# ASSESSMENT OF THE INSTITUTIONAL FRAMEWORK FOR DISASTER MANAGEMENT IN ZANZIBAR: THE CASE OF WEST DISTRICT

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT FOR THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN SOCIAL WORK OF THE OPEN UNIVERSITY OF TANZANIA**

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## CERTIFICATION

I, Prof. Hosea Rwegoshora, certify that this dissertation titled "**Assessment of the Institutional Framework for Disaster Management in Zanzibar: The Case of West District"** Submitted to The Open University of Tanzania for the award of Masters Degree in Social Work is an independent project work carried out by Mr. **Ali Wadi Ame**, under my supervision and guidance. This has not been presented for the award of any academic qualification in any higher learning institution.

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Prof. Hosea Rwegoshora

(Supervisor)

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Date

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I, **Ali Wadi Ame**, do hereby declare that this dissertation is my own original work and it has not been presented before its submission to Open University of Tanzania and will not be presented to any University for a similar or any other degree award.

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Date

## DEDICATION

This study is dedicated to my children Amina, Hamida, Firdaus, Ibrahim, Khalid and Maryam

## ACKNOWLEDGEMENT

Thanks to my family for the endless support it has been giving me for the entire period this work was being carried out. It is this support that has encouraged me to accomplish this Dissertation. I am grateful to the contributions of all people who assisted me in accomplishing this academic work. More importantly, the high devotion of my supervisor Prof. Hosea Rwegoshora has been of great importance to the fulfilment and the production of this work and I highly appreciate and recognize his contribution with my thankful heart. Special thanks to, Mwanauwani Omari Ali, Rahma Ali Vuai and Rahma Kassim Ali for their contributions that in one way or another have made the completion of this academic task possible. Finally, I would like to thank my colleague students for their cooperation.

## ABSTRACT

The main goal of this study was to assess the effectiveness of disaster management framework in Zanzibar, particularly in the West District. The study was conducted among members of the committees for disaster management that are the District and Shehia Committees. Their selection was done using both random and purposive sampling procedures, especially through snowball sampling. The study included both qualitative and quantitative data, which were obtained through face-to-face interview, questionnaires, and direct observation methods. In relation to the objectives of this study, the research findings indicate that, women have been much encouraged to participate in the issues related to disaster management and have shown positive response. Their participation in the interviews and questionnaires filled in was higher than that of men. There were total of 100 respondents divided into two groups, the group of 25 respondents from the District Disaster Management Committee and 75 respondents from members who form Shehia Disaster Management Committees from five selected Shehias. These respondents in different times were involved in both interviews and questionnaires in the data collection process. It is recommended to establish early warning centers in all Districts in Zanzibar as well as equipping them with all necessary devices. The current Disaster Management Structures need to be re-structured to improve efficiency during the time of preparedness, response and recovery.

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| | |
|---|---|
| DC | District Commissioner |
| DDMC | District Disaster Management Committees |
| DM | Disaster Management |
| DMD | Disaster Management Department |
| DMS | Disaster Management Structure |
| MDG | Millennium Development Goal |
| MKUZA | Mpango wa Kupunguza Umasikini Zanzibar |
| RC | Regional Commissioner |
| SDMC | Shehia Disaster Management Committees |
| SPSS | Statistical Package for Social Sciences |
| TDHS | Tanzania Demographic and Health Survey |
| TMA | Tanzania Meteorological Agency |
| ZBS | Zanzibar Bureau of Standards |
| ZDCS | Disaster Communication Strategy |
| ZDMP | Zanzibar Disaster Management Policy |
| ZEPRP | Zanzibar Emergency Preparedness and Response Plan |
| ZSGRP | Zanzibar Strategy for Growth and Poverty Reduction |

# CHAPTER ONE

# THE STUDY AND ITS SETTING

## 1.1 Background Information

A serious disrupting event within the society or a community that causes effects such as deaths, loss of property, destruction of infrastructure and that cannot be handled by the resources available within that particular community or society until external assistance is obtained is termed as the disaster, and most of such events have a sudden impact, though some, such as droughts and famines, are somewhat awkwardly called ‘slow onset’ disasters (Hopkins, 2006). Disasters in Zanzibar have been causing social and economic deprivation to the people. In the social point of view, women, the elderly, children and disabled people have been most vulnerable groups.

According to a Baseline Survey Report (2013), about 14% of households in West District have family members with disabilities. Though, according to Tanzania Demographic and Health Survey (TDHS) 2010, under-five mortality has declined steeply in Zanzibar, whereby mortality rate for Zanzibar stands at 73 deaths per 1,000 live births. Despite this achievement made by the Revolutionary Government of Zanzibar in implementing Millennium Development Goals (MDG’s) still there is an increased number of disaster-related deaths for the most vulnerable groups in West District. Hopkins (2006) suggests that, when occurring at district or provincial level, a large number of people can be affected. Disaster could result in a major illness, deaths, and inability of those affected to cope without outside assistance.

Countries that are prone to disasters have to have well coordinated plans to deal with such situations. Due to its geographical location, Zanzibar is exposed to many hazards of both natural and human-induced origin. The Zanzibar Emergency Preparedness and Response Plan (2011) indicates that hazardous events such as floods, drought, cyclones, tsunami and earthquakes, have the potential of disrupting the communities in terms of social and economic services, ecological, environmental and health. In the recent years, collapse of buildings, fire outbreaks, marine and terrestrial accidents have been increasing. As reported by the Zanzibar Disaster Management Policy (2011), cases of marine accidents are increasing. In March 2009, fire destroyed two passenger ships, MV Aziza I and Aziza II, when they were undergoing maintenance.

In May 2009 the backdoor of one passenger ship fell off while in the Indian Ocean. A week later, a cargo ship (MV Fat-hi) capsized at the Zanzibar's main port of Malindi where six people were confirmed dead and twenty-seven people were rescued. In 2011, about 1,529 passengers died when MV Spice Islander I sank, and in 2012, a year later, MV Skagit lost lives of 293 passengers when it was travelling from Dar es Salaam to Zanzibar.

In 2005, Zanzibar experienced heavy rainfalls that are said to have not been seen for the last forty years. According to the Disaster Management Policy (2011), 10,000 households were destroyed and people lost their homes and livelihoods. Trend is showing that in every year during the rain season people vacate temporarily from their homes to save their lives. Most of the areas that are heavily affected by floods

as a result of heavy rains are in the West District. Vulnerable Shehias include Mtopepo, Tomondo, Mombasa, Kijitoupele, and Pangawe.

The impact of these disasters is being experienced virtually at all levels. At household level, they cause prolonged suffering. The life becomes very difficult and painful, it can also destabilize family structure, erode the asset base of households, deplete their labour force and restrict their ability to earn cash from productive activities, hence undermine their ability to feed themselves and maintain adequate levels of nutrition. At the national level, the calamity can seriously undermine efforts to reduce poverty. Despite these potential impacts of disaster in Zanzibar, it is only recently that the threat and its impact has been fully appreciated, as the rate of occurrence in the country is increasing (TNA, 2013).

Disaster management requires an integrated multi-sectoral approach, which provides for a comprehensive and active participation and interaction of all key players (NOGDM, 2003). In this regard, the Government of Zanzibar in collaboration with other stakeholders has established a number of initiatives to ensure that disaster management issues are given high priority. Disaster Management Act No.2 of 2003 was introduced to specifically address all disaster related issues. In Zanzibar, the Act also established the Disaster Management Department (DMD) as a state body for coordinating all matters regarding disaster management in the isles.

Disaster Management Policy of 2011 was another initiative of the Government to help provide guidelines to properly handle disasters in terms of minimizing their effects to the livelihood of the people and their property. Other frameworks that have

been developed to facilitate management of disasters include the Zanzibar Emergency Preparedness and Response Plan (ZEPRP) of 2013, Zanzibar Disaster Communication Strategy (2011), the National Operational Guidelines (2013) and the Monitoring and Evaluation framework for Disaster Management Policy (2013).

More recently (in January 2015), the Zanzibar Revolutionary Government has repealed the Disaster Management Act No.2 of 2003 and established the Disaster Risk Reduction and Management Act of 2015. This new Act has come up with the Disaster Management Commission as Semi-autonomous national coordinating body. Earlier, the Disaster Management Department had no mandate to make decision in matters regarding disaster management. However, in spite of the efforts taken in managing disasters, they continue to pose serious risk to the lives of people and animals, loss of properties, as well as the destruction of the infrastructures.

## 1.2 Statement of the Problem

The institutional framework for disaster management in Zanzibar was introduced to provide a swift emergency response to the victims of the disaster; unfortunately, in most of the disastrous events this is not realized. Disasters continue to endanger the lives of marginalized group in the society such as women, children, elderly and those living with disability. Floods in West District in 2014 in Zanzibar left a lot of people homeless, increases number of deaths, children do not attend to school, and women live with families in a poorly temporary shelters. During disasters, availability of basic social services such as water, food and medical services are stained, especially for women, children, and elderly as well as to the people living with disability.

In ensuring disaster management becomes imperative, several intervention measures have been developed. These initiatives include establishment of Zanzibar Disaster Management Act No. 2 of 2003, introduction of the Disaster Management Department as a national coordinating body in 2006, development of Disaster Management Policy of 2011, Zanzibar Emergency Preparedness and Response Plan (ZEPRP), and the Zanzibar Disaster Communication Strategy in 2011. These initiatives by the government were intended to reduce the impact of disaster to the people, hence in turn improve their social lives and economic wellbeing. In spite of these measures disasters have continued to cause havoc and negative social and economic impacts to the lives and properties of the people.

Therefore, this study seeks to assess the effectiveness of the institutions erected to help communities in managing disasters. For the purpose of this study, effectiveness means the proper administration and supervision of disaster management programs at both District and Shehia levels, organizing and coordinating all interventions from other agencies and mobilize needed financial and material resources for disaster management, and ensuring the established structures both for preparedness and civil protection against disasters at District and Shehia levels observed the standards set.

The problem came about when the central government committed itself taking appropriate actions in addressing issues regarding disaster management, but the idea seems not to be working properly as intended. Sepulveda et al. (2012) suggests that having plans is one step; but the second step is their implementation. Whatever the good plans that exists, if not properly implemented the lives of the intended people will always be weak.

## 1.3 General Objective of the Study

The general objective of the study is to examine effectiveness of the disaster management framework in dealing with floods in West District, Zanzibar.

### 1.3.1 Specific Objectives

This study was guided by the following specific objectives:

(a) Examine the administration and supervision of disaster management programs and their implementations at District level

(b) Investigate the organization and coordination of all interventions from other agencies and the mobilization of needed financial and material resources for disaster management.

(c) Examine the established structures for both preparedness and civil protection against disasters at District and Shehia levels.

## 1.4 Specific Research Questions

(a) What are the strategies involved in the administration and supervision of disaster management programs in the district?

(b) What are the interventions made by the agencies in dealing with floods in the District?

(c) Are the established structures have skilled human and material resources in performing their jobs?

## 1.5 Significance of the Study

The study is going to help policy makers focus on the issues of public interest in the early stages of policy design. In this regard, policy makers and other stakeholders are

reminded not to repeat the mistakes done by their previous policy makers that led the implementation of the designed policies prove failure.

Ordinary people have very important role to play in disaster management process, their participation helps largely the efforts to manage disasters. This will provide them with awareness that their contribution is acknowledged and valued, in so doing; people will get encouraged and always be ready to join efforts in managing disasters. The National Operational Guidelines for Disaster Management (2003) indicates that disaster management requires coordinated efforts of all parties concerned; it can never be managed by a single organization.

Disaster Management Department (DMD) has never conducted any study to evaluate the effectiveness of its disaster management frameworks available; in this context it becomes difficult for them to get clear picture of the weakness of these plans in their execution. The study is going to be the opportunity for the DMD to identify the challenges in executing or implementing these frameworks as it will point out the areas that might have been causing these plans not to be working correctly. After all the gaps are identified, it is assumed that DMD will work on them accordingly.

### 1.6 Conceptual Framework

The **c**onceptual framework in Figure 1.1 illustrates the conceptualized institutional framework in a manner that if well practiced, disaster will effectively be managed. On contrary, if not well practiced, disaster will be poorly managed. Institutional Framework comprises the disaster management institutional structure which works closely with the Disaster Management Supporting Sectors in the preparation and

implementation of guidelines. Good preparation and implementation of guidelines by the institutions collaboratively determines the disaster management, either effective or poor disaster management.

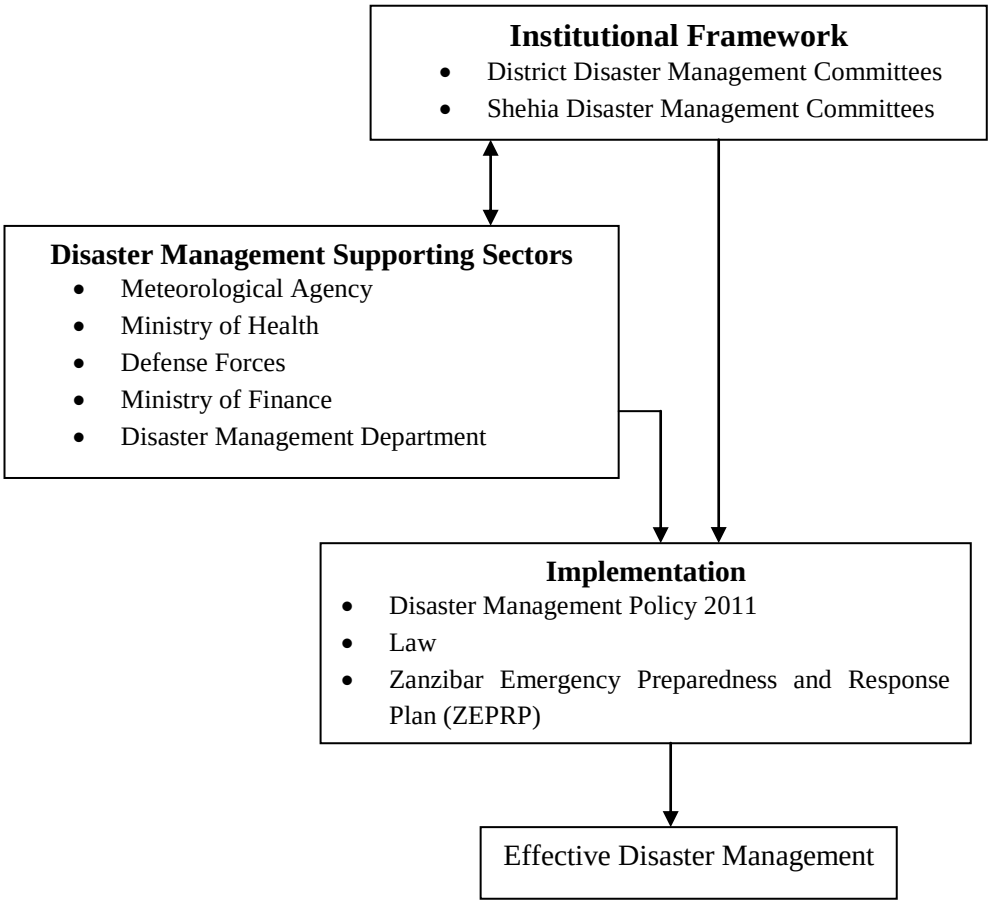


**Figure 1.1: Conceptual Framework**

Source: Current Survey (2015)

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter gives an overview of the literatures regarding the matter discussed; presenting some concepts and theories relevant to the discussion. Views of other scholars in the field may also be discussed.

## 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).

### 2.2.3 Institutional Framework

An institutional framework is generally understood to mean the systems of formal laws, regulations, and procedures, and informal conventions, customs and norms that broaden, mould and restrain socio-economic activity and behavior. The institutional framework is likely to be the result of government policy, but workers' organizations may have their own rules on hiring and firing (Donnellan et al., 2012).

## 2.3 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.

### 2.3.1 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.

### 2.3.2 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).

### 2.3.3 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, strutture and transport.

### 2.3.4 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).

## 2.4 Zanzibar Disaster Profile

Zanzibar's disaster profile is dominated by droughts and agricultural pests, fire, floods, marine and terrestrial accidents, diseases and epidemic outbreaks that disrupt people's livelihood, destroy some infrastructure, divert planned use of resources, interrupt socio-economic activities and retard development. These disaster incidences have not been without costs, and their impacts have become an impediment to sustainable development of the isles (ZDMP, 2011). According to the Zanzibar Disaster Management Policy (2011) few cases cited are as they can be seen.

### 2.4.1 Rainfall Patterns

The very high rainfall experienced in Zanzibar in 2005 is considered to have been the worst downpour in the last 40 years. This unprecedented rainfall, which lasted 36 hours and measured 149+ millimeters, took place between 15 and 17 April 2005. Following these rains, 10,000 households lost their homes and over a 10,000 others lost their livelihood. With poor coping strategies, the situation led people to depend entirely on relief services (ZDMP, 2011).

### 2.4.2 Food Shortage

In the past four decades, Zanzibar experienced extreme food shortage which resulted into hardship for many people. The same situation was experienced in 2008 due to the rise of global food and fuel prices and inadequate and erratic rainfall (ZDMP, 2011). According to WHO (2009), the level of acute malnutrition following the food shortage and food insecurity across Zanzibar Islands significantly elevated with 22.5% (300,000 people) requiring food mainly children under the age of five as well as pregnant and lactating women who were malnourished.

### 2.4.3 Marine Accidents

As par (ZDMP, 2011) reported cases of marine accidents are increasing. In March 2009, fire destroyed two passenger ships, MV Aziza I and Aziza II, when they were undergoing maintenance. In May 2009, a passenger Ship's backdoor fell off while in the Indian Ocean. A week later, a cargo ship (MV Fat-hi) capsized at the Zanzibar's main port of Malindi where six people died and twenty-seven people were rescued. In 2011, about 1529 passengers died when MV Spice Islander I sank, and in 2012, a

year later, MV Skagit lost lives of 293 passengers when it was travelling from Dar es Salaam to Zanzibar.

### 2.4.4 Fire Outbreaks

Frequent fire outbreaks pose potential risks not only to lives of people and animals, but also loss of property, livelihood and environmental degradation. The statistics indicate that during the period of 2006-2009 thirty persons lost their lives due to fire incidences; and ten people were rescued from such hazardous events. Statistics specify that a total of 503 cases of fire incidences occurred, covering buildings (264 cases), forest fires (109 cases), motor vehicles (49 cases), dumping sites (25 cases), high voltage transformers (46 cases), and (10 cases) incidences incurred from training (ZDMP, 2011).

## 2.5 Zanzibar's Experience on Man-Made and Natural Disasters

The isles have been experiencing both natural and human induced disasters. In most cases, human induced disasters are frequently happening. Marine and terrestrial accidents, political conflicts are said to be the major human induced disasters in Zanzibar. Though floods falls under the category of natural disasters, poor urbanizatin and solid waste disposal are the main causes of floods and are experienced every year particularly during rainny season in Zanzibar. Natural disasters that have been reported in Zanzibar include strong winds and heavy rainfalls, however, in 2006 earthquake was reported, although it did not pose any danger to the lives and property of people. Experience shows that, man-made disasters in Zanzibar are on the rise as compared to natural disasters.

## 2.6 Factors Contributing to the Occurrence of Disasters

The probability of a disaster occurring can be influenced by a number of factors that either aggravate the situation or lessen the severity of its occurrence (UN/ISDR, 2004). According to the United Nations (2004) factors such as low income, inadequate housing, issues of land tenure, and lack of public services and social security force the poor to take actions that expose them to greater on-going risk.

Although Sub-Saharan Africa Region is no disaster prone region, it is the most vulnerable to disasters because of physical, social, economic and environmental factors that negatively affect the capacity of people to secure and protect their livelihood. The major factors are poverty and low incomes, fragile and degraded environments, high prevalence of diseases and low access to social services, weak governance and armed conflict (ISDR, AU, WB, 2008).

### 2.6.1 Poverty

As par the Revised Zanzibar Development Vision 2020 of 2011, poverty in both urban and rural areas in Zanzibar is still a major problem that requires relentless efforts to be reduced or eliminated by 2020. The decline in the basic needs poverty over the period 2004/05 – 2009/10 is small and this holds for each of the strata and for the Zanzibar as a whole. Apparently, food poverty for the rural areas actually increased from 15.93 per cent in 2004/05 to 16.76 per cent in 2009. The Zanzibar's Growth Strategy 2006-2015 (2007) shows that the major concern over growth is that it has been fluctuating, and in recent years it has shown signs of decline. This is an indication that it may not be sufficiently high to reduce poverty significantly.

### 2.6.2 Climate Change

Many coastal and small island communities are extremely vulnerable to the impacts of climate change and hydro-meteorological hazards (Hiwasaki, et al. 2014). Extreme weather and climate events, interacting with exposed and vulnerable human and natural systems, can lead to disasters (IPCC, 2012). Climate change may be due to natural internal processes or external, forcing persistent anthropogenic changes in the composition of the atmosphere or in land use (IPCC, 2012). Climate change impacts such as sea level rise, more frequent and intense storms, increased rainfall, and warmer ocean temperatures exacerbate hydro-meteorological hazards. Thus, not only are coastal and small island communities in the sub-region prone to more extreme hydro-meteorological hazards, they are also affected by slow-onset changes resulting from climate change such as coastal erosion, coastal flooding, water pollution and loss of coastal ecosystem biodiversity, all of which pose a direct threat to their livelihood (Hiwasaki, et al. 2004).

Effects of climate change have very great contribution to the occurrence of the natural disasters. Around the globe, climate change has become an issue of discussion for whatever the development plans a particular organization is coordinating. It is assumed there is connection of the occurrence of natural disasters such as earthquake, drought, and floods with climate change.

Poverty, climate change, as well as other factors as they are outlined in this section has huge contribution in destabilizing the country’s security. In the situation where majority are living in poverty, with no social services that are provided to them such

as water, education, housing, and health services, it is likely that it endangers the security. Instability of a country in most cases leads to the battle, as a result deaths, loss of property, and destruction of infrastructure may be reported.

## 2.7 Types of Climate-Related Natural Disasters

Anderson et al. (2006) suggest climate change is predicted to have a range of serious consequences, some of which will have impact over the longer term, like spread of disease and sea level rise, while some have immediately obvious impacts, such as intense rain and flooding. While recognizing the importance of the other predicted consequences of climate change. The 'extreme weather events' responsible for natural disasters include:

(a) Extreme temperature highs – heat waves

(b) Storms, including windstorms, hurricanes, etc.

(c) High levels of precipitation, and associated flooding

(d) Lack of precipitation, and associated drought

Climate change is increasing the frequency and intensity of natural disasters. Dealing with climate change, therefore, becomes an integral part of disaster management. Dealing with climate change involves two approaches: the first is climate change is mitigation, the reduction of carbon emissions.

However, climate change mitigation alone will not be enough. Even if green house gas emissions are reduced drastically, the current effects of climate change will be felt for several decades more. It will also take 20-30 years for carbon offsets to become effective, as trees have to grow and mature. Therefore, a second strategy for

dealing with climate change is adaptation which is also becomes essential. Simply stated, adaptation is accepting that climate change and that the natural disasters will occur, and preparing for them. At a local level, the single most important response to climate change is adaptation (Miththapala, 2008).

## 2.8 Disaster Management

Many people still think of disasters as ‘accidents’ or events which cannot be anticipated. This results in a focus on responding to the immediate needs created by a disaster rather than preventing or reducing effects. Disaster management conveys the important idea that protecting populations and property also involves the estimation of risks, preparation, activities which will mitigate the consequences of predictable hazards and post-disaster reconstruction in a way that will decrease vulnerabilities. An important goal is building a culture of awareness that preparation is not only possible, but also will greatly reduce the consequences from disasters in terms of human and economic loss. In these, public health is an important partner with engineers, planners, elected leaders and community organizations (Hopkins, 2006).

## 2.9 Disaster Management Cycle

Disasters are often thought of as a cycle. A disaster may occur with or without a warning phase. A response is made following a disaster. The response may be helped substantially by any preparedness actions, which were made before the disaster occurred. Relief activities occur during the emergency phase, which follows the impact of the disaster. This phase transitions into the reconstruction phase (Hopkins, 2006). The Indian Ocean tsunami of December 26, 2004 was one of the most horrific tragedies of recent human history. The details of the tsunami’s immediate impacts in

coastal countries of Asia and Africa were shocking: 186,983,000 people died and 42,883 were reported missing. There was a massive displacement of populations, as well as extensive damage to infrastructure and coastal natural resources (Miththapala S. 2008).

In order to achieve the goals of disaster management, it is necessary to prevent, prepare for, mitigate and minimize effects of a natural disaster. Then response (relief), recovery, and rebuilding after a natural disaster occur. Therefore, before a natural disaster, the phases of Prevention, Mitigation, and Preparedness are essential (Miththapala S. 2008).

### 2.9.1 Before a Natural Disaster

#### 2.9.1.1 Prevention

Prevention includes the safeguards that you establish to stop the effects of a disaster. These include policies and legislation that affect urban planning and are not damaging to human and ecosystem well-being. It is usually difficult to prevent entirely a natural disaster and therefore, the next two steps become important (Miththapala, 2008). Hopkins (2006) some disasters can be prevented entirely. Mudslides can be prevented from happening by controlling deforestation or undertaking engineering works. Loss of life and property can be prevented by enforcing housing codes in disaster-prone areas. This requires resolute governments with strong public support to enforce such restrictions. Civic authorities seldom receive credit for disasters that never occurred through careful planning and enforcement.

#### 2.9.1.2 Mitigation

Mitigation means to take actions which will lessen a disaster's consequences and subsequent hazards (Hopkins, 2006). Mitigation refers to the Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards (ISDR, AU, WB, 2008). Mitigation reduces risk from natural disasters. Zoning and proper land use management – for example, building with a set-back on a coastline or leaving intact stands of mangroves and public education – are examples of mitigation (Miththapala, 2008). Hazard-specific mitigation measures (structural and non-structural) to be taken to minimize physical damage for existing and new facilities and infrastructure; development of building codes and standards for multi-hazard resistant design and their compliance in construction of housing and public infrastructure; prioritizing and financing for mitigation programs, setting up all-hazard warning and monitoring systems, hazard mapping and land use planning, watershed management, integrated coastal zone management (ISDR, AU, WB, 2008).

#### 2.9.1.3 Preparedness

Preparedness aims to reduce to the minimum level possible, the loss of human lives and damage to build and natural infrastructure through the prompt and efficient actions to response and rehabilitation. Effective preparedness allows communities and institutions to provide a quick, organized response to disasters and include early warning systems, planned evacuation routes and sites (Miththapala, 2008). Emergency preparedness calls for the preparation of the emergency response planning at all levels in government, community-based response planning, periodical

drills and exercises, public awareness, information and communication systems, emergency response capacity enhancement (ISDR, AU, WB, 2008).

### 2.9.2 After a Natural Disaster

Achieving the second and third goals occurs after a natural disaster. Response (Relief), Recovery and Rebuilding then become essential (Miththapala, 2008).

#### 2.9.2.1 Response (Relief)

Response (Relief) is the collective actions carried out immediately after a disaster with the objective of saving lives, alleviating suffering and reducing economic losses. For example, relief includes getting people to safe locations, provision of food and clothing (Miththapala, 2008). 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.

Some form of disaster response capacity is present in most countries. This may be organized through a national civil defense or emergency management agency. Military forces may take disaster response responsibilities because of their communication and logistical capacity. The Red Cross and Red Crescent National

Societies are chartered in many countries to provide relief in emergencies. Civil society organizations such as nongovernment organizations and those associated with religious groups may be the first responders. In almost all disasters, local communities play the first and often most important role in responding by rescuing those affected, providing first aid and emergency shelter, usually long before outside organizations arrive at the scene. Building a strong volunteer group is an important disaster response asset. (Hopkins, 2006). Disaster response is predominantly focused on immediate and short-term needs and is sometimes called "disaster relief". The division between this response stage and the subsequent recovery stage is not clear-cut. Some response actions, such as the supply of temporary housing and water supplies, may extend well into the recovery stage (UNISDR, 2009).

#### 2.9.2.2 Recovery

Recovery is the activity that returns humans and built infrastructures to minimum living/operating standards and guides long-term efforts designed to return life to normal levels after a disaster. This includes building temporary housing and provision of basic household amenities (Miththapala, 2008). As par the Virtual University for Small States of the Commonwealth (VUSSC), recovery means returning the community to normal. Ideally, the affected area should be put in a condition equal to or better than it was before the disaster took place. Examples: temporary housing; grants; medical care.

#### 2.9.2.3 Rebuilding

Rebuilding is the long term response to a disaster. In this phase, permanent infrastructures are rebuilt, ecosystems are restored and livelihoods are rehabilitated

(GDRC, 2008). In developed countries the effects of a disaster may be repaired in a short period of time, though the psychological damage among survivors may persist for years. In developing countries the reconstruction process may take years. Consensus on reconstruction policy may take time to reach, records of property ownership may be lost and official permission delayed. At the household level families may take time to decide whether to return to disaster affected areas or rebuild their lives and houses elsewhere. A rapid early response can demonstrate serious commitment to assist survivors by government, as well as promote an early return to normality which will help health psychological trauma for the disaster. Humanitarian aid organizations must think about what affect their actions will have on local governments and future disaster responses (Hopkins, 2006). All these disaster management phases are inter-linked and are cyclic – i.e., one phase cannot be effective in isolation of the others. In other words, the phases before an event – prevention, preparedness and mitigation – are as important as response, recovery and rebuilding.


**Figure 2.1: Disaster Management Cycle**

Source: The International Federation of Red Cross and Red Crescent Societies (2006)

## 2.10 Inclusion of Social Work Aspects in Disaster Management Cycle

In the social work point of view, and in all stages of disaster management cycle, there is huge importance of considering aspects of the social work as it directly reflecting the wellbeing of the people. Before disasters, the main activities that are performed basically are the preparedness and prevention. Conducting various training programs, preparation of infrastructure that are resilient and that can accommodate disasters are some of activities performed before disaster and their main target is to strengthen the capacity of the people in dealing with disasters where they happen.

After disasters, what follows immediately is the response to save lives, alleviate suffering and reducing economic losses. Social wellbeing is of the primary concern whenever disaster happens. These can be achieved by rebuilding the infrastructure, provision of humanitarian assistance, such as food, shelters, medical services and water. Recovery period always takes longer, though defer depending on the type of disaster.

## 2.11 Improving Resilience to Disasters

Many efforts have contributed to the ability to manage the consequence of disasters more effectively by building better resilience among governments and their citizens. Among these have been the UN International Decade for Natural Disaster Reduction, Yokohama strategy, the International Strategy for Disaster Reduction and its Hyogo Framework. These have greatly advanced knowledge on effective approaches to mitigate the effects of disasters and support communities in coping with disaster

consequences. The Hyogo framework focuses on building national and community resilience to disasters. It outlines three strategic goals:

(a) The Introduction of disaster risk reduction into planning for sustaining development at national and local levels.

(b) Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards.

(c) Systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programs (Hopkins, 2006).

## 2.12 Legal and Institutional Framework

Legal frameworks play a crucial role for effective groundwater governance. They provide the basis and starting point for policy development and they turn policy decisions into rights and obligations (Mechlem, 2012). An institutional framework is generally understood to mean the systems of formal laws, regulations, and procedures, and informal conventions, customs and norms that broaden, mould and restrain socio-economic activity and behaviour (Donnellan et al. 2012). Nearly all countries have institutional structures generally responsible for the day-to-day operation of disaster management, including central planning, coordination and monitoring (ISDR, AU, WB, 2008). In the past in Zanzibar, there was no any national comprehensive plan regarding the matter, though these kinds of disastrous events were taken care of. Later, in 2003, the Disaster Management Act No.2 was passed for the first time ever in Zanzibar. The Act stipulated the establishment of the Disaster Management Department as a national disaster management coordinating body. The Act also introduced two committees, the National Disaster Management

Committee responsible for over-seeing and coordinating the activities of the Government designed to secure the effective prevention of disasters and the preparedness and operation of affairs in the event of a disaster.

This Committee is chaired by the Chief Minister, Minister of State, Chief Minister's Office as Vice Chairman, members being Ministers of State, President's Office, Regional Administration and Special Departments, Minister of Finance and Economic Affairs, Minister of Health and Social Welfare, Minister of Communication and Transport, Minister of Agriculture, Minister of Water, Construction, Energy and Land, Attorney General of Zanzibar, Chairman of the Committee of Social Welfare of the House of Representatives, All Regional Commissioners of Zanzibar and the Executive Secretary of the Commission as s Secretary to the Committee.

The second Committee established by the Disaster Management Act was the Regional Disaster Management Committees, whereby every Region shall have its own committee. Regional Disaster Management Committees will be responsible to oversee and supervise all Regional programs and considers their implementation and to give advice to the Minister on any program which, on the opinion of the committee, may cause a disaster. Regional Commissioners of the respective Regions will chair the committees in their Region, members of the committee are all the District Commissioners available in the region, the Director of Municipal or Secretary of the Town Council, the Secretaries of the District Councils within that Region, Regional Medical Officer, Regional Police Commander, Regional Security Officer and a Regional Administrative Officer as a Secretary of the Committee.

After eight years of its existence, the Disaster Management Act No.2 of 2003 has been repealed by the Disaster Risk Reduction and Management Act of 2015 which has stipulated the establishment of the Commission for Disaster Management, a strong and semi-autonomous body. The tenth amendment of the Zanzibar Constitution of 1984 has largely influenced the repeal of the Disaster Management Act. This Commission is chaired by the Second Vice President; members of this commission are the ministers of all ministries, heads of all security forces in Zanzibar. As par this Act, there will be a secretariat that will be known as the Secretariat of the Commission. Unlike the repealed Act, the Disaster Risk Reduction and Management Act of 2015 has come up with the national technical committee formed by all Permanent Secretaries of all the ministries, the Association of traders in Zanzibar (Zanzibar Chamber of Commerce).

## 2.13 Intervention Measures

Several intervention measures by the central government have been taken in the efforts to reduce the effects of disasters to the people. Currently, DMD is doing its duties under the Legal directives as a main guideline; there are also other guidelines to support its functions. Some of these initiatives include the following:

### 2.13.1 The Zanzibar Emergency Preparedness and Response Plan (ZEPRP)

ZEPRP of 2011 is a national Multi-Hazards functional plan that sets forth appropriate actions to be taken in response to an emergency or major disaster including potential or imminent threat of any event. This plan facilitates the coordination for the delivery of resources and services necessary to deal with the consequences of an emergency or major disaster. It describes the disaster situation

and planning assumptions, concept of operations, response and recovery actions, organizational and specific assignments of responsibilities to the departments and government agencies tasked with local response efforts (ZEPRP, 2011).

### 2.13.2 Zanzibar Disaster Communication Strategy (ZDCS)

This guideline was aimed at ensuring operability, interoperability and continuity of communications to allow emergency responders to communicate as needed, on demand, and as authorized at all levels of the government. ZDCS was also designed to support the Zanzibar Emergency Preparedness and Response Plan. It further outlines the organization, operational concepts, responsibilities, and procedures to accomplish emergency communications capabilities nationwide. Focuses on the use of technology, coordination, planning, training and exercises at all levels of the government (ZDCS, 2011).

### 2.13.3 Zanzibar Disaster Management Policy (ZDMP)

Zanzibar Disaster Management Policy (ZDMP) of 2011 is another initiative by the government of Zanzibar in addressing disasters. This guideline, its focus is to have safe and sound livelihood with minimum disaster disruption to social and economic development issues. It also intends to develop as much as necessary capacity for coordination and collaboration for comprehensive disaster management programs among principal players at all levels (ZDMP, 2011).

### 2.13.4 The National Operational Guideline

This was designed to provide a coordinated framework relevant to Zanzibar Disaster Management Policy within which the more detailed sectoral operational plans will be

prepared by various line ministries, local authorities, agencies and other organizations. These guidelines represent a concerted effort by the Revolutionary Government of Zanzibar to provide assistance in an expeditious manner to save life, property or any other human interest that may be affected by a disaster event (NOG, 2013).

## 2.14 Theoretical Discussion

Since disaster management is continuous process in the sense that disaster can happen anytime and anywhere, it requires various stakeholders' work together to accomplish the goals. These stakeholders might have been assigned different tasks; some of these tasks need to be performed before, some during and others after the disaster has happened, and it sometimes become obvious that some tasks cannot be performed before others have not been previously done. This process works like a system, where one has to complete its job first before others can take part. In this regard, it is crucial to have a look at the systems theory as model to this study. Thus, systems theory is an organizational theory that looks at interactions between systems (Bruce D. et al., 2000). The process requires different components be involved, each of these components has a role to do in accomplishing the mission. For the policy to be effective, all the required parties should fully participate in the preparation process, they work as system and if it happens some parties were not involved, then proposed policy will not work correctly.

## 2.15 Systems Theory

According to Collins English Dictionary (2000), systems theory is an approach to industrial relations which likens the enterprise to an organism with interdependent

parts, each with its own specific function and interrelated responsibilities. Anderson et al. (1999) defines systems theory as a way of elaborating increasingly complex systems across a continuum that encompasses the person in environment. Systems theory was introduced by biologist L. von Bertalanffy in the 1930's as a modeling devise that accommodates the interrelationships and overlap between separate disciplines (Littlejohn, 2001).

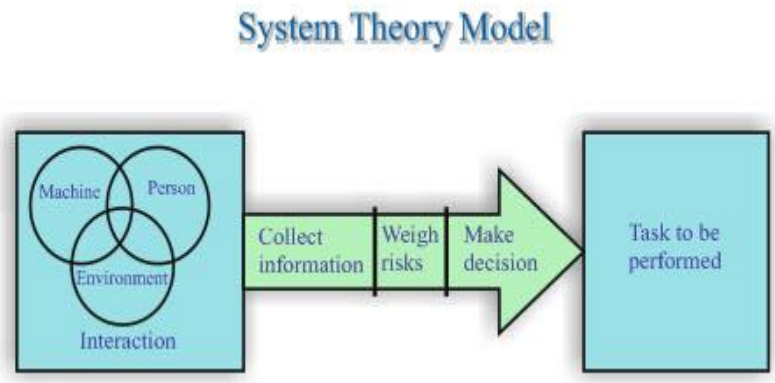


**Figure 2.2: The Systems Theory Model**

Source: www.hrdp-idrm.in

### 2.15.1 Importance of the Systems Theory

As a profession, social work has struggled to identify an organizing framework for practice that captures the nature of what we do. Many have identified systems theory as that organizing framework (Goldstein, 1990). Bruce D. et al., (2000) views systems theory as enabling us to understand the components and dynamics of client systems in order to interpret problems and develop balanced intervention strategies, with the goal of enhancing the "goodness of fit" between individuals and their environments. Bertalanffy (1968) saw systems theory as a method of organizing the interaction between component parts of a larger organism. Since it was a way of organizing information rather than explaining observations, it was easily adaptable to

many different scientific fields, including psychology, psychiatry, sociology, and social work.

## 2.16 Social Exchange Theory

Social exchange theory is a sociological perspective whereby social change and stability are considered to be a process for negotiation of exchanges between different parties. Social exchange theory posits that all human relationships are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives. Social exchange theory takes an economic approach to explain relationships. The premise under this theory is that in relationships, just as in life, you do not get something for nothing (Sasse, 1999). Relationships have rewards and costs. Rewards are anything that brings pleasure or satisfaction in a relationship. People look for different kinds of rewards from their contacts with others, such as support, stability; excitement, love, or material benefits. Costs in a relationship are the physical, mental, and emotional contributions that are made. Currently, Social exchange theory is applicable in many different situations with the same idea of the exchange of resources.

In this study, social exchange theory focuses much on the anticipated reciprocity within relationships, the influence of benefits and direct rewards people receive from both sides and on the altruism and the perception of relationship efficacy. As people anticipate reciprocity within their relationships, however, both actors in the relationships must supply each other with different things with either great or less

intensity that Wellman, (1982) termed as symmetric and asymmetric network among actors.

Similarly, as relationship is concerned with the issue of cost and reward, the unequal distribution of scarce resources leads to both collaboration and competition. Some groups band together to acquire scarce resources collaboratively, whereas others compete and conflict over resources.

The other reason of using the social exchange theory in this study was where it helps assessing the transitivity of the relationships among Shehias and Disaster Management Committees in properly managing the adverse consequences of disasters. There is thus, among Shehias a transitive kind of network where Shehia A networks with Shehia B and vice versa.

## 2.17 Empirical Findings

Unfortunately, there is no any study so far in particular aimed at evaluating the existing disaster management frameworks in Zanzibar, though studies have been conducted to evaluate other strategies rather than disaster management frameworks. The Zanzibar Population Policy Implementation Strategy (2011) argues that, the implementation of the Zanzibar Population Policy of 2003 had faced both, successes and challenges. New development perspectives within and outside the country have influenced these challenges. Since both the population and development are changing over time, a population policy has to become dynamic to address the existing challenges. According to the Report on the Millennium Development Goals (2010), a number of general and specific constraints hamper progress on MDG1. The

Accelerated Framework points out a number of critical bottlenecks (prioritized), starting with those relating to agricultural productivity which is critical for raising incomes of the majority of the poor households in the rural areas. In implementing the cluster III of the Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP) popularly known as MKUZA in Swahili, challenges faced have lead to poor implementation of this cluster which was to strengthen the national unity and good governance. (MKUZA AIR, 2007/08) suggests that, scarcity of qualified human resources is one of the key challenges at all levels of government in implementing good governance.

### 2.18 The Knowledge Gap

Most of the reviewed literatures for this study have much focused on the assessment of the disaster management frameworks for Asian and European countries. Few of them have focused in only part of African countries, in particular West African nations. Frameworks that have been assessed several times in Africa include those in agriculture, business, and education. In East African region, such assessments in disaster management frameworks have so far not been given priority. The existing gap is that, there is no any assessment done to find out the effectiveness of disaster management framework not only in Zanzibar, but also in some East African States.

In the social work point of view, if this gap takes longer to be filled in, the negative consequences will continue to be experienced. Loss of lives, especially of children, the elderly and women are the most vulnerable groups to disasters. Destruction of property, and infrastructure, helps largely to retard the social developments. Coping

up to such disastrous situation takes time based on the economic condition of the individuals as well as of the country.

# CHAPTER THREE

# RESEARCH METHODS AND PROCEDURES

## 3.1 Introduction

This chapter describes the research methodology to be employed in this study. Essentially, it focuses on study design, research approach, study area, population, and sampling procedures. This chapter further deals with data collection techniques, analysis and gives short account of validity of the instruments.

## 3.2 Research Design

Research design is the conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurements, and analysis of data (Kothari, 2004). This research used both qualitative and quantitative approaches. Creswell (2003); Denzin and Lincoln (2003), view qualitative research as an approach to research that uses multiple methods that are interactive and humanistic, involving naturalistic and descriptive approaches. Also qualitative research aimed at gathering in-depth understanding of human behavior and the reasons that governs such behavior. Quantitative research as a systematic empirical investigation of quantitative properties phenomena and their relationship with the aim of developing and employing mathematical models, theories and/or hypotheses pertaining to phenomena. Participatory approaches were used and proved its strength in involving the community in the development process. This design was felt well as it contained

both descriptive as well as interpretive data. It also emphasized on the discovery of ideas, perceptions and insights from respondents.

### 3.3 Study Area

The study was conducted in five Shehias in the West District that are more vulnerable to floods. According to Baseline Survey Report (2013) Shehias that are most vulnerable to floods in West District includes Mtopepo, Tomondo, Mombasa, Kijitoupele, and Pangawe. The report also states that, flood hits most of these areas almost every year. Floods are mainly caused by uncontrolled urbanization, poor solid waste disposal and inadequate drainage systems. The main adverse impacts of floods in West District include disease outbreak such as cholera, dysentery, and malaria, loss of household assets, destruction of houses and infrastructure such as roads and bridges (BSR, 2013).

The map showing the study area (The shaded area)

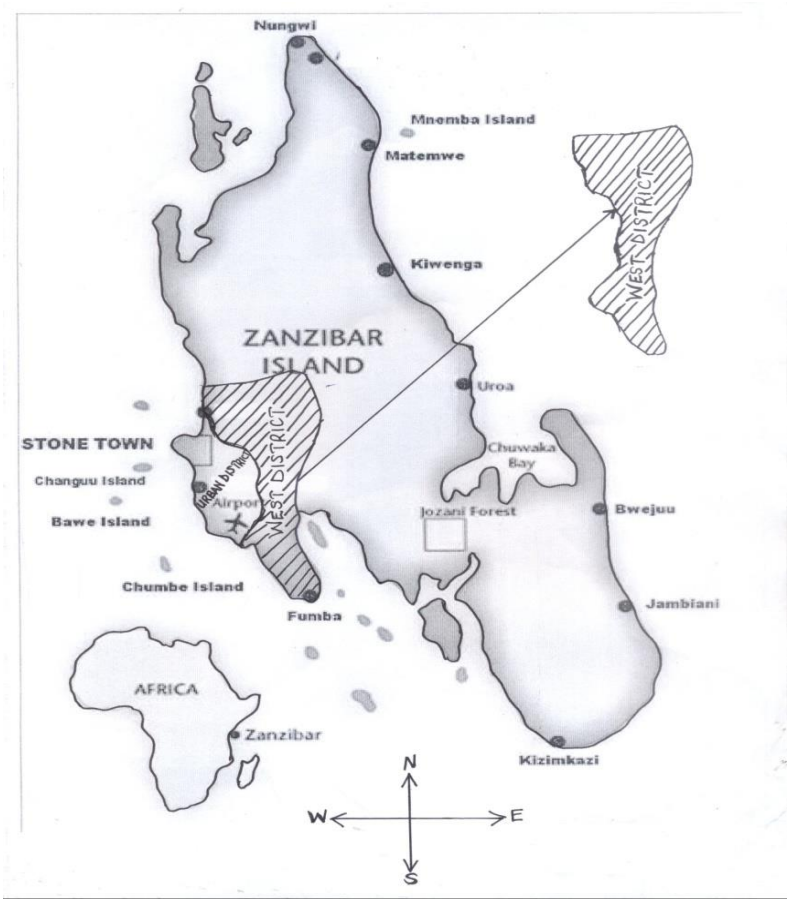


**Figure 3.1: Map of Zanzibar Showing the Study Area**

The groups of people that are most affected by disaster include women, elderly, children and those living with disabilities. In West District, the Baseline Survey Report (2013) indicates that, practices that contribute to the increase in the risk to floods is invading and illegal construction of houses in flood prone areas and blocking natural drainage systems. The report also shows that the practice of dumping solid waste on drainage systems increase the risk to floods.

## 3.4 Study Population

The target population for this study was divided into two groups of people, first, officers from public sectors such as those from the West District Office, Local Administrative Government Office in West District, Ministry of Infrastructure and

Communications as well as the Ministry of Health, and the Disaster Management Department. On the other hand, ordinary people from the selected Shehias were also involved. Basically, in these two groups, respondents who were involved were those who form either District Disaster Management Committee or from Shehia Disaster Management Committees. The total population in five Shehias under the study is 66, 349.

### 3.5 Sampling Procedure

This study applied both random and purposive sampling to get respondents. Sampling can be defined as the deliberate choice of a number of units (Jankowicz, 2005). Purposive sampling was used to get respondents who were capable of answering technical questions; such respondents were like those working in the District head office and other technical people in the District. Random sampling was used to select respondents from the Shehias. Because respondents had similar characteristics, snowballing techniques were applied to get only the required number of respondents from each Shehia.

#### 3.5.1 Purposive Sampling

This technique involved people whose views were 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 was used to get respondents who were capable of answering technical questions; such respondents were like those working in the District head office and other technical people in the District.

### 3.5.2 Random Sampling

Simple Random Sampling was used as it is considered 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 five 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. All people within all Shehias had similar characteristics, and therefore probability technique was used to obtain fifteen people from each Shehia. Random sampling was used to select respondents from the Shehias. Because respondents had similar characteristics, snowballing techniques were applied to get only the required number of respondents from each Shehia.

## 3.6 Sample Size

According to Cohen et al (2000), the knowledge gained from the sample is representative of the total population under study. The size of the population to be consulted was calculated based on the formula below. The total population from selected Shehias to be contacted was 66,349. Total of 100 respondents were interviewed out of 66,349. This figure (100) included both officials and ordinary people from Shehias.

$$\mathbf{n = N/ (1+Ne^2)}$$

Where**, n =** Sample Size

**N =** Total Population

**e =** Marginal Error = 0.1

### 3.7 Data Collection Techniques

It is argued that for a research to deliver the desired and reliable results, more than one data collection methods must be used. The significance of using a combination of data collection techniques is emphasized since no single technique is necessarily superior to any other (Kalton *et al*, 1971). Effective information gathering is the most basic perspective-widening tool an effective leader requires. Good quality information marks out the context in which the leader operates, creates the information patterns from which ideas emerge, and provides the criteria by which ideas are screened and assessed (Mindtools, 1995).

Two types of data collection were involved, namely primary data and secondary data. Primary data was through interviews as well as questionnaires, while secondary data applied sources like the internet, different books and journals. These three methods (Questionnaires, Interviews and Observation) of data collection, if all were used in the study, it can be said that triangulation has been achieved. In this study, secondary data included published research papers and relevant reports, rainfall and temperature data from Tanzania Meteorological Agency, internet search and other relevant sources. Information from government and non-governmental organization was also useful in this study.

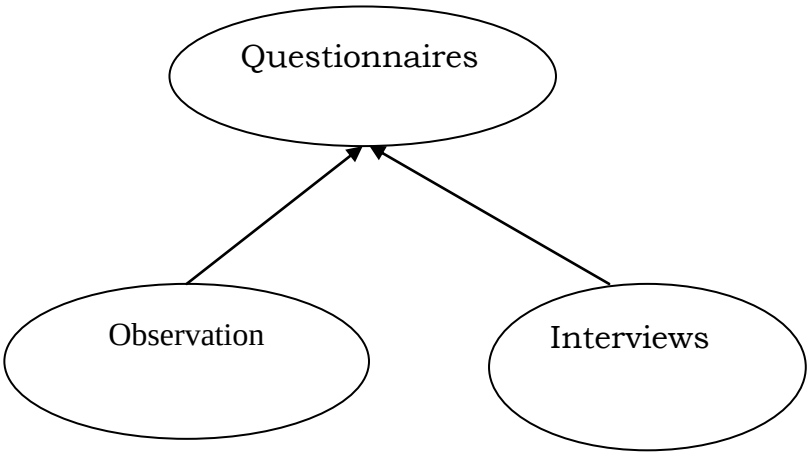


**Figure 3.2: The Triangulation for Data Collection Techniques**

Source:

### 3.7.1 Interviews

A series of questions or topics asked by a researcher directly to a person and the answers are recorded by the researcher (Moore, 2001). A simple approach in collecting data is interviewing. It can be defined as getting an answer from a respondent by asking him several questions based on our area of interest. It can be face-to-face or can be conducted via telephone or online (Sekaran, 2000). Interviewees will be asked to provide information on how they understand the day-to-day functions of institutions, during disasters in particular.

The study therefore used interview to collect staffs' opinion perceptions, ideas and insights concerning the general situation on how disastrous events were handled. In particular semi-structured interview or what Mason (2002) called qualitative interview was used. This type of interview has the following characteristics.

(a) Interactive exchange of dialogue which allows one-to-one interaction on focus group.

(b) Fluid and flexible structure and therefore allow researcher and interviewee(s) to develop unexpected themes.

(c) It ensures that the relevant context knowledge is brought into focus so that situated knowledge can be provided (Mason, 2002).

### 3.7.2 Structured Interviews

Structured interviews use questionnaires based on a predetermined and standardized or identical set of questions and we refer to them as interviewer-administered questionnaires (Saunders, 2009). A structured interview (also known as a standardized interview or a researcher-administered survey) is a quantitative research method commonly employed in survey research. The aim of this approach is to ensure that each interview is presented with exactly the same questions in the same order. This ensures that answers can be reliably aggregated and that comparisons can be made with confidence between sample subgroups or between different survey periods.

Structured interviews are a means of collecting data for a statistical survey. In this case, the data is collected by an interviewer rather than through a self-administered questionnaire. Interviewers read the questions exactly as they appear on the survey questionnaire. The choice of answers to the questions is often fixed (close-ended) in advance, though open-ended questions can also be included within a structured interview.

A structured interview also standardizes the order in which questions are asked of survey respondents, so the questions are always answered within the same context. This is important for minimizing the impact of context effects, where the answers given to a survey question can depend on the nature of preceding questions. Though context effects can never be avoided, it is often desirable to hold them constant across all respondents.

Structured interviews can also be used as a qualitative research methodology. These types of interviews are best suited for engaging in respondent or focus group studies in which it would be beneficial to compare/contrast participant responses in order to answer a research question. For structured qualitative interviews, it is usually necessary for researchers to develop an interview schedule which lists the wording and sequencing of questions. Interview schedules are sometimes considered a means by which researchers can increase the reliability and credibility of research data (Lindlof *et al*., 2002).

### 3.7.3 Unstructured Interviews

Interview without any set format but in which the interviewer may have some key questions formulated in advance. Unstructured interviews allow questions based on the interviewee's responses and proceeds like a friendly, non-threatening conversation. Unstructured interviews are not specifically formatted, but generally use some key questions to sense a candidate’s qualifications. These types of interviews are designed to use questions based on the candidate’s responses. Many of the questions are open-ended and progress along the topic. This format generally

progresses like a casual conversation. It is considered less reliable than a structured interview due to the lack of specific and sequential questioning that pinpoints explicit behavioral traits and skills in question (Lindlof *et al*, 2002).

### 3.7.4 Questionnaire

Researchers have noted significant advantages in using questionnaires techniques. They are of relatively of low cost and that respondents have adequate time to give well thought out answers (Kothari, 2004). A series of written questions which people completes by themselves. Questions consists of a series of written questions which are usually posted or handed out to people, although sometimes they are read out to respondents.

The essence of a good questionnaire is that it asks exactly the right questions to uncover the information you want to find, in as clear and simple a manner as possible and that it is as short as possible (Moore, 2001). Information can be gathered in form of written response for questions in particular area of interest. There were several questions which may be multiple choices or agree/disagree questions or a short descriptive type (Henderson, 2001). Questionnaires were prepared to collect information from staff at the district level, such as District Commissioner, Administrative Officers, Education and Health Officers in the district.

## 3.8 Data Analysis

Initial data analysis and processing was being conducted daily at site, where collected data were organized and summarized, edited, coded, and classified to facilitate easy further analysis. Data analysis captured both qualitative and

quantitative aspects. The findings were then presented in tables. Also the data from relevant secondary sources were analyzed in order to verify their consistency and reliability with the primary data. Analysis of qualitative data was by the use of content analysis method whereby, generalization of key issues emerged from the discussions were summarized and analyzed to draw conclusion. Quantitative data were analyzed using The Statistical Package for Social Sciences (SPSS) software.

# CHAPTER FOUR

# DATA PRESENTATION, ANALYSIS AND DISCUSSION

## 4.1 Introduction

In this chapter, results are presented and discussed based on objectives. Results include characteristic of respondents, types of disasters experienced in the District, causes of the disasters, effects, the most affected group of people, sources of early warnings and other related issues.

## 4.2 Characteristics of the Respondents

### 4.2.1 Personal Characteristics

Characteristics of the respondents based on gender, age, residential address, and education level are presented in Table 4.1.

**(a) Gender**

The result on Table 4.1 shows that, female respondents interviewed both from selected Shehia and District level form 56 percent, while male respondents constitute 44 percent. There were fifteen (15) respondents from each Shehia, and twenty five (25) respondents from the district. This indicates that female respondents were more concerned with the issues related with disaster, since they are among the vulnerable group to disaster as par Baseline Survey Report (2013).

**(b) Age**

Results on Table 4.1 shows that ages of the majority of the respondents appeared in the interview ranges between 31 to 44 years who constitute 43 percent, followed by respondents whose age ranges between 18-30 whose percent was 28, then 45-59 with 22 percent and finally those with age range starting 60 and above the group which constitute only 8 percent. This indicates that respondents of the middle age range

seems to be more involved as considered fully matured and can think critically as compared with other age range. It is assumed that, in the societies people with the age above 60 are considered incapable of doing activities that requires much efforts such as those in disaster management. In the disaster management activities, people who are capable of performing works are much more preffered as those who are incapable, this is due to the nature of activities being done.

**Table 4.1: Characteristics of Respondents**

| Variable Description | | Shehia Level | | | | | District level | Percent |
|---|---|---|---|---|---|---|---|---|
| | | **Mtpp** | **Kjtl** | **Pngw** | **Mmbs** | **Tmnd** | | |
| **Gender** | Male | 6 | 5 | 9 | 4 | 10 | 10 | 44 |
| | Female | 9 | 10 | 6 | 11 | 5 | 15 | 56 |
| **Age range** | 18-30 | 3 | 2 | 4 | 3 | 6 | 8 | 28 |
| | 31-44 | 675 | 7 | 5 | 8 | 7 | 10 | 43 |
| | 45-59 | 4 | 5 | 3 | 3 | 1 | 6 | 22 |
| | 60-Above | 2 | 1 | 3 | 1 | 1 | - | 8 |
| **Education Level** | | | | | | | | |
| | Certificate | 7 | 4 | 9 | 8 | 8 | 2 | 38 |
| | Diploma | 5 | 8 | 4 | 6 | 6 | 4 | 33 |
| | Bachelor | 2 | 3 | 1 | 2 | 1 | 6 | 15 |
| | Master | 1 | - | 1 | - | - | 3 | 5 |

Source: Field Data (2015)

**Key:**

**Mtpp** - Mtopepo

**Kjtl** - Kijitoupele

**Pngw** - Pangawe

**Mmbs** - Mombasa

**Tmnd** - Tomondo

**(c) Residential Address**

In Shehia wise, findings in Table 4.1 reveals that respondents from Tomondo appeared more in the interview followed by Pangawe, the least Shehia whose turn up

was the lowest is Mombasa. This shows that people of Tomondo have got good lesson in the past disastrous events that they have ever experienced. The Baseline Survey Report (2013) showed severe destruction caused by floods in Tomondo. Pangawe is also flood prone area according to the Baseline Survey Report (2013), this is also the reason why the turn up of the respondents was good.

### (d) Education Level

Results in Table 4.1 shows that, most of the respondents (38 percent) have completed certificate level, respondents with Diploma level constitutes 33 percent, those with Bachelor's Degree form 15 percent and lastly, respondents with Master's Degree form only 5 percent. This indicate that, at Shehia level, Disaster Management Committees are mainly formed by the people whose education level is low and in turn, this can sometimes act as barrier when it comes to the issue of providing more trainings to them. In some cases, disaster management trainings require good academic background to be able to cope with it.

## 4.3 Execution of Training Programs

This seeks to find the capacity of the District and Shehia in conducting various disaster management trainings. The Table 4.2 summarizes the capacity in these two levels as can be seen:

**Table 4.2: Trainings and its Execution**

| Variable | Description | Shehia Level | | District Level | |
|---|---|---|---|---|---|
| | | Yes | No | Yes | No |

| | | | | | |
|---|---|---|---|---|---|
| Assessment | Is the training need assessment done | 25 | 45 | 10 | 15 |
| Implementation | Program execution | 35 | 40 | 7 | 18 |
| Mandate | Authority to conduct training | 25 | 50 | 9 | 16 |

Source: Field Data (2015)

**(a) Training Need Assessment**

Results on Table 4.2 reveals that, training need assessment for both District and Shehia levels is not done, 45 respondents out of 75 from Shehia said there are training need assessment done in their areas. At the level of district, 15 respondents out of 25 said no assessment done. This means that, needs of what particular training needed will not be known, instead inappropriate trainings are conducted. This gives the indication that people won't get the appropriate required skills and techniques to manage disaster once they happen. Provision of trainings prior training need assessment is of less importance and cannot help reduce the impacts of disaster.

**(b) Implementation Status**

Findings presented on Table 4.2 show that, training programs that are proposed in both district and Shehia levels are not implemented as earlier planned. 40 respondents from Shehia said there is no implementation, 35 are the respondents who said there is implementation. In the district level, 18 respondents out of 25 said the planned trainings are not implemented. It generally indicates that there is poor implementation of the training programs in the Shehias and at the District. This implies that when there is no training programs implementation, the population continues to be at risk since there is knowledge of how people can reduce the effects of disasters.

**(c) Legal Mandate**

Disaster Management Act No.2 of 2003 gave the Disaster Management Department the mandate to conduct disaster management related trainings. The findings on Table 4.2 show that neither Shehia nor District has conducted training, out of 75 respondents 50 said the Shehia has no mandate to conduct training. In District level, 16 respondents out of 25 said the district has no mandate to conduct trainings related to disaster management. This shows that in case the responsible department fails to conduct the required training in a required time for whatever the reason, it indicate that people will not be able to handle or deal with the effects of disaster when happen.

## 4.4 Selection of Committee Members and the Status of Trainings

This section shows how the members of the committees in both the District and the Shehia were selected. It also show the selected training programs as to whether they fit the desired purpose or otherwise, as well as the source of fund to facilitate the trainings.

**(a) Selection of Participants for Training**

Findings on Table 4.3 show that participants for the trainings conducted from both Shehia and the District level heavily depend on experience only. Their duration of stay in the committees determine their participation for the disaster management trainings. From the district level, out of 25 respondents 15 of them said participants are only selected for their experience and basically their stay in the committee. For

the Shehia, 50 respondents out of 75 said the experience is the only factor to be selected for training.

**Table 4.3: Training Status and Selection of Members**

| **Variable and the Description** | | **District Level** | | **Shehia Level** | |
|---|---|---|---|---|---|
| | | **Experience only** | **Experience and Education** | **Experience only** | **Experience and Education** |
| Training | Selection for Training | 15 | 10 | 50 | 25 |
| Committee | Selection for Committee Members | 16 | 9 | 55 | 20 |
| **Failure to execute training programs** | | | | | |
| **Variable and the Description** | | **District Level** | | **Shehia Level** | |
| | | Time/ financial problems | No skilled people to conduct | Time/ financial problems | No skilled people to conduct |
| Training Status | Training execution | 11 | 14 | 30 | 45 |
| Fund | Sources of fund | From governmen t only | From donors and government | From government only | From donors and government |
| | | 9 | 16 | 25 | 50 |

Source: Field Data (2015)

On the other hand, member who are selected to form district and Shehia disaster management committees have basically the experience, other factors such as level of education and individual competence are not that much considered. This indicates that, people who have good academic background are not selected for the training for the reason that they do not have experience. These committees will always be weak as the appointment of their members does not consider education and the spirit of doing the intended task. This kills their talents and moral in doing their jobs.

**(b) Source of Fund to Conduct Trainings**

Results in Table 4.3 show that trainings that were conducted depended on donors' support and government contribution for both Shehia and district. 16 respondents out of 25 in the district said the source of fund was donors and the government; while in the Shehia, 50 respondents out of 75 also said the source of fund are the donors and the government. This gives the clear indication that, in the absence of donors' support the said trainings cannot be conducted in a manner earlier expected.

## 4.5 Disaster Types and their Sources

The table below show different types of disasters in the district with their respective causes, their frequency of occurrence as well as the percentage of occurrence.

**Table 4.4: Disaster Type and Causes**

| Variable | Description | District level | | | Shehia Level | | |
|---|---|---|---|---|---|---|---|
| | | Causes | Frequency | Percent | Causes | Frequency | Percent |
| Floods | Floods with Disease | Poor Urbanization and blockage of water channels | Once in every year | 68 | Heavy Rainfalls | Twice in a year | 62 |
| Fire | | Poor Electrical materials and installation | Anytime in a year | 58 | Poor handling and Sabotage | Popularly every summer | 56 |
| Drought | | Deforestation | Throughout the year | 60 | Absence of rainfall | During summer | 55 |

Source: Field Data (2015)

### (a) Type of Disasters

Findings on Table 4.4 show that there are different types of disasters in the Shehias as well as in the district that are happening in different times of the year. Majority of the respondents 68 percent in the district level reported that flood with disease is a popular and major disaster. It is also popular disaster in the Shehia level, 62 percent

of the respondents said floods are main disaster within their Shehias. Fire is another type of disaster experienced in both levels, District and the Shehia. 58 percent of respondents in the district said fire is the second disaster in their region, while 56 percent in Shehia also has the same opinion. Drought is the third disaster facing district and Shehias, 60 percent of respondents from the district and 55 percent from Shehia said drought is the third disaster type in their areas.

**(b) Causes of Disasters**

Findings of the study show that (Table 4.4) the major cause of floods in the District and in the Shehias is poor urbanization and the blockage of channels of water. 68 percent of respondents said people who are building residential houses without the directives of the responsible department, as well as the blockage of channels of water is also the reason of floods. Apart from this reason, others are the heavy rainfalls that are experienced almost every year.

For the case of fire, results of the study in Table 4.4 show that the main cause of fire in the Shehias and in the district is the use of poor electrical materials that are below the specified standards and also poor installation. 58 percent of respondents reported that people who are using materials that have not been proven and the use of inexperienced technicians have been said to be the major cause of fire. Poor handling of fire and sabotage are also the reasons of the fires that are happening. Drought has been reported as also the disaster in the District and Shehia. 60 percent of the respondents in the district said the main cause of drought is deforestation, while in the Shehia 55 percent absence of rainfall is the main cause. This indicates that, these

disasters will continue to pose serious risk to the lives of people, destruction of infrastructure and property if measures to prevent them are not taken into account.

### (c) Frequencies of Occurrence of Disasters

Results on Table 4.4 show that floods in the district level are experienced every year, and in the Shehia it was reported to occur twice in a year. Fire was reported that can be experienced in the district level anytime in a year, while in the Shehia level people said it is mainly reported during summer. In the district level, drought is experience throughout the year, whereby in the Shehia is only experienced during summer. This indicates that these disasters occur in different times in the different areas for the different reasons. This can give people chance to understand that where there is huge rate of deforestation, education is needed to reduce the effects that might happen, and can prepare mechanisms to properly deal with all types of disasters influencing reasons.

## 4.6 Effects of Floods to the Vulnerable Groups

The Table 4.5 shows the effects of floods in the District and at the Shehia. It also show the vulnerable groups in the society that are most affected by the floods. Results on Table 4.5 show that the major effect of floods is deaths. In the district level (68%) of the respondents said deaths to the children is the major effect of floods, while (64%) said deaths to the disabled, (60%) said deaths to women and lastly, (56%) said the elderly. Deaths is also the major effect of floods in the Shehia level, whereby (77.3%) of the respondents reported the deaths of children, (73.3%)

said deaths to the disabled, (66.6%) said deaths to the women, for the case of elderly (61.3%) of their deaths are caused by floods.

**Table 4.5: Effects of Floods**

| Variable/Description | District Level | | Shehia Level | |
|---|---|---|---|---|
| | No. of respondents | Percent | No. of respondents | Percent |
| Deaths to Women | 15 | 60 | 50 | 66.6 |
| Deaths to the elderly | 14 | 56 | 46 | 61.3 |
| Destruction of property and infrastructure | 8 | 32 | 20 | 26.6 |
| Deaths to Children | 17 | 68 | 58 | 77.3 |
| Deaths to Disabled | 16 | 64 | 55 | 73.3 |

Source: Field Data 2015

This enlightens us that, though there are several disasters related effects but deaths remain the major effect. Other effects such as the destruction of property and infrastructure are considered of less important as compared to the lives of people. The most vulnerable groups are the women, children, the elderly and the disabled. If there is no appropriate actions taken, that means disasters will continue to endanger the welfare and the economic status of the people and of the nation as the expected task forces (children) are dying for floods.

## 4.7 Intervention Measures to Disasters

The below table show the various intervention measures taken by the District to help manage the floods. It also shows the agencies involved in the provision of assistance, type and also the level of support they provide.

**Table 4.6: Measure Taken in Intervention**

| Variable | Description | District Level | Shehia Level |
|---|---|---|---|
| | | No. of Respondents | No. of Respondents |
| Agencies | International | 12 | 30 |
| | National | 9 | 25 |
| | Spiritual | 4 | 20 |
| Support Type | Finance | 15 | 45 |
| | Materials | 10 | 30 |
| Level of Support | Satisfactory | 16 | 40 |
| | Unsatisfactory | 9 | 35 |
| Issuance | Conditional | 14 | 50 |
| | Unconditional | 11 | 25 |

Source: Field Data (2015)

**(a) Agencies and Their Support**

Findings on Table 4.6 show that agencies that are involved in disaster management include national, international and also spiritual agencies. Their contributions to disaster management vary from one agency to the other. In the district level, 12 respondents out of 25 said much of the support is from International Agencies, 9 respondents said national agencies, and only 4 respondents who said spiritual agencies are contributing more. Also results on Table 4.6 show that 15 respondents out of 25 in the district level said they receive financial support, while 10 said material support. In the Shehia, 45 respondents said the support given is finance while 30 said material support.

**(b) Level of Support and its Issuance**

Results on Table 4.6 show that 16 respondents in the district out of 25 said satisfactory support is given to help disaster management activities, only 9

respondents who said the support that is given is not sufficient. Though they said these support are given under specific conditions, 14 respondents out of 25 said there are conditions in issuance of support. In the Shehia level, 40 respondents said the support given by agencies is satisfactory, 35 respondents are the ones who said it is not satisfactory. In the Shehia, 50 respondents out of 75 said these support are given under conditions.

This indicates that, in the disaster management activities in both the District and the Shehia depends heavily on international agencies. If it happen these agencies do not contribute to disaster management activities it means there will occur huge scarce of resources required to accomplish the disaster management task. It also indicates that the amount of support that is given is satisfactory but there might be the misuse of it. There are also some conditions that have to be agreed prior the issuance of the intended support. There might be the hidden agenda by the agencies that are supporting disaster management activities.

### 4.8 Resource and Coordination Capacity

The intention of the table below is to show how resources are coordinated and organized in a manner that they can provide the required support. This include intervention measures such as policies, education and relief services provision.

#### (a) Human and Response Capacity

Results on Table 4.7 show that in both District and in the Shehia, there is insufficient number of people who can assist disaster management activities in one or the other way. Respondents from District and Shehia who said there is insufficient number of

people is respectively as 13 out of 25 and 55 out of 20. In turn, the response during emergency for both levels as reported by respondents is not good. In the district level 17 respondents out of 25 and 60 out 75 in the Shehia said there is poor response to disaster management. This indicates that there is the need to equip these levels with necessary skills and techniques to deal with disasters, and if this is realized then the response to disasters will always be good.

**Table 4.7: Organization and Coordination Capacity**

| Variable | Description | District level | Shehia Level |
|---|---|---|---|
| Human Resource | Sufficient<br>Insufficient | 13<br>12 | 55<br>20 |
| Intervention measures | Education<br>Policy<br>Provision of relief services | 6<br>5<br>14 | 25<br>20<br>30 |
| Coordination and organization of intervention measures | Good<br>Weak | 9<br>16 | 23<br>52 |
| Response to the emergency | Timely<br>Delays | 8<br>17 | 15<br>60 |

Source: Field Data (2015)

**(b) Intervention Measures and Coordination**

Findings on Table 4.7 also show that coordination and organization of intervention measures are weak in both the District and the Shehia. In the District level 16 respondents out of 25 and 52 respondents out of 23 reported there is weak coordination and organization capacity of measures to deal with disasters. Popular intervention measures used is the provision of relief services during the event. 14 respondents out of 25 in the District level and 30 respondents out of 75 said the intervention measure used is only to provide victims with the assistance during the

event; no further plans are taken care off. This indicates that, the way which is normally taken as intervention does not help victims much as it only concentrates during the time the incident has happen. The best way to deal with such a situation is to have long term response plans.

## 4.9 Structure of the Committees and Appointment of Members

The Table 4.8 show the adequacy of the disaster management structures, particularly that of District and Shehia. It also shows how clear the duties of the committees are, and the credentials of members selected.

**Table 4.8: Committees Structure**

| Variable | **Description** | **District Level** | **Shehia Level** |
|---|---|---|---|
| | | **No. of Respondents** | **No. of Respondents** |
| Adequacy of DMS | Adequate | 14 | 50 |
| | Not adequate | 9 | 25 |
| Appointment of Members | DC | 12 | 30 |
| | DM Act | 5 | 25 |
| | RC | 8 | 20 |
| Credentials for Committee Members | Experience and Education | 5 | 20 |
| | One's Popularity | 8 | 25 |
| | Friendship | 12 | 30 |
| Clearer of Duties | Clear | 10 | 35 |
| | Not Clear | 15 | 40 |

Source: Field Data (2015)

### (a) Adequacy of DMS and Appointment of Members

Findings on Table 4.8 show that in both the District and Shehia the Disaster Management Structure (DMS) is adequate, that means the structure is good. 14

respondents out of 25 in the level of district said the structure is good, 9 respondents are the ones who said the structure is not good. In the Shehia level 50 respondents out of 75 said the structure is good and only 25 of them who said is not good. Members of the committees (District and Shehia Disaster Management Committees) are appointed by the Regional Commissioner, District Commissioner, and the Disaster Management Act No.2 of 2006. 12 respondents in the District out of 25 and 30 respondents from Shehia level said the members of these committees are appointed by District Commissioner.

Findings further report that 8 respondents out of 25 and 20 out of 75 from district and shehia respectively said members are appointed by the Regional Commissioner, and only 5 respondents from district and 8 from Shehia said the members are proposed by the Act. This indicate that members themselves do not understand where their appointments comes from, others are saying they are appointed by the Regional Commissioner, and others by the District Commissioner. This also gives the clear indication that members of the committees might be incompetent in their jobs.

**(b) Credentials of Members and the Clearer of Duties**

Results on Table 4.8 shows that members of the committees who are appointed based on their experience and academic qualifications are few. 5 respondents out of 25 from the district level and 20 respondents out of 75 from the Shehia level are only the ones said members are appointed based on the experience and academic qualifications. One's popularity has been reported the factor one can be appointed. 8 respondents out of 25 and 25 out of 75 from the District and Shehia level respectively said popularity is used in selecting members of committees. Friendship

has been reported the major factor considered in the selection of members, 12 out of 25 respondents and 30 respondents from both the District and Shehia reported that members are appointed considering their friendship.

Duties of the disaster management are not clear, different institutions might be doing the same job during the disaster, leaving other tasks have no one to take care of. Out of 25 respondents 15 from the district said the duties are not clearly identified to specific organization. 40 respondents out of 75 said disaster management duties are not clear. This shows that where duties are not specified for specific institution before, there will of course be experienced the duplication of works, the same job might be done by different institutions at the same time. This waste much of the time in the rescue activities as there occur the duplication of works. On the other hand, findings show that members of the committees do not have qualifications suitable for disaster management; rather friendship and popularity are taken as factors to select members instead of one's experience and academic qualifications. This will always retards the performance in the rescue and other related activities.

### 4.10 Capacity to Disseminate Early Warnings

This Table 4.9 shows the capacity of the District and Shehia in disseminating early warnings, the communication devices used as well as the sources of the early warnings.

#### (a) Communication Devices

Study findings on Table 4.9 show that large number of respondents from both the district and shehia posess radios. In the district level 12 respondents out of 25 do

have radios back home, while 30 respondents out of 75 in the Shehia also posses radio as their major communications device. The second communication device that is possessed by many people in the district and Shehia is television. In the district, 8 respondents said they have television back at home whereby 25 respondents in the Shehia said they have television as well. Newspapers are not read by as many people as expected, only 5 respondents out of 25 in the district reads newspaper while 20 respondents only read newspaper in the Shehia.

**Table 4.9: Communication Devices**

| Variable | Description | District Level | Shehia Level |
|---|---|---|---|
| | | **No. of Respondents** | **No. of Respondents** |
| Communication Devices | Radio | 12 | 30 |
| | Television | 8 | 25 |
| | Newspapers | 5 | 20 |
| Receipt of Early Warnings | Yes | 10 | 25 |
| | No | 15 | 50 |
| Sources of Early Warnings | TMA | 12 | 35 |
| | DMD | 5 | 15 |
| | Indigenous Knowledge from the elderly | 8 | 25 |
| Disaster Management Awareness Raising Programs | Exist | 8 | 30 |
| | Does not exist | 17 | 45 |

Source: Field Data (2015)

This gives the indication that if early warning information are issued through the communications media that are accessible to many people, it is likely can be received in a timely manner. On contrary, the same information if issued through the Medias such as radios the devices that are possessed by many people then becomes very possible that the early warning information can be received by as many people as possible.

**(b) Receipt of Early Warnings**

Results on Table 4.9 shows that early warning information is not received by many of the respondents, 15 respondents out of 25 said they do not receive early warnings in the district, while in the Shehia 50 respondents out of 75 do not receive early warning. It is possible that the communication Medias used to disseminate early warning information are not accessible to as many people as expected. This indicates that, disasters especially floods will continue to cause serious effects to the lives and property of the people, as they do not receive early warnings at all or they receive late.

**(c) Sources and Medias of Early Warnings**

The study findings on Table 4.9 have revealed that the main source of early warning information is the Tanzania meteorological Agency (TMA) through televisions and radios, 12 respondents out of 25 in the district level said they receive early warnings from TMA, and 35 respondents from Shehia said TMA is their main source of early warning information. The other source of early warning is the indigenous knowledge from the elderly within the communities, these elderly by using the past experiences sometimes predicts the occurrence of disastrous events. There are people who

believe on them, though their prediction is not guided by any scientific measurements. Out of 25 respondents from the district 8 said they receive information through the elderly in their areas. 25 respondents in the Shehia also receive through the elderly.

This indicates that there is the big job to be done to educate people about the reliable sources of early warning information. Some other people in the communities do not depend on TMA to receive disaster related information, instead they heavily depends on the indigenous knowledge to get their information. Disaster can happen and affect many people because they did not receive early warnings from the reliable sources of information.

**(d) Disaster Management Awareness Raising Programs**

Study findings on Table 4.9 show that the District Disaster Management Committee does not have any educative program related to disaster management. 17 respondents out of 25 said there are no such programs in the District. In the Shehia, 45 respondents out of 75 also said there are awareness programs in their shehias. Having these programs could help people understand the role they are supposed to do before, during and after disasters have happened. This gives the indication that because there are no educative programs in the District and Shehia regarding the disaster management; it is obvious that such disastrous events must bring adverse consequences particularly to the lives of women, children, the elderly and disabled.

# CHAPTER FIVE

# CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter describes the conclusion of the study as well as recommendations on the way forward. In order to be more precise summary of key issues of findings are summarized.

## 5.2 Conclusion

The findings of the study show that most of the respondents have their ages between 31 to 44 years who constituted 56 percent, with female respondents being the majority in almost every Shehia. From among the selected Shehias, Mombasa was the leading in the female respondents turn up while Tomondo was the least one in the female respondents' turn-up. Education level of most of the respondents is certificate level who represent 38 percent while those with Master degree being only 5 percent. Disasters that are mostly reported to occur in the District are floods and fire, the reported causes of floods that happens annually is the poor urbanization and blockage of water channels as well as heavy rains, in the other hand, causes of fire are the poor electrical materials used and the poor installation. Major effects by these disasters are deaths of woman and the children, the elderly and the people living with disability.

In effectively responding to these 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

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 Shehias is not conducive to allow smooth transfer of goods, equipment and other items to the incident areas.

Early warnings information is popularly issued by the Tanzania Meteorological Agency (TMA) as the main early warnings issuing Agency in the country. There are other sources such as indigenous knowledge where by this source of information is believed by many people after TMA. Popular communication Medias that are normally used by TMA to disseminate early warning information include Radios and televisions, whereby indigenous knowledge does not need such kinds of electronic devices to issue information, instead it used local calls and meetings within the communities to disseminate early warnings.

Many people have never had any disaster management trainings since there is no awareness raising programs within Shehias. This has lead to the rescuers being not familiar with the rescue jobs they are doing during rescue operations. Though, SDMC and DDMC performs their activities under the directives of the rules and regulations but still these guidelines do not provide legal protection to the rescuers in case they have accidentally damaged one’s items during rescue activities. DDMC

and the SDMC do not have regular schedule for their meeting, they sometimes meet only if there is emergency. In terms of cooperation, the findings reveal that there is poor cooperation between the Shehias and the DDMC.

## 5.3 Recommendations

### 5.3.1 General Recommendations

(a) The District Management in fighting floods has to make thorough supervision via management of the Shehias to ensure houses are build in the areas that are not flood prone and no blockage of natural water channels.

(b) For the case of fire, the low standard of materials used has been the main source of fires. The central government has to take its role as all goods that are imported are under the supervision of Zanzibar Bureau of Standards (ZBS). Standards are also important to be observed for the technicians who install domestic electrical appliances, as some of them have been found half-backed.

(c) Rescue centers have to be built in the District, currently there is any. In case of floods for instance, where victims need to be shifted to safer places becomes difficult since there is no specific places that are purposely reserved to accommodate such kind of situations. It takes little bit longer to think of the proper place to shift the victims while their conditions keep on deteriorating.

### 5.3.2 Specific Recommendations

(d) Training programs regarding disaster management are of genuine importance, the District has to establish regular schedule to provide trainings in the Shehias as

many people are so much eager to learn the skills and techniques to help them better manage disasters. People in the Shehias are the first responders, therefore are the ones who are supposed to take care of the situation until further assistance is given from the responsible agencies. So if people are well equipped with the proper skills and techniques, definitely will handle the situation accordingly.

(e) Early warnings information before disasters is very important as it prepares people psychologically before the disaster happen. People will start to take appropriate actions before the event to avoid the consequences that might arise during the incident. Apart from issuing early warnings messages through radios, televisions and other electronic Medias, the TMA has to introduce alternative means of disseminating early warnings information. Currently, the ways that are used be TMA to communicate early warning messages are not accessible to as many people as possible. TMA has to communicate their messages to the local indigenous people in the Shehias as they are believed much by their followers. Findings have shown that there are people in the community who relies much on indigenous knowledge.

(f) Laws and regulations have to be reviewed, the central governments has to work on the matter. In some cases, rescue operations becomes impossible because if in case the rescuers cause damage by accident, there is no any legal protection, so this sometimes brings hesitation in the rescue activities.

(g) DDMC and SDMC have to convene the meetings in a regular basis, findings shows that there are no such schedules for the meetings. Meetings are only

convened when there is an emergency, this cannot help much in solving the problem. Reliable sources of income have to be introduced; this will minimize the reliance on other sectors. Disastrous issues will be tackled in a timely fashion without heavily depending on other stakeholders.

## 5.4 Area for Further Study

The suggested area for further study should look at the legal framework for disaster management in Zanzibar, studies that have ever conducted have never be done at the legal framework part of the Disaster Management Committees.

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# APPENDICES

## Appendix I: Questionnaires and Interview Questions

1. Gender: Male☐ Female ☐

2. Age: 18-30 ☐ 31-44 ☐ 45-59 ☐ 60-Above ☐

3. Address: ☐ Pangawe ☐ Kijitoupele ☐Tomondo ☐ Mombasa ☐ Mtopepo

4. Education level: ☐ Certificate ☐ Diploma ☐ Bachelor ☐ Master

5. Are there training need assessment done? Yes ( ) No ( )
6. As par the assessment done, what is the type of disaster that is more likely to happen or experienced?
   (a) Floods (b) Drought (c) Fire(d) Collapse of buildings (e) Earthquake (f) Accidents

7. Based on the assessment, what type of training program is most needed to address the disaster likely to happen?
   (a) Training for floods (b) training for Drought (c) training for managing Fire (d) training for avoiding accidents (e) training in managing earthquake

8. What type of disaster management programs offered
   (a) Preparedness trainings (b) Response/Rescue trainings
   (b) Rebuilding/Reconstruction

9. To whom trainings are offered
   (a) SDMC members (b) DDMC members (c) Ordinary people in the Shehia (d) Key staff

10. How frequent are they offered

(a) Not frequently (b) every month (c) once in a year (d) every three months (d) every six months

11. How is the selection of participants is done

(a) Experience only (b) Experience and education

12. Are the programs administered and supervised by the district or other body

(a) District experts (b) Experts from other sectors out of district

13. Are the trainings for only public or even NGOs

(a) Public sectors only (b) Private Sectors only (c) Both

14. Where the fund to conduct these programs does come from?

(a) From government only (b) From donors only and government

15. Are the programs implemented correctly in a timely fashion?

(a) Yes (b) No

16. What makes programs not implemented correctly

(a) No skilled staff to conduct (b) Time and financial constraint

(b) Are there legal mandate to force the implementation?

(a) Yes (b) No

17. Which are the most affected groups in the society

(a) Children (b) the elderly (c) Women (d) Disabled

18. Is there any special training program for the most vulnerable groups?

(a) Yes (b) No

19. What are the agencies involved in supporting disaster management activities?

(a) International agencies (b) Local agencies (c) Local spiritual agencies

20. What type of disaster management support is given?

    (a) Financial support (b) Material support

    If financial support, does it be given at a satisfactory level?
    Yes/No
    If material support, what are these materials? a Vehicles b. Medicines c. Early warning equipment

21. Is there any condition by the agencies prior the issuance of assistance?
    (a) Yes (b) No

22. Do you have enough human resource capacity? A. Yes b. No

23. What are the techniques used in managing disasters?
    (a) Educating people (b) Policy intervention (c) Provision of services during incident

24. How is the organization and coordination of intervention measures?
    a. Good b. Poor

25. Does the disaster management response is given in timely? (a) Timely
    (b) Delays.

26. Do you know how the disaster management structure is in Zanzibar?
    (a) Yes (b) No

27. Who appoints members of the committees?
    (a) The District Commissioner (b) Minister responsible for disaster management (c) Regional commissioner

28. What are the credentials for one to qualify to be a member of any committee?

    (a) Experience in disaster management (b) Academic qualification and experience (c) Affiliation to the nominating authority

29. Do you think the current structure is adequate?