

**FACTORS AFFECTING DISASTER MANAGEMENT IN KENYA. A CASE STUDY OF
BUDALANGI FLOOD PLAIN IN BUSIA COUNTY**

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**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF MANAGEMENT AND
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OPTION) OF MANAGEMENT UNIVERSITY OF AFRICA**

DECLARATION

Declaration by the student

This research project is my original work and has not been presented to any other university for academic credit.

Signature**Date.....**

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Declaration by the supervisor

The research project has been submitted for examination with my approval as university supervisor

Signature.....**Date**

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DEDICATION

The study is dedicated to my mum and my uncle for their constant support and patience through my academic struggle.

ACKNOWLEDGEMENT

First I would like to thank Almighty God for good health and sound mind throughout my research work and complete it successfully

I would like to pass my sincere gratitude to my research supervisor, Madam Patricia Chemutai a lecturer at The Management University of Africa for her guidance and quick response and swift communication whenever I needed help concerning my project. I also thank the MUA Staff members for their kind hearts ,advice and encouragement throughout my studies. I am grateful to mum and my uncle who have supported my education and prepared me for the future. I give more thanks to my siblings who have been praying for me all that long.

ABSTRACT

Disaster management is very paramount aspect as far as development is concerned. Disasters are inevitable therefore it is necessary to consider how we can manage them. The study sought to investigate the various problems affecting disaster management in Kenya a case study of Budalangi in Busia County. One of the general objectives was to determine the influence of disaster management policy on disaster management in Budalangi in terms of budget allocation and available resources to implement the policy .The specific objectives were; To find out the impact of farming practices along river banks on disaster management, to investigate the effect of siltation in river Nzoia on disaster management, to determine the influence of rural infrastructure on disaster management, to determine the effect of political will on disaster. The research adopted descriptive research design in attempt to investigate the factors affecting disaster management .The population which was targeted for this study was 16,000 residents of Busia County. The researcher determined the instrument's content and construct validity. Primary data was gathered directly from the respondents through questionnaires. Descriptive and inferential statistics was used in data analysis. The researcher found out how Disaster management policy, Coordination of stakeholders, Training, Community preparedness affect disaster management in Kenya and how the four relates to Budalangi flood plain in Busia County.The study findings indicated that 60% agree with the disaster management policy implementation, 6% were neutral while 30% did not agree. .50% agreed to stakeholder's involvement in disaster management projects, 21% were neutral and 29% disagreed. 25% agreed that there was efficiency in training about disaster management, 8% were neutral while the remaining 57% disagreed. 21% of the respondents agreed that there were enough funds which were allocated on disaster preparedness in the community, 21% were neutral and then 58% disagreed.

The study recommends that the government should ensure that the policy set aside for disaster management are well implemented, that there is availability of infrastructure to facilitated such policies and enough funds should be allocated on disaster management policy implementation. The study also recommended that It is therefore necessary to consider stakeholders involvement and effective communication between the stakeholders to ensure proper coordination between them. The needs and expectation of the stakeholders should also put into consideration. Efficiency and effectiveness in training of residents should be considered. Creativity and innovation with technological know-how of the residents should also be put to consideration. There should be enough funds allocated on community preparedness and the management support should be considered in terms of political will. The operational costs should be reduced.

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LIST OF ABBREVIATIONS

CRED -Centre for Research on the Epidemiology of Disasters

KRCS -Kenya Red Cross Society

NDOC -National Disaster Operations Centre

CSOs- Corporate social responsibilities

MDGs-Millennium Development Goals

HFA -Hyogo Framework for Action

CBFA - Community based first aid

CBDM -Community based disaster management

PHAST -Participatory hygiene and sanitation transformation

NDRT -National disaster response team

RDRT -Regional disaster response team

RIT -Regional intervention team

FACT-Field Assessment and Coordination Team

CBDM-Community based disaster management

MCDA- Military and civil defense assets

NSD - The National Security Division

DMRC- the Disaster management and Relief Committee

SMART- Special Malaysia Disaster Assistance and Rescue Team

DRR- disaster risk reduction

CHAPTER ONE

1.0 Introduction

Disaster management is an enormous task; they are not supposed to be in a particular place since it changes from time to time in different places. Therefore, it is important to put in place proper management to optimize efficiency of planning and response. There is need for collaboration at the governmental, private and the community level due to limited resources. The level of collaboration requires coordinated and organized efforts to immediately militate, prepare and recover from emergencies and their effects.

This chapter talks about the background of the study which refers to various destruction that have been done by various disaster that occurs in Kenya: terror attacks in Westgate supermarket and the recent attack in Dusit D2 Hotel in Riverside, Nairobi , Overflowed water from Solai Dam, Bomb blast scenario on 8th August 1998 where many people lost lives landslides in West Pokot and floods which have happened in several places in Kenya like Kano and Budalangi plains in Kisumu and Busia county respectively. The objectives of the study and the questions are also highlighted in this chapter. This chapter also explains the significance of the study to government, development planners and the residents at the floodplains. The scope of this study is explained which is done in Budalangi sub-County and people living in areas like Mudembi, Rwambwa, Budalangi, Sisinga, Mundere, Magombe West, Rukala, Lugale and Mabinju. Lastly it talks about the summary of this chapter in which it summarizes the whole chapter.

1.1 Background of Study

The issue of disasters especially caused by floods has been rampant in the world, which is caused either naturally or caused even by human beings. According to (CRED) “there were 315 natural disaster events recorded with 11,804 deaths, over 68 million people affected, and US\$131.7 billion in economic losses around the world.” Indonesia was most adversely impacted in terms of lives claimed, with earthquakes in August and September 2018 that left a total of 4,904 people dead or missing. Earthquakes also accounted for the greatest number of deaths among natural disasters worldwide in 2018. And among all types of natural hazards, floods affected the greatest number of people during the past year, with 127 major cases, and were responsible for 24 percent

of the total deaths from natural disasters in 2018.. Volcanic eruptions in Guatemala and Indonesia, which in Indonesia was followed by a tsunami, killed over 800 people in 2018 (Affairs, 2019).

National Disaster Operation Centre states that heavy rains in the past three weeks has caused death of people, displacement and flooding and landslides in various parts of Kenya, especially in Rift valley and coastal regions. The long rains which started on March 2020 has affected more than 233,000 people across 36 out of 47 counties. Over 116,00 people were displaced according to Kenya Red Cross Society (KRCS)

At least 85,000 people are sheltering in displacement camps in the western (more than 55,800 people), North Rift (nearly 15,000), coastal (almost 7,800) and north-eastern (7,000 people) regions. According to the KRCS, at least 54 per cent of the displaced populations are female-headed families, while 11 per cent are children under age 5. Kenya's Interior Cabinet Secretary, Fred Matiang, confirmed during a press conference on 6 May that at least 194 people have been killed by the floods since March. Damage to infrastructure, including schools, houses, roads and bridges has been reported, and over 8,000 acres of farmland, mainly rice nearly mature, have reportedly been destroyed, according to the Government (OCHA, Kenya: Floods Flash Update No. 1 (7 May 2020), 2020). In western Kenya, one of the hardest-hit regions, at least 40,000 people were rendered homeless after the Nzoia River burst its banks on the weekend of 2 May. Meanwhile, the rising level of Lake Victoria is impacting families in Kisumu, Siaya, Busia, Migori and Nyanza counties. According to the Lake Victoria Basin Commission, the water level in the Lake has risen by more than two meters, a situation last seen when the overflow rose by close to 2.5 meters between 1960 and 1964.

The heavy rains hindered access to roads which were damaged by water. (System, 2020). Counties like West Pokot were affected by landslides in November 2019. In Mount Kenya and the Aberdares, heavy rainfall has caused an increase in the volume of the Seven Fork Dam, with flooding reported downstream in areas around Tana River, according to media reports. The reports from the government urges those people living near Tana river and Garisssa to move to higher areas since water from dams like Kiambere, Kindaruma and Masinga. This rainfall has left the residents vulnerable to diseases like malaria, cholera and even typhoid hence hindering efforts to fight the COVID-19 pandemic. The Ministry of Health has reported a cholera outbreak

in Marsabit county and parts of north-eastern region. People displaced by floods and landslides are living in temporary camps which leads to congestion, poor sanitation, inadequate food and water which adds up to 70% of the population which was displaced.

1.2 Statement of the Problem

Floods are the most predominant disaster in Kenya, with the prevalence rates standing at 27% and affecting 5% of the population (GoK, 2019). Floods cause death with a 60% in Kenya (UNEP, 2009). Among the areas that experience floods every year are Budalangi, Kano, and parts of Nyanza such as Rachuonyo, Migori and also in Tana River District, Coast Province. Besides the evident loss of homesteads and the displacement of people and animals, floods also have other effects such as loss of crops, diseases outbreaks such as malaria, cholera and dysentery (Oketch, 2019). This result into further loss of lives, decreased livelihoods, decreased food security and increased poverty. In addition, the absence of a flood management policy in Kenya makes it difficult to adjust to the antagonistic impacts of floods .The country lacks organized institutional structures to relieve the negative effects of floods. Absence of advance flood warning leaves communities vulnerable, without taking preventative measures. Without such strategy and system, flood risk management in Kenya has remained to a great extent conflicting, awkward and receptive instead of adopting a more proactive strategy (GoK, 2007).

Assistance to thousands of flood-affected families in Kenya has been prevented by lack of a national disaster management body, poor coordination, poor rural infrastructure and other challenges. At least 89,515 Kenyans had been displaced by floods, according to a recent Kenya Red Cross Society (KRCS) report. Over 100 people were reported dead by floods countrywide in the recent rains in August-December 2019, also there was loss of properties and dead of animals

The western region of Kenya is most influenced by floods. Rivers Nzoia encounters enormous floods, affecting Budalangi. Flood hazards contribute to the existence of social insecurities and vulnerabilities of helplessness of poor women, children, elderly and persons with disabilities within the community as observed in Budalangi areas.

Even in the event of free land allocation, the community in Budalangi flood plains has resisted moving to safer grounds hence, they continue to reside on their ancestral land, usually the flood prone areas (Oteng'i, 2003) suggested. The resistance in Budalangi attributed to the fact that the

community values their ancestral land and is attached to these spaces. This study focuses on the factors contributing to the persistent vulnerability to flooding in Budalangi, and more important, to unpack the resilience of the community to withstand and live with floods.

1.3 Objectives of the study

1.3.1 General objectives

The general objective of the study will be to investigate the factors affecting disaster management in Budalangi flood plain, Busia County.

1.3.2 Specific objectives

1. To find out the impact of farming practices along river banks on disaster management
2. The investigate the effect of siltation in river Nzoia on disaster management
3. To determine the influence of rural infrastructure on disaster management
4. To determine the effect of political will on disaster management

1.4 Research Questions

The following are research questions which will guide the study

1. What is the impact of farming practices along river banks on disaster management in Budalangi, Busia County?
2. What is the effect of siltation in river Nzoia on disaster management in Budalangi flood plain?
3. What is the influence of rural infrastructure on disaster management in Budalangi flood plain?
4. What is the effect of political will on disaster management in Budalangi flood plain?

1.5 Significance of the study

This study is very important to both government and development planners including the residents to understand how to cope up with the floods disasters in future and generate better ways to curb such disasters like building dykes like what happen in Budalangi. This can only happen when government in collaboration with development planners to carry out education for pre and pro disaster measures by the residents of coastal areas and Budalangi. The government

also should provide safety jackets for such areas so that incase of such disasters people are able to rescue themselves. It is also important to allocate enough money in disaster management sector to ensure proper measures are taken on the onset of disaster.

1.6 Scope of the study

This study will carried out in Budalangi in Busia County. This study will establish the factors that affect disaster management in Kenya. The study population will be 250 which will include the government officials, religious leaders, community elders, Administrative officers and the residents of Budalangi. The study is restricted to identifying elements at risk located in floodplain areas such as; persons, family structure, economic activities, buildings (schools, churches, dispensaries), infrastructure (roads, bridges, communication network, electricity, water, drainage channels), farms located in the flood prone areas of Budalangi. The duration of the study will be from September to December 2020.

1.7 Chapter summary

This Chapter contain the introduction; background to the study which defines various scenarios in the world where floods have ever happen and caused death, problem statement, purpose and objectives of the study, research questions, significance of the study which helps the government and other institution including the beneficiaries to coordinate their activities to ensure proper mitigation of the disasters like floods. It has also scope of the study and the chapter summary which defines the coverage areas of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The chapter presents the literature that relates to the current study. The chapter comprises of the review of theoretical studies, literature review, summery and the conceptual framework

2.1 Theoretical literature review

2.1.1 Chaos theory

The study was based on the chaos theory by Henri Poincare (1854-1912) He explained that small differences in the initial conditions produce great ones in the final phenomenon. Therefore when an error is done in the former condition then automatically will affect the latter condition therefore prediction becomes impossible. Gleick (1987), states that Chaos theory is a scientific principle describing the unpredictability of systems.

According to Bower (1988), chaos is the irregular, uncertain discontinuous aspect of change within the confines of a patterned whole. He further notes that as a qualitative study, chaos theory investigates a system by asking about the general characters of its long time behavior, rather than arriving at numerical predictions of its exact future state. This meant that disaster and emergency situations epitomize the unpredictability or the non-linearity of human events. Disaster management in schools involves different stakeholders i.e. Government officials, religious leaders, administrative officers and the community at large who need to be coordinated to reduce vulnerability to disasters for schools. Disaster management includes mitigation, preparedness, response and recovery. It therefore requires interaction of different stakeholders and at all levels of disaster management (Wangui, 2015).

The assumption of this theory was that any perturbations in the current condition or former will cause the same changes in the future condition and make it difficult to predict the future conditions. Therefore a slight error in the initial condition of a system causes changes in the future. Albert Einstein (2018) critic that there is Unpredictability: Because there is no full evidence on iniatial conditions of complex system in sufficient detail. Since it is impossible to

measure the effects of all the butterflies in the World, accurate long-range weather prediction will always remain impossible (Einstein, 2018).

2.1.2 Vulnerability theory

The idea of vulnerability has exponentially been viewed as essential to the comprehension of the human-environment which is an essential concern toward this study (Zakour M. j., 2017). This is relevant to the study because it recognize how communities become vulnerable hence leading to death of people and destruction of their properties .This therefore explain that when disaster like flooding occurs, it destroys the human environment including houses, infrastructures, buildings like schools and churches hence leaving people unable to access to health and educational services, there become vulnerable to diseases like cholera, malaria, dysentery, pneumonia and even HIV/AIDS. Disaster causes a lot of destructions within the country which makes it to allocate a lot of money in order to save the situation, where such amount could have been used in development of other projects. Therefore it becomes so costly to the government to come up with policies which may require a lot of money to be implemented.

Some of the assumptions of this theory are as follows: The availability and equitable distribution of resources in a community decreases disaster vulnerability and facilitates resilience (Norris et al., 2008).Vulnerability is largely the result of environmental capabilities and liabilities .Unsafe conditions in which people live and work are the most proximate and immediate societal causes of disaster (Blaikie & Brookfield, 1987). Disasters occur because of a chain of causality in which root causes interact with structural pressures to produce unsafe conditions. Hazards then interact with unsafe conditions to trigger a disaster (Zakour M. J., 2012) .According to (Nina Cohn 2012), argued that although vulnerability theory is useful to make social policies but it does not indicate well on how to allocate resources to the vulnerable communities.

2.2 Empirical literature review

2.2.1 Disaster management policy and disaster management

The national Policy on disaster management will include many activities of the disaster management cycle. The Policy encourages the need for inclusion of disaster risk reduction in development plans and strategies at all levels to enhance capacity of vulnerable communities to

withstand the adverse effects of disasters. Disaster Management Policy will therefore, ensure that proactive measures are in place for minimization of negative effects of disasters (Shaban, National Policy, 2009).

Most common disasters experienced in Kenya are triggered by hydro meteorological and environmental processes leading to hazards such as floods and drought. This is caused by vulnerability which is resulted from poorly managed agricultural and environmental practices. Human disasters like accidents, fires, civil unrest and conflicts, terrorism and industrial accidents are also frequent. Precautionary measures should be taken during Disaster preparedness which is taken in advance of an imminent threat of a disaster in order to empower the society to respond to and cope with the potential impact of a disaster. Disaster response activities are important to maintain life of people and improve their health and support the morale of the affected people. It involves interventions taken during or immediately after a disaster. Disasters are more likely when there are no preparedness and response strategies in place therefore there is need for the government to adopt modern research approach to alleviate natural disasters. When the resilience among communities is low there is need to promote disaster awareness culture and capacity building for disaster preparedness and response at all levels through disaster management policy (Moses A. , 2013).

According to (Suda 2013)Kenya has suffered for decades because of Lack of disaster preparedness. In 1997 and 1998 there was massive displacement of populations, loss of lives, and destruction of property, water and energy crises, and the collapse of vital infrastructure because of the El Nino rains and the prolonged drought during the year 2000. There is need for intergration of Disaster and environmental management with disaster preparedness measures and recovery operations to bring in sustainability (Collette, 2013).

China is prone to disaster which are widely ,high frequency, and large losses. A series of domestic major emergency incidents and disasters and international disaster reduction activities have promoted the formation of the CBDM concept, the implementation of capacity building activities, and the improvement of policy and laws. However, it is only in the initial phase of CBDM implementation, which remains plagued by several challenges and problems, such as the deficiency of community resident participation, management organizations, disaster risk assessment methods, NGO development, and safety culture cultivation (Hang, 2013).

2.2.2 Coordination of stakeholders with disaster management

Government will ensure there is strategic planning and management of disasters in participatory collaboration with development partners, international agencies, CSOs and other bodies. Government shall also play a key role to ensure availability of the various resources for Disaster management at all levels from Government sources and partners (Shaban, National Policy, 2009).

The contribution of these stakeholders in DM in Kenya has been vital and the Government will encourage this collaboration and partnerships to realize synergies, providing linkages, promoting trust, goodwill and ownership of the Disaster Management system. To achieve the Millennium Development Goals (MDGs), respond to the provisions of the Hyogo Framework for Action (HFA) and to facilitate the attainment of Kenya's Vision 2030 for sustainable development, an effective Disaster Management system is important for creating a safe, resilient and sustainable society (Chao, 2016). All these disasters are caused by inadequate overall therefore there are three separate levels of coordination in the mitigation and preparedness phase of disaster management these are : (1) communication and transportation infrastructure, (2) monitoring and assessment tools, (3) collaborative tools and services for information sharing. Toward that end, a fourth level of coordination distributed resource/role allocation algorithms of first responders, mobile workers, aid supplies and victims addresses the dynamic environmental conditions of the response phase during an emergency (Abramson, 2015).

The concept of coordination in humanitarian logistics through clusters proposed by Jahre and Jensen (2010) looks as a different approach to minimize the consequences of a natural disaster. Clusters were introduced to improve the effectiveness of the Office for the Coordination of Humanitarian Affairs (OCHA) system in the five following key areas: satisfactory global capacity to react to the current and future crisis; trustworthy and predictable leadership at a global and local level; unbreakable alliance between UN bodies, NGOs and local authorities; responsibility, both for the reaction and in relation to receivers; and strategic field-level organization and prioritization (Ahmet, 2013). In order to achieve these five goals of efficiency improvement, three main aspects are represented as essential for the cluster system of Jahre and Jensen: "selected global direction, central and local competence construction and supplier of last alternative". Firstly, the cluster concept is planned at the global perspective and then prepared for

a particular location while the event occurs. Secondly, the global management of the clusters has a special task of making sure both central and local competence creation. In order to make certain the global perspective and the coordination between different small or large areas of assistance, the global cluster management has a vital role. Finally, the supplier of last alternative is another important part of the cluster perspective.

However, interaction between the humanitarian community and national armies responding to disasters in their own country is still a relatively new and under-researched phenomenon (Maker, 2015). Coordination in a purely conflict-related or disaster-related context is less challenging than dealing with complex emergencies that require quite a specific approach and where general guidelines cannot help. The roundtable was an opportunity to present several national systems for disaster management (Mittu, 2018).

2.2.3 Disaster management training and advocacy

The aim of disaster management training is to build the capacity of National Societies' staff and volunteers, and that of International Federation delegates, to improve preparedness and response at all levels before during and after disasters and to give all components of the Movement the means to work together in a coordinated manner. The focus of disaster management training is generally on improving the technical skills of the participants, but also on personnel and team management. It aims to encourage an exchange of experience and knowledge and the creation of networks amongst the disaster managers. It also aims to improve coordination of disaster response and the quality and availability of disaster management tools (Societies, IFRC, 2017).

Disasters provide opportunity for governments to use emergency powers to acquire sites, assemble land and rationalize land use patterns. Such programmes are also used to improve the housing conditions of the poor by training in disaster resistant infrastructure including housing . In this way, the effects of the calamity are changed to the advantage and the disaster becomes the agent for change, leading eventually, to improved human settlements (Mutanda, 2018). Disaster management training through public education and other information is informative and helpful in disaster preparedness (Waugh, 2000: 39). This includes not simply help to get the job but training for the service, special service for the disabled and the young, special schemes for the unemployed, working conditions of the employed, income levels, distribution and maintenance,

training and retraining for specific employment and industrial relations. Involves also the education and training of officials and population at risk, training of intervention teams. Training of the stakeholders or partners in disaster management is very crucial (Ochieng, 2018). The courses should be tailored to the needs of various disaster types and situations (Kanwar, 2008: 163). The rationale behind this is that different disasters need different types of health sector response and personnel requirement. Specialized courses in first aid, surgery, and health education should be mounted to the health care personnel involved in disaster work. In addition, the training of trainers should be revitalized to meet the needs and emerging challenges of disasters. They should be well versed with knowledge of current treatment and medical disaster response mechanisms to impart it to the trainees. Effective plans consider securing resources, possibly including stockpiling supplies and earmarking funds (Randolph, 1998: 126). The focus for training human service workers is on learning skills rather than knowledge. The author again adds that, one emphasis of a disaster preparedness plan should be to anticipate the requirements for the disaster relief operation and the most effective ways of meeting those requirements (Orinda, 2018). Those responsible for issuing warnings must be trained as well responsible to offer direct relief functions (Haddownand, 2006: 78). Training cannot be a one-time event but includes refresher courses that are essential in imparting learning and knowledge skills. Haddownand, (2006: 44) specifically emphasizes, on the need for training for those responding to a disaster situation, arguing that such training should be able to differentiate between speed and timeliness. Haddownand, (2006: 66) & Nicholson, (2005: 69), note that “although many communities once had excellent knowledge about natural disasters,” new conditions and situations can rapidly make that information obsolete. Advocacy also sensitizes the population and increases the general understanding of disasters likely to face and precautions to be taken. The draft also opines that enhanced training on disaster management is crucial and should be undertaken continuously through the media, private sector and among other stakeholders (Kenya DM, 2009: 105). Proper baselines and monitoring information is crucial in disaster management.

Disaster management is highly dependant on capacity building for undertaking relevant research using appropriate technology. The policy recognizes the need for research on disasters and their management in collaboration with local, regional and international learning institutions (Kenya, 2009: 46). The draft policy notes that for effective disaster management and sustainability of development programmes, capacity building and training are essential. In

addition, the Kenya Red Cross Society and other organizations do have varying levels of disaster management training programmes in place that can be drawn upon (Kenya, 2009: 29). Referring to the 1997-1998 El-Nino rains, UNDP observes that the floods affected populations that had just began the long process of recovery from the severe drought of 1995-1996. This was the disaster whose severity was intensified by the existence of a fragile and vulnerable society.

2.2.4 Community preparedness and disaster management

The community must prepare to respond and recover from incident which requires interaction and communication with development partners like a cross-section of state, local, and tribal partners as well as other stakeholders (Capabilities, 2017).

Community preparedness includes preparing , withstanding and recovering from public health incidents in both the short and long term. To achieve successful community preparedness, a jurisdiction must be able to perform the four following functions

1. Investigate the risks to the health of the jurisdiction.
2. Strengthen community partnerships to support health preparedness.
3. Ensuring proper Coordination with partners and sharing information through community social networks.
4. Training and providing guidance to support community involvement with preparedness efforts.

There is need for Public health and safety in the event of a disaster are increased as plans are devised and implemented since disaster often strikes without warning (management, 2013). Therefore specific plans should be created to be put in place at a moment's notice

Aim This project explored the disaster knowledge, preparedness, and resilience of 2nd and 3rd-year undergraduate student nurses in a Bachelor of Nursing Science program in a regional university to garner support for the introduction of dedicated disaster nursing education, which is currently absent from Australian undergraduate nursing curricula (Grimes, 2019). Australian trained nurses are highly valued and actively sought in the global health workforce market. In a world marked by increasing change and instability, the lack of dedicated disaster education and

skills in the largest health workforce increases the overall vulnerability. Methods Data were collected using the Disaster Preparedness Evaluation Tool, the Connor-Davidson Resilience Scale, simple demographics, and a previous disaster experience questionnaire (Christopher, 2019). Results The results highlight important gaps in current practice and vulnerabilities in the current disaster management framework. Local students scored higher results in preparedness and resilience. Discussion Student nurses are an underutilized resource in disaster preparation and by response teams around the world. With a global intent of shared responsibility and increased resilience in individuals and communities before, during, and after disaster events, dedicated capacity building of nursing staff has the potential to address key factors and simultaneously utilize an underappreciated demographic of student nurses. To the best of the author's knowledge, this project is the first to explore disaster knowledge, preparedness, and resilience in undergraduate student nurses using validated disaster preparedness and resilience tools in Australia (West, 2019).

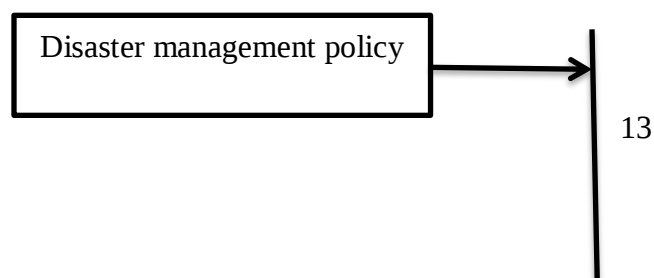
2.3 Research gap

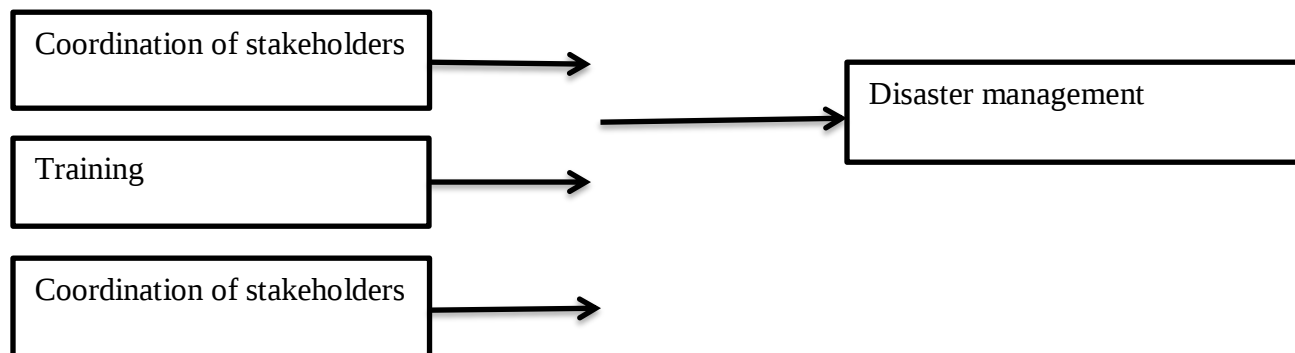
Most common disasters experienced in Kenya are triggered by hydro meteorological and environmental processes leading to hazards such as floods and drought. The ecosystem has remain vulnerable due to Poorly managed agricultural and environmental practices. Human induced disasters such as accidents, fires, civil unrest and conflicts, terrorism and industrial accidents are also frequent (Moses A. N., 2013). Disaster response activities provide assistance by maintaining people's lives ,improving their health and supporting their morale. The Government of Kenya has put in place multi-sectoral systems, tools and mechanisms to ensure disaster preparedness and timely response. However, Kenya lacks modern research approach with outcomes that have disaster management plan to alleviate natural disasters.

2.4 Conceptual Framework.

INDEPENDENT VARIABLES

DEPENDENT VARIABLES





The structure above shows factors that affect disaster management system in Kenya. Disaster management policies are formulated but not implemented due to corruption and poor infrastructures to implement them. This leaves the community vulnerable to disaster which destroys their lives and properties. Poor communication between the key stakeholders like government and the residents leads to poor coordination in disaster management which sometimes leads to duplication of work especially when two or more organizations operates in the same area.

Most of community members does know how to deal with disaster when occurs, Therefore it is upon the responsible stakeholders to train the residents of disaster management cycle i.e. Mitigation, preparedness, Response and recovery which are very vital aspects in disaster management. This will help the community to identify their roles in times of disasters and even be able to save themselves in such like situations. Preparedness is one of the steps in disaster management cycle which must be considered by the community. This will help the community to set up proper infrastructures and some funds for just in case disaster occur. It helps the community to know its role and that of the government. The government sets disaster management funds every year, therefore that fund should be disbursed on time to save the lives of people.

2.5 Operationalization of variables

Variable	indicators	measurement
Disaster management policy	-Policy implementation	Questionnaire (open and

	-Availability of infrastructure -Budget allocation -Project monitoring and evaluation	close ended
Coordination of stakeholders	-Stakeholders involvement -Effective communication -Needs and expectation	Questionnaire (open and close ended)
Training	-Efficiency -Effectiveness -Creativity and innovation -Technological know how	Questionnaire (open and close ended)
Community preparedness	-Allocation of funds -Management support - operational cost	Questionnaire (open and close ended)

2.6 Chapter Summery

This section described the introduction part which talks about factors affecting disaster management in Kenya. It also talks about theoretical literature which described two theories; vulnerability theory and chaos theory, the empirical review which shows the study that was done earlier before in other places that can also be applied this study, the summery of the gaps was also described and the conceptual framework that shows structure which describes the factors that affect the disaster management in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The chapter focuses on the methodology and procedures that was put in place to obtain data through a well-defined research design, target population, data collection procedures, research instruments and methods of data analysis.

3.1 Research Design

Research design is the scheme, outline or plan that is used to generate answers to research problems which is designed as a cross sectional descriptive study also known as surveys. It adopted a cross sectional survey design, as it sought to establish and describe prevailing effects such areas. The design was suitable for this study given the extensive data on factors that contribute to states of vulnerability to flooding, coping strategies employed, community participation in managing floods and gaps that exist in the phases of preparedness and mitigation on one hand and response and recovery on the other hand.

The study adopted both qualitative and quantitative techniques of data collection in order to deeply understand the research problem and also to ensure that there is no bias inherent in particular data sources, investigator, and method could easily be neutralized by combining both quantitative and qualitative research methods. Quantitative technique was used to collect and analyze numeric data while qualitative technique was used to collect non-numeric data, which gave more information on the study objectives and hence strengthened the quantitative data collected.

3.2 Study Population

The study population comprised the Luhya communities from Budalangi flood plains. As a result, the language spoken is Abaluhya by the Luhya community in Budalangi. The Luhya community has different dialects, which are Samia, Khayo, Kimarachi and Kinyala. According to the Kenya National Bureau of Statistics (2019), Budalangi has a total population of over

70,000 with over 16,000 households. In this study the target population comprised of households and selected key informants such as the Local and Government officials.

Table 1 Target population

Population category	Target	Percent %
Households	12,000	75%
Key informants	4,000	25%
Total	16,000	100%

Source: Author 2020

3.3 Sampling and sampling technique

A sample is a limited part of a statistical population which is studied to gain information about the whole. Sampling is choosing a given number of subjects from a particular population as representative of that population. The information obtained should be true about the population. Therefore when there is larger sample then the sampling error. Random sampling was used to give every member a chance of being selected in the the sampling procedure defines the number of all the population units from which the sample were selected. Sample was drawn from all the households and the key informants and was done using stratified random sampling. Stratified random sampling is a sampling method in which the population is first divided into strata. Then a simple random sample is taken from each stratum. The combined results constitute the sample (Cooper & Schindler, 2003: 124). In this study a target population totaling to 16,000 respondents was examined. Of the total population 12,000 comprised of household members while the remaining 4,000 comprised of key informants i.e. local and government officials. Out of 12,000 household members 8,000 were sampled for the purpose of the study while out of 4,000 Key informants 2,000 were sampled.

Table 3.2 Sample and sampling technique

Population	Target	Sample size
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Households	12,000	8,000
Key Informants	4,000	2,000
Total	16,000	10,000

Source: Author 2020

3.4 Data collection instruments

Two types of data were collected; primary and secondary data. Primary data was obtained from household surveys, FGDs, Key informants' interviews and direct observation. Primary data was collected using an interview schedule. In this study, the data was collected from heads of households. Secondary data was obtained through Internet sources, article, books, and journals.

3.5 Pilot study

The pilot study was done in Kisumu County to pretest the validity and reliability of data collected using the questionnaire. A pilot group of 20 individuals from a different group were selected to test the validity and reliability of the research instrument.

3.5.1 Validity and reliability

Validity refers to a measurement devices ability to vary directly with a measure of the same construct or indirectly with a measure of an opposite construct. It shows that the test is valid by comparing it with an already valid test. According to Creswell (2003: 55) notes that validity is about whether one can draw meaningful and useful inferences from scores on the instrument. To ensure content validity, the instruments were reviewed by the research supervisors and other research experts. Content validity ensures that all respondents understand the items on the questionnaire similarly to avoid misunderstanding. Response options were provided for most of the questions to ensure that the answers given were in line with the research questions they meant to measure. Reliability is concerned with the question of whether the results of a study are repeatable. The acceptable reliability coefficient was 0.6 and above (Rousson, Gasser & Seifer, 2002: 95). The pilot study was allowed for pretesting of the research instrument. The clarity of the instrument items to the respondents was necessary so as to enhance the instrument's validity and reliability.

3.6 Data collection methods and procedure

Data was gathered through the administration of questionnaire to a cross section of respondents drawn from the various categories. The respondents were to fill the questionnaire and then collected by the researcher. That helped to reduce instances of non-respondents. Follow ups was done through telephone calls, e-mails and personal interviews to ensure a viable response rate for the study. The questionnaires were scrutinized for errors and omissions, ambiguity, legibility and relevance.

3.7 Data Analysis

Qualitative data were grouped into categories and analyzed thematically. The frequencies of the data obtained in relation to each objective of the study were recorded and percentages worked out. According to Kerlinger, (1993: 67), organization descriptive statistics are used to analyze quantitative data. Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was then coded to enable the responses to be grouped into various categories. Descriptive techniques was used to analyzed the data .Quantitative approach was used mainly where the researcher counts some aspects of performance of the subjects in the study. The quantitative approach included tables, pie charts graphs among others. Qualitative method was used in collection and analysis of data. The findings were presented using tables and charts, percentages, tabulations, means and other measures of central tendency. Tables were used to summarize responses for further analysis and facilitate comparison. For this study, the researcher was interested in investigating the factors affecting disaster management in Kenya. This generated quantitative reports through tabulations, percentages, and measures of central tendency.

3.8Ethical Considerations

The goal of ethics is to ensure that every member participating is protected from harm. Given the often sensitive relationships between researcher and respondents, reasonable safeguards were built in this study based on ethical consideration and requirements. Therefore, the information that the researcher received during the period of study was treated in confidence and purely for academic purpose. Names of respondents were not used or mentioned in this study.

3.9 Chapter summary

The chapter illustrates more of the methods that were used to operationalize the study. The research design was descriptive and the target population was 16,000 from which the sample sizes of 10,000 participants were picked for the study. The research instrument was questionnaire which was used to collect data and the study will be analyzed.

CHAPTER FOUR

DATA ANALYSIS PRESENTATION AND INTERPRETATION OF FINDINGS

4.0 Introduction

The chapter provides the findings explored from methodologies and collected from the field which will be then presented on tables and charts in regard to the research variables under study.

4.1 Presentation of research findings

4.1.1 Response rate

The study will provide the actual number of respondents that will take part in the study from the total sample. The findings will be presented on the table as shown below;

Table 4.1 Response rate

Category	Frequency	Percentage
Response	14,000	88%
Non-response	2,000	12%
Total	16,000	100

The study indicates that 88% of the respondents responded in the study while 12% of the total sample did not participate in the study. The percentage of those who participated was sufficient since was more than 60% of the sample population.

4.1.2 Background information

4.1.2.1 Age of the respondents

The study aimed at finding out the age of those respondents that participated in the study and the results were tabulated on the table as shown below;

Table 4.2 Age of the respondents

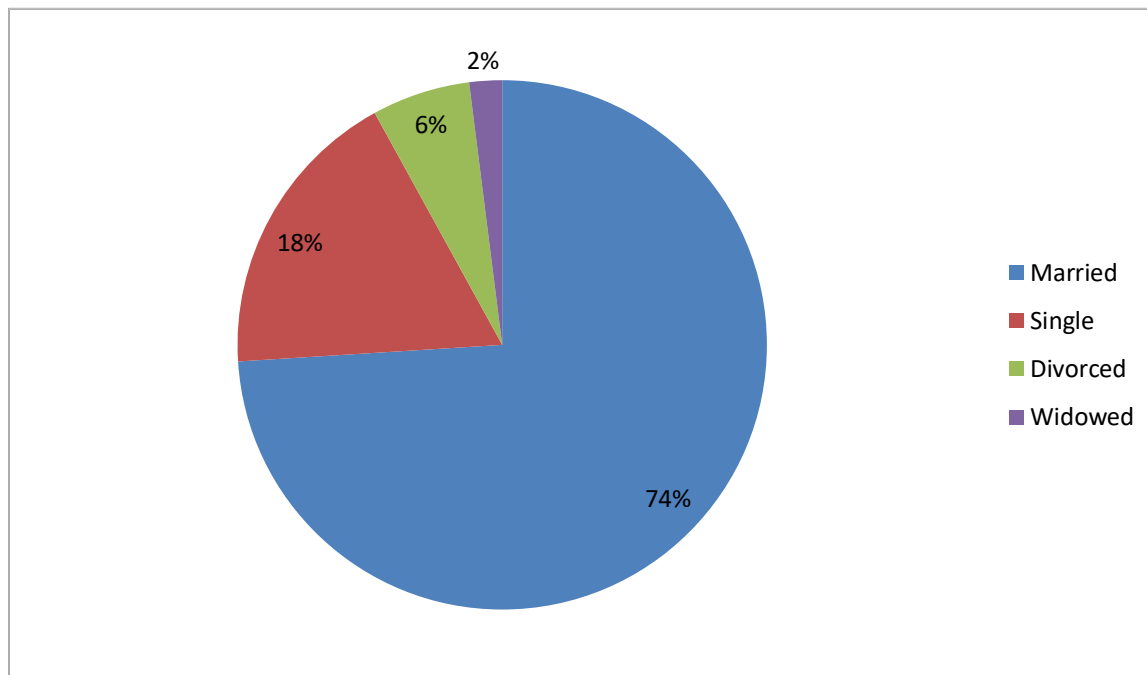
Category	Frequency	Percentage
18-20years	500	4
21-30 years	1200	9
31-40 years	6,000	42
41-50 years	4,500	32
Above 50 years	1,800	13
Total	14,000	100

The study indicates that the respondents between 18-20years were at 4%, those between 21-30 years were at 9%, those between 31-40years were at 42%, those between 41-50years were at 32% and those above 50years of age were at 13%.

4.1.2.2 Marital status of the respondents

The study was meant to investigate the marital status of the respondents and the results were tabulated on the figure as shown below

Figure 4.1 Marital statuses of the respondents



The study defines that the marital status of those who are married were at 74%, single were at 18%, divorced were at 6% and then widowed were at 2%. The marital status was well captured for the study.

4.1.2.3 Highest level of education

The study was to investigate the highest level of education of the respondents and results were tabulated as follows

Table 4.3: Highest level of education

Category	Frequency	Percentage
Secondary	5,000	36%
College Diploma	1400	10%
Undergraduate	6,000	43%
Post-graduate	1,600	11%

Total	14,000	100
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The study establishes that those respondents with secondary level of education were at 36%, College diploma were at 10%, undergraduate were at 43% and those with post-graduate level of qualification were at 11%.

4.1.3 Disaster management policy

4.1.3.1 Policy implementation

The researcher was to find out if the disaster management policies are implemented and the results were tabulated as shown below;

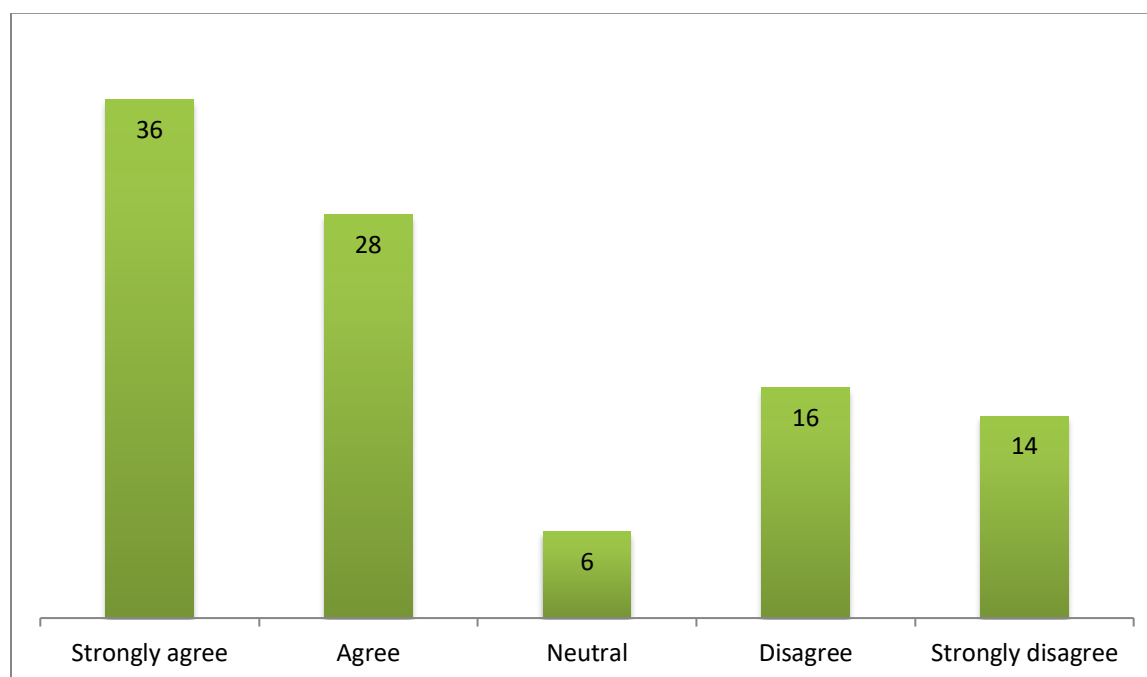


Figure 4.2: Policy implementation

The study findings indicated that 60% agreed that the disaster management policy are well implemented, 6% were neutral while 30% did not agree.

4.1.3.2 Availability of infrastructure

The researcher was to find out the availability of infrastructure in the rural area and the data was tabulated as shown below;

Table 4.4 Availability of infrastructure

Category	Frequency	Percentage
Strongly agree	1000	7
Agree	3,000	22
Neutral	600	4
Disagree	5,000	36
Strongly Disagree	4,400	31
Total	14,000	100

The study findings show that 28% of the respondents agreed that there are available infrastructure, 4% were neutral while 67% of the respondents disagree.

4.1.3.3 Budget allocation

The research aimed at finding out if enough funds are allocated in disaster management project and if funds are well utilized. The results are tabulated in the figure as shown below;

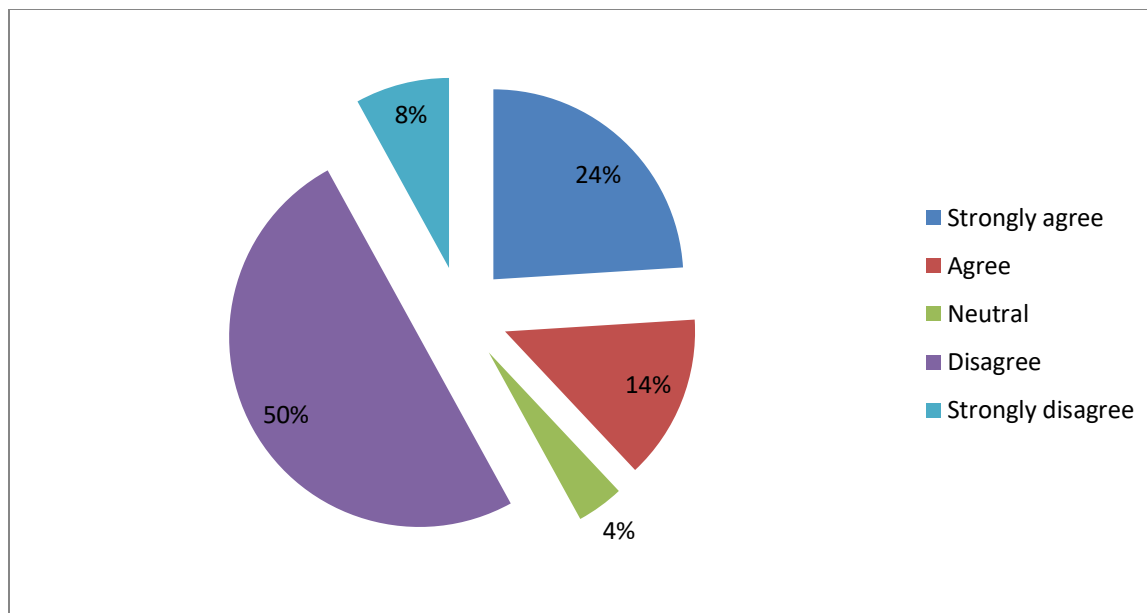


Figure 4.3 Budget allocations on disaster

The study determines that 38% agreed that enough funds are allocated well utilized on disaster management, 4% were neutral while the remaining 58% disagreed.

4.1.4 Coordination of stakeholders

4.1.4.1 Stakeholders involvement

This was to find out by the researcher if all stakeholders are involvement in the projects implementation on disaster management. The results are tabulated on the table as shown below;

Table 4.5 stakeholder's involvement

Category	Frequency	Percentage
Strongly agree	5,000	35
Agree	2,000	15
Neutral	3,000	21
Disagree	1,000	8

Strongly disagree	3,000	21
Total	14,000	100

The study findings indicate that 50% agreed to stakeholder's involvement in disaster management projects, 21% were neutral and 29% disagreed.

4.1.4.2 Effective communication

The researcher was to find out if effective communication contributes to project implementation in terms of disaster management. The results are tabulated on the figure below;

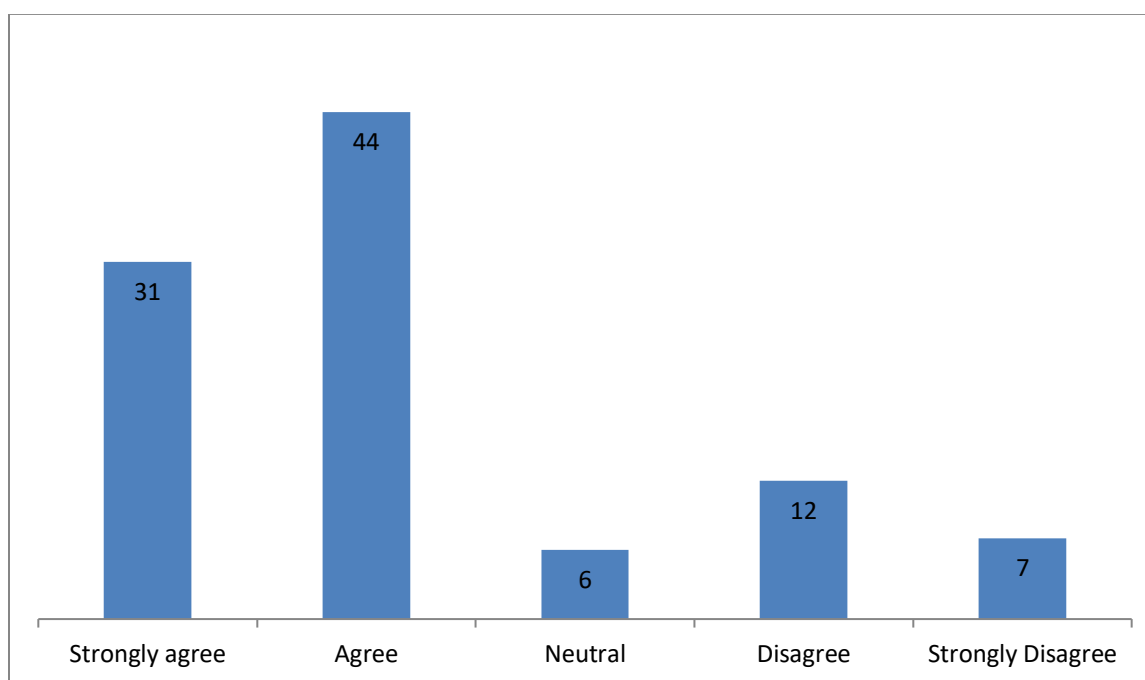


Figure 4.4 Effective communication

The findings indicates that 75% of the respondents agreed that effective communication contributes to project implementation in disaster management, 6% were neutral while 19% disagreed.

4.1.5 Training

4.1.5.1 Efficiency in training

The researcher was to find out if there is efficiency in terms of resource utilization in training or not and the results were be tabulated as shown below;

Table 4.6: Efficiency in training

Category	Frequency	Percentage (%)
Strongly agree	2,000	14
Agree	3,000	21
Neutral	1,000	8
Disagree	5,000	36
Strongly disagree	3,000	21
Total	14,000	100

The study indicates that 25% agreed that there was efficiency in training about disaster management, 8% were neutral while the remaining 57% disagreed.

4.1.5.2 Technological know-how in training

This was to investigate if there is technological know-how in the training about disaster management and the results were tabulated as shown;

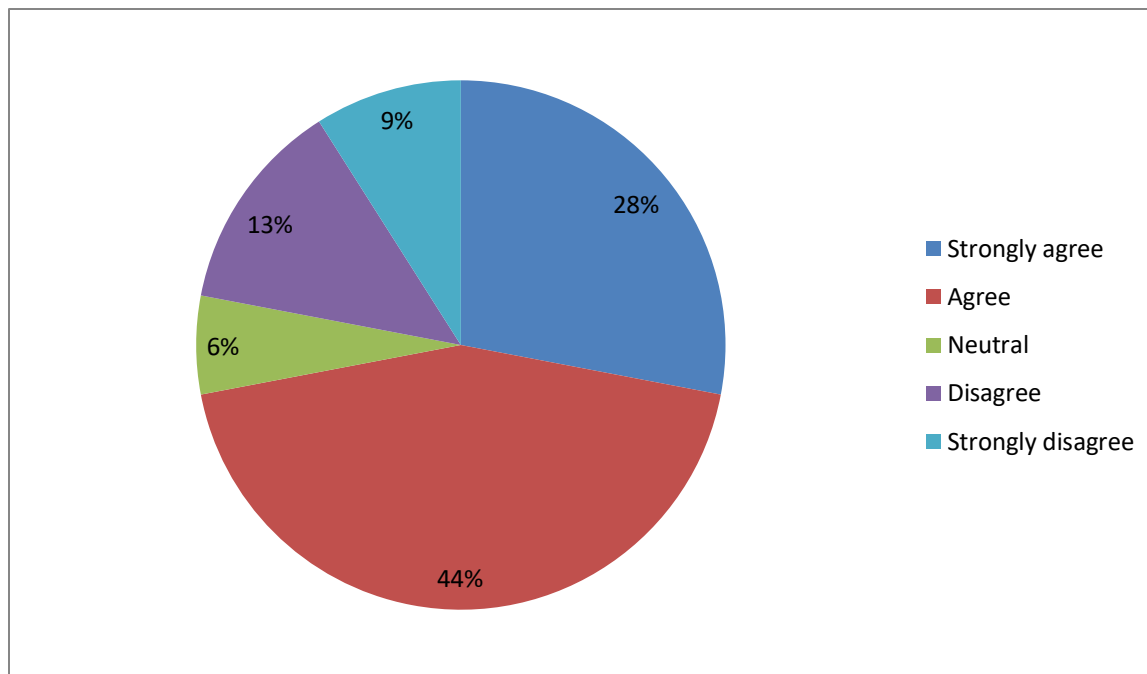


Figure 4.5 Technological know-how in training

The study findings indicates that 72% agreed that there was technological know- how in the training about disaster management, 6% were neutral while 22% disagreed.

4.1.6 Community preparedness

4.1.6.1 Allocation of funds on disaster preparedness

The study was to find out if enough funds are allocated on the community preparedness in terms of disaster management and the findings were tabulated on the table bellow

Table 4.7 Allocation of funds on disaster

Category	Frequency	Percentage
Strongly agree	2,000	14
Agree	1,000	7
Neutral	3,000	21

Disagree	4,,000	29
Strongly disagree	4,000	29
Total	14,000	100

The study indicates that 21% of the respondents agreed that there were enough funds which were allocated on disaster preparedness in the community, 21% were neutral and then 58% disagreed.

4.1.6.2 Management support on community preparedness

This was for the researcher to find out if there was management support in ensuring community preparedness in disaster management and the findings were tabulated

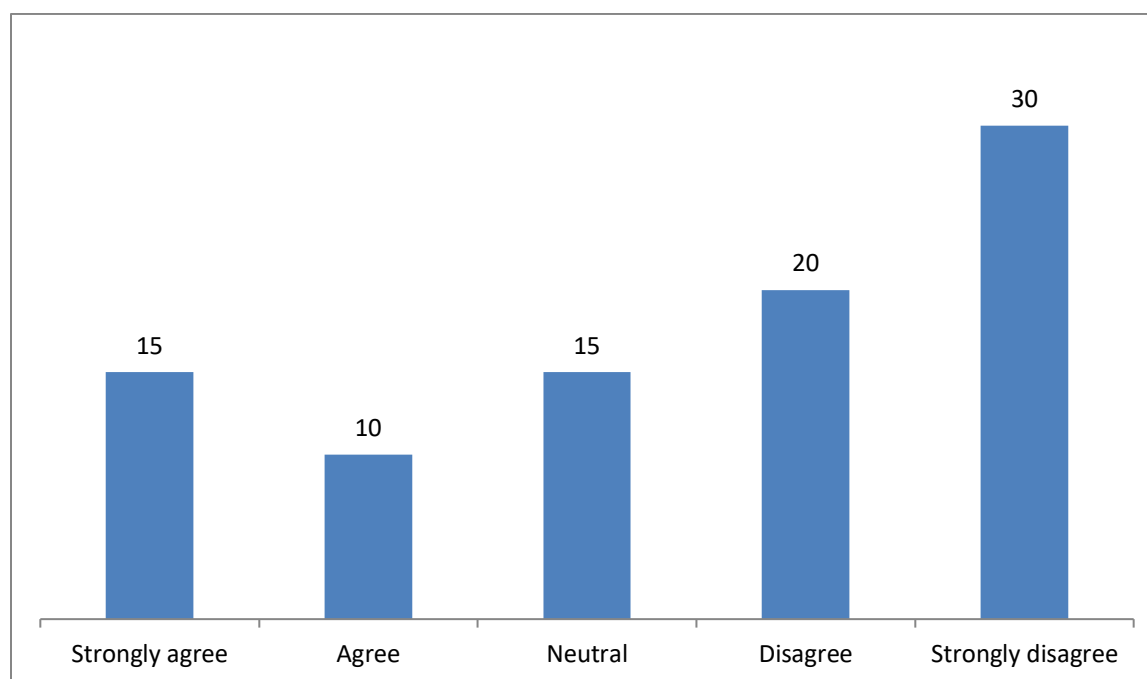


Figure 4.6 management supports on community preparedness

The results findings indicate that 25% of the respondents agreed that there was management support in community preparedness, 15% were neutral and 50% disagreed.

4.2 Limitation of the study

There was lack of cooperation from the residents who demanded that they should be paid first for them to give information which is unethical .This affected the acquisition of data required in the study therefore the researcher explained about the reason for the study on the lives of people in Budalangi and Kenya at large which was enough to convince them to give accurate information to the researcher. The researcher did not force them to respond.

There was also resistance from the residents and government officials which they thought was all about political affiliations and fear of being victimized by their political leaders which made them to be reluctant to provide the information.

4.3 Chapter summary

The study focused on the findings from the field by presenting data from each variable in different sub-headings to make specific explorations. The data was presented in a well labeled tables and graphs from which an interpretation was made and some statement made to make clear the findings for easy analysis in the next chapter.

The study found that disaster management is affected by factors such as; Disaster management policy, Coordination of stakeholders, Training, Community preparedness.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.0 Introduction

The chapter presents the analysis of the data obtained in the chapter four by providing the summary of findings, conclusion and recommendation

5.1 Summary of Research Findings

5.1.1 Background information

The study indicated that 88% of the respondents respondent in the study while 12% of the total sample were not able to participate in the study. The study indicated that the respondents between 18-20 years were at 4%, those between 21-30 years were at 9%, then between 31-40 years were at 42%, those ,those between 41-50 years were at 32% and finally those above 50 were at 13%. The study established that the marital status was well captured where those who are married were at 74%, single are at 18%, those who are divorced were at 6% and then those widowed were at 2%. The study established that those respondents with secondary level of education were at 36%, those with college level were at 10%, undergraduate level were at 43% and those at post graduate level were at 11%. This was an indication that the target education level of the respondents were well captured for use in the study.

5.1.2 Disaster management policy

The study findings indicate that 60% agree with the disaster management policy implementation, 6% were neutral while 30% did not agree. The study findings show that 28% of the respondents agree that there were available infrastructure, 4% were neutral while 67% of the respondents disagreed.

5.1.3 Coordination of stakeholders

The study findings indicated that 50% agreed to stakeholder's involvement in disaster management projects, 21% were neutral and 29% disagreed. The findings indicated that 75% of the respondents agreed that effective communication contributed to project implementation in disaster management, 6% were neutral while 19% disagreed.

5.1.4 Training

The study indicated that 25% agreed that there was efficiency in training about disaster management, 8% were neutral while the remaining 57% disagreed. The study findings indicated that 72% agreed that there is technological know-how in the training about disaster management, 6% were neutral while 22% disagreed.

5.1.5 Community preparedness

The study indicates that 21% of the respondents agreed that there were enough funds which were allocated on disaster preparedness in the community, 21% were neutral and then 58% disagreed. The results findings indicated that 25% of the respondents agreed that there is management support in community preparedness, 15% were neutral and 50% disagreed.

5.2 Conclusion

This study concludes that factors such as Disaster management policy, Coordination of stakeholders, Training, Community preparedness (-Policy implementation on disaster management, Availability of infrastructure, Budget allocation, Project monitoring and evaluation, Stakeholders involvement, Effective communication and identification of needs and expectation of the stakeholders. Efficiency of the training given to stakeholders, Effectiveness, Creativity and innovation, Technological know-how, Proper Allocation of funds for community preparedness, Management support, Reduce operational cost. Therefore it is upon the government and the responsible stakeholders to ensure the above factors are considered and put into consideration to curb issues of disasters.

5.3 Recommendation

5.3.1 Disaster management policy

The study found out that Policy implementation, Availability of infrastructure and a Budget allocation affect disaster management in Busia County in Budalangi flood Plain, The study recommends that the government should ensure that the policy set aside for disaster management are well implemented, that there is availability of infrastructure to facilitated such policies and enough funds should be allocated on disaster management policy implementation.

5.3.2 Coordination of stakeholders

The study found out that Stakeholders involvement, Effective communication and Needs and expectation affect disaster management in Busia County in Budalangi. It is therefore necessary to consider stakeholders involvement and effective communication between the stakeholders to ensure proper coordination between them. The needs and expectation of the stakeholders should also put into consideration.

5.3.3 Training

The study found out that Efficiency and Effectiveness in terms of available resources, Creativity and innovation and Technological know-how are factors that affect disaster management in terms of training being given to the residents of Budalangi flood plain. Therefore the study recommends that efficiency and effectiveness in training of residents should be considered. Creativity and innovation with technological know-how of the residents should also be put to consideration.

5.3.4 Community preparedness

The study found out that proper Allocation of funds on disaster preparedness, Management support and operational cost affect disaster management .The study recommends that there should be enough funds allocated on community preparedness and the management support should be considered in terms of political will. The operational costs should be reduced.

5.4 Areas for further Research

The study only considered four factors that affect disaster management. In future further research should be carried out to investigate the influence of other factors on the disaster management. Future studies should also review the factors that affect disaster management of other areas other than Budalangi flood plain in Busia County so as to come up with factors affecting disaster management in that government can put them into consideration.

Further, this study only focused on the Budalangi flood plain in Busia County. This implies that the results cannot be generalized to other areas such as Muranga and kirinyaga where there are landslides. Therefore a similar study can be conducted in Muranga and Kirinyaga. This will help the scholar to clearly understand the factors affecting disaster management

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APPENDIX I
LETTER OF INTRODUCTION TO COLLECT DATA

Kevin Nonga,
P.O Box 29677-00100,
Nairobi, Kenya,
kevinonga736@gmail.com,
Cell: 0791485219

Dear Respondent,

RE: INTRODUCTION LETTER FOR DATA COLLECTION

I am an undergraduate student of Bachelor degree in development study in The Management University of Africa. I will conduct a research titled; Factors affecting disaster management in Kenya .I hereby request you kindly to respond to the questionnaires I will be issuing to you after which you will return to me for analyzing.

For anybody who will be chosen to take part in the study. The information and opinions you will give will be purely for academic purposes of the study and shall remain strictly confidential.

I will appreciate for your cooperation.

Yours faithfully,

KEVIN NONGA

Registration Number: BDSK/1/00015/3/16

APPENDIX II: QUESTIONNAIRE

FACTORS AFFECTING DISASTER MANAGEMENT IN KENYA. A CASE STUDY OF BUDALANGI FLOOD PLAIN IN BUSIA COUNTY

Instructions: use a tick to indicate your answer

Background information

1. Your age in complete years

18-20 years ()

21-20 years ()

32-40 years ()

41-50 years ()

Above 50 years ()

2. Marital status

Single ()

Married ()

Divorced ()

Widowed ()

3. Highest level of education

Secondary ()

College diploma ()

University degree ()

Post graduate ()

SECTION B: Disaster management policy

6. The following statements relate to Disaster management policy on disaster management.

Please indicate with a tick to the statement with a rating on the scale of 1 to 5 (1=

Strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly Disagree)

Statement	Rating				
	1	2	3	4	5
The disaster management policy are implemented					
Infrastructure to support disaster management are availability					
There is enough budget allocation on Disaster management					
Disaster management Projects are well monitored and evaluated					

SECTION C: Coordination of stakeholders

7) The following statements relate to coordination of stakeholders on disaster management. Please indicate with a tick to the statement with a rating on the scale of 1 to 5 (1= strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly Disagree)

Statement	Rating				
	1	2	3	4	5
Stakeholders are involved in disaster management					
There is effective communication					
Needs and expectation are well catered for during project implementation					

SECTION D: Training

8) The following statements relate to training on disaster management. Please indicate with a tick to the statement with a rating on the scale of 1 to 5 (1= strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly Disagree)

Statement	Rating				
	1	2	3	4	5
Efficiency in resource utilization					
Effectiveness in policy implementation					
Creativity and innovation					
Technological know how					

SECTION E: Community preparedness

9) The following statements relate to community preparedness on disaster management. Please indicate with a tick to the statement with a rating on the scale of 1 to 5 (1= strongly agree, 2= Agree, 3= Neutral, 4= Disagree, 5= Strongly Disagree)

Statement	Rating				
	1	2	3	4	5
Enough funds are allocated					
There is top Management support					
There is low operation cost					