unemployment, inequality, environmental degradation which has made it difficult to achieve sustainable development goals. This means that the majority of disaster risk reduction strategies adopted at national, provincial and community levels have mostly been confined to damaged livelihoods and this response is despite the fact that damaged or disrupted livelihoods take time to rebuild and mend. The problem that arises from such a scenario is that communities end up adopting coping strategies that may expose them to further problems such as environmental degradation and deforestation, making human development difficult to achieve (Musarurwa, 2013).

4.9 Sources of information regarding cases of disaster

District Civil Protection Committee respondents pointed out that community leaders, health village/ward based workers, traditional leaders, council legislators (councillors) and community at large. However there is a need to improve network and channels of communication with technology in remote areas because in terms of reporting community leaders might be trapped

during flood disaster so reporting using cell phones is the only solution they have. The current situation render flood prone areas vulnerable to flood disaster because of poor infrastructure with no proper roads and bridges.

4.2.1 CPU Respondents satisfied and the ones not satisfied with institutional capacity in disaster management

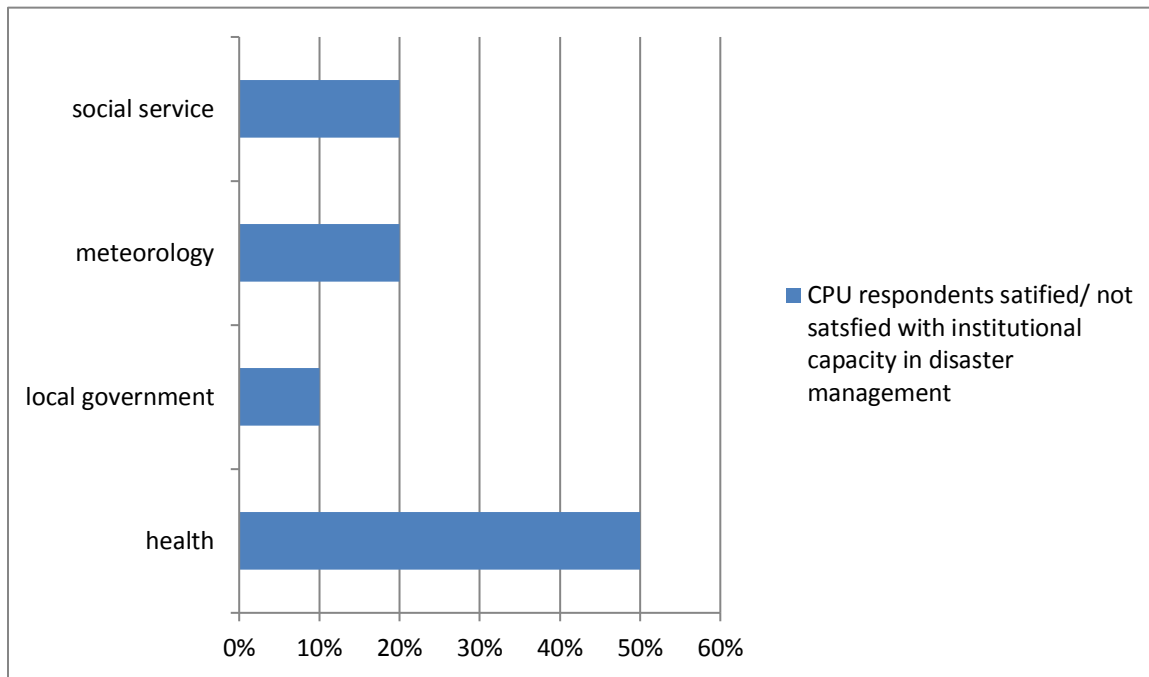


Fig 4.2.1 reveals that respondent from health department expressed 50% of institutional capacity in disaster risk management. This is so because health department in the district is funded by various donors and do not rely on government funding only but humanitarian organisations play a major role. Social service and meteorology thought institutional capacity amounts to 20% and there is much to be done in terms of sourcing funds and awareness. Local government recorded only 10% in terms of institutional capacity in disaster relief because the government is not doing much in disaster risk management in terms of resource mobilisation and infrastructural development.

4.2.2 Early warning systems

Early warning systems include the meteorology department through media and Local government and traditional early warning (flowering of some type of local trees) for example, isinga, and msasane and bhanda trees. The community members seemed to prefer traditional type

of early warning citing that their remoteness of their locations with less or no signal of radio waves and sometimes some members do not have radios. In addition one respondent from ward six, at Mbunjini village expressed distrust and scepticism on the early warning systems by the media because sometimes heavy rainfalls are predicted but never precipitate in other words there is no accuracy in early warning systems.

4.2.3 Community Participation in disaster risk management

Every respondents at community level pointed out that they have not participated in any disaster management and planning meaning that they just wait for Civil Protection Unit to respond whenever flood disaster strike. This shows that disaster risk management in Tsholotsho is top-down approach; people are not active participants in disaster management activities making it not sustainable and does not foster resilience therefore disaster risk management strategies such as evacuation are likely to be resisted. Besides that people have to be given room for participation in matters involving their livelihood to make them sustainable.

As elaborated in chapter 2 that community participation is crucial. Shaw and Phong (2012) are in support of community participation in disaster management by pointing out that local communities should not be passive recipients or, victims, but be active partners with a real voice and some power. In India community participation has been prioritised by awareness raising concept of community participation in areas of disaster risk reduction and management by adopting specific policies, attribution of roles and responsibilities and the delegation of provision of the necessary authority and resources at grass root level(Bhaduri undated). Top-down approach shows that Civil Protection Unit loopholes because sidelining the very people who are at risk is not effective way of managing disaster

4.2.4 Respondents willing to vacate flood prone areas.

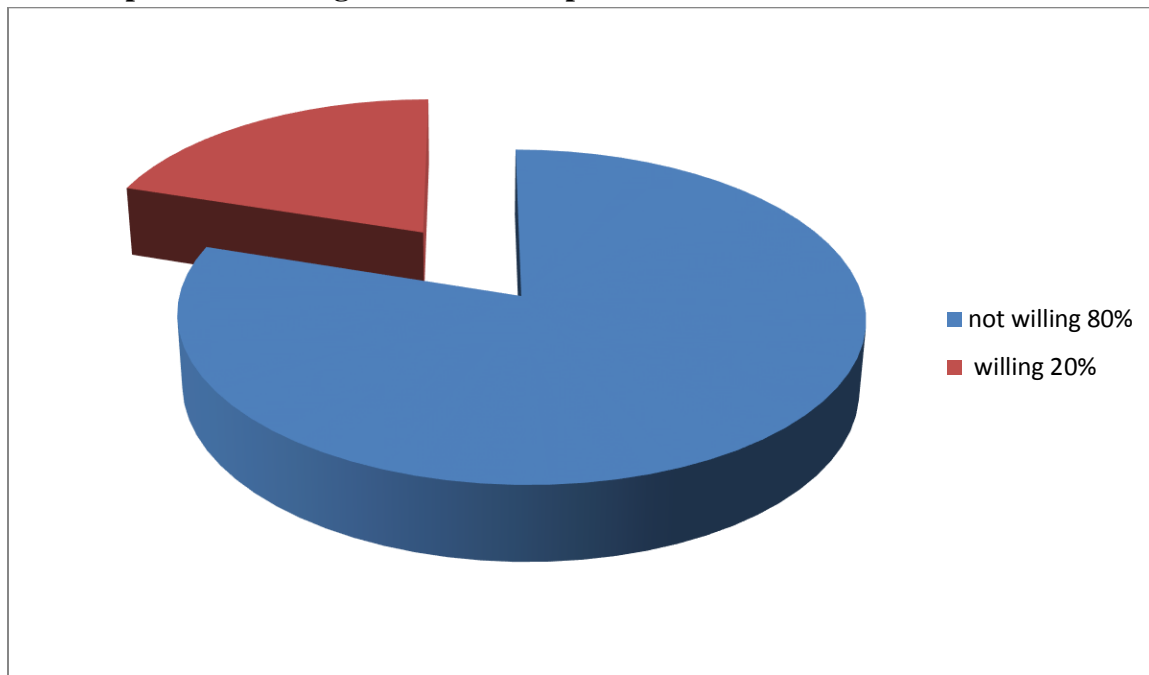


Fig 4.2.4 shows that 20% of community members interviewed agreed to vacate flood prone areas but to a far much better place, well serviced and with fertile land because their socio-economic livelihood depended on agriculture (subsistence farming). However 80% of the respondents appeared to be adamant to vacate the place on the basis of that the place has been made fertile by the floods which always come with fertile soils to the place. Another reason cited is that after 2001 flood disaster the government offered the Forestry land on the east of Ward six on the highlands but without water points and health centres, not fertile (sandy and not conducive for farming) and no road infrastructure. To date the government has not done anything in terms of infrastructural development.

Those who agreed to be re-settled in the place namely Thuthukani, Mpumelelo and Phakamani villages found themselves in water problems and to date they access water back in ward six the area they vacated. In addition one respondent cited the impact of politics in relation to vacating flood prone areas. The 2001 flood disaster coincided with fast track land reform program therefore the responded pointed out that posts flood disaster arrangements for them to get land in Nyamandlovu (more fertile) were made unfortunately the move was unsuccessful because land was only given to politically correct individuals. As mentioned in chapter 2 that various scholars are in agreement that natural hazards cannot be avoided but their impacts on human lives can be

minimised through evacuating and relocating people who live in floodplain and along riverbanks to safe settlements.

However the situation in Tsholotsho District ward six is different because the government proposed unsafe settlement to be occupied by the people without important and basic services such as water. In other words people are justified to shun the place and remain in flood prone areas as they deem it far much better than government proposed alternative because floods do not happen every year. Other respondents revealed that floods do not happen more often in their places; floods occurrence in ward six date back to 1948, 1978, 1999, 2001 and 2013 but 2001 floods being the worst of all. Therefore community members have gained confidence that floods do not occur more frequently thus why they do not intend to vacate the place.

4.2.5 Objectivity and fairness in resource distribution in response to flood disaster

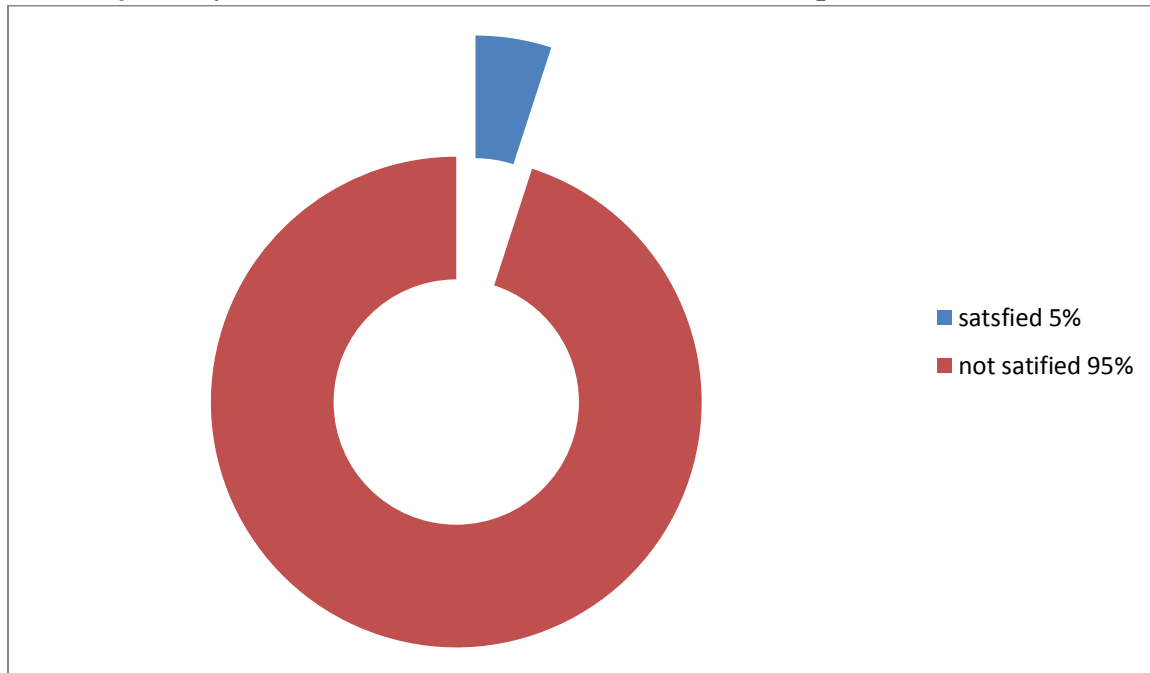


Fig 4.2.6 presents that five percent of the respondents showed satisfactions with the aid however the rest were not satisfied not only that aid is temporally but mentioned that the process was not objective citing that some of the resources were unveiled to them in front of the media but never given to them. Some cited that flood victims in need of aid did not get it meaning that there was no viable vulnerability assessment.

4.2.6 Participate in the infrastructural development even without a commission/pay/salary

Respondents showed keen interest to offer labour or any assistance they afford to develop their infrastructure if the government or private players offer funds, specialists, and equipments. Respondents' emphasized infrastructural development as integral to counteract the adverse effects of the flood disaster for example road construction with bridges to ensure access to health, education and business centres because during floods occurrence Lozombani River is a barrier for them to access the aforementioned services.

4.2.7 Solutions to flood disaster

Building of strong houses most probably with cement other than mud was suggested although financial constraints will always pose challenges. Other respondents suggested building huts reinforced with wood material to counteract the forces of flood disaster. Construction of dams because there is no dam in the area thus why water during rainy season find its way to homesteads. Removing silt from Gwayi River is also major stride that should be taken to avoid flood disaster. In addition respondents cited that huge trees have grown and development inside the river causing water during rainy season to flow off the river to the villages, there cutting of those trees inside the river is another method can be used. Respondents cited that farming near the river is another cause of river therefore it should be prohibited. Other solutions cited include the following:

- Avoiding deforestation
- Evacuation but to a safe place with water, fertile land and other basics.
- Financial assistance and aid to built strong houses
- Employment creation by the government so that they will not depended solely from subsistence farming (reducing vulnerability)
- Objectivity in disaster response resource distribution so that the victims in dire need of aid are assisted.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter presents the conclusion and summary of the whole research chapters, possible solutions and recommendations of the challenges discovered.

5.1 SUMMARY OF THE RESEARCH

Chapter one consists of the introduction to the study to draw the reader to the whole essence of the research. Background of the study is also included in chapter one, it serves as a backdrop of the study about flood disaster, it gives the history of flood disaster in Zimbabwe and Tsholotsho district, location of the area of study. Statement of the problem is outlined in chapter one and it seeks to identify the existing gaps and loopholes in the current structures of the disaster risk reduction methods and the emphasizes the need to address the problems so as to improve flood disaster management. Some of the problems included in the statement of the problems are that CPU is reactive to flood disaster instead of being proactive, lack of financial resources and top-down approach in disaster management.

Research objectives and research questions are also found in chapter one, these seek to find answers to certain aspects and direct the study and help in maintaining the theme of the study. Justification of the study in the chapter aims to establish the rationale and significance of the study to the readers of the research findings. Scope of the study reveals to the reader of the various aspects to be discussed in the research. Limitations and delimitations reflect the advantages and disadvantages experienced by the research in the process of data collection. The summary then summarises the whole chapter 1.

Chapter two is the engine of the research as it explores various definitions, concepts, theories and solutions about the study. Disaster Risk Management is discussed in detail in this chapter, more specifically to the study is the flood disaster management case studies namely, in India, Zimbabwe and Bangladesh. Chapter 3 contains research methodology i.e research design, data collection instruments, justification of data collection instruments and sampling techniques, sample frame, data collection procedures and the summary. In short chapter three contains the justification of research techniques and validate research methods used by the researcher.

Chapter four is made up of the data collected from the area of study presented in diagrams, graphs, and pie charts. Data is interpreted, analysed and faults are found in the research and established. Chapter 5 then give summary of the whole chapters and recommendations and possible solutions to the problems discovered in chapter 4.

5.2 Conclusion

Developing a holistic approach in enforcing the law especial environmental laws, sourcing funds and generating funds locally rather than depending solely on international humanitarian aid is the remedy in revamping and forging a sustainable disaster management in Zimbabwe. Pawarangira (2008) calls for flood hazard modelling in Tsholotsho developed in his study to develop flood risk map. Some of the causes of flood disaster can be avoided such siltation of dams by removing silt however financial and material shortages comes into play.

5.3 RECOMMENDATIONS

Making use of Vulnerability Assessment-

Being aware of the current situation of a flood disaster prone area is of paramount importance so as to reduce future and present damages but knowing the situation and doing nothing about it is as good as nothing. Therefore ways should be found to identify social vulnerability and resilience on the basis of a variety of factors for example individual, household, community and region. This means that the impact of floods can be reduced through an integrated political and socio-economic vulnerability assessment that helps to form systematic disaster preparedness and response processes. This vulnerability assessment should result in positive recommendations that will help in disaster preparedness, response, and prevention if possible, response and resilience.

Political will and commitment

Forging political will to act in a world of scarce resources-financial as well as natural-political attention and commitment are vital to ensure good decision making and the necessary investments in the development and management of water as well as economic use of scarce resources. The Civil Protection Act give responsibility of declaring of disaster; however the president is a political figure, which means the declaration of a disaster depend on the discretion/willingness of the president of which humanitarian matters can play a second fiddle to politics and disaster related matters can be made an underling of politics. Therefore, political

consensus is necessary in disaster mitigation because changes in government can radically disrupt both preparedness plans and the administrative structures of disaster planning at all levels.

Community participation-(Community based disaster risk reduction)

As asserted by According to Bongo et al (2013), policy making process has ignored the input of the most vulnerable groups, hence the top down approach has been implemented. The Civil Protection Unit and other stakeholders have not done much towards incorporating communities in policy making and this has limited the country's capacity to cope with the risks associated with natural disasters. To achieve effective DRM local communities should not be passive recipients or, victims, but they should be active partners with a real voice and some power. In this case people when involved are willing to participate fully in the implementation process by even providing free labour. Involving community in policy formulation and implementation enhance public awareness and education. For instance in India community participation has been prioritised by awareness raising concept of community participation in areas of disaster risk reduction and management by adopting specific policies, attribution of roles and responsibilities and the delegation of provision of the necessary authority and resources at grass root level(Bhaduri undated In this regard participation is useful in promoting a better understanding the threats of disaster, enlighten the communities on their current situation and capacity to halve risk and revamp a collaborative venture in reducing disaster risk and the ownership and commitment towards achieving disaster risk management goals.

Evacuation and relocating the people living in flood prone areas.

Evacuation can be implemented before and after flood disaster it is a response to the immediate or forecast threat of flooding that is expected to pose a risk to life, health on wellbeing. However, people should be resettled in safe places with accessible potable and clean water, road infrastructure, and education and health facilities among other things. Evacuation can also be associated with early warning systems and forecast. Although this can be compromised by the culture and religion, people may be adamant to vacate the place if major follow ups are not taken to communicate the dangers of not vacating the place. Restriction of development on high hazard prone areas: anthropogenic activities on unsuitable lands exacerbate disaster putting the built-up

and population at high risk. This could be made possible through legislation and law enforcement and requires planning by local authorities and traditional leaders who are responsible for land allocation.

Early Warning, Awareness, Sensitization, promoting indigenous knowledge on flood disaster

An improved early warning system with modern technology is necessary. This involves making people who are likely to be affected by a disaster alert so as to protect their socio-economic life. The media should be very active in transmitting information to the people to raise their consciousness to anticipate disaster more importantly is making information accessible to remote areas. Meteorological department should take lead in weather forecasting and reporting again with advanced technology. In terms of awareness local authorities, with the help from community leaders, should embark on awareness program in discouraging settlements on floodplains, deforestation and soil erosion. For local people to be recognized and gain confidence legislation should be made available to them so that they lobby the government to offer adequate assistance. This will go a long way in achieving sustainable development goal number thirteen on climate change (taking urgent action to combat climate change and its impact).

Infrastructural development and renovating the existing infrastructure.

Construction of proper roads, with bridges especially in Lozombani River to enable pupil to access school is necessary. Building of strong houses even with mud and grass but reinforced with wood should be emphasized; building with cement will be the best. However the area under study is impoverished most people in area depend on nature to build shelters free of charge making it hard for them to purchase building material. Therefore government and local authority should mobilise resources though they also face financial challenges, so engaging private players and Nongovernmental organisations in infrastructural development is essential as per sustainable development goal number nine on building resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. Damming and construction of weirs require enormous financial resources therefore private players can chip in. Public Private Partnership especial in terms of infrastructural development is essential because the construction of proper

road network to remote areas will enable the vulnerable community to get prompt relief in times of disaster instantly.

Resource mobilisation by the government

The research discovered that there are resource constraints to carry out disaster risk management properly thereby making it ineffective. Therefore government should find means of resources to finance the process of disaster management like the 3% Aids levy from employment tax. Resources can also be found from international or regional community or aid organisation. It is also important that the government ward decent salaries to its employees so as to attract competent and retain quality human resources that can best execute functions of disaster risk management.

Focus should be on disaster preparedness and resilience other than response.

The research unearthed that much attention is given to response which is costly therefore CPU should prioritise preparedness that is to educate people and setting standards, if possible with subsidy, the building structures and promote education awareness to the flood prone populace with monitoring and evaluation as per Zim-Assset cluster for social service. It is cost effective to stay prepared and preventive measures should be devised also.

Prioritising flood disaster management in development plans.

As plans are crafted from the community by VIDCOs and WADCOs flood disaster mitigation plans should be given full attention it deserve. Community based disaster management committees should be established because traditional leaders and councillors function in disaster management has seemed to be reporting when the disasters occur but the communities need to plan and devise solutions to floods disaster.

Effective channels of communication and interaction between local authorities and citizens.

Communication between service providers and service recipients should be strengthened especially during disaster, reporting should not be rested on community leaders only because in some instances they will be also trapped. Therefore international communication and technology tools should be used so that everyone can report to local authorities' cases of disaster whenever

they occur. Telephone network should be made available to the remote areas so as to foster smooth communication.

BIBLIOGRAPHY

Babbie, E. (2010) The Practice of Social Research, WADSWORTH CENGAGE Learning, Chapman University

Bryman, A. (2012), Social Research Methods: Oxford University Press Inc. New York

Bromley D.B. 1990. Academic contributions to psychological Counselling 2. Discourse Analysis and the Formulation of Case Reports. *Counselling Psychology Quarterly* 4.

Braun, V. and Clarke, V. 2006. Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3 (2).

Boesen, K. J and Martin T. 2007. Applying a rights-based approach: An inspiration guide for civil society, The Danish Institute for Human Rights, Denmark.

Blaike, P., Cannon, T., Davies, I., and Wisner, B. 1994. At risk: Natural Hazards, people`s vulnerability and disasters. *Routledge. London.*

Chambers, R. and Conway, G. 1992. Sustainable rural livelihoods: Practical concepts for the 21st century IDS. Discussion Paper 296. IDS. Brighton.

Clark, J, and Carney, D. 2008, ESRC Research Seminar: Sustainable Livelihood Approaches – What have we Learned? Accessed on 15 June at:

<http://www.eldis.org/go/topiv/dossiers/livelihoods-connect&id=41798&type=document>.

Comfort, L. 1994, Self-organisation in Complex Systems, *Journal of Public Administration Research and Theory*, Vol 4 No 3.

Creswell, J. 1998. Research design: Qualitative, quantitative, and mixed methods Approaches (2nd ed.). Thousand Oaks, CA: Sage.

David, M. & Sutton, C. (2004), Social Research Basics; SAGE Publications, London

Global Water Partnership (2000), Integrated Water Resources Management: SE-105 25, Stockholm, Sweden ISSN: 5324

GWP. (Global Water Partnership). 2000. Integrated Water Resources Management: Stockholm, Sweden, SE-105 25, ISSW: 1403-5324

Gumbo, D.(2006) "Working Together to Respond to Climatic Change" Annex 1 Expert Group Seminar in Conjunction with the OECD Global Forum on Sustainable Development

GFDRR (Guide for Disaster Recovery Framework) .2014. Disaster Recovery Framework, Mozambique

Gray, D.E. (2009), Doing Research in the Real World, SAGE Publications Ltd, London

Hillhorst, D. 2003, Complexity and Diversity: Unlocking Social Domains of Disaster Response, In Bank off G, et al, Mapping Vulnerability: Disaster, Development and People, Earth scan, London.

Krantz, L. 2001. The Sustainable Livelihood Approach to Poverty Reduction; An Introduction. Stockholm: Swedish International Development Cooperation Agency.

Madamombe, E. K. 2004, Integrated Flood Management Case Study1 Zimbabwe: Flood Management Practices: Selected Flood Prone Areas Zambezi Basin, World Meteorological Organization.

MudoFridah, W, 2002, Sampling in Research. Accessed on 04 September 2015 at: https://www.uonbi.ac.ke/fridah_mudo/files/mugo02samplingpdf.

National Emergency Management Committee of Australia (2010) Disaster Management Strategy Policy Framework, The State Queensland. Australia

Osti, R, & Miyake, K. (2011), Natural Disaster Research, Prediction and Mitigation: Forums of Community Participation in Disaster Risk Management Practices, Nova, and New York, NY, USA. Available from ProQuest ebrary (9 September 2015)

Pawarangira, R. (2008), Flood Hazard Modelling in Tsholotsho District, Zimbabwe. University of Zimbabwe. Harare

Punch, K.F. (2014), Introduction to Social Research: Quantitative and Qualitative Approaches. SAGE Publications, London

Wellington, J. & Szczerbinski, M. (2007), Research Methods for Social Sciences. Continuum International Publishing Group, London

Shaw, R. & Phong, T. (eds) (2012), Community, Environment and Disaster Risk Management, Volume 9: Environment Linkages, Emerald Group Publishing Ltd, New York, NY, USA. Available from: ProQuest ebrary. (9 September 2015)

United Nations (undated) Guidelines for Reducing Flood Losses: A contribution to the International Strategy for Disaster Reduction

USAID (2011), Introduction to Disaster Risk Reduction Training Course for Southern Africa

Ray, G.L. & Mondal, S. (2004), Research Methods in Social Sciences and Extension Education. Kalyani Publications, New Delhi

Reducing Future Flood Losses: The role of Human Actions- Summary of a Workshop, March 2, 2004, Washington DC 2004, National Academics Press, Washington, DC, USA . Available from: ProQuest ebrary. (9 September 2015)

NEMC,(National Emergency Management Committee).2010., Disaster Management Strategic Policy Framework, The State of Queensland; Australia

UNDP (United Nations Development Programme).2004., Reducing Disaster Risk: A Challenge for Development. New York. NY, ISBN92-1-126160

United Nations (undated), Guidelines for Flood Losses, A Contribution to the International Strategy for Disaster Reduction: United Nations

UNISDR (United Nations International Strategy for Disaster Reduction).2002. ISDR Background paper for WSSD. Geneva

UNISDR (United Nations International Strategy for Disaster Reduction).2009., UNISDR Terminology on Disaster Risk Reduction. Geneva. 30p.

USAID (United States of America for International Development) .2011., Introduction to Disaster Risk Reduction Training Course for South and Southern Africa

Patton, M. Q, 1990, *Qualitative Evaluation and Research Methods*, SAGE Publications, Newbury Park, London.

<http://www.reliefweb.int/disaster/fl-2015>

The Civil Protection Act. (1989). Zimbabwe Act: Civil Protection. Parliament of Zimbabwe Document (Chapter No.5, pp. 18). Harare, Zimbabwe.

Twigg, J. 2004. *Disaster Risk Reduction: Mitigation and Preparedness in*

UNISDR. 2005. "Disaster Risk Reduction Efforts in Zimbabwe." Accessed on April 23, 2015 at: <http://www.unisdr.org/2005/mdgs-drr/national-reports/Zimbabwe-report.pdf>.

UNDP, 2004. *Zimbabwe Human Development Report*, UNDP.

Wisner, B., P. Blaike, T. Cannon, and I. Davis. 2004. *At Risk: Natural Hazards, People's Vulnerability and Disasters*, Wilshire, Routledge

APPENDIX 1

QUESTIONNAIRE FOR CIVIL PROTECTION UNIT MEMBERS



My name is Maclear Khumalo. I am a student at Midlands State University pursuing degree in Local Governance Studies and carrying out a research project on the assessment of flood disaster management strategies and their effectiveness and I chose Tsholotsho as my case study. I am kindly asking you to assist with information which you might have encountered and know as you will answer this questionnaire. The information you will provide will be strictly confidential and strictly for academic purpose only, no publications and follow-up will be done as there is no need to provide your name.

DETAILS OF RESPONDENT

Please fill in the following information

Organisation.....

Position

Sex.....

Date.....

1. How long have you been working for this organisation?
2. Source of information regarding cases of flood disaster?
3. What are your early warning systems and are they effective?
ii) If no what steps have you taken to improve early warning system?
4. What information systems available regarding disaster?
5. What challenges do you face in securing materials and goods for disaster relief items?
6. What legal and bureaucratic challenges do you encounter?

(ii) If any what solutions have you proposed or put in place to get rid of above challenges

7. How often do you engage community in disaster management and planning?

8. What are the players in disaster management?

9. What is your major source of resources in disaster relief?

10. Do you value traditional leaders in disaster management?

11. Have you ever experienced any political interference in disaster relief?

(ii) if yes in what form?

12. Are you satisfied with institutional capacity in flood disaster management? Give explanation to your answer.

13. Does the economic situation of the country affect your organisation in tackling flood disaster matters? Give explanation.

14. Give possible solutions to the above challenge

APPENDIX 2

Below are questions directed to the ordinary citizens who reside in flood prone areas in Tsholotsho District?

DETAILS OF RESPONDENTS

Ward and Village

Sex.....

Date.....

Level of education.....

1. How frequent is the occurrence of flood disaster in your area
2. What are the effects of flood disaster on the your socio-economic livelihoods3.Are you satisfied by the way civil protection officials respond to flood disaster
- 4) Are you given enough space to participate in disaster relief and planning in your area
(ii) If yes in what activities have you participated in relation to flood disaster management
- 5) Do you think it is wise to vacate flood prone areas? Give explanation to your answer
- 6). Do you think distribution of resources in flood response is fair
- 7) Have you ever been denied aid because of your political affiliation, gender, and location if yes explain how
- 8) Who do you think are the most vulnerable group in your community in relation to flood disaster?
- 9) Are you employed if not what is your source of income?.
- 10) Have you ever been to Diaspora if yes for how long?
- 11) Are you aware of legal provisions that govern civil protection?9)
- 12Are you willing to participate in structural development in your area without a commission
- 13) What do you think is the solution to flood disaster in your area?