

**LOCAL STAKEHOLDERS PARTICPATION IN EFFECTIVE DISASTER
MANAGEMENT IN ZANZIBAR: A CASE STUDY OF MJINI DISTRICT**

HAMID ABDALLA HAJI

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN
MONITORING AND EVALUATION OF THE OPEN UNIVERSITY OF
TANZANIA**

2019

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by Open University of Tanzania a dissertation entitled; “Local stakeholders participation in effective disaster management in Zanzibar” in partial fulfillment of the requirements for the degree of Master of Art in Monitoring and Evaluation of the Open University of Tanzania.

.....

Prof. Deus Dominic Ngaruko
(Supervisor)

.....

Date

COPYRIGHT

No part of this dissertation may be reproduced, stored in any other retrieval system, or transmitted in any other form or by any means without prior written permission of the author or Open University of Tanzania in that behalf.

DECLARATION

I, Hamid Abdalla Haji, do hereby declare that this dissertation is my own original work and that it has been not presented and will not be presented to any other University for similar or any other degree award.

.....

Signature

.....

Date

DEDICATION

This dissertation is dedicated to my beloved mother, Tatu Sheha Hamdu, who raised and laid the foundation of my education and career. May the Almighty Allah (S.WT.) bless you! Also this dissertation dedicated to my lovely daughters Khairat Hamid Abdalla and Farhat Hamid Abdalla

Read! And your Lord is the Most Generous. Who has taught by the pen? He has taught man that which he knew not (QUR AN 96:3-5).

ACKNOWLEDGMENT

My countless thanks go to God who helped me to every step in my studies. I wish to express my sincere gratitude to my lovely mother, Tatu Sheha Hamdu who I shall always remain greatly indebted for their untiring love, moral and material supports and who laid the foundation stone of my study. My special thanks go to my lovely wife Mrs Fatma Haji Faki who tolerance, prayers, love and care have always been sources of strength and encouragement to me through the course of my study.

My profound gratitude goes to my supervisor, Prof Deus Ngaruko for his guidance, patience, moral support and understanding from the initial stages of writing the proposal up to the time of production of this dissertation. I am also gratefully indebted to my employer, Zanzibar Planning Commission for finance my studies. In other hand, thanks goes to lovely Commissioner of Monitoring and Evaluation Department Mrs. MashavuKhamis Omar, Head of National Monitoring and Evaluation Mrs. Jamila S. Abbass, Head of M&E Policy Analysis Division and my best friends Mr. Mussa Mshirazi Mbarouk and Ali Abdalla Juma for given me cooperation from initial stage up to final stage in my study without to forget my best friend during my class discussion Mr. Suleiman Rashid, Ali Mlenge and Saada Shaibu for their companionship to me through the course of my study.

Also thanks goes to Government Institutions, NGOs and Shehias of Gulioni and Mwembe Makumbiat Mjini District for granting me permission to undertake my field research and all officials who helped me in one way or another in completion of my field research.

My sincere thanks are extended to all lectures and other staff of Open University Tanzania (OUT) for their instructions and encouragements after my stay at the Institute. Last but not least, I wish to express my measureless thanks to my colleagues and all friends who we shared, exchange and challenging different views on our studies.

ABSTRACT

The main objective of this thesis was to assess the effectiveness of local stakeholder's participation in disaster management in Zanzibar. Specifically, this examined how the ICT is used in disaster management, how the local community participates in disaster management and lastly was to examine the contribution of Public Sector and NGOs on Disaster management. The study used descriptive research design, quantitative approach and closed ended questionnaire in data collection and the sample size were 99 including ICT People, NGOs Staff, Government Officials and household. Data was analysed using Microsoft Excel and Statistical Package for Social Sciences (SPSS) Version 16. The study reveals uses ICT, community participation and Contribution of public and NGOs play big role in the contribution of disaster management in Mjini District, Zanzibar. This study recommends that The Revolutionary Government of Zanzibar should put more effort on ensuring all stakeholders including private companies to participate effectively in disaster management.

TABLE OF CONTENTS

CERTIFICATION.....	ii
COPYRIGHT	iii
DECLARATION	iv
DEDICATION	v
ACKNOWLEDGMENT	vi
ABSTRACT	viii
TABLE OF CONTENTS.....	ix
LIST OF TABLES.....	xiii
LIST OF FIGURES.....	xv
LIST OF ABBREVIATIONS AND ACRONYMS.....	xvi
CHAPTER ONE.....	1
INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Research Problem	2
1.3 Research Objectives	4
1.3.1 Main Objective.....	4
1.4 Research Question.....	4
1.4 Significance of the Study.....	4
1.5 Ethical Consideration	5
CHAPTER TWO.....	6
LITERATURE REVIEW.....	6
2.1 Chapter Overview	6
2.2 Concept of Disaster and Definition of Terms 2.2.1 Disaster.....	6

2.2.3	Theoretical Review on Disaster Management	11
2.2.4	Global Empirical Literature Review	15
2.2.5	Empirical Literature Review in Africa.....	16
2.2.6	Empirical Literature Review in Tanzania.....	17
2.3	Research Gap	18
2.4	Policy Review	18
2.5	Conceptual Framework	19
CHAPTER THREE.....		21
RESEARCH METHODOLOGY		21
3.1	Chapter Overview	21
3.2	Description of the Study Area	21
3.3	Research Design.....	22
3.4	Study Population, Sample and Sampling	22
3.4.1	Populations	22
3.4.2	Sample Size	23
3.5	Sampling Technique.....	23
3.5.1	Purposive Sampling	24
3.5.2	Simple Random Sampling	24
3.6	Data Collection	25
3.6.1	Primary Data.....	25
3.6.3	Questionnaire	25
3.7	Secondary Data	26
3.8	Data Analysis	26
3.9	Data Presentation	27

CHAPTER FOUR	28
PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA	28
4.1 Overview	28
4.2 Characteristics of Respondents	28
4.2.1 Sex Distribution of Respondents	28
4.2.2 Distribution of Respondents by Educational Level	29
4.2.2 Distribution of Respondents by Category	30
4.3 How ICT is used in Disaster Management	31
4.3.1 Real-Time Monitoring for Emergency Early Warning, Climate and Weather Prediction	31
4.3.2 Icts Provision of Vital Support for Disaster Preparedness	33
4.3.4 ICTs Supports Better Response Planning in Areas Such as Determining Vulnerable Infrastructures.....	35
4.4 Contribution of Public Sector and NGOs on Disaster Management	36
4.4.1 Integration of Disaster Management Issues Into Sectoral Development Plans.....	37
4.4.2 Seek Resources to Support Disaster Management Activities.....	38
4.4.3 Create Public Awareness and Information Dissemination on Disaster Management	39
4.5 Local Community Participation in Disaster Management	49
4.5.1 Formation of Disaster Management Teams in the Community.....	50
4.5.2 Plans Preparation and Procedures for Disaster Management Programs	51
4.5.3 Operational Control in the Event of a Disaster or Emergency	53
4.5.6 Overseeing, Empowering and Supervision of Disaster Management	

Activities at Household Level.....	55
CHAPTER FIVE	57
SUMMARY, CONCLUSION AND RECOMMENDATIONS	57
5.1 Overview	57
5.2 General Summary	57
5.3 Summary of key Findings by Objectives	57
5.3.1 Uses of ICT in Disaster Management	58
5.3.2 Contribution of Public Sector and NGOs on Disaster Management	58
5.4 Conclusion	60
5.4.1 Uses of ICT in Disaster Management	61
5.4.2 Contribution of Public Sector and NGOs on Disaster Management	61
5.5 Recommendations	62
5.5.1 The use of ICT in Disaster Management.....	62
5.5.2 The Contribution of Public Sectors in Disaster Management	62
5.5.3 The Contribution of NGOs in Disaster Management	63
5.6 Community Participation in Disaster Management	63
5.7 Possible Areas for Further Research	64
REFERENCES	65
APPENDICES.....	68

LIST OF TABLES

Table 3.1: Sample of Population of Disaster Management Stakeholders.....	23
Table 4.1: Sex Distribution of Respondents	29
Table 4.2: Distribution of Respondents by Educational Level	30
Table 4.3: Distribution of Respondents by Category	31
Table 4.4: Real-Time Monitoring For Emergency Early Warning, Climate and Weather Prediction	32
Table 4.5: ICTs Provision of Vital Support for Disaster Preparedness	34
Table 4.6: ICTs Provides Answers Such as the Exact Location of the Fire Stations on Disaster Management in Zanzibar	35
Table 4.7: ICTs Supports Better Response Planning in Areas Such as Determining Vulnerable Infrastructures	36
Table 4.8: Integration of Disaster Management Issues into Sectoral Development Plans.....	38
Table 4.9: Seek Resources to Support Disaster Management Activities in Zanzibar	39
Table 4.10: Create Public Awareness and Information Dissemination on Disaster Management in Zanzibar.....	41
Table 4.11: Establish and Implement Appropriate Disaster Management Plans, Regulations, and Guidelines	42
Table 4.12: Facilitate Trainings and Researches on Reduction of the Disasters Impact	44
Table 4.13: Encourage its Members to Participate in Disaster Management Activities.....	45

Table 4.14: To Promote of Public Awareness on Disaster Management	46
Table 4.15: To Participate In Preparedness and Response Activities	Error!
Bookmark not defined.	
Table 4.16: Promotion of Environmental Management in Relation to Emergency Activities	49
Table 4.17: Formation of Disaster Management Teams in the Community.....	51
Table 4.18: Plans Preparation and Procedures for Disaster Management Programs	52
Table 4.19: Operational Control in the Event of a Disaster or Emergency	53
Table 4.20: Identifying all Hazards in Respective Locations	55
Table 4.21: Overseeing, Empowering and Supervision of Disaster Management Activities at Household Level.....	56

LIST OF FIGURES

Figure 2.1: Conceptual Framework20

LIST OF ABBREVIATIONS

CDEMA	Caribbean Disaster Emergency Management Agency
CHEs	Complex Humanitarian Emergencies
DMC	Disaster Management Commission
EPRP	Emergency Preparedness and Response Plan
ICT	Information Communication Technology
NGOs	Non Government Organization
OUT	Open University Tanzania
RGoZ	Revolutionary Government of Zanzibar
SPSS	Statistical Package for Social Sciences
UN	United Nation
UNODRR	United Nations Office for Disaster Risk Reduction
VUSSC	Virtual University for Small States of the Commonwealth
WDR	World Disaster Report

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Mjini District like any other district in Zanzibar is vulnerable to a number of hazards. Disasters in Mjini district are threatening human life, property, economic livelihoods and the environment. While mankind has learnt to cope with some of these problems, it is not possible to either eliminate or even constrain some of them. On the contrary, due to population growth, increasing poverty, climate changes and environmental degradation, human actions and lack of response have increased the disaster risks. In addition, new threats have been developed due to increased conflicts and social violence. The threat of hazardous materials and substances resulting from the importation of used materials (EPRP,2014).

Zanzibar has and still is experiencing significant disastrous events of both natural and man-made origin. Severe prolonged drought, cyclones and floods together with land degradation and resulting from weather related calamities leading to disastrous events such as epidemics, impassable roads and sea accidents, bush and residence fire are increasingly raising concern for different sectors and the general public at large. Disaster calamities usually cause loss to lives, loss of properties and infrastructure and therefore may lead to increasing level of poverty through inducing post-traumatic stress disorders, unemployment, inability to function properly and making people even more vulnerable to the future disaster incidents (EPRP,2014).

Throughout the recorded history of Zanzibar archipelago, disaster in various part of the country has been reported. Unquestionable, floods and diseases have been the most

frequently Occurring hazards. This confirms the high level of exposure to hazards due to its geography. Its geology explains the prevalence of floods for Unguja and landslide for Pemba islets. The frequency, intensity and variability of hydrometeorological hazards also have intensified the compelling need for the country to adopt the disaster risk reduction and resilient programming. Increases in levels of vulnerability especially in areas affected by floods and diseases need attention in order to reduce losses to human lives, property, crops, information, natural resources and other assets in all parts of the country (DMC, 2017).

In the period between 2005 and 2016 Zanzibar experienced heavy rain that may result in floods, landslides and storm surge are the most prevalent types of hydro-meteorological hazards .Also severe and recurrent floods have frequently occurred resulting in deaths and economic losses to agriculture, infrastructure and properties. Some of the most devastating floods and landslides are triggered by heavy rains that happened also within the period of 2017. Human activities also aggravate the effects of disasters specifically in the low land areas of Unguja and coastal wetlands of Pemba, where farming and irrigation activities have led to floods (DMC, 2017).

1.2 Statement of the Research Problem

The disaster management depend inter-related actions required from different actor to be taken include prevention, mitigation and preparedness before the disaster impact (Carter, 2008). Disaster management is an integrated process of planning, organizing, coordinating and implementing measures to effectively deal with their impact on people. The basic phases of disaster management are defined as long-term mitigation, preparedness, relief, and reconstruction. Mitigation or risk reduction

activities include structural and non-structural measures to reduce the adverse effects of natural hazards. Preparedness deals with activities and measures taken in advance to guarantee operative reaction to the influence of hazards, including the issuance of timely and effective early warnings and temporary evacuation of people and property from threatened locations

According to Warfield (2010) disaster management aims to reduce or avoid the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster, and achieve rapid and effective recovery. The disaster management cycle illustrates the ongoing process by which governments, businesses, and civil society plan for and reduce the impact of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred. Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability and prevention of disasters.

Wadi, 2015 explored the institutional framework in disaster management in West District Zanzibar and only conducted among members of the committees for disaster management that are in the West District and Shehia Committees. More specifically this study address the effectiveness of local stakeholders participation in disaster management in Mjini District, Zanzibar by considering the examine how the ICT is used in disaster management, examine how the local community participates in disaster management and examine the contribution of Public Sector and NGOs on Disaster management. This study therefore, sought to fill the gap of stakeholders participation in disaster management in Mjini District and to know the local community participates in disaster management and examine the contribution of

Public Sector and NGOs on Disaster management.

1.3 Research Objectives

1.3.1 Main Objective

Assess the effectiveness of local stakeholders participation in disaster management in Zanzibar.

1.3.2 Specific Objectives

- i. To examine how the ICT is used in disaster management
- ii. To examine how the local community participates in disaster management
- iii. To examine the contribution of Public Sector and NGOs on Disaster management

1.4 Research Question

- i. To what extent is the ICT used in Disaster management
- ii. How does the local community participate in disaster management
- iii. How do the Public sectors and NGOs contribute on Disaster management

1.4 Significance of the Study

This study will help to generate new knowledge, where the researchers and academicians that who intended to assess the effectiveness of disaster management at Zanzibar. This study will help in the formulation of policy and plans that will help the projects Coordinators on project implementation. Also the study will provide factual information to the stakeholders that could improve their awareness on disaster management. Lastly the study will help to benefit other researchers who will

be conducting study for related topic. This can help others researchers to have reference and good guidance when they conduct the research which has related to this study.

1.5 Ethical Consideration

During data collection, the researcher will guarantee the respondents that the information collected would be confidential and that it would be used for academic purposes only and not otherwise. The researcher's goal in conducting the research is to generate knowledge through honest conduct and reporting of the findings. The researcher is aware that data should not be falsified nor manipulated in order to maintain the quality of the research and of the report.

CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Overview

This chapter gives an overview of the literatures regarding on local stakeholders participation in effective disaster Management concepts, the theoretical and empirical reviews about the previous studies in the world and in developing countries. It reviews the necessary literature detailing on local stakeholders participation in effective disaster Management in order to establish link between what are proposed to examine and what has already been studied and enables to show existing knowledge. According to Kumar (2011) stated that Literature is reviews involved from text books, journals, articles, academic papers and the internet on issues relating to disaster management. Conceptual framework used to support the need for disaster management. This also explained what have been done and finding the gap of the study in correlation with the previous studies with the same topic area.

2.2 Concept of Disaster and Definition of Terms

2.2.1 Disaster

A disaster is a serious disrupting of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources (GRDRI, 2004). Hopkins (2006) defined the word disaster as a sudden overwhelming and unforeseen event. IPCC (2012) defined disaster as severe alterations in the normal functioning of a community or a society due to hazardous

physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery. Disaster for the purpose of this study is defined as serious disrupting event which disturbs the lifestyle of the people and their properties, hence coping up with the situation becomes difficult without external assistance.

2.2.2 Disaster Management

As defined by Maskrey (1989), disaster management is a discipline dealing with disrupting events and avoiding risks. It involves preparing for a disaster before it happens, disaster response, as well as supporting, and rebuilding society after natural or human-made disasters have occurred. According to Caribbean Disaster Emergency Management Agency (CDEMA) disaster management or sometimes called emergency management is the organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps. Disaster management seeks to achieve specific goals, these include: (a) Reduce, or avoid, the potential losses from hazards (b) Assure prompt and appropriate assistance to victims of disaster and (c) Achieve rapid and effective recovery (GDRC, 2008).

According to United Nations Office for Disaster Risk Reduction (2004), disaster management is defined as “the organization and management of resources and responsibilities for dealing with all aspects of emergencies, in particularly preparedness, response and rehabilitation”. Moreover, disaster management has been defined as “policy, decisions, activities, the practitioners and technologies that apply

in differing stages of a crisis at all levels”(Lettieri, et al., 2009).

2.2.2.1 Types of Disasters

According to Maskrey (1989) natural hazards and natural disasters are two very different terms which are frequently confused and used interchangeably. Earthquake, flood, and cyclone come to be synonymous with disaster, although natural hazards like earthquakes can be highly destructive, they do not necessarily cause disaster. An earthquake in an uninhabited desert cannot be considered to be a disaster, no matter how strong the intensities produced. An earthquake is only disastrous when it directly or indirectly affects people, their activities and their properties.

2.2.2.1.1 Natural Hazards

United Nations (2009) describes natural hazards as natural processes or phenomena which can cause loss of life, injury or health issues, property damage, loss of ownership and services, social and economic disruption or environmental damage. It further groups natural hazards into geological hazards such as earthquakes, landslides, rock fall, mudflow, and overflow of water and the meteorological hazards such as floods, lightning, snow-slips, freezing, thick fogs, hails, strong snowstorm, drought, natural fires like bush, peat, and lowland fires.

Basically, there are two types of disasters according to the World Disasters Report (2000), these are the natural and technological disasters. So far, it is assumed technological disasters in Africa is not yet the big challenge as many of these countries are underdeveloped, there is no huge technological advancement that can cause things like air pollution as many Asian and European countries do. Instead, in

Africa man-made disasters are on the rise.

2.2.2.1.2 Natural Disasters

Natural disasters are generally considered as a coincidence between natural hazards (such as flood, cyclone, earthquake and drought) and conditions of vulnerability. There is a high risk of disaster when one or more natural hazards occur in a vulnerable situation (Maskrey, 1989). Disasters are the convergence of hazards with vulnerabilities. As such, an increase in physical, social, economic, or environmental vulnerability can mean an increase in the frequency of disasters (World Bank, 2010).

According to the report on the status of Disaster Risk Reduction in the Sub-Saharan Africa Region (2008), natural disaster is an extreme event in which a natural hazard interacts with individual and community exposure and vulnerabilities to trigger negative social and economic impacts on a scale that is beyond the coping capacity of the affected population. As par the Virtual University for Small States of the Commonwealth (VUSSC), these types of disaster naturally occur in proximity to, and pose a threat to, people, structures or economic assets. They are caused by biological, geological, seismic, hydrologic, or meteorological conditions or processes in the natural environment (e.g., cyclones, earthquakes, tsunami, floods, landslides, and volcanic eruptions).

2.2.2.1.3 Technological Disasters

As defined by the World Bank (2010), technological disasters are threats that arise from technical or industrial circumstances including accidents and breakdowns, hazardous processes, infrastructure disruptions or specific human activity which can

cause loss of human lives, injuries, diseases or other health impacts, property damage, loss of ownership or services, social or economic disruption or environmental damage. Such disasters include nuclear power plant, hydro-electrical power stations, chemical industries, biological industries, production and storage of explosives, collapse of building, structure and transport.

2.2.2.2 Man-Made Disasters

Although weather and geologically related disasters are considered to generate the greatest number of deaths and economic loss, disasters generated by humans are increasing in importance (Hopkins, 2006). The Virtual University for Small States of the Commonwealth (VUSSC) describes man-made disasters as the disasters or emergency situations of which the principal, direct causes are identifiable human actions, deliberate or otherwise. Apart from “technological disasters” this mainly involves situations in which civilian populations suffer casualties, losses of property, basic services and means of livelihood as a result of war, civil strife or other conflicts, or policy implementation.

In many cases, people are forced to leave their homes, giving rise to congregations of refugees or externally and/or internally displaced persons as a result of civil strife, an airplane crash, a major fire, oil spill, epidemic, terrorism, etc. Armed conflicts, often called Complex Humanitarian Emergencies (CHEs) are the worst disaster that can befall populations. The deaths among civilians in Vietnam, the Democratic Republic of the Congo, Mozambique and Iraq are counted in hundreds of thousands and, in some cases, in millions (Hopkins, 2006).

2.2.3 Theoretical Review on Disaster Management

According to mHyogo Framework for Action on Building the resilience of nations and communities to disasters (2005-2015), The Effective disaster risk reduction requires community participation. The involvement of communities in the design and implementation of activities helps to ensure that they are well tailored to the actual vulnerabilities and to the needs of the affected people. This informed engagement helps to avoid problems and secondary effects when hazard events occur. Participatory approaches can more effectively capitalize on existing indigenous capacities. They are usually also more sensitive to gender, cultural and other context-specific issues that can undermine or empower particular groups and individuals to take locally based action.

The incorporation of local perspectives into decision and activities also helps to ensure that changes in vulnerability and perception of risk are recognised and factored into institutional processes, risk assessments, and other programmes and policies. According to John Twigg(2015) Experience has shown that a critical feature of an effective disaster preparedness capability is the extent to which different actors and entities operate in a coordinated and timely manner by avoiding gaps, duplication of effort, and parallel structures. Skilful coordination among the wide range of potential stakeholders that may provide assistance during an emergency (such as the military, NGOs, utility companies and private sector entities) is critical to avoid confusion and to facilitate an effective response.

Further more John Twigg (2015) insists that Ensuring a clear central focal point and location for coordination, such as an Emergency Operations Centre. Different

political, cultural, and socio-economic environments necessitate institutional arrangements, including coordination mechanisms, which are appropriate to that particular context. Effective coordination also requires a clear division of labour and clarity as to who does what. It is also important to recognize that even in systems that are decentralized, responsible entities can still provide information and benefit from participation in more centralized coordination mechanisms.

Effective preparedness requires close coordination and information exchange among active organizations, including internally (within their own Ministries or Departments) and externally (with other stakeholders). It is also important to ensure vertical coordination between the regional, national and local level. An effective coordination system will promote two-way information flow and actual dialogue rather than just information sharing between different components of the system (John Twigg 2015).

ICRC (2005) identifies key preparedness mechanisms that that will directly increase the effectiveness and efficiency of disaster response as; evacuation procedures, search, rescue and assessment teams, assessment procedure and information priorities and measures for activating special installations for disaster response. Other such measures include procedure for activating distribution systems, preparations for emergency reception centers and shelters, procedure for activating emergency programs for airports, harbors and land transport; and preparation for storing or making arrangements for rapid acquisition of emergency relief supplies and equipments e. These measures become very useful during disaster response but only if they were catered for during preparedness stage. To realize this, such gaps

like low levels of political commitment to disaster preparedness, limited capacity in risk identification, and uncoordinated emergency response must be tackled conclusively.

Schneid, et al. (2000) Disasters occurs quite frequently all over the world and yet; decision makers usually devote resources to the most pressing current problems rather than to a problem that may not occur under their watch. Indeed, such disaster comes in many forms and natural disasters kill at least 12 one million people around the world each decade. Due to their frequency and the destruction they cause on human lives and livelihood, Schneid D T asserts that disaster preparedness world over is no longer a matter of choice but mandatory irrespective of where one lives. We must shift from a culture of reaction to a culture of prevention. This is because prevention is not only more human than cure; but it is also much cheaper.

Above all, we should not forget that disaster prevention is a moral imperative, no less than reducing the risk of war. Consequently, we should always prepare for disaster occurrences the same way the military prepares for wars whose occurrence they cannot tell with certainty. Schneid further identifies the various steps in disaster preparedness as identification of potential risks, assessing their viability, evaluating the probability of the risk occurring and an appraisal of the potential damage in order to come up with a realistic and practical approach to management of the problem. This is because we must acknowledge the fact that we live in a world of risks and seek appropriate ways of managing and reducing the risk in order to reduce vulnerability. Human vulnerability is determined by factors such as the physical environment where they live, social economic and ecological factors among others

(Schneid, et al. 2000).

Mahalingam, et al. (2011) observe that the internet has changed information handling and escalation of digital contents in recent years, but appropriate storage technology is needed for effective management of information which is critical to businesses today. The rapid growth of digital contents requires a technology that delivers high availability, scalability, and reliability. Storage Area Network (SAN) is one promising solution providing high speed data transfer with many other storage services, backboned with a high speed Fibre Channel (FC). Kizza (2013) states that in information technology disaster situations are big security problems to the enterprise information systems, which must be handled with skills just like other security problems for a modern society. Businesses fail or lose millions of dollars every year depending on the level of attention they give to their online systems against disasters like fire, power outage, theft, equipment failure, viruses, hackers and human errors. business cannot succeed in today's environment without plans to deal with disasters.

Huang et al. (2010) asserts that internet social networking tools and the emerging web 2.0 technologies are providing a new way for web users in information sharing and knowledge dissemination. Examples of web 2.0 tools include search engines (e.g. google and Bing), encyclopidias (e.g. wikipedia), videos and photos sharing (e.g. youtube and flickr) blogs and social networking websites (e.g. facebook, twitter and 24 plurk). Users are able to send text, photos or audio clips to be viewed by anyone or specific groups which can be chosen by the user. These sites have empowered the public to share experience and information during emergency and

disaster response activities.

2.2.4 Global Empirical Literature Review

Some studies doubt about an organizational explanation about disaster management can be effective. In particular Stenchion's (1997) interpretation of Australia disaster management juxtaposes with Britosealier description of Management structure. According to Stenchion (1997) stated that "A common misconception associated with Disaster Management is the belief that it is something separate from normal government and community business, involving only professional emergency response agencies and relief effort when something serious occurs. In reality disaster management should extend all times across all government sectors, non governmental, international level down to individual peoples as it affect.

Another study on Disaster management in India (2002) stated that since the community is the first responder in any disaster situation, there are great needs for community level initiation in managing disaster. The initiative taken by different agencies including the state, NGOs, need people –centric and the level of community participation should be gauged through the role played by community in the process of planning and decision making. Effort should be made to strengthen the local economies thereby making people independent for external assistance.

Hopkins (2006) views an effective response to disaster begins with effective planning, but must include many other steps. Each of these steps depends on the strength of other links in the disaster management chain. While no one organization or group „owns“ a disaster, the ultimate responsibility rests with governments to

protect its people against disaster. No government can carry out these responsibilities without cooperating with many other groups in a country. An effective national disaster management system is largely absent from many developing countries.

2.2.5 Empirical Literature Review in Africa

Mugambi (2008) examine the effective of disaster management and found that in order to improve on disaster management in the country, recommends an effective institutional framework that coordinates the various actors and with community participation. Hence, public institutions should work more closely with their partners in the private sector, local authorities and NGOs on the basis of their comparative advantage. Such coordinated effort is crucial because during disaster, there are very many actors who seek to help but each comes into the scene on their own and the multiplicity of actors makes it difficult in ascertaining who takes the final responsibility for integrating disaster reduction into development planning.

Besides this, the various actors require a coordinating agency that will ensure that all the equipments, supplies and other resources are effectively utilized to combat the problem and relieve suffering to the affected persons. Such coordination is not clear and a study that leads to its identification is crucial for better results in disaster management in Kenya. Taabu (2014) in her study on assessment of disaster management practices explain that effective disaster management depends on rate and force of natural and/ or man-made disasters. In this context, it is now essential to be able to promptly and effectively prevent and prepare for, respond to and recover from catastrophic events. Government typically responds by putting in place suitable policies and organizations. Disaster management requires additional effort towards

proper and effective collaboration when coping with catastrophic events.

2.2.6 Empirical Literature Review in Tanzania

Galila (2017) examined the Effectiveness of Early Warning System for Disaster Management in Tanzania, a case study of Management of floods in Kinondoni Municipality and revealed that early warning system should be encouraged in the community to contribute to the disaster management as well as links of agency and department of disaster control in Tanzania. This means that community may acquire better information by absorbing citizens who are affectively attached to the community and have moral obligations to fulfil their goals. However, community and management need to be aware on disaster management in increasing households' obligation level so as to build their normative commitment as well as giving more attention and recognition to the continuancely committed disaster control to improve their morale that binds them to be emotionally attached to the community.

Wadi, (2015) assessed the institutional framework for disaster management in Zanzibar, a case study West District on his study revealed that effectively responding to disasters, it is crucial for the District Disaster Management Committee and that of the Shehia to have ability to deal with them. Capacity could be the ability of the people to assist in the disaster management 66 activities such as in preparedness stage, rescue and post disaster stages. Having financial and technical capacity could pave the way to have free disaster communities. Findings reveal that there are enough human resources within the Shehias, that if properly used could help much in disaster management. Also Shehias are capable of conducting disaster

related trainings as they already have people who have received trainings and therefore can train others. Status of the infrastructure such as roads in the Shehia are not conducive to allow smooth transfer of goods, equipment and other items to the incident areas.

2.3 Research Gap

Recent studies have been conducted about the assessment of disaster management but focus public education on disaster management (Samuel William Nielsen, 2010) for the sake of exploring how public education the different ways in which senior disaster managers and educators as a key of influence the disaster practice in community. Another study (Taabu 2014) on assessment of disaster management practices in Ministry of Energy and Petroleum and Wadi (2015) on assessments in disaster management frameworks but unfortunately they didn't clarify clearly the local stakeholders participation in effective disaster management. Therefore, this study will fulfill that gap, but more specifically in Zanzibar aims to identify to examine how the ICT is used in disaster management, to examine how the local community participates in disaster management and to examine the contribution of Public Sector and NGOs on Disaster management.

2.4 Policy Review

Zanzibar has launched the implementation of the Disaster Management Policy since 2011, together with the amendments of the Disaster Management Act No. 1 of 2015. Another important tools that has been developed by the Disaster Management Commission (DMC) are the National Operational Guidelines of June 2013, Monitoring and Evaluation Framework of 2013, Zanzibar Emergency Preparedness

and Response Plan of 2011 and the Zanzibar Disaster Communication Strategy of 2011. These important working instruments reveals the government commitment in disaster management governances in the country that seeks to ensure a resilient community through institution of disaster prevention, preparedness, mitigation, response and recovery measure. In respect to the above commitment, the Zanzibar Government formulated a disaster management system to create an enabling environment for effective management of disasters at all levels in the country.

The development of this policy is influenced by a comprehensive disaster management approach that seeks to achieve the right balance of prevention, mitigation, preparedness, and response. Disaster management requires the cooperation between multilateral development agencies, national and local governments, nongovernmental organizations, businesses, natural and social scientists, technical specialists and the vulnerable communities. From this point of view, this policy is based on the realization of the multi-dimensional nature of disaster which also requires complex and a very coordinated management by drawing a wide range of skills, knowledge and experiences from a range of stakeholders at all levels. In addition, the government established the Disaster Management Commission (DMC) in 2015 to give more power of autonomy and authority, as stipulated the newly Disaster Management Act No. 1 of 2015.

2.5 Conceptual Framework

The conceptual framework in Figure 1.1 illustrates the relationship between dependent variables and independent variable. The independent variables which are the uses of ICTs, Contribution of Public Sectors and NGOs and local community

participation which direct influence of dependent variable (Effective Disaster Management). This means that if well practiced, disaster will effectively be managed. On contrary, if not well practiced, disaster will be poorly managed. Stakeholders participation involved of fully engaged on disaster management through preparation, implementation, and reporting all disaster issues.

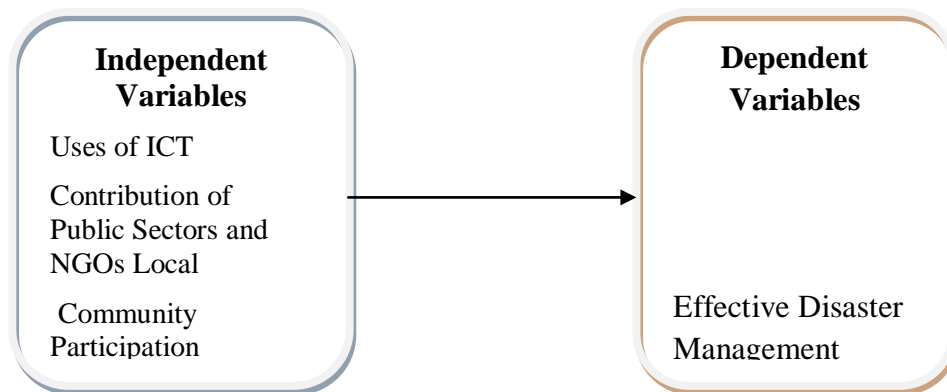


Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Chapter Overview

This chapter describes the research methodology that employed in this study. Essentially, it focused on study design, research approach, study area, population, and sampling procedures. This chapter further deals with data collection techniques, analysis and interpretation. Since the emphasis of this research was to undergo an assessment of effectiveness of disaster management by examined how the local community participate in disaster management, the use of ICT and examined the contribution of NGOs in disaster management in specific location(Galila, 2017) In this research, an exploratory question, ‘‘what’’ and ‘‘how’’ are most appropriate and helps to harness detailed and valuable insights and understanding of the topic which could not be achieved by a survey (Yin, 2003).

The research on assessment of effectiveness of disaster management in Zanzibar was descriptive and qualitative in nature. Methodological triangulation; obtaining data from different sources, such as observations, Focus group discussions documentations and Key informants interview, helps to harnesses diverse ideas about the same issue and assist in cross-checking the results, and consequently helps to increase the validity, reliability of the findings and eases data analysis (Bryman 2008; and Rialp, 2006).

3.2 Description of the Study Area

The study was conducted at Mjini District. The researcher selected these areas due to the fact that are among of the most affected area on disaster during the rain season.

3.3 Research Design

A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Kothari, 2004). The researcher applied both qualitative and quantitative approaches. Qualitative research gathers information data that are in form of words, for example open-ended questionnaires, unstructured interviews and unstructured observations. Qualitative methods are often closely allied with interviews, survey design techniques and individual case studies ((McLeod, 2008). Quantitative research gathers data in numerical form which can be put into categories, or in rank order, or measured in units of measurements. (McLeod, 2008). Quantitative approach applied when to analyze closed ended/structured questionnaires which were distributed to respondents.

3.4 Study Population, Sample and Sampling

3.4.1 Populations

Population is a group of individuals, objects or items from which samples are taken for measurement. It refers to an entire group of elements that have at least one thing common. It also refers to the large group from which the sample is taken (Kombo & Tromp 2006). The total populations from selected Shehias contacted were 6,167. These Shehias include Gulioni (1283 people), Mwembemakumbi (4884 people) The target population for this study were into two groups of people, first group will be Ordinary People from selected Shehias at Mjini District and the second group were the key informants, (officers from Government with ICT peoples and non state actors organizations) selected in District.

3.4.2 Sample Size

The knowledge gained from the sample is representative of the total population under study (Cohen et al, 2000). The researcher used the sample of 99 respondents whereby among of them were 39 people from 2 Shehias (20 people from Shehias of Mwembemakumbi and 19 people from 1 Shehia of Gulioni), 20 people were government Officials, 20 are ICT People and remaining 20 were from NGOs from Mjini District. The total populations from selected Shehias contacted were 6167. Total of 99 respondents interviewed out of 6,167. This figure (99) included both officials and ordinary people from Shehias.

$$n = N / (1 + Ne^2)$$

Where,

n = Sample Size

N = Total Population of the Study

e = Level of significance or Marginal Error=0.1

Where two shehia of Mjini District (Population of the Study) = 6,167

$$n = 6,167 / 1 + 6,167(0.1^2)$$

$$98.6 = 99 \text{ Population of two Shehia}$$

Table 3.1: Sample of Population of Disaster Management Stakeholders

SHEHIA	NUMBER	PERCENTAGE
ICT People	20	20.2
NGOs Staff	20	20.2
Government Officials	20	20.2
Household	39	39.4
TOTAL	99	100

Source: Researcher, 2019

3.5 Sampling Technique

Sampling can be defined as the deliberate choice of a number of units (Jankowicz,

2005). The researcher used purposively sampling to get respondents who capable of answering technical questions; such respondents were like those working in the NGOs, ICT peoples, and Government Offices in the District. The researcher also used Random sampling to get select respondents from the Shehias.

3.5.1 Purposive Sampling

This technique involved people whose views relevant to an issue under discussion. Purposive sampling enables the researcher to use judgment to select cases that best answered the research questions and objectives (Churchill et al. 2002). Purposive sampling used to get respondents who were capable of answering technical questions; such respondents were like those working in the NGOs, ICT people and other Government Offices in the District. The total populations for purposively sampling were 60 respondents as key informants from public sectors and NGOs.

Purposive sampling is a sampling technique that allows a researcher to use cases that have required information with respect to the objectives of study. This technique involved the selection of key sampling elements individuals from the population based on the relevance to the research project. This method is advantageous in that it avoids the risks of eliminating the key elements/individuals from being included in the sample, (Patton, 2001).

3.5.2 Simple Random Sampling

This type of sampling is also known as chance sampling or probability sampling where each and every item in the population has an equal chance of inclusion in the sample and each one of the possible samples, in case of finite universe, has the same

probability of being selected (Kothari,2004). Simple Random Sampling used as it is considering a fair way of selecting a sample from a given population since every member is given equal opportunities for being selected. This focused mainly on the ordinary people, who could respond to the general questions, that they were asked within the two selected Shehias, the leader of that particular administrative area called Sheha assisted in gathering people, both men and women and youths who were capable of answering general questions.

3.6 Data Collection

The researcher used primary and secondary methods to collect information.

3.6.1 Primary Data

The Primary data are those which are collected afresh and for the first time, and thus happen to be original in character (Kothari, 2004). These are the original information collected directly from the respondents. The study obtained more of Primary data through interviews and questionnaires from various respondents. The data collected through primary sources included discussion to collect the primary data. The researcher used three techniques that are interview, questionnaire and observation. These three techniques of data collection, if all used in the study, it can be said that triangulation has been achieved.

3.6.3 Questionnaire

In this research, questionnaire prepared and presented to respondents so as to fill them. Questionnaires used because of a large proportion of the desired information collected within a short time and limited resources (Kidder, 1981). Only closed

ended questions used to collect quantitative data in this study due to the nature of the information that needed from the respondents. The researcher used only this tool to get information from all respondents.

3.7 Secondary Data

Secondary data refers to the statistics that already exist Chuchil & Lucobucci (2002). Apart from the primary data the researcher also collected secondary data through documentary sources where by various documents reviewed from Disaster Management Commission, Mjini District and Mjini Municipal. The following data were collected such as Mjini District Disaster Profile, Zanzibar Disaster Profile and Government intervention in disaster management. These data used to support primary data and helped the researcher to know what other said and what gaps left behind and what needed in the research.

3.8 Data Analysis

According to Yin (1994), analysis of case study data is difficult because the strategies and techniques have not well defined in the past. Moreover, Yin went further that, for this reason, much of work in analyzing the case study depends researcher's own style of rigorous thinking, along with the sufficient presentation of evidence and careful consideration of alternative interpretations of data (Yin, 1994). Therefore, for this study applied only quantitative data this obviously considered during data analysis techniques. A part from that, Carter and Litter (2007) claimed that, quantitative approach enables the researcher to rely on numerical data which is based on facts and figures. Thus, quantitative data in this study analysed through involvement of tabulation, use of percentage and frequencies. In doing so, the

Statistical Package for Social Sciences (SPSS). Descriptive statistics used to present the data in tabular form.

3.9 Data Presentation

The analyzed data presented by using tables, figures and percentages. Word reporting structure presented discussions of the findings, summary, recommendations, and conclusions.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.1 Overview

This chapter discusses deeply the findings of the study concerning the local stakeholders participation in effective disaster management. It presents the respondent's responses in relation to the research questions and objectives. In order to achieve the objective of this study, the researcher designed a questionnaire as a tool of collecting data as indicated in Chapter three. This chapter provides a detailed presentation, analysis interpretation and presents findings collected from field. The collection of data done through households, Public sectors, NGOs and ICT People as a source of primary data sampled 99. The analysis makes the use of percentages, frequency and tables.

4.2 Characteristics of Respondents

The study's respondents during the field data findings were the residents of the Zanzibar Mjini District, 2 Shehias, government officials, ICT People and NGOs from Mjini District who both showed their participation in the study by responding to the questionnaires. This analysis has been done specifically to show the representation of the respondents with regards to their sex, work status as well as level of education.

4.2.1 Sex Distribution of Respondents

It was perceived important to have a profile of respondents especially with regard to their sex. A total of seventy five (99) respondents were involved in this study, whereby all respondents participated by filled questionnaires. From the total of 99

respondents, 52, which correspond to 52.5 % respondents were males whereby 47, which translates to 47.5% respondents were females. This shows that, in this study male respondents were well represented compared to the female counterparts.

Table 4.1: Sex Distribution of Respondents

Sex	Frequency	Percent
Male	52	52.5
Female	47	47.5
Total	99	100.0

Source: Research Data, 2018.

4.2.2 Distribution of Respondents by Educational Level

During the study analysis, the educational level of the respondents was analysed by using the following criteria; below secondary education level, secondary education level, diploma level, undergraduate level and post graduate level. The educational level was put in the study in order to reduce the researcher's bias by including all groups in the study, in which by one way or another formal education may shape the findings differently, if the study could take only graduate level respondents, or only those with no formal education or otherwise with the same study setting and design. The findings revealed that respondents with below primary education level were three in number who make 3 % of total respondents. Moreover, those respondents with secondary education were 13, which translate to 13.1 % from the total ninety nine of the study respondents.

In case of Diploma level education, twenty six respondents who were equal to 26.1%. More still, the researcher found that, forty nine which equal to 49.5% respondents from the total of ninety nine had undergraduate levels of education. Not

only that the researcher found that 8 respondents which equal to 8.1% with the total of ninety nine respondents were post graduate level. In this level, the findings indicate a correspondence of 57.5% with degree as well as master level of education. Therefore, the study findings establish that, respondents with graduate level of education were the majority in the study.

Table 4.2: Distribution of Respondents by Educational Level

Education level	Frequency	Percent
Postgraduate	8	8.1
Undergraduate	49	49.5
Diploma level	26	26.3
Secondary Education	13	13.1
Below secondary Education	3	3.0
Total	99	100.0

Source: Research Data, 2018

4.2.2 Distribution of Respondents by Category

In this part, the characteristics of the respondents were analysed according to their categories (Government Institutions, NGOs and Household). The total number of respondents completed the questionnaires. The findings of the study showed that, of them, which is equal to 39.4% were the tour were households from two Shehia (Mwembemakumbi which are 19 and Gulioni which are 20).The findings also showed that 39 respondents which equal to 39.4% were respondents from Government Institutions whereby 16 of them are ICT people while 24 which is equal to 24% of the respondents were from NGOs where by 4 of them were ICT People. The inclusion of respondents according to the named categories has been found assured because these categories are sufficient for acquiring the needed data of the study.

Table 4.3: Distribution of Respondents by Category

Respondents Category	Frequency	Percent
Household	39	39.4
Government Institutions	36	36.4
NGOs	24	24.2
Total	99	100.0

Source: Research Data, 2018

4.3 How ICT is used in Disaster Management

The first objective of this research was to examine how the ICT is used in disaster management. The major aim of this objective was to answer the question “To what extent is the ICT used in Disaster management ” In order to answer this question four main areas explained the uses of ICT in disaster management .The following are the findings on uses of ICT in Disaster Management

4.3.1 Real-Time Monitoring for Emergency Early Warning, Climate and Weather Prediction

The findings from the study shown that majority of the respondents strongly agreed with the notion that, ICTs displays real-time monitoring for emergency early warning, climate and weather prediction in disaster management in Zanzibar. This has been revealed due to the study findings which show that forty eight respondents which is equal to 48.5% from the total study respondents strongly agreed when they were asked if ICTs displays real-time monitoring for emergency early warning, climate and weather prediction in disaster management in Zanzibar.

Apart from that, there were thirty eight (38) equal to 38.4% respondents who agreed that ICTs displays real-time monitoring for emergency early warning, climate and

weather prediction in disaster management in Zanzibar, eight respondents which is equal to 8.1% don't know that ICTs displays real-time monitoring for emergency early warning, climate and weather prediction in disaster management in Zanzibar, two respondents which is equal to 2% Disagree that ICTs displays real-time monitoring for emergency early warning, climate and weather prediction in disaster management in Zanzibar and three respondents which is equal to 3 % Strongly Disagree that ICTs displays real-time monitoring for emergency early warning, climate and weather prediction in disaster management in Zanzibar.

This result implies that ICT played significant role on disaster management. This result supported by Huang et al. (2010) asserts that internet social networking tools and the emerging web 2.0 technologies are providing a new way for web users in information sharing and knowledge dissemination. Examples of web 2.0 tools include search engines (e.g. google and Bing), encyclopedias (e.g. wikipedia), videos and photos sharing (e.g. youtube and flickr) blogs and social networking websites (e.g. facebook, twitter and 24 plurk).

Table 4.4: Real-Time Monitoring For Emergency Early Warning, Climate and Weather Prediction

	Responses	Frequency	Percent
	Strongly agree	48	48.5
	Agree	38	38.4
	Don't know	8	8.1
	Disagree	2	2.0
	Strongly Disagree	3	3.0
	Total	99	100.0

Source: Field Data (2018)

Users are able to send text, photos or audio clips to be viewed by anyone or specific groups which can be chosen by the user. These sites have empowered the public to share experience and information during emergency and disaster response activities Table 4.4 provides a clear summary of the findings.

4.3.2 Icts Provision of Vital Support for Disaster Preparedness

The findings from the study shown that majority of the respondents agreed and strongly agreed with the notion that, ICTs provide vital support for disaster preparedness in Zanzibar. This has been revealed due to the study findings which show that eighty six respondents agreed (43) and strongly agreed (43) which is equal to 86.8 % from the total study respondents agreed and strongly agreed when they were asked if , ICTs provide vital support for disaster preparedness in disaster management in Zanzibar.

Apart from that, there were nine (9) equal to 9.1 % respondents don't know ICTs provide vital support for disaster preparedness in disaster management in Zanzibar, three respondents which is equal to 3% Disagree that ICTs provide vital support for disaster preparedness in disaster management in Zanzibar and one respondents which is equal to 1 % Strongly Disagree that ICTs provide vital support for disaster preparedness in disaster management in Zanzibar. Table 4.5 provides a clear summary of the findings. This findings is supported by Richard Heeks and Angelica Ospina (2011) argued that Development of new wireless technologies; convergence of telecommunications, computing, and multi-media; multi-stakeholder partnerships; and the use of FOSS by socially minded ICT-savvy professionals are enabling greater standardizations and interoperability, more data availability, greater reach at

lower costs, and to some extent transparency and accountability of disaster resource allocation and delivery.

Table 4.5: ICTs Provision of Vital Support for Disaster Preparedness

	Responses	Frequency	Percent
	Strongly agree	43	43.4
	Agree	43	43.4
	Don't know	9	9.1
	Disagree	3	3.0
	Strongly disagree	1	1.0
	Total	99	100.0

Source: Field Data (2018)

4.3.3 ICTs Provides Answers Such as the Exact Location of the Fire Stations on Disaster Management

The findings from the study shown that majority of the respondents agreed with the notion that, ICTs provides answers such as the exact location of the fire stations on disaster management in Zanzibar. This has been revealed due to the study findings which show that forty three respondents which is equal to 43.4% from the total study respondents agreed when they were asked if ICTs provides answers such as the exact location of the fire stations on disaster management in Zanzibar.

Apart from that, there were thirty eight (38) equal to 38.4% respondents who strongly agreed that ICTs provides answers such as the exact location of the fire stations on disaster management in Zanzibar, eight respondents which is equal to 8.1% don't know that ICTs provides answers such as the exact location of the fire stations on disaster management in Zanzibar, seven respondents which is equal to 7.1% Disagree that ICTs provides answers such as the exact location of the fire

stations on disaster management in Zanzibar and three respondents which is equal to 3 % Strongly Disagree that ICTs provides answers such as the exact location of the fire stations on disaster management in Zanzibar. Table 4.6 provides a clear summary of the findings.

Table 4.6: ICTs Provides Answers Such as the Exact Location of the Fire Stations on Disaster Management in Zanzibar

	Response	Frequency	Percent
	Strong agree	38	38.4
	Agree	43	43.4
	Dont know	8	8.1
	Disagree	7	7.1
	Strongly Disagree	3	3.0
	Total	99	100.0

Source: Field Data (2018)

4.3.4 ICTs Supports Better Response Planning in Areas Such as Determining Vulnerable Infrastructures

The findings from the study shown that majority of the respondents agreed with the notion that, ICTs supports better response planning in areas such as determining vulnerable infrastructures on disaster management in Zanzibar. This has been revealed due to the study findings which show that forty t respondents which is equal to 40.1% from the total study respondents agreed when they were asked if ICTs supports better response planning in areas such as determining vulnerable infrastructures on disaster management in Zanzibar.

Apart from that, there were thirty eight (38) equal to 38.4% respondents who strongly agreed that ICTs supports better response planning in areas such as determining vulnerable infrastructures on disaster management in Zanzibar, fifteen

respondents which is equal to 15.2 % don't know that ICTs supports better response planning in areas such as determining vulnerable infrastructures on disaster management in Zanzibar, three respondents which is equal to 3.1% Disagree that ICTs supports better response planning in areas such as determining vulnerable infrastructures on disaster management in Zanzibar and three respondents which is equal to 3 % Strongly Disagree that ICTs supports better response planning in areas such as determining vulnerable infrastructures on disaster management in Zanzibar.

This finding is supported by Richard Heeks (2011) argued that frequently however, large parts of the telecommunications infrastructure are destroyed or incapacitated for several days if not weeks; those that survive suffer overload. The complex interdependencies of technology systems (e.g., dependency of financial services, transportation, on ICT networks) make them vulnerable to failure from ignorance, human malice and technical malfunction. It also means the failure of one system can lead to failure of another. Table 4.7 provides a clear summary of the findings.

Table 4.7: ICTs Supports Better Response Planning in Areas Such as Determining Vulnerable Infrastructures

Response	Frequency	Percent
Strongly Agree	38	38.4
Agree	40	40.4
Don't know	15	15.2
Disagree	3	3.0
Strongly Disagree	3	3.0
Total	99	100.0

Source: Field Data (2018)

4.4 Contribution of Public Sector and NGOs on Disaster Management

The study also examined the contribution of Public Sector and NGOs on Disaster

management. In this section, the researcher wanted to know how the Public sectors do and NGOs contribute on Disaster management. The researcher started to examine the contribution of Public sectors on disaster management, the following findings on the contribution of Public Sectors as follows:-

4.4.1 Integration of Disaster Management Issues Into Sectoral Development Plans

The findings from the study shown that majority of the respondents strongly agreed with the notion that the Public sectors contributes on Disaster management in Zanzibar through Integration of disaster management issues into sectoral development plans. This has been revealed due to the study findings which show that forty three respondents which is equal to 43.4% from the total study respondents strongly agreed when they were asked the Public sectors contributes on Disaster management in Zanzibar through Integration of disaster management issues into sectoral development plans.

Apart from that , there were thirty two (32) equal to 32.3% respondents who agreed that Public sectors contributes on Disaster management in Zanzibar through Integration of disaster management issues into sectoral development plans, fourteen respondents which is equal to 14.1% don't know that Public sectors contributes on Disaster management in Zanzibar through Integration of disaster management issues into sectoral development plans, six respondents which is equal to 6.1% Disagree that Public sectors contributes on Disaster management in Zanzibar through Integration of disaster management issues into sectoral development plans and four respondents which is equal to 4 % Strongly Disagree that Public sectors contributes

on Disaster management in Zanzibar through Integration of disaster management issues into sectoral development plans. This finding resemble with Howard (2009) said that “ Indeed, the linkage of development and disaster seems inevitable when one considers the high costs that low income countries pay for disasters relative to their GDPs. Table 4.8 provides a clear summary of the findings.

Table 4.8: Integration of Disaster Management Issues into Sectoral Development Plans

Respondents	Frequency	Percent
Strong agree	43	43.4
Agree	32	32.3
Don't know	14	14.1
Disagree	6	6.1
Strongly Disagree	4	4.0
Total	99	100.0

Source: Field Data (2018)

4.4.2 Seek Resources to Support Disaster Management Activities

The findings from the study shown that majority of the respondents agreed with the notion that the Public sectors contributes on Disaster management in Zanzibar through to seek resources to support disaster management activities. This has been revealed due to the study findings which show that thirty eight respondents which is equal to 38.4% from the total study respondents agreed when they were asked if the contribution of Public Sectors is to seek resources to support disaster management activities in Zanzibar.

Apart from that , there were thirty one (31) equal to 31.3% respondents who strongly agreed that the contribution of Public Sectors is to seek resources to support disaster management activities in Zanzibar, sixteen respondents which is

equal to 16.1% don't know that the contribution of Public Sectors is to seek resources to support disaster management activities in Zanzibar, eight respondents which is equal to 8.1% Disagree that the contribution of Public Sectors is to seek resources to support disaster management activities in Zanzibar and five respondents which is equal to 5.1 % Strongly Disagree the contribution of Public Sectors is to seek resources to support disaster management activities in Zanzibar. This finding is supported by Rattan (2013) who agreed that organizations have to safeguard and preserve the variety of precious and invaluable information sources, tools, staff and other infrastructure from any potential disaster or any risk. Table 4.9 provides a clear summary of the findings.

Table 4.9: Seek Resources to Support Disaster Management Activities in Zanzibar

Respondents		Frequency	Percent
	Strong agree	31	31.3
	Agree	38	38.4
	Don't know	16	16.2
	Disagree	8	8.1
	Strongly Disagree	5	5.1
	Total	99	100.0

Source: Field Data (2018)

4.4.3: Create Public Awareness and Information Dissemination on Disaster Management

The findings from the study shown that majority of the respondents strongly agreed with the notion that the Public sectors contributes on Disaster management through Creating public awareness and information dissemination on disaster management in Zanzibar. This has been revealed due to the study findings which show that thirty one

(31) respondents which is equal to 31.3% from the total study respondents strongly agreed when they were asked if the contribution of Public Sectors is to create public awareness and information dissemination on disaster management in Zanzibar.

Apart from that, there were twenty one (29) equal to 29.3% respondents who agreed that the contribution of Public Sectors is create public awareness and information dissemination on disaster management in Zanzibar , twenty six (26) respondents which is equal to 26.3% don't know that the contribution of Public Sectors is to create public awareness and information dissemination on disaster management in Zanzibar , nine (9) respondents which is equal to 9.1% Disagree that the contribution of Public Sectors is to create public awareness and information dissemination on disaster management in Zanzibar and four (4) respondents which is equal to 4 % Strongly Disagree the contribution of Public Sectors is to create public awareness and information dissemination on disaster management in Zanzibar.

The results indicate that 31.3 % respondents strongly agree that the contribution of Public Sectors is create public awareness and information dissemination on disaster management in Zanzibar hence it implies that the community is very awared on disaster management in Zanzibar . This result supported by Twigg (2009) states that risk perception is the key element of individual and collection disaster risk management. By increasing public understanding and awareness of hazard risks, disaster planners and managers seek to stimulate communities and individuals to take appropriate questions before and during crises. Table 4.10 provides a clear summary of the findings.

Table 4.10: Create Public Awareness and Information Dissemination on Disaster Management in Zanzibar

	Frequency	Percent
Strongly agree	31	31.3
Agree	29	29.3
Don't know	26	26.3
Disagree	9	9.1
Strongly disagree	4	4.0
Total	99	100.0

Source: Field Data (2018)

4.4.4 Establish and Implement Appropriate Disaster Management Plans, Regulations, and Guidelines

The findings from the study shown that majority of the respondents agreed with the notion that the Public sectors contributes on Disaster management in Zanzibar. This has been revealed due to the study findings which show that thirty nine (39) respondents which are equal to 39.4% from the total study respondents agreed when they were asked if the contribution of Public Sectors is to establish and implement appropriate disaster management plans, regulations, and guideline son Disaster management in Zanzibar.

Apart from that, there were twenty one (35) equal to 35.4% respondents who strongly agreed that the contribution of Public Sectors is to establish and implement appropriate disaster management plans, regulations, and guidelines on Disaster management in Zanzibar, fifteen (15) respondents which is equal to 15.2% don't know that the contribution of Public Sectors is establish and implement appropriate disaster management plans, regulations, and guidelines on Disaster management in Zanzibar, six (6) respondents which is equal to 6.1% Disagree that the contribution

of Public Sectors is to establish and implement appropriate disaster management plans, regulations, and guidelines on disaster management in Zanzibar and four (4) respondents which is equal to 4 % Strongly Disagree the contribution of Public Sectors is to establish and implement appropriate disaster management plans, regulations, and guidelines on Disaster management in Zanzibar. The results indicate that the contribution of Public Sectors is great and much concerned much on disaster management in Zanzibar.

This finding resembled with Warfield (2010) stated that “Disaster management aims to reduce or avoid the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster, and achieve rapid and effective recovery. The disaster management cycle illustrates the ongoing process by which governments, businesses, and civil society plan for and reduce the impact of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred”. Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability and prevention of disasters. Table 4.11 provides a clear summary of the finding.

Table 4.10: Establish and Implement Appropriate Disaster Management Plans, Regulations, and Guidelines

Respondents	Frequency	Percent
Strong agree	35	35.4
Agree	39	39.4
Don't know	15	15.2
Disagree	6	6.1
Strongly disagree	4	4.0
Total	99	100.0

Source: Field Data (2018)

4.4.5 Facilitate Trainings and Researches on Reduction of the Disasters Impact

The findings from the study shown that majority of the respondents agreed with the notion that how do the Public sectors contributes on Disaster management in Zanzibar. This has been revealed due to the study findings which show that forty five (45) respondents which are equal to 45.5% from the total study respondents agreed when they were asked if the contribution of Public Sectors is to facilitate trainings and researches on reduction of the disasters impact in Zanzibar.

Apart from that, there were thirty one (31) equal to 31.2% respondents who strongly agreed that the contribution of Public Sectors is to facilitate trainings and researches on reduction of the disasters impact in Zanzibar, fifteen (14) respondents which is equal to 14.1% don't know that the contribution of Public Sectors is to facilitate trainings and researches on reduction of the disasters impact in Zanzibar, seven (7) respondents which is equal to 7.1% Disagree that the contribution of Public Sectors is to facilitate trainings and researches on reduction of the disasters impact in Zanzibar and two (2) respondents which is equal to 2% Strongly Disagree the contribution of Public Sectors is to facilitate trainings and researches on reduction of the disasters impact in Zanzibar. The results indicate that Public Sectors plays significant role on giving knowledge to community providing new information through research on disaster management in Zanzibar.

This finding is supported by Mathews & Eden (2005) disaster training should aim to raise the awareness of all staff regarding everyday safety and security issues and the steps they can take to reduce the likelihood of a disaster occurring and prepare them on what to do in the event of a disaster. Table 4.12 provides a clear summary of the

findings.

Table 4.12: Facilitate Trainings and Researches on Reduction of the Disasters Impact

Respondents		Frequency	Percent
	Strong agree	31	31.3
	Agree	45	45.5
	Don't know	14	14.1
	Disagree	7	7.1
	Strongly disagree	2	2.0
	Total	99	100.0

Source: Field Data (2018)

4.4.1.1 Encourage its Members to Participate in Disaster Management Activities

The findings from the study shown that majority of the respondents agreed with the notion that the NGOs contributes on Disaster management in Zanzibar. This has been revealed due to the study findings which show that forty one (41) respondents which is equal to 41.4% from the total study respondents agreed when they were asked if the contribution of NGOs is to encourage its members to participate in disaster management activities aimed at reducing vulnerability to the community on Disaster management in Zanzibar.

Apart from that, there were thirty three (33) equal to 33.3% respondents who strongly agreed that the contribution of NGOs is to encourage its members to participate in disaster management activities aimed at reducing vulnerability to the community on Disaster management in Zanzibar, seventeen (17) respondents which is equal to 17.2% don't know that the contribution of NGOs is to encourage its members to participate in disaster management activities aimed at reducing

vulnerability to the community on Disaster management in Zanzibar, four (4) respondents which is equal to 4 % Disagree that the contribution of NGOs is to encourage its members to participate in disaster management activities aimed at reducing vulnerability to the community on Disaster management in Zanzibar and last four (4) respondents which is equal to 4 % Strongly Disagree the contribution of NGOs is to encourage its members to participate in disaster management activities aimed at reducing vulnerability to the community on Disaster management in Zanzibar.

The results indicate that NGOs have good connection in participating local communities issues such as disaster management in Zanzibar. This finding is supported by Coppolla (2008) argue that insurance provides transfer of the risk from individuals or community to insurance company. Insurance mechanism can be a tool for mitigation. According to Kentucky medical association insurance model disaster plan, an organization should make sure that they have adequate insurance to cover losses in the event of a particular disaster. Table 4.13 provides a clear summary of the findings.

Table 4.11: Encourage its Members to Participate in Disaster Management Activities

Respondents	Frequency	Percent
Strong agree	33	33.3
Agree	41	41.4
Don't Agree	17	17.2
Disagree	4	4.0
Strongly Disagree	4	4.0
Total	99	100.0

Source: Field Data (2018)

4.4.1.2 To Promote of Public Awareness on Disaster Management

The findings from the study shown that majority of the respondents agreed with the notion that the NGOs contributes on Disaster management in Zanzibar. This has been revealed due to the study findings which show that forty nine (49) respondents which is equal to 49.5% from the total study respondents agreed when they were asked if the contribution of NGOs is to promote of public awareness on disaster management in Zanzibar.

Apart from that, there were thirty three (30) equal to 30.3 % respondents who strongly agreed that the contribution of NGOs is to promote of public awareness on disaster management in Zanzibar, seventeen (12) respondents which is equal to 12.1% don't know that the contribution of NGOs to promote of public awareness on disaster management in Zanzibar, seven (7) respondents which is equal to 7.1 % Disagree that the contribution of NGOs is to promote of public awareness on disaster management in Zanzibar and last one (1) respondent which is equal to 1 % Strongly Disagree the contribution of NGOs is to promote of public awareness on disaster management in Zanzibar.

Table 4.12: To Promote of Public Awareness on Disaster Management

Respondents	Frequency	Percent
Strongly agree	30	30.3
Agree	49	49.5
Don't know	12	12.1
Disagree	7	7.1
Strongly Disagree	1	1.0
Total	99	100.0

Source: Field Data (2018)

The results indicates that NGOs promote of public awareness on Disaster Management as supported by Erika (2007) who stated that “Shift in mindset of mitigation and prevention through training and awareness is not limited to community members but is also necessary for agencies (NGOs) working in the region”. Table 4.14 provides a clear summary of the findings.

4.4.4.3 To Participate in Preparedness and Response Activities

The findings from the study shown that majority of the respondents agreed with the notion that the NGOs contributes on Disaster management in Zanzibar. This has been revealed due to the study findings which show that forty one (41) respondents which is equal to 41.4% from the total study respondents agreed when they were asked if the contribution of NGOs is to Participate in preparedness and response activities on Disaster management in Zanzibar.

Apart from that, there were forty (40) equal to 40.4 % respondents who strongly agreed that the contribution of NGOs is to participate in preparedness and response activities on Disaster management in Zanzibar, thirteen (13) respondents which is equal to 13.1% don't know that the contribution of NGOs to participate in preparedness and response activities on Disaster management in Zanzibar, five (5) respondents which is equal to 5.1 % Disagree that the contribution of NGOs is to participate in preparedness and response activities on Disaster management in Zanzibar and last no one (0) respondent which is equal to 0 % Strongly Disagree the contribution of NGOs is to participate in preparedness and response activities on Disaster management in Zanzibar. This finding supported by Zubir (2011) said that Participation of local communities and volunteer involving organizations (VIOs)

though NGOs is crucial both to understanding local needs and empowering people to address those needs as well as to send a message to local communities that their voice is valued. Table 4.15 provides a clear summary of the findings.

Table 4.13: To Participate In Preparedness and Response Activities

Respondents	Frequency	Percent
Strongly agree	40	40.4
Agree	41	41.4
Don't know	13	13.1
Disagree	5	5.1
Strongly Disagree	0	0
Total	99	100.0

Source: Field Daa (2018)

4.4.4.4 Promotion of Environmental Management in Relation to Emergency Activities

The findings from the study shown that majority of the respondents agreed with the notion that how do the NGOs contributes on Disaster management in Zanzibar. This has been revealed due to the study findings which show that forty one (45) respondents which is equal to 45.5% from the total study respondents agreed when they were asked if the contribution of NGOs is to promote of environmental management in relation to emergency activities on Disaster management in Zanzibar.

Apart from that, there were thirty five (35) equal to 35.4 % respondents who strongly agreed that the contribution of NGOs is to promote of environmental management in relation to emergency activities on Disaster management in Zanzibar, fourteen (14) respondents which is equal to 14.1% don't know that the contribution of NGOs is to promote of environmental management in relation to

emergency activities on Disaster management in Zanzibar, two (2) respondents which is equal to 2 % Disagree that the contribution of NGOs is to promote of environmental management in relation to emergency activities on Disaster management in Zanzibar and last were three (3) respondent which is equal to 3 % Strongly Disagree the contribution of NGOs is to promote of environmental management in relation to emergency activities on Disaster management in Zanzibar.

The results comply with Bajracharya 2015 stated that Disaster prevention begins with information. Information for mitigation purposes at community level has to be delivered in different forms, level of details and packaging for the various stakeholder groups, with a special focus on frontline workers. NGOs have a direct role in the sensitization, orientation, education and training of most of the local stakeholders, and an indirect role through advocacy for promoting education in higher and specialized levels. Table 4.16 provides a clear summary of the findings.

Table 4.14: Promotion of Environmental Management in Relation to Emergency Activities

Respondents	Frequency	Percent
Strongly agree	35	35.4
Agree	45	45.5
Don't know	14	14.1
Disagree	2	2.0
Strongly Disagree	3	3.0
Total	99	100.0

Source: Field Data (2018)

4.5 Local Community Participation in Disaster Management

The third objective of this research was to examine how the local community

participates in disaster management. The major aim of this objective was to answer the question “How does the local community participate in disaster management” In order to answer this question five main areas explained on how the local community participate in disaster management .The following are the findings on how the local community participate in disaster management.

4.5.1 Formation of Disaster Management Teams in the Community

The findings from the study shown that majority of the respondents strongly agreed with the notion that how the local community participates in disaster management in Zanzibar. This has been revealed due to the study findings which show that thirty six (36) respondents which is equal to 36.4% from the total study respondents strongly agreed when they were asked if the local community participate in disaster management through formation of disaster management teams in the community and assigning them particular preparedness and response responsibilities in their respective level on Disaster management in Zanzibar.

Apart from that , there were thirty five (35) equal to 35.4 % respondents who strongly agreed that the community contribute on Formation of disaster management teams in the community in Zanzibar, seventeen (17) respondents which is equal to 17.2% don't know that the local community Formulate of disaster management teams in the community in Zanzibar, eight (8) respondents which is equal to 8.1 % Disagree that the local community Formulate of disaster management teams with the community in Zanzibar and last were three (3) respondent which is equal to 3 % Strongly Disagree that the local community Formulate of disaster management teams in the community in Zanzibar.

This finding supported by Antigua (2010) said that the community response team, through its collective action, was able to manage the needs of the community—monitoring the information bulletins, taking preventative measures to evacuate their neighbors to a safe place and clearing the water course to restore access to the community. Table 4.17 provides a clear summary of the findings.

Table 4.15: Formation of Disaster Management Teams in the Community

Respondents	Frequency	Percent
Strongly Agree	36	36.4
Agree	35	35.4
Don't Know	17	17.2
Disagree	8	8.1
Strongly Disagree	3	3.0
Total	99	100.0

Source: Field Data (2018)

4.5.2 Plans Preparation and Procedures for Disaster Management Programs

The findings from the study shown that majority of the respondents agreed with the notion that how the local community participates in disaster management in Zanzibar. This has been revealed due to the study findings which show that forty three (43) respondents which is equal to 43.4% from the total study respondents agreed when they were asked if the local community participate in disaster management through plans preparation and procedures for disaster management programs on Disaster management in Zanzibar.

Apart from that, there were twenty nine (29) equal to 29.3 % respondents who strongly agreed that the community participate on plans preparation and procedures for disaster management programs on Disaster management in Zanzibar, fourteen

(14) respondents which is equal to 14.1% don't know that the local community on plans preparation and procedures for disaster management programs on Disaster management in Zanzibar, ten (10) respondents which is equal to 10.1 % Disagree that the local community on plans preparation and procedures for disaster management programs on Disaster management in Zanzibar and last were three (3) respondent which is equal to 3% Strongly Disagree that the local on plans preparation and procedures for disaster management programs on Disaster management in Zanzibar.

This results resembled with Shohid Mohammad stated that “Community participation through preparing their own planning by using their own resources or support from outside is the most effective elements to achieving sustainability in dealing with natural disaster risks. As a disaster prone country Bangladesh is affected by different types of natural hazards like tropical cyclones, tidal bores, floods, tornados, river bank erosions, earthquakes etc. almost every year and destroy many lives and resources of people”. Table 4.18 provides a clear summary of the findings.

Table 4.16: Plans Preparation and Procedures for Disaster Management Programs

Respondents	Frequency	Percent
Strong agree	29	29.3
Agree	43	43.4
Don't know	14	14.1
Disagree	10	10.1
Strong disagree	3	3.0
Total	99	100.0

Source: Field Data (2018)

4.5.3 Operational Control in the Event of a Disaster or Emergency

The findings from the study shown that majority of the respondents agreed with the notion that how the local community participates in disaster management in Zanzibar. This has been revealed due to the study findings which show that forty one (41) respondents which is equal to 41.4% from the total study respondents agreed when they were asked if the local community participate in disaster management through operational control in the event of a disaster or emergency on disaster management in Zanzibar.

Table 4.17: Operational Control in the Event of a Disaster or Emergency

Respondents	Frequency	Percent
Strong agree	32	32.3
Agree	41	41.4
Don't know	17	17.2
Disagree	6	6.1
Strongly disagree	3	3.0
Total	99	100.0

Source: Field Data (2018)

Apart from that, there were thirty two (32) equal to 32.3 % respondents who strongly agreed that the community participate in disaster management through operational control in the event of a disaster or emergency on disaster management in Zanzibar, seventeen (17) respondents which is equal to 17.2% don't know that the local community participate through operational control in the event of a disaster or emergency on disaster management in Zanzibar, six (6) respondents which is equal to 6.1% Disagree that the local community participate in disaster management through operational control in the event of a disaster or emergency on disaster management in Zanzibar and last were three (3) respondent which is equal to 3 %

Strongly Disagree that the local community participate through operational control in the event of a disaster or emergency on disaster management in Zanzibar. Table 4.19 provides a clear summary of the findings.

4.5.4 Identifying all Hazards in Respective Locations

The findings from the study shown that majority of the respondents disagreed with the notion that how the local community participates in disaster management in Zanzibar. This has been revealed due to the study findings which show that thirty six (36) respondents which are equal to 36.4% from the total study respondents disagreed when they were asked if the local community participate in disaster management through Identifying all hazards in respective locations on Disaster management in Zanzibar.

Apart from that, there were twenty nine (29) equal to 29.3 % respondents who strongly disagreed that the community participate in disaster management through Identifying all hazards in respective locations on Disaster management in Zanzibar, twenty (20) respondents which is equal to 20.2% agreed that the local community participate Identifying all hazards in respective locations on Disaster management in Zanzibar, eleven (11) respondents which is equal to 11.1 % strongly agreed that the local community participate in disaster management through Identifying all hazards in respective locations on Disaster management in Zanzibar and last were three (3) respondent which is equal to 3 % don't know that the local community participate through Identifying all hazards in respective locations on Disaster management in Zanzibar. Table 4.20 provides a clear summary of the findings.

Table 4.20: Identifying all Hazards in Respective Locations

Respondents	Frequency	Percent
Strong agree	11	11.1
Agree	20	20.2
Don't know	3	3.0
Disagree	36	36.4
Strong disagree	29	29.3
Total	99	100.0

Source: Field Data (2018)

4.5.6 Overseeing, Empowering and Supervision of Disaster Management

Activities at Household Level

The findings from the study shown that majority of the respondents strongly agreed with the notion that how the local community participates in disaster management in Zanzibar. This has been revealed due to the study findings which show that thirty five (35) respondents which are equal to 35.4% from the total study respondents agreed when they were asked if the local community participate in disaster management through oversee, empower and supervise disaster management activities at household level on Disaster management in Zanzibar.

Apart from that, there were twenty five (25) equal to 25.3 % respondents who agreed that the community contribute on oversee, empower and supervise disaster management activities at household level on Disaster management in Zanzibar, twenty (20) respondents which is equal to 20.2% don't know that the local community Prepare plans and procedures for disaster management programs in their respective locations on Disaster management in Zanzibar, twelve (12) respondents which is equal to 12.1 % Disagree that the local community oversee, empower and supervise disaster management activities at household level on Disaster management

in Zanzibar and last were seven (7) respondent which is equal to 7 % Strongly Disagree that the local community Prepare plans and procedures for disaster management programs in their respective locations on Disaster management in Zanzibar. Table 4.21 provides a clear summary of the findings.

Table 4.21: Overseeing, Empowering and Supervision of Disaster Management Activities at Household Level

Respondents	Frequency	Percent
Strongly agree	35	35.4
Agree	25	25.3
Don't know	20	20.2
Disagree	12	12.1
Strongly disagree	7	7.1
Total	99	100.0

Source: Field Data (2018)

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Overview

This chapter presents summary of the study findings in relation to the objectives of the study, the conclusion of the study findings and recommendations on possible measures to promote local stakeholders participation in disaster management in Zanzibar. Also this chapter gives direction for the further studies.

5.2 General Summary

The study examined local stakeholders participation in effective disaster management in Zanzibar. The study focused on the variables such as Uses of ICT, Contribution of Public Sectors and NGOs and Local Community Participation in disaster management in order to analyze the local stakeholders in effective disaster. The study conducted theoretical and empirical review from different part of the world including Africa, Tanzania as well as Zanzibar. The review cleared showed that a critical feature of an effective disaster preparedness capability is the extent to which different actors and entities operate in a coordinated and timely manner by avoiding gaps, duplication of effort, and parallel structures. Skilful coordination among the wide range of potential stakeholders that may provide assistance during an emergency (such as the military, NGOs, utility companies, private sector entities and other stakeholders) is critical to avoid confusion and to facilitate an effective response.

5.3 Summary of key Findings by Objectives

The main objective of this study was to assess the effectiveness of local stakeholders

participation in disaster management in Zanzibar, whereby the study specifically examined how the ICT is used in disaster management, how the local community participates in disaster management and the contribution of Public Sector and NGOs on Disaster management.

5.3.1 Uses of ICT in Disaster Management

Uses of ICT in disaster management is the one of the objective of this study . The finding of this objective revealed that the ICTs provide vital support for disaster preparedness and provide real-time monitoring for emergency early warning, climate and weather prediction. This finding is related to Richard Heeks and Angelica Ospina (2011) said that “During disasters, information is as much a necessity as water, food and medicine. Information and communication technologies (ICTs) are thus among the lifelines. The ICT is very important for preparedness and response before and during disaster for quick response and disseminate information after disaster.

5.3.2 Contribution of Public Sector and NGOs on Disaster Management

The findings of this objective divided on two categories as follows:-

5.3.2.1 Contribution of Public Sector on Disaster Management

The finding of this objective shown that the public contribute on disaster management through Coordination and Seeking resources from inside and outside the country which will assist various activities in disaster management and Integration of disaster management issues into sectoral development plans. This argument is supported by Anwaar (2013) said that “The Ministry of Food and

Disaster Management of the Government of Bangladesh is responsible for coordinating national disaster management initiatives across the country. Foreexample in January 1999 the ministry issued the Standing Orders on Disaster (SOD) to guide and monitor disaster management activities in Bangladesh.

5.3.2.2 Contribution of NGOs on Disaster Management

The Findings of this objective shown that the NGOs contribute on disaster management through encouraging its members to participate in disaster management activities and Promote of public awareness on disaster management. This finding is resembled to Eikenberry & Cooper(2012) said that the value of NGOs in a disaster is in their role as rapid responders NGOs have earned the reputation of being efficient, effective, and impartial when distributing relief goods to disaster victims.

5.3.2.3 Local Community Participates in Disaster Management

Participation of local community in disaster management is the one of the objective of the study. The Findings of this objective shown that the local community participates in disaster management through Formation of disaster management teams within the community. This finding is similar to Kilby, (2008) said that “The quality of the reciprocal relationship between the community and NGOs and other actors influences the communities’ ability to recover in disaster event. To refer again to the example in India after the Indian Ocean tsunami in 2004, the response consisted of a combination of interventions by governmental bodies, NGOs and local community initiatives. These interventions included local people and groups in the design and implementation of the intervention.

5.4 Conclusion

The researcher set out to assess effectiveness of local stakeholders participation contribute in disaster management in Zanzibar and concluded that effectiveness of local stakeholders participation contribute in disaster management in Zanzibar. Disaster management is based on multidisciplinary and proactive approach, thus it requires more involvement of various stakeholders with strong regular coordination. Currently, the coordinating mechanism is not well diversified and organised to enable each stakeholder to perform its responsibilities accordingly.

Information management, communication, education, training, public awareness and research shall be part of improving and managing knowledge on disaster risks and their reduction. A strong national and local commitment is required in order to save lives and livelihoods threatened by natural and human-induced disastrous events. Achieving this Disaster Management Commission with other key stakeholders need to increase and create a visibility and understanding of scientific based disaster management technologies and techniques by mobilizing partnerships with research institutions available in Zanzibar and Tanzania in general for innovation, research and development.

In ensuring community resilience in disaster events the government and among disaster management practitioners as well as among stakeholders. It is also recommended that, roles and responsibilities need to be re-communicated among them in order to understand in the context of solving the community from the existing vulnerable conditions and emergency situations. Not only that but also Disaster Management Commission need to strengthen the coordination and

collaboration among and between the stakeholders for implementing the community resilience related programs while also ensuring capacity building programs on disaster risk reduction mechanism continually updated, communicated toward the communities and institutions.

5.4.1 Uses of ICT in Disaster Management

The study concluded that ICT greatly contributes to disaster risk reduction as seen in the study findings. It shown then formation for Disaster Management (IDM) annual conference proceedings and disseminate publications. ICTs in particular are able to provide more clear disaster preparedness, response and recovery solutions. Rapid advances in imaging sensors and information technologies, for instance, offer the possibility to identify, map and analyse with unprecedented detail, the facts and figures before, during and after a disaster. Social media, crowd sourcing and community sensing were extensively used for the first time in the immediate aftermath of the disaster events, and helped communities by giving them the tools to actively engage in the disaster risk management process.

5.4.2 Contribution of Public Sector and NGOs on Disaster Management

The findings of this objective divided on two categories as follows:-

5.4.2.1 Contribution of Public Sector on Disaster Management

The researcher concluded that Zanzibar, sector development plans do not exhaustively disclose the elements of prevention and mitigation to disasters. The linkages among sectors are not well incorporated. In some cases, where disaster preventive regulations exist they are not effectively enforced giving chance for

disasters to take place. Activities under disaster response include warning system, rapid damage and needs assessment, resource mobilisation, search and rescue, evacuation, relief distribution and construction of temporary shelters. However, auxiliary national structures and other obligatory needs are not well established and/or inadequate for effective response. The legislation is short of motivation in its implementation and other stakeholders are not effectively involved in disaster management

5.5 Recommendations

5.5.1 The use of ICT in Disaster Management

In relation to the uses of ICT in disaster management, this study recommends that the government and other allied institutions responsible with disaster management should use some modern tools such as billboards, social media and telephones that is play an important role in warning communities about the impending danger of a disaster through some text messages(sms) which issued an alert to the entire population in short time.

5.5.2 The Contribution of Public Sectors in Disaster Management

The public sectors should make an effort of Mainstreaming disasters and disaster management issues in sectoral plans. This can enhance the execution of disaster management issues on their daily activities. Apart from that as we know that Disaster management is a crosscutting issue, every sector should play its part on Seek resources from inside and outside the country which will assist various activities in Disaster Management. Disaster management is based on multidisciplinary and pro active approach, thus it requires involvement of various

stakeholders with strong regular coordination. Currently, the coordinating mechanism is not well organised to enable each stakeholder to perform its responsibilities accordingly.

5.5.3 The Contribution of NGOs in Disaster Management

This study recommends that the NGOs Updates the public knowledge and awareness on disasters and increase the community resilience and effective participation in disaster management. Upgrade public knowledge and awareness of disaster, ensure community resilience and true participation in disaster preparedness, mitigation and recovery.

5.6 Community Participation in Disaster Management

The community should therefore be accepted as an institution and be recognized as a fundamental stakeholder in the process of preventative measures of disaster and this can be done through education and awareness that will ensure grassroots level is active in their own planning, monitoring and supervision of all disaster event. Apart from that , Disaster Management Commission need to strengthen the coordination and collaboration among and between the stakeholders for implementing the community resilience related programs while also ensuring capacity building programs on disaster risk reduction mechanism continually updated, communicated toward the communities and institutions. These capacity building activities will help to enhance stakeholders understanding and also motivating them so that principles and concepts of community resilience can be applied, and concrete actions can be taken by the institutions and community on building resilience.

5.7 Possible Areas for Further Research

The study analyzes the local stakeholders participation in effective disaster management in Zanzibar at Mjini District. However local stakeholders participation is not only issue that make effective of disaster management like Government budget allocation on disaster management, disaster institutional arrangement in Zanzibar and Disaster policy execution that need more research

REFERENCES

- Ame, A. W. (2015). Assessment of the Institutional Framework for Disaster Management in Zanzibar. Unpublished masters dissertation, Open University Tanzania, Dar es Salaam, Tanzania.
- Antigua and Barbuda (2010). Community Disaster Response Teams in Action, International Federation of Red Cross, World Disaster Report. Red Cross.
- Bajracharya, B., & Hastings, P. (2015). Public–private partnerships in emergency and disaster management: Examples from the Queensland floods 2010–11. . *Australian Journal of Emergency Management*, 30(4), 30–36.
- Caribbean Disaster Emergency Management Agency, (2014). Regional Comprehensive Disaster Management (CDM) Strategy and Programming Framework. Manor Lodge Complex, Barbados, SBN 978-976-8243-22-5
- Emanuele Lettieri, Cristina Masella, Giovanni Radaelli, (2009). Disaster management: findings from a systematic review, Disaster Prevention and Management. *An International Journal*, 18(2), 117-136.
- Hopkin J. (2006). *The International Federation of Red Cross and Red Crescent Societies*. New York: Aldine de Gruyter.
- Huang, S. & Chu, X. (2010). *Earth and Planetary Science Letters University of Nevada, Las Vegas. Earth and Planetary Science Letters*, 222, 43–60.
- ICRC, (2005). Annual Report CH-1202 Geneva, Switzerland.
- IPCC, (2012). Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change, IPCC.
- Kothari, C. R. (2004). *Research Methodology, Methods and Techniques*, (2nd Ed)

New Delhi: New Age International (P) Limited Publisher.

- Mahalingam, J. (2011). Framework of Effective Learning Management System Controls of Technology Enabled Teaching and Learning in Higher Education Institutions, *International Journal of Computer Applications* 19(6), 13-17,
- Maskrey, A. (1989). *Disaster Mitigation: A community Based Approach. Development Guidelines No.3*. Glasgow Great Britain: Bell & Bain Ltd,
- Mugambi, B. N. (2008). *Disaster Management in Kenya; a Case Study of the Role of the Military-(1998-2008)*. Nairobi: University of Nairobi.
- RGoZ, (2011). *The Emergency Preparedness and Response Plan, Zanzibar: Chukwani University Press.*
- RGoZ, (2011). *The Zanzibar Disaster Management Policy, Zanzibar: Chukwani University Press.*
- RGoZ, (2011). *Zanzibar Disaster Management Department Strategy. Chukwani Zanzibar: Chukwani University Press.*
- RGoZ, (2014). *Mjini District Emergency Preparedness and Response Plan, Zanzibar: Chukwani University Press.*
- Stenchion, P. (1997). Development and Disaster Management, *Australian Journal of Emergency Management*. 12(3), 40–44.
- Taabu, L. (2014). *Assessment of Disaster Management Practices, at The Ministry of Energy and Petroleum*, unpublished maters dissertation, University of Nairobi, Kenya.
- Thomas, D. Schneid & Larry, R C. (2002). *Disaster management and preparedness Occupational safety and Health guide service*, ISBN 1-56670-524-Lewis publishers washington.books-google.com.

World Bank, (2010). *The International Bank for Reconstruction and Development/ the World Bank, annual report, WB.*,

World Conference on Disaster Reduction (2005). Hyogo Framework for Action 2005-2015. Extract from the final report of the World Conference on Disaster Reduction (A/CONF.206/6).

APPENDICES

APPENDIX 1: CONSENT FORM

Greetings! My name is **Hamid Abdalla Haji**, a Master's degree student from Open University of Tanzania (OUT) and the objective of my research is to assess the **effectiveness of local stakeholder's participation in disaster management in Zanzibar**. This is a requirement for my master's study of Monitoring and Evaluation. I kindly ask you to participate in the study by filling this questionnaire. I assure you that all the information collected from you will be kept confidential. The compiled report will contain responses from respondents without any reference to individual's names.

You are kindly requested to participate in this study by giving your views, opinion, insight and experiences so as to fulfil the study goal. I would like to request you to answer these questions as truthfully as you can. You will be required to answer all the questions from the questionnaires. The self-administration of questionnaire will take you about 15-20 minutes.

Your participation is voluntarily. You may decide to refuse or not participate in this study without giving any reasons. However, your input through participation is highly valued and will be appreciated (Do not indicate your name in this paper).

APPENDIX I1: QUESTIONNAIRE

**EFFECTIVENESS OF LOCAL STAKEHOLDERS PARTICPATION IN
DISASSTER MANAGEMENT IN ZANZIBAR**

Questionnaire number

PART I

(Please tick (√) appropriately in the blanks provided)

1) Gender

a) Male []

b) Female []

2) What type of Orgarnization do you work?

a) Government Institution []

b) NGOs []

**3) Which category of employee do you belong? (If you have answered question 2
and 3 please go to question 5)**

a. Top management officer []

b. Mid level offer []

c. General staff []

4) Which shehia do you live?

a) Mwembemakumbi []

b) Gulioni []

5) What is your Education level?

a. Postgraduate []

- b. Undergraduate []
- c. Diploma level []
- d. Sec. Education []
- e. Below sec. education []

PART II

(Please tick (√) appropriately in the blanks provided)

6) To what extent how the ICT used in disaster management

<i>Uses of ICT in disaster management</i>	Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree
ICTs displays real-time monitoring for emergency early warning, climate and weather prediction					
ICTs provide vital support for disaster preparedness through observation, monitoring, recording, classifying, analysing, sharing, networking, communication and warning dissemination to public.					
ICTs provides answers to some of the questions important to disaster management officers, such as the exact location of the fire stations such as a number and locations of paramedic units required in a specific emergency					
ICTs supports better response planning in areas such as determining evacuation routes or locating vulnerable infrastructure such as roads, bridges, airports and port					

7) To examine how the Public Sector and NGOs contribute on Disaster management

<i>Contribution of Public Sector on Disaster management</i>	Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree
Integration of disaster management issues into sectoral development plans, programmes, strategies and other administrative arrangements					
Seek resources from inside and outside the country which will assist various activities in disaster management					
Create public awareness and information dissemination programmes on disaster management to the communities and other stakeholders by using different mechanisms;					
Establish and implement appropriate disaster management plans, regulations, and guidelines;					
Facilitate trainings and researches on disaster management issues through collaboration with other stakeholders and provide necessary equipment and tools for the reduction of the disasters impact;					
<i>Contribution of NGOs on Disaster management</i>	Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree
Encourage its members to participate in disaster management activities aimed at reducing vulnerability to the community					
Engaged in promoting public awareness, damage assessment, training, provide assistance and fund self-help activities					
Participation in preparedness, response activities, monitoring and evaluation of programmes					
Promotion of environmental management in relation to emergency activities					

8) How does the local community participate in disaster management?

How the local community participate in disaster management	Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree
Formation of disaster management teams with the community and assigning them particular preparedness and response responsibilities in their respective levels.					
Prepare plans and procedures for disaster management pro-grams in their respective locations					
To take operational control in the event of a disaster or emergency so as to ensure that support is provided to the affected households					
To identify and map all hazards in their respective locations and conduct risk and vulnerability analysis					
To oversee, empower and supervise disaster management activities at household level; and					

THANKS FOR YOUR COOPERATION