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THE APPROPRIATENESS OF EMERGENCY COMMUNICATION CHANNELS USED BY THE GARISSA COUNTY CRISIS TEAM: CASE OF THE 2018 FLOODS IN BURA EAST WARD

BY

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DECLARATION

I, the undersigned hereby confirm that this project is my original work and has not been previously presented in part or totality to any other institution of learning for the award of any degree or examination.

Signed……Date: ……

Martha Muthere

K50/87879/2018

This research project has been submitted with my approval as the University Supervisor.

Signed……Date: ……

Dr. Consolata Mutisya

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DEDICATION

I dedicate this project to my late father, Samuel Muthere, my source of inspiration, my husband Oliver Kiiru, who has encouraged and supported me all the way to ensure I finished this MA project. To my children Leon Ndegwa, Duane Muthere, and Aryannah Wanjira, thank you all for keeping me focused on the goal of this study.

I can never quantify my love for you all. God bless.

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KENGEN	**:**	Kenya Electricity Generating Company Limited
KMD	**:**	Kenya Meteorological Department
KRCS	**:**	Kenya Red Cross Societies
NDOC	**:**	National Disaster Operations Centre
WRA	**:**	Water Resource Authority
WRUA	**:**	Water Users Association
RANET	**:**	Response and Assistance Network

ABSTRACT

This study sought to review the appropriateness of communication channels used by Garissa County crisis team during the 2018 floods in Bura East Ward. Specific objectives of the study were; to identify the communication channels used by the crisis team to communicate with the community; to investigate the community sources of information on floods, and, to examine the appropriateness of communication channels used in disseminating emergency information on floods. Classical Rhetoric theory was used to explain how a channel for message delivery influences perception while participatory communication theory expounded on the importance of audience research to best understand the communication needs of the target audience. Exploratory design was used to gain insights into this fairly new phenomenon of floods in Bura East. The study employed a qualitative research approach. Purposive sampling was applied to sample 15 key informant interviews, and members of three focus group discussions. The data was presented in a narrative format and analysed thematically. The study established that the channels used by the crisis team to communicate to the community are incongruent with the community sources of information. In addition, there are unresolved and underlying issues breeding resistance like, differences in wetland management and border wrangles between Tana River and Garissa Counties. Lastly, the study found that audience research was not conducted to understand the community's information needs in order to design the best tools to use to communicate with them. The study recommends that the crisis team should diversify their channels of communication to include: youth leaders, farmer groups and bandas which are more accessible to the community in Bura East. Similarly, the community should also embrace other communication channels like apps, short message service and broadcast media in order to get richer information. Further, the study recommends use of imagery by media and other communicators to lay emphasis and appeal to the emotional part of the recipients. Additionally, audience research should be carried out to understand the recipient community, come up with proper messages, and choose the right channels. Research, too, should inform policy and collaborative relationships amongst the crisis team members.

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter gives the background information on flood emergencies, provides description of Garissa County in terms of the location, size, natural conditions, demographic profiles as well as the administrative and political units. It then zeros in on the history of Bura East ward flood situation, introduces the stakeholders, problem statement and objectives of the study. Further, the chapter states the justification of the study, significance, its scope and limitations.

1.2 Background

Emergencies can be described as situations that pose immediate risk to health, life, property, or environment. They require urgent interventions to mitigate and in some cases reconstructive responses. Emergencies occur due to natural or man-made disasters like fires, floods, earthquakes among others. During such situations the most vital commodity is information which all stakeholders require to aid in decision making. This study will specifically explore flood emergencies.

Since the biblical times of Noah, floods have remained a global phenomenon; the oxford dictionaries describe floods as an overflow of huge amounts of water beyond its regular limits, especially over what is usually dry land (Oxford, n.d.). Just like in Noah's days where human wickedness brought floods upon the human race, today human activities like deforestation and industrialization have led to neglect of the environment contributing to climate change. Climate variability overtime has brought a myriad of disasters, from droughts to hurricanes, and floods (CCSO, 2018).

Global warming is no longer an anticipated future phenomenon but it is upon us and is affecting the weather patterns; there are prolonged droughts and heavy down pours leading to floods. Floods are on the rise in Kenya especially in Garissa, Western, and Tana River districts; even Nairobi experiences its own share of flash floods (CIDP Garissa, 2018).

The research seeks to investigate the appropriateness of communication channels used to disseminate emergency information which is core in determining whether they achieve the set objectives. A specific channel of communication ensures that the intended recipient of a message is reached in time and the information sent out through that channel reaches them with the intended goal. The response to the message by the recipient is looked at in both the sender and receiver perspectives.

Classified under ecological zone VII, Garissa County is an arid region with minimal vegetation covers prone to wind and water erosion. The environment is under sustained threat from severe droughts, soil erosion and heavy flooding that occurs in the county every five or eight years. Besides this, there is also the conventional annual flooding and droughts. The unrelenting Prosopis juliflora which has formed a dense thicket covering much of the land and especially along the river threatens the environment. The inhabitants of the county also rely much on wood energy leading to increased depletion of trees and other vegetation. There is increasing need for conservation measures to avoid further degeneration. Climate change is evident in the county in a number of ways; the amount of rainfall is becoming less and unpredictable, there is occurrence of frequent and prolonged drought in the recent past and unpredictable floods (CIDP Garissa, 2018).

Garissa County has experienced climate change in all its facets and aftermaths, from prolonged dry spells, to famines, floods, and refugees. It is one of the three counties in the North Eastern region of Kenya covering an area of 44,174.1Km2 it borders the Republic of Somalia to the east, Lamu County to the south, Tana River County to the west, Isiolo County to the North West and Wajir County to the north. The population in Garissa County is 98 per cent Somali; other clans found in the county include Abudwaq, the Aulihan, the Abdalla, Muqabuul, Qare, and Dogodia. The main languages spoken in the county are Somali, English, and Swahili. The county's population is mainly Muslim with an insignificant group of residents, mainly workers, professing Christianity.

Garissa County is flat and low-lying, the major physical features being seasonal Laghas and the Tana River Basin, which has tremendous effect on the climate, settlement patterns and economic activities within the county. The County representative spatial average annual rainfall is 430mm/ (Devinit, 2016)Year. Garissa County is principally a semi-arid area and receives an average rainfall of 275 mm per year. There are two rain seasons, the short rains from October to December and the long rains from March to May (CIDP Garissa, 2018).

Garissa County has a topography varying from 50m alms at 450. The general slope south eastwards towards the ocean is 0.09% towards Bura and Halugo wards the soils in this area s also has very poor drainage.

According to the Garissa Government report, Tana is the longest river in Kenya stretching about 1,014 km, and discharging, on average, 4,000 million cubic meters of fresh water annually. River Chania, Thika, Sagana, Thiba, and Mutonga drain into river Tana. The catchment areas for the Tana are slopes of Mount Kenya and the Aberdare Ranges and it drains into the Indian Ocean. Tana River supports industrial and other socioeconomic functions such as power generation, agriculture, livestock, water supply to Nairobi, tourism and micro-enterprises found within the basin. The Middle Tana Delta has an altitude of between 1100-3000 meters above the sea level and supports agro pastoralists. The major causes of flooding in this zone are the siltation from the cultivated land in the area accompanied by deforestation and eventual over grazing. Consequently, during heavy precipitation the zone experiences a lot of run-off and flash floods According to Kenya 2009 census, Bura East has a population of 1492 people; this was projected to rise to 2036 by 2017 (CIDP Garissa, 2018).

To get data to informative data, this study targeted the following crisis team members; Kenya Electricity Generating Company Limited, KenGen is the leading electric power generation company in Kenya, producing about 75% of electricity capacity installed in the country. The country utilises various sources to generate electricity ranging from hydro, geothermal and wind. It majorly taps the waters of River Tana for it hydroelectric production (KenGen, 2018). Water resource authority (WRA) is a state corporation established under Section 11 of the Water Act, 2016. Pursuant to Section 6 of the Act which came in to effect on 21st April, 2017 vide Legal Notice No. 59, the Authority is an Agent of the National Government responsible for regulating the management and use of water resources (WRA, 2018).

Kenya Meteorological Department provides meteorological services to different sectors of the economy. The department monitors the weather and publishes climate related data, and maintains an efficient telecommunications system for rapid collection and dissemination of meteorological information required for national and international use in accordance with the World Meteorological Organisation and the International Civil Aviation Organisation procedures (KMD, 2018).

The National Disaster Operations Centre (NDOC) was established on 21 January 1998 following the adverse effects of El Nino rains to coordinate the national effort in reducing the impact of the rains and widespread infrastructural and environmental destructions. It is manned by officers drawn from various Ministries/Departments of the Government on a 24 hour basis (NDOC, 2018). The International Federation of Red Cross and Red Crescent Societies (IFRC) is the world's largest humanitarian and development network, with millions of volunteers in 190 m. The Kenya Red Cross offer humanitarian response to disaster preparedness and risk reduction, save lives in a cost effective manner and build resilience (IFRC, 2018).

Some leaders and residents from Garissa allege that Kengen, the hydropower producer caused the flooding on the Tana basin and the latter has to constantly deny claims that it deliberately discharged water from the Seven Forks dams resulting in flooding in Tana River and Garissa counties. Elsewhere, around the world, similar cases of blame and counter blame concerning floods and communication or lack of it among all stakeholders are abounding. In 2009, the A Vuong hydropower dam in the central province of Quang Nam released 150 million cubic meters of water during Storm Ketsana, worsening flooding that killed at least 163 people and caused over

$786 million worth of damage. In 2013, water discharged from nine hydropower dams was blamed for worsening flooding triggered by a tropical depression that killed 41 in the central region, which has the most hydropower dam projects in Vietnam (VnExpress, 2016).

Contrary to the popular allegation, KenGen's chief executive Rebecca Miano said the Seven Forks dams help to regulate river levels by storing huge volumes of water thus reducing flooding downstream. The firm also warns the Garissa County administration of foreseen flooding (Nation D 2018). Indeed Dams store water and help produce hydroelectricity a major driver of economic development. Meanwhile our news media are awash with cases of floods and displacements of communities.

1.3 Statement of the Problem

Bura East constituency experiences rains between March and May every year, which is accompanied by, floods (CIDP Garissa, 2018). Occasionally, the floods cause damages and losses in the community. Red Cross and other Government institutions communicate on this flood issue to create awareness and mitigate damage. In spite of this communication, the floods still caused many damages in this area during the 2018 floods meaning the levels of awareness are low leading to inaction by the community members. This paper sought to investigate why the awareness levels are low by exploring the communication channels used by the crisis team during the 2018 flood event in Bura East.

1.4 Research Objectives

The main objective

To investigate what channels of information are most appropriate for emergency communication in order to elicit the right action from the target community.

1. To investigate the communication channels used by the crisis committee to communicate to the community about floods
2. To investigate the sources of information on floods in Bura East
3. To examine the appropriateness of communication channels used in disseminating emergency information during floods in Bura East

1.5 Research Questions

1. What are the communication channels used by the crisis committee to communicate to the community about floods?
2. Where does the Bura East community get their information on floods?
3. How appropriate are the communication channels used in disseminating emergency information during floods in Bura East?

1.6 Justification

Kenya experienced a season of heavy rains between March and May 2018. An analysis of the 2018 floods in Kenya show that low lying marginalised areas were most affected. The terrain in other areas like Nyanza and Western counties which equally experience floods is fairly good and these areas could still be accessed during these flood emergencies. Some parts of Bura East were however cut off during the floods with relief agencies using make shift bridges to reach the

marooned residents. Data from Red Cross ranks Garissa as one of the nine counties whose infrastructure was seriously affected (OCHA, 2018). Even farmers were denied access to their farms and watched helplessly as he floods swept away their only source of food (Nation D, 2018). Bura East flood threat escalated fast within a month of the rains into an emergency situation, Red Cross set up emergency response units, schools and roads were closed. The communities in Bura heavily rely on the irrigation farms for food and sustainability after long spells of drought wipe out their herds, then the water they rely on wreaks havoc inform of floods and wipes out their new source of livelihood. They suffer in water scarcity and surplus in equal measure, both situations are emergencies in this area. This matter has not been researched before, therefore this research prioritises this area and identifies a great need for communication to get the information needed for decision making by different stakeholders involved in this emergency.

1.7 Significance

Floods are becoming a clear and present danger in this area of Bura East, more so with the advent of climate change. As such, this study will help in the expansion of the existing knowledge on the best channels to use to communicate about this phenomenon to the affected communities. The study will also inform crisis team communicators on how to package and deliver emergency messages to elicit the desired action from the recipients. Furthermore, the study will encourage communities affected by floods to embrace more channels of communication to get timely and hence reliable information.

1.8 Scope and Limitations

This project was carried out in Bura East Ward in Garissa County. Bura is situated in the low lying plains of the Tana Delta, River Tana runs across the ward and the residents practice irrigation along the river. It has an area of 5246.30km^2 with a population of 15,764 and a density of 3. Bura East comprises of the following locations; Mansabubu, Jambele, Nanigi, and Guyo (WRA, 2016). The inhabitants of Bura are agro pastoralists.

Cultural barriers are a major limitation to this research. This is because the men of the Islamic religion in that traditional setting do not like talking to women and more so of non-Islamic religion. Low literacy levels and language are also other barriers. Most of the people only speak Somali. To counter this, the research will employ research assistants who are known and trusted by the community, accepted by their religion and can understand their language. Also there is a group of Pokomo and Malakotes who can speak Swahili.

1.9 Operational Definitions

Crisis communication team: a group of individuals with knowledge and expertise to support and coordinate communication efforts during emergencies. This study identifies crisis team as a group of organisations formed to respond to emergencies in Garissa County because of their knowledge and experience in the flood situation.

Demographic characteristics: are the classifiable characteristics of a given population, this study recognises demographic characteristics as unique identifiers of the Bura East community.

Emergency: is a weighty unforeseen and often hazardous situation requiring speedy action, this study identifies emergency as the flood incidences in Bura East.

Communication: entails imparting or exchanging information by speaking, writing, or using some other medium.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This literature review explores the flood situations around the world, regionally in Africa and in Kenya. Further, the review examines the communication process, nature, and medium used during these emergencies. With the advent of climate change, disasters related to droughts and floods are rampant around the world, it is therefore necessary to look into how crisis teams communicate during these emergencies. A review of the flood situation is important because it illuminates on different flood events and how communication tools were either used appropriately and improved the situation or used inappropriately and aggravated the situation. The comparative nature of the review brings forth lessons learnt and informs the researcher on development of the research tools. The first part of the review entails the history of flood globally; the second part examines the history of Floods and communication failure in Africa and lastly the review looks at flood events in Kenya and how different stakeholders have communicated these emergencies. The sources referenced in this review include; books, online journals, websites, newspapers, reports, conference proceedings and other electronic sources all in a bid to inject diversity of the knowledge obtained.

2.2 History of Floods Globally

Handmer, Penning, & Tapsell (1999) posits that flooding is the overflow of rivers caused by prolonged seasonal rainfall, rainstorms, snowmelt, dam breaks, and accumulation of rainwater in low-lying areas with high water tables or inadequate storm drainage, and intrusion of seawater onto the land during cyclonic or tidal surges. In broader terms, Blaikie, Cannon, & Wisner (1994)

describe floods as too much water at a certain location within too short a time. Heavy rainfall is the most common cause of floods. Magnitude, speed of onset, and duration of the flood are among other factors influenced primarily by topography, river course and alteration, vegetation, and soils. Floods are becoming a common environmental hazard worldwide, occurring more frequently and intensifying in some areas and also spreading into new regions.

The water bodies are a blessing and a curse in the same breath. Globally, there are some major deltas located on low-lying plains and experience increasing flood risk from intense precipitation, (cyclonic) storm surges and high tides, global sea-level rise, and rapid urbanisation and industrialisation. Wesselinka (2015) explored the Rhine/Meuse/Scheldt (The Netherlands), Pearl River (China), Mekong (Vietnam), Ganges/Brahmaputra/Meghna (Bangladesh), Zambezi/Limpopo (Mozambique), and Mississippi (USA). Overall, these deltas share several socio-economic and water management characteristics, albeit at different scales and levels of detail. They are densely populated, house coastal megacities, and have great economic value because of international transport facilities, industrial development, and the investment in property related to both population and economic growth. Similarly, River Tana is a major economic booster with 7 major hydroelectricity generation plants, irrigation schemes and tourist resorts.

Communication is very important in managing both natural and human made disasters. Communication during and immediately after a disaster situation is a crucial component of response and recovery; it connects affected people, families, and communities with first responders, support systems, and other family members. NORC (2013) review established that dependable and accessible communication and information tools are also pivotal to a community's

resilience. Information therefore, is the most valuable commodity during disasters, it is what every crisis manager needs to make decisions and mitigate damage. Flood disasters are frequently featuring in local and international media. To mitigate such impacts there is need for holistic information on floods.

Elsewhere in Salzach Austria, Rufat, Tate, Burton, & Maroof (2015) observed that high levels of precipitation and pre-existing soil moisture in the Salzach catchment caused heavy flooding at the downstream reaches of the Salzach in June 2013. The Salzburg City water gauge station measured 8.51 m, 15 cm higher than catastrophic floods in 2002, which resulted in damage of an estimated three billion Euros for Austria. Since then, Austria invested in disaster mitigation measures notably reducing damages along the Salzach during the flood event in 2013. Communication between the hydrological agencies, weather forecast services, the media and responders was often unsatisfactory, misleading, or interpreted incorrectly. This was attested through an elaborate scrutiny of media reports, augmented by interviews with responsible decision-makers, and results from a local stakeholder workshop. The objective was to analyse knowledge fragmentation during the flood event in order to improve co-ordination and communication.

According to that analysis, knowledge fragmentation occurred because of barriers in knowledge production, transfer, and implementation, which could be social or functional. Such an evaluation enables sharing of lessons learnt among different stakeholders. The knowledge gained can also be incorporated in future collaborative disaster mitigation strategies. The evaluators discovered that there were strained relations among the administrators, authorities and research institutions. Enhancing collaboration and integrating results from research projects where possible could lead

to improved management and transparency. Weichsel Gartner& Pigeon (2015) added that a satisfactory consolidation of multiple scales, different societal actors, various knowledge sources, and diverse disciplines into disaster risk research increases its relevance for decision-makers in policy and practice. Basically collaborative communication among different stakeholders is vital. The study also found that the media and public often have high expectation on what the meteorologist can deliver during the early warning stages. Highly accurate flood forecasts were expected two days in advance yet due to the varying rainfall this could only be possible during the downpour or immediately prior. Such limitations accrue from lack technical capabilities leading to delayed communication on eventualities of flash floods (Rufat, Tate, Burton, & Maroof, 2015).

According to Rufat, Tate, Burton, & Maroof (2015) communication was the main shortcoming in the 2013 flood event in Austria. Early warning flood information from the meteorological service was passed on to the media on Friday afternoon, but only used on Saturday morning for the news reports. The media however transmitted more accurate information updates hourly all through the night. Later that Saturday afternoon, the hydrological service communicated a much more severe event which the media delayed to transfer to the public until Sunday morning. Here the Media as the main channel used is the major culprit due to all these delays. The meteorological service uses traffic-light symbols based on international standards of the National Weather Service to communicate risk of extreme weather. They had already used the orange level and after consultations with the hydrologist they dismissed the idea of using the red alert. Unfortunately, these alerts were misinterpreted and, in some parts of Salzburg, the fire brigade was also not actively preparing for a large-scale event on Saturday. This reflects lack of guidance in decision making.

The meteorologist asserts that the communicating journalist who understands the impact of the flood events to the social environment from experience can understand the meaning better and transmit it with effectively. Khan & Haque (2017) advised that it's crucial to translate complex climate information into simple actionable formats for the media for ease in to spreading awareness. The media are also faulted for not prioritising weather news, since their main aim is to sell news they downplay and blow things out of proportion causing distortion, this greatly undermines the importance of the information provided by focusing on individual priorities. This would further hamper early preparations for the floods leading to inaction by the people at risk. Emergency response teams were trained to deal with emergencies occurring in the present because the information sent out by state authorities and meteorological agencies included model uncertainties and was varying thus making it difficult for the media to interpret the information correctly, which lead in this particular case to an underestimation of the risk associated with the flood (Khan & Haque, 2017).

The public media failed to use the early-warning information about flood risk consistently leading to delays in transmission of up to date weather information they had received. This lack of proper communication created generated confusion among the public who in many instances never bothered to arm themselves for the floods and mitigate the damages. There seems to have been no mechanisms to follow up on the feedback loop, no checks on whether the information sent was received and implemented by the target audience. A perfect aspect though was the post event evaluation that ensured all the stakeholders learned and shared knowledge which they can use to devise better communication strategies in the future(Spiekermann, Kienberger, & Norton, 2015).

Elsewhere in Thailand, there was a mega flood in 2011 and People in slums and in the rural areas felt sidelined, and were very critical of the information presented to themes they intimated in the narrative interviews and participant observation. The provision of official flood information by governments increases awareness but hardly reduces social vulnerability. When people are aware, they can prepare well in anticipation, more so if the information they receive appeal to their emotion, feelings of fear and uncertainty may make them take appropriate action (Rufat, Tate, Burton, & Maroof, 2015).

Lo & Chan (2017) in a social survey about household arrangements in England Wales geared to reduce the economic losses arising from flooding and enhance community resilience discovered that the intention to act during flood is socially motivated. There is therefore the need to address the role of social networks and engagements with local community in order to have influence in enhancing community resilience to flooding.

In 2004, the Manawatu-Wanganui region New Zealand experienced one of the most destructive storms in over 100 years and perhaps the most intensive wide spread rain as a
result of deforestation in the twentieth century. It caused a lot of damages and losses in broken down infrastructure, landslides, disrupted lives most especially to rural communities Overall, the economic impacts of the February floods on the lower North Island were in the range of NZD 300–400 million. The floods had a profound influence on public perceptions towards flood risk, and stimulated action on a number of fronts at local, regional and national levels. In the Manawatu, the reframing of risk perceptions was expressed in the political campaigns of several candidates in

October 2004 and again in 2007 elections. A number of candidates who took a strong stand on the need to reduce flood risk were elected to local and regional councils. Heightened public awareness and political will to reduce flood risk was translated into significantly increased community investment in measures to understand and manage flood risks (Glavovic & Bruce, 2004). Their experience and loss spiked their awareness and perception towards the dangers the floods could bring. Every individual and society as a whole had their emotions jolted by that experience. When politicians took to the stand, convincing such an audience was easy, having experienced direct impacts of the floods.

Risk communication is the purposeful exchange of environmental risk information between interested stakeholders. It's a two way communication process between the communicating parties who engaged in social learning. Risk communication uses words that enhance perception by appealing to the pathos. The ways the messages are packaged make the recipient want to take action to mitigate risk. Awareness levels and past experiences determine how the people are going to perceive the hazard. In the absence of knowledge about the flood risk the people will trust the source of news or rather the bearer of the news. Risk communication can strengthen people's risk awareness and motivate those at risk to take preventive actions (Kellens, Terpstra, & De Maeyer, 2012)

Flood risk communicators should develop information tools that meet demand of different user groups. In Europe the internet platform is gaining popularity due to its time independency, location, its fresh, allows participation and diverse perspective though it's limited to the highly educated and the younger generation. They use flood maps, though not all can interpret them they

give a realistic situation. If people stay for a long time without experiencing the floods for instance, they lose their risk awareness its there're necessary to combine communication and information tools to find new regular and repeated ways of activating the recipients awareness. When risk communication is effectively carried out it can steer the recipient towards high attention levels and heightened interests in flood topics. Such recipients will seek further information, engage more and become more accepting (Klose & Wagner, 2009).

During disaster affected people communicate with low technology. During super storm sandy in New York and New Jersey area the residents affected reported using low technology and high in person communication to reach for help. These communication methods were also determined by level of imp-act. Those greatly affected could not choose what to use but rather used what was available, mostly in person. Infrastructure was already badly damaged. Age and literacy levels also determined the communication tools that were accessed by the affected Communication tools are not ubiquitous across all demographic segments and utility of some communication tool deteriorate in disaster situations. During super storm sandy there were extensive power outages and downed cellular service (NORC, 2013).

Renn (2005) posits that communicating risk is a two way process, the receivers must decode and give feedback, once this aspect is clear to the communicators they should start focusing on the values and needs of the community targeted by this communication. They should then adjust their communication to these needs and values to enable the target community judge their risk situation and make informed decision based on factors such as levels of preparedness (Renn, 2005).

2.3 History of Floods and Communication Failure in Africa

Davidson (1998) noted that Africa is a minor contributor of global GHG emissions, its share of carbon emissions, which is by far the most important GHG, is only 3.2% of the world's total in 1992. Its share of methane emission is also small, only 7.7% of the world's total in 1991 .Yet Africa is worst hit by vagaries of the changing climate, most unprepared and probably most uncoordinated. Africa lacks mitigation strategies mainly the technological solutions; African economies are also not the strongest. However some African societies are well organised but this is not exploited by communicators who may be targeting to change individual behaviour.

A good case of organised societies that communicators have failed to exploit is best exemplified by the local populations in the African Sahel region. According to Nyong, Adesina, & Osman (2007) this community developed and implemented extensive mitigation and adaptation strategies through their indigenous knowledge systems, that have enabled them reduce their vulnerability to past climate variability and change, which exceed those predicted by models of future climate change. However, this knowledge was not tapped during the design and implementation of modern mitigation and adaptation strategies due to lack of community participation. The African Sahel is characterised by rainfall declines and droughts that exceed those predicted by models of the future. These communities are still surviving and growing in population therefore their indigenous coping mechanisms are worth sharing as lessons useful in addressing current and future climatic issues. Incorporating such indigenous knowledge into climate change policies can lead to the development of effective mitigation and adaptation strategies that are cost-effective, participatory and sustainable and also compliment modern scientific knowledge.

Working in a participatory manner offers opportunities to rethink how information can be communicated to those at risk by positioning people at the heart of flood risk communications. Participatory working re-imagines the traditional roles of experts and lay people and considers diversity, different forms of expertise participants working together as equals to co-produce shared knowledge and output. Different organisations, professionals, and ordinary people break down borders between them and work together to manage floods. Participation should start of by understanding the audience perceptions, and what information they need, to enable proper packaging of such information. Rather than relying on raising risk perceptions, providing holistic hazard information develops flood literacy which repositions the local victims to active agents in managing the floods. These agents are able to make their own judgments and decisions on risk and protective behavior, rather than relying on expert knowledge. This emancipation builds local resilience much better that a simple threat based communication (Rollason, Bracken, & Hardy, 2018).

2.4 History of Floods in Kenya

Kenya experiences floods yearly in different parts of the country, the most prone areas being, Garissa, Tana River and Western Counties. There are a lot of infrastructural damages, loss of life and property, disruption of learning in schools and displacements of people.

Different stakeholders are involved in response and recovery stages. The Kenya meteorological department as a key stakeholder has not been left behind in this. In 2001, KMD introduced RANET, a Radio and internet system for disseminating flood forecasts to rural communities in the flood prone areas of Kenya. The meteorological institution keeps watch on river water levels,

generates important data and information that can warn the local community and other stakeholders on the risks of rising river waters. Early Warning System (EWS) provides data and information timely to the target audience (Mulwa, 2013).

The poor are viewed as most endangered by climate change impacts; usually monetary capabilities are a key index of adaptive capacity however, the 1998/1999 World Development Report posits that knowledge, not fiscal capital, is vital to sustainable social and economic development. Building on local knowledge thus, should be the central component of any region's knowledge system (World Bank, 1998).

A review of the Nation Daily newspaper, from 2016 through to 2018 reveals that, the paper carried several flood related stories, perfectly employing pathos in their delivery. Most headlines were striking with risk communication characteristics and exaggerations geared to elicit action from the communities being addressed. Even on social media Nation Media House had such blaring hash tags connoting impending danger. On 26th April 2018 at 3; 16am they had this on their twitter handle @ntvkenya; Flood water rises to shoulder level around Garissa town. On the same day during the 9.00pm and 11.00pm bulleting, Nation television headlined the story; Garissa flood waters reach crisis levels, the story further elaborated that the flooding had been caused by spillage from Kindaruma dam upstream. It was accompanied by a strong imagery of a woman captured on video submerged in raging water up to her shoulders. The story went on to explain how the residents were caught unawares and showed strong images and videos of locals trying to salvage property in vain.

Water Resource Management Authority (WARMA) also issued a warning to Garissa and Tana River Counties, in March 2016. Through WARMA the Government identified 21 flood prone areas across the country. The Authority was also working on an Integrated Flood Management Plan (IFMP) through which they intended to effectively control the floods in the mapped areas (KNA, 2016). Elsewhere in Baringo County, a system for early flood warning donated by JICA to WARMA to help control floods was installed. The residents renamed it KIMBIA which means take cover, the warnings given by the device were positively received and implemented, and their perceptions signified identification (KNA, 2016).

According to the UN office for the Coordination of Humanitarian Affairs (OCHA)'s Financial Tracking Service (FTS), donors committed US$68.1 million of humanitarian assistance to Kenya in 2016 in preparations for relief and reconstruction. They were responding to a funding alert raised due to flooding in Garissa. Heavy rainfall had exceeded the capacity of the River Tana and other seasonal rivers in Garissa County, north-eastern Kenya. The subsequent flooding was damaging farms, settlements, roads and other infrastructure, affecting up to 2,000 households, and was likely to continue displacing people this is according to a report by OCHA (2018). This was communication from another level of flood management, the relief and re-construction; the stakeholders were in communication and together had managed to raise the mount and were ready to manage the floods.

Another crisis team member in relief, the Kenya Red Cross on its Twitter page issued a report on the extent of damage caused by the floods; 312 households in Kolakal Ward, Turkana Central had been affected, and in Wajir a section of the road to Garissa had been cut off (Nation, 2016).

The foregoing attests that, Kenya is not at a level of communication that would mitigate the flood disaster situation since most of the communication is happening during the disaster itself. In Kenya long rains start in March yet we see most of this communication happening in May. The channels mostly used are the media and their messages are quite alarming, people can take heed if not yet affected but to the affected especially those featuring in it, it's too late. This can however serve as a lesson learnt for others and for the future. Flood risk communication ought to give information on the probabilities and consequences of known risks to affected communities and seek consensus among them regarding a specific course of response and mitigation (Fellows, 2008).

2.5 Theoretical Framework

2.5.1Classical theory of Rhetoric

The theory states that all kind of usage of language comprises a certain amount of element of persuasion in them. According to the Collins dictionary, rhetoric is the skill of using language effectively. The theory dates back to the times of ancient scholars like Plato, Aristotle and Socrates. The theory had its origins sometime in the 5th century B.C. The classic rhetoric theory sought to know how this element of persuasion works and how it can be effectively utilised. Classical rhetorical theory therefore has its premise on how language works for people. The theory's major proponent's Aristotle identified three elements necessary for effective communication, the sender of the message and the receiver. Aristotle stated that the way the sender packages and delivers the message greatly determines how the receiver interprets it and the kind of feedback it can elicit. Rhetoric thus studies the effectiveness of language (Leggett, 2012)

Ancient Greek embraced democracy and used rhetoric to pursue the people, thus rhetoric is as old as language, in our context we want to explore its latent capabilities in resolving social problems through communication. Rhetoric surrounds us albeit not recognising it and utilising it to solve societal problems. For instance when children ask for items like roller skates, they think of the possibility of persuading parents to purchase the skates. As per the theory the children have evaluated the reaction of the parents, they know they might refuse because they think the skates are dangerous but they will go further and appeal to the parents' emotions by feigning loneliness in the house when the parents is away. Sometimes parents give in to such requests just to be fair and also since the children anticipate this too because they appealed to emotions of the parents.

For rhetorical theorists, the message is the primary focus of inquiry when approaching the study of communication and they employ the theory to package and to evaluate the message. In the context of this paper the rhetoric theory will focus of the stakeholders who are likely to be the source of the messages, like KENGEN, TARDA, among others , it will also explore the kind of messages they package, how well they choose their words and topic and the channels chosen to deliver the messages. The receiver in our case will be mostly the community; they will often get information from government institutions for their action. How well they evaluate these messages and successfully implement what is required determines the success of the sender's communication. Communication isn't as easy as saying what you mean but it's how you say what you mean.

Ethos depends heavily on the personal character of the speaker , how credible he is, pathos is geared to put the audience in the right frame of mind while logos is all about reasoning, providing the evidence or proof of what is being communicated . This theory leans more on clarity and consistency of the speaker, exaggerations, repetitions, metaphor , irony paradox, simile are all stylistic features of language used by the theory to lay emphasis in risk communication for instance. (Leggett, 2005)

The theory will explore how well the stakeholders use or fail to use the three building blocks of successful communication namely: Logos, ethos and pathos. The sources of information like in the case of this study, KENGEN or Kenya Red cross should conceive the idea and determine the intention, what is the message and what reaction should we expect from the receivers, use reason and logic. Further, they should use statistics and case study stories to support their messaging. They will encode ideas that can be understood by the receiver.

Next the source will also transmit the message whether written, visual or oral they should employ ethos for best results. Let the communities get this information from credible, likeable, familiar sources to build trust. In this case they must learn and understand their audience their receivers, for instance the communities.

The receivers must decode the messages, how they see, hear, interpret evaluate and respond is greatly affected by how well the sender employs pathos. Does the sender appeal to their emotions? For instance the threat of floods sweeping away their livestock may make the communities take precautionary measures, because the herd has a lot of significance for them. The sender can use exaggerations to achieve this.

The rhetoric theory therefore can help the sources create effective messages that suit the context and the receivers. According to Lumen (2018) rhetoric enables multiple perspectives, in both evaluation and construction of messages and this means the receivers can also have differing unintended interpretations and being highly contextualised brings a lot of rigidity and sometimes noise or interferences occur, because there is no consensus. For example political interference may cause misunderstanding and what was meant to be an early warning signs for people to move to higher grounds becomes a blame game and floods happen and wreak havoc. Feedback loop also increases the chances of success if the speaker adapts to the receiver's feedback. But is this always the case? Most times the opinion of the communities like in our context may not reach the sources. And that steers this study to a second theory to compliment rhetoric. How can all the stakeholders get on board?

2.5.2 Participatory Communication theory

Participation is the provision of the chance for people to be involved in determining how something is done; this is according to Merriam-Webster, (2004). On the other hand Oxford dictionaries , (2015) describe communication as the exchange of information by speaking, writing and some other mediums like, television, radios, letters and telephones. Participatory communication therefore is the theory and practice of communication used to involve people in decision-making process of development initiatives.

Mody (1991) defines community as a derivative from the Latin word 'communis' meaning common. Communication is sharing meanings and a perspective in this context sharing implies an equitable division of the shared object. The participatory communication theorist Tufte &

Mefalopulos (2009) maintains that, genuine participation entails true and effective communication amongst all stakeholders affected, giving all similar, and equal opportunities to influence the outcome of the initiatives.

Participatory approach is a model where all stakeholders are involved by the fact that the intervention affects them. All should have equal rights; no stakeholder should dominate the other. Similarly, no view should be dominant, all are tabled, and dissenting perspectives reconciled until they reach a mutually accepted consensus. True participation gives the ordinary person a voice and a hearing. In some cases participants feel like they are rubber stamping empirical reports, others feel left out especially due to factors like poverty and illiteracy.

Albeit there being no common definition that fits all the stakeholders in that they will all have their own perspective on inclusion. The common aspect remains the involvement of the ordinary person, however there different reasons why participatory communication is important to different stakeholders. The organisation (KENGEN) for example may set goals external to the community like optimal resources utilisation of the Tana for Kenya's economic development whereas the community seeks empowerment and a voice on how to use or not use the river to their detriment. Their goals should inform the relevance of participatory communication approach to them. The bottom line is to create a very clear understanding of the proposed action and validate its acceptance across the board. If there are any dissenting views, explore the alternatives. Communicate the final decision, provide support and the necessary publicity during implementation, this way you keep stakeholders informed and you get to learn their reactions. carry out impact assessment, report and gather feedback.

Proponents of participatory communication articulate that, development as a discourse builds knowledge and power by conceptualising social problems and institutional interventions. They faulted the dominant paradigm for consistently assuming the individual was deficient of some skills, this was rather very speculative even in the way they viewed the problems faced by the third world countries. There was a shift of the power dynamics the participatory communication theorist focus on the control of the empowerment process, the manifestation of social power at individual, organisational and community levels (Melkote & Leslie, 2001).

Servaes (2008) defines communication as a process not a set of technologies or a product , it includes informal and formal, direct and indirect forms of communication needs to be applied in different ways at distinct levels according to needs. Communication is a key element used to inform and persuade respectively, it also raises awareness, imparts knowledge, and promote attitude and behavior change using mass media. It is an important tool used to plan and implement development via diffusion in the dominant paradigm and still used today through dialogue in participatory communication. Its relevance has transcended time. It has an empowering value.

In the process of communication, the roles of sending and receiving change hands depending on who is talking and who is listening. According to Beltran (1974) dialogue promotes participation and builds capacity Communication nurtures knowledge and creates consensus taking into account interests needs and capacities of all concerned parties, it is a social process. In our case government organisations like Kengen will use communication systems for social mobilisation and change management. However, lack of understanding of the complexity of human behavior, societal and

cultural functions, or end user consumption patterns has led to ineffective or even counterproductive outcomes. The source must understand the audiences.

All affected by the proposed intervention should participate but to enable effective planning it is good to get an informed representative sample from the community. One could use the people directly affected by the disaster, for instance village elders would have experience on the terrain and how to build dykes to minimise loss, having experience loss of their herds over the years. Credible personalities too may be used to deliver such messages like school heads, politicians could also be used as influencers. Similar to rhetoric, participatory communication theory leans heavily on trust and familiarity to gain credibility.

Interactive empowerment participation allows ordinary people to participate in joint analysis, which leads to action plans and the formation of new local institutions or the strengthening of existing ones. It tends to involve many methodologies that seek diverse perspectives to enable learning. These groups have control over local decisions, and so people have a stake in maintaining structures or practices (Servaes, 2008). At times there is more to gain by acting together than while alone, more so when the stakeholders impart and learn skills. Garissa region has been experiencing floods surely the community can share something they have learnt over the years and help create better strategies to communicate and arm the locals on flood eventualities.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter presents the methods employed by this study. They include; the research design, research methods, sample and the sampling techniques, dependability of the research instruments, quality of the instruments, data collection procedures, data analysis and ethical considerations.

3.2 Research Site

This study focused on reviewing the appropriateness of communication channels used to communicate to the community by the crisis communication team in the 2018 flood emergency in Bura East Ward. The communities in Bura heavily rely on the irrigation farms for food and sustainability after long spells of drought wipe out their herds, then the water they rely on wreaks havoc inform of floods and wipes out their new source of livelihood. They suffer in water scarcity and surplus in equal measure, both situations are emergencies in this area. This matter has not been researched before, therefore this research identifies a great need for communication to get the information needed for decision making by different stakeholders involved in this flood emergency.

3.3 Research Design

Kothari (2004) defines research design as a plan that shows how a research will be conducted. This study employed exploratory research design; it was meaningful and culturally salient to the participants. The issue of floods in Bura East has not been studied before; climate change has made Bura prone to this calamity. Exploratory design helped determine the best data-collection method

and selection of participants and informants with relevant data. The study design was also iterative, because the researcher adjusted the data collection and research questions according to what was learnt during probing especially in the focus group discussions (Mack, Woodsong, Macqueen, Guest, & Namey, 2005). The design aided in identifying channels used by crisis committee to communicate to the community, and identifying the community sources of information. It aided in the analysis of the resistant behaviour displayed by community in times of emergency since it mainly focuses on situation analysis (Dudovskiy, 2018). The findings revealed the most appropriate channels to use to reach the community and effect behaviour change.

3.4 Research Approach

The study adopted the qualitative research approach which used key informant interviews, and focus group discussion as data collection instruments. The rationale behind the qualitative approach to the study was to provide more in-depth and more contextualised insights into how the community perceives the information they receive and why, in order gauge appropriateness of the channels used. The qualitative interviews provided "rich" information about why the respondents chose the channels they used and how the community perceived what was conveyed, challenges, feedback and relationships were also explored this agrees with Hennik, Hutte, & Bailey (2011),who postulated that qualitative data is rich in depth. In terms of research strategy, the research is inductive and used thematic interpretation to enable proper understanding of the data in line with the objectives.

3.5 Research Method

This study was an up-close, in-depth, and detailed examination of appropriateness of communication channels used by the crisis team members to communicate to the community in Bura East as well as its related contextual conditions. It specifically aimed to study the flood trends, responses and communication channels employed in Bura East area. The case study method was preferred due to attention to detail. The crisis team, for instance, had many assumptions that led them to choose the channels they used to communicate but the reality among the community members revealed reasons why those particular channels were inaccessible to them. Case study method therefore helped the study to zero in on very realistic responses (Shuttleworth, 2008).

3.6 Population and Sampling Technique

3.6.1 Target Population

A target population consists of individuals, events, organisations or entire society (Kothari C. R., 2004). The target population for this study is Bura East Ward which comprises 1492 people according to the 2009 census; this was projected to rise to 2036 by 2017. The project also examined the following crisis committee members; Kenya Electricity Generating Company Limited (KenGen), Garissa county Government representative, Kenya Meteorological department (KMD), Garissa County Commission, Kenya Red Cross societies (KRCS), Water Resources Authority (WRA), National Disaster Operation Center (NDOC) as key informants. Other key informants within the community included, school heads and health officers. The aforementioned targeted participants were more informed on this matter, plus they were literate, others have social economic interaction with the river and the area thus, their level of involvement during flood emergencies should improve with better communication. The community participated via focus

group discussions. Bura East is inhabited by agro pastoralists and most have settled along the River Tana permanently, making it possible for this research to use them as part of the study population. They also have direct interaction with River Tana because they do irrigation farming, and any effects from the river directly affect them. They also have experiences living along the river for a long time therefore they know how the flood situation on river Tana has been over the years.

3.6.2 Sample design

This study used purposive sampling to select its respondents because it required expert knowledge from various institutions and the community. The selected respondents are involved in developing emergency messages and or receiving them. This study therefore targeted those who have experienced flooding.

The study had 15 key informants drawn from a wide range of sectors. This was informed by the data needs of this study, the time and resources available. The researcher initially mapped out the Bura East population and created a list of possible key informants who are knowledgeable and closely linked to this community. Given the perennial nature of the floods in this area the researcher selected key informants who had first-hand knowledge about the community, and the flood risk situation. The crisis committee members chosen were emergency responders, who are first in and last out during flood events, relief organisations that help the community during such emergencies, government institutions used by the responders for refuge and communication purposes, experts in weather forecasting, organisations engaged in economic activity on river Tana that have direct impact on the community and government institutions whose core mandate is to

manage, the river. These individuals helped the researcher understand the motivation and beliefs of community.

The focus group discussion participants were selected based on their experience and knowledge living in this area. The researcher selected a group of 20 respondents that included four chiefs, elders, youth, and farmers and studied them in their natural setting as advocated by Denzin & Lincoln (1994). The farmers were selected from five community farms greatly affected by the 2018 floods. The focus group discussions were held in three sessions of 6, 7, and 7 participants each to best accommodate all opinions and give all a chance to participate.

Table 3.1 illustrates the composition of the sample, its size and percentile.

Table 3.1: Sample design

Population segment	**Sample**	**Percentage**
Key informants from; Kenya Electricity Generating Company Limited, Garissa county Government representative, Kenya Meteorological department, Garissa County Commission, Kenya Red Cross societies, Water Resources Authority, National Disaster Operation Center This study will interview only one manager from each organisation for the relevant category. Other key informants included 4 heads of Primary schools in the four locations of Bura East, 2 heads of secondary schools in Bura and 2 health officers from Mansabubu and Bura East health facilities.	15	43%
Each of the four locations of Bura East is headed by a chief aided by some elders. So this study incorporated all the 4 chiefs and 2 elders from each of the following villages; Jambele, Mansabubu, Guyo and Nanigi. Further the FGDs incorporated 1 representative each from the following community farms; Damaka, Rahma, Jambele, Bismilahi and Umoja farms. These farms were the most affected by the 2018 floods. Farmers lost their entire crop. Lastly 3 youth leaders participated in the FDGs, one in each session.	20	57%
Total sample	**35**	**100%**

3.7 Data Collection Procedures and Tools

3.7.1 Data Collection Tools

To achieve its three objectives, this study utilised primary data collected through focus group discussions and key informant interviews.

3.7.1.1 Focus Group Discussion Guide

Focus group discussions are frequently used as a qualitative approach to gain an in-depth understanding of social issues (Wong, 2008). The method aims to obtain data from a purposively selected group of individuals rather than from a statistically representative sample of a broader population. Focus group discussion guide was used to moderate the Fgds, and heavily relied on the moderator's interpersonal and leadership skills to steer the discussion in the right direction. They consisted of 7-8 participants who included elders, youth leaders and farmers. The researcher used open ended discussion questions. The focus group discussion guide is attached here in as appendix (i).

3.7.1.2 Key Informant Interviews Guide

These are qualitative in-depth interviews with people who know what is going on about a particular issue like community leaders, experts, professionals or even residents. Normally this people have who have firsthand knowledge about the community or the situation at hand using key informant interview guides. The guides consisted of a series of semi-structured interviews questions in a face-to-face interview. The key interview guide is attached here in as appendix (ii). In agreement with Hennik, Hutte, & Bailey (2011), depth interviews and discussions gave rich data suitable for this qualitative research.

3.7.2 Data Collection Procedure

The researcher purposively selected respondents that reflected experience in knowledge about floods, experience in the history of the area, experience in exposure to loss and damage accruing from the floods and experience in response to the flood emergency. This qualitative research was carried out in Bura East among the community members using focus group discussions; comprising of famers from five farms greatly affected by the 2018 floods, chiefs, youth and elders of the five villages along the river Tana in Bura East. The focus group discussions aimed to find out what was the community's source of information, challenges, collaborations and feedback. The insights in this helped the researcher measure the appropriateness of the channels, desired improvements and underlying issues. The full focus group guide is attached herein as appendix 1. This study utilised a research assistant to moderate the focus group discussion because of language barrier. Finding the quorum needed for this focus groups was not an issue, mainly because the community was cooperative. After obtaining a certificate of fieldwork from the University of Nairobi, attached here as appendix(iii), the researcher wrote to the Garissa County commission to gain permission to carry out this research, permission was granted and the letter communicating the same was issued to the chiefs and community leaders who then let the researcher gain access to the community.

The researcher wrote letters to all key informants organisations requesting permission to carry out this research, permission was granted and the relevant respondents notified. All the questions were handled flexibly by the interviewer who could also ask additional questions where necessary and had a leeway to add or reformulate questions, or drop questions that are repeated or answered

earlier on. However the interviewer tried to respect the structure of the interview guide attached as appendix 2.

Both interview and focus group discussions were fully transcribed by the researcher using the field notes.

3.8 Data Presentation and Analysis

3.8.1 Data Presentation

Qualitative data is not easily reduced to numbers, its data that relates to the social world like behaviors that cannot be quantified. Data was presented in a narrative format. Tables were also used to give clear details; they were well explained in the narration. The researcher selected quotes that were poignant and most representative of the research findings from key informants' interviews and excerpts from focus groups and used them to support what was presented in the in the narration and tables.

3.8.2 Data Analysis

Data analysis transforms data into findings by bringing order structure and meaning to the raw data. This process involved reduction of the volumes of the information, picking relevant facts, patterns and identifying a way of communicating what was discovered. The interview data were analysed on the basis of an inductive coding process that relied on the participant's experiences. Meaning expressed by one participant helped the researcher to understand and make sense of what came next from another participant due to what was emerging as shared experiences and contrasting realities. The data was broken down into a code book on MS word. The unit of analysis used in this research is a portion of a line and sometimes several lines this agrees with Saldana (2013) sentiments. The research identified patterns close semantically or connoting the same

concept. Then this similar data was grouped into subcategories from which themes were developed in line with the objectives of the study. The categorising derived the following themes: Information mediums, selection of medium, relationships, perceptions and Communication needs. The themes were described and supported by quotations in the final research report. Eventually an analysis of the themes was carried out to in line with the research objectives. According to Boyatzis (1998) themes are patterns found in the data that organises and interpret phenomenon.

3.9 Quality and Dependability of Research Instruments

This study used triangulation that involved two methods of data collection, interviews and discussions. This procedure revealed multiple constructions of realities amongst interviewees and focus group discussion participants. This different constructions of realities were contrasting and conforming; the views of key informants would sometimes agree with the community members' realities or contrast. This agrees with Golafshani (2003) who posits that triangulation is a validity procedure where researchers search for convergence among multiple and different sources of information to form themes in a study. In this study different constructions of realities helped the researcher find quality and dependable data via triangulation.

3.10 Research Ethics

All the respondent organisations gave their full consent to being interviewed. They were informed of the context of the study and how the data will be used. The interview data was coded to ensure neither the respondents nor other people they are referring to in the interview like other crisis team members participating in the same could be identified. The interview transcripts do not contain

any information that can link the interview data to the key informants also the demographic characteristics are not incorporated in the present report (Kothari C. , 1990).

The researcher acquired a Certificate of Field Work to certify that permission was granted by the University of Nairobi to collect data for this study (see Appendix iii). Attributions of all sources of information utilised by this study was done and confirmed by the plagiarism test run by the University of Nairobi as shown in the Originality Report (see Appendix iv)

Finally, the researcher conformed to the University's requirements by working on the corrections as advised by the lecturers during the defenses hence acquiring a Certificate of Corrections (see Appendix v).

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Overview

This chapter discusses the data analysis and findings from 15 key informants' interviews by disaster committee members and the focus group discussions with community members. The purpose of this study was to investigate what channels of information are best suited for emergency communication during flood disaster in order to elicit the right action from the community. The objectives of the study were; to examine the communication channels used by the crisis committee to communicate to the community about floods, to investigate the community's sources of information about floods and to examine the appropriateness of communication channels used in disseminating emergency information during floods. Data analysis was done via inductive reasoning using the data presented by the focus group discussions and key informants interviews.

4.2 Communication Channels Used by Crisis team

The word communication derives from the Latin word 'communis' meaning making common. When we communicate therefore we create a common bridge to exchange ideas, feelings and thoughts. (Sigband,1995) posits that communication is the transmission and reception of ideas feelings and attitudes both verbally and nonverbally eliciting a response. This research sought to investigate the communication channels used by the Garissa crisis team to communicate during the 2018 flood emergency. The data from key informants' interviews revealed four main categories of communication channels used by the crisis team, namely; broadcast media, interpersonal media, ICT communication tools, and print media. The four are well explored under the theme of Information pathways.

4.2.1 Information Mediums

Information medium involves content and the object through which that content is delivered a medium therefore is an element through which a message is communicated. This theme addresses objective one, it shows the channels used by the crisis committee to disseminate information to the community. The results are well demonstrated in table 4.1;

Table 4.1 Communication channels used by the crisis committee members

Medium used	NO of Respondents using the medium	Total NO of respondents
Radio	6	15
Television	4	15
News Paper	4	15
Short messaging service/SMS	4	15
Calls	4	15
Apps	2	15
Letters	4	15
Social media	1	15
Emails	3	15
Imams/mosque/churches	3	15
Chiefs	15	15
Loud Speakers	1	15
Outreach programmes	1	15
Sensitization campaigns	1	15

Table 4.1 above shows that chiefs were most preferred mediums of communication; all the respondents used them to disseminate information, followed by radio, Television, and Newspaper, Sms, calls and letters enjoyed the same preference levels among the respondents. 3 out of the 15

respondents used emails and mosques. Only two respondents used Apps, while a single respondent utilised loud speakers, outreach programmes, sensitisation campaigns and social media. The theme of information mediums was explored in four lenses; broad cast media, interpersonal mediums, ICT mediums and Print Mediums

4.2.1.1 Broadcast Media

Broadcast media includes radio and television; it's an expedient means to transmit information immediately to a widest possible audience. Media companies have extended the meaning of broadcast media to include internet streaming of media content but for the purpose of this study broadcast will refer to television and radio only. Broadcast media is a one way communication path; the audience rarely has a chance to give feedback.

6 out of 15 key informants' respondents used radio and television as channels to disseminate information to their fellow crisis team members and to the community. Most of the team members opting for this option had the capacity to absorb the high media costs accruing; they argued that TV and radio gave them the reach and urgency they wanted to disseminate this emergency communication. Three out of 6 crisis committee emergency responders 'organisations argued that they used radio because they could reach most of the community members owing to radio's wide reach. One of the users reported using radio and television because their organisation communicated at a very high level and thus enabled them to reach the whole country faster. One member of the crisis team said they preferred the two mainstream media because they were believable, over time, the two have gained prominence in society, and many people believe if some piece of information is featuring on news chances are it is true. Local FM stations were an added

advantage that all the 6 informants agreed had eliminated language barriers and enhanced familiarity and comprehension. The key informant also revealed that the two mediums having been around for quite some time were familiar to the audience. One of the members added that the radio is very affordable and many people in the community had one, so they were sure majority were receiving the information they shared via radio. The following quotes from key informants demonstrate some of their sentiments regarding radio and television preference;

"We use radio because we reach many of them." (KI 007)
"We communicate at a high level so we use television." (KI 004)
"We communicate through the radio because of its wide reach." (KI 003)

On the other hand the community thorough focus group discussions cited their sources of information in the broadcast category as only local FM stations and on rare occasions the television. Most said they did not have radios and worse still, during floods there was no electricity. Sometimes the utility lines would be swept by the floods and they would stay for long without electricity. In addition, the area they inhabit is not meant for permanent habitation, so part of it, like Nanigi are no connected to the power grid. With no electricity they cannot power the television and radios or charge batteries and phones to access FM radio. Most also argued that television was expensive and only very few could afford it .Illiteracy was another stumbling block for this community, majority agreed that they were not very educated to understand all they hear on radio and complained that the area also had very weak fm radio frequency. Those who had radio and were educated to understand, added that they trusted the radio but would still seek to know what the chief or the imam said about the issue on radio. When asked why they did not use the other two options in the broadcast category they answered as quoted below;

Q: Do you access radio and television?

P4: Sisi radio wengi wetu hatuna (most of us do not have radio).

P10: Stima ni shida (We have no electricity).

P2: Huku hakuna miyale ya radio (there is no frequency for radio).

P8: TV ni dhahabu huku kwetu wachache tu wako nayo (Television is gold here, only a few people have it)

P1: Sisi hata tukaskiza tutaelewa? Sisi si wasomi, wengi hapa hawaelewi kinachosemwa (if we were to listen, would we understand? we are illiterate...Most of us will not understand what is being said)

From the two results above its clear that not all communicator's choice of channel is accessible to the targeted audience, in this case the community. This findings agree with NORC (2013), findings during Super Storm Sandy that revealed; in times of disaster, affected individuals' communicate with low technology. During this storm residents of New York and New Jersey reported using low technology and high interpersonal communication to reach for help. Those greatly affected used interpersonal means, there was infrastructure damage, and literacy levels determined the communication tools that could be accessed by the affected. Therefore communication tools are not universal across all demographic segments and utility of some communication tool deteriorate in disaster situations. During super storm Sandy, there were extensive power outages and downed cellular service.

Similary, in Bura East the radio and Television frequencies were reportedly very weak if not completely out. Furthermore, few could afford radio and fewer could afford television. Those with FM radios on their phones spared the batteries in case they take the herds far to graze and also because some parts like Nanigi have no electricity and solar points are far. Illiteracy was also a

barrier to this communication. Interpersonal means of communication was widely used by many to seek help and information.

The radio and television are both familiar and believable. The radio has a wide reach covering even remote areas it's more affordable than Television and convenient to listen even in not so comfortable situations. The local FM stations, tendency to repeat news throughout the day meant that the listeners had to take heed of what was being said. Repetition is a feature of style employed by the classical rhetoric theory of Aristotle to enhance clarity and memory in the targeted audience. It's not easy to forget flood warning if they feature every hour, eventually the target audience takes heed. The following excerpt best explains this sentiments, the famer from the focus group discussion was referring to flood warnings on a local fm station he had listened to.

Q: What was the frequency of the messaging?

P 18: Hiyo wakati hili janga la mafuriko lilisemwa sana mpaka tuakaanza kuamini.

(That time this flood disaster was repeated so many times until we started to believe)

Television on the other hand has limited reach due to affordability and infrastructural barriers as cited by the community. However, in agreement with Aristotle's theory of rhetoric, the crisis team's decision to use television was informed by the audio visual capabilities, they could employ imagery to enhance delivery and perception. Classical rhetorical theory of Aristotle emphasises on packaging the message in such a way that it evokes emotion on the target audience. The few in the community who watched the raging waters of the Tana drowning people evacuated and urged their friends to do so. The quote below from one of the youth leaders in the focus group discussion attests to this;

P11: Mimi nikiwa Garissa wakati ule niliona runinga ya Nation, nikaona mama amezama mpaka shingoni, nikaambia jamaa zangu wasingojee ifikie hapo, wakahamia huku juu (I was watching Nation TV while in Garissa, I saw a woman had droned up to the neck, I told my relatives no to wait for the same fate, they moved to higher grounds).

4.2.1.2 Interpersonal

All respondents had used chiefs to communicate to the community; other means of interpersonal communication employed included outreach programmes, sensitization campaigns, and Imams. They engaged in dialogue at county level and what was discussed and agreed upon was shared with the community through chiefs and imams. These chiefs and imams are not part of the steering group so to reach them; the information followed a chain link via county leadership and county commissioner.

All the key informants agreed to have used the chiefs and imams to communicate with the community. School heads of both secondary and primary schools in Bura East area reported to have communicated to the parents of their students during school meetings and also through the students. Flood information shared during school assembly would reach the parents after school, health officers also shared informed with those who visited the heath facility and urged them to tell others.

Other crisis team members reported to have held sensitisation campaigns before the floods and had community outreach programmes within the area to try and raise awareness of the flood situation. Below are some the quotes to exemplify this;

"We talk directly to parents during school meeting and also send the students home with the flood information to relay to parents. We have outreach programs to reach the community" (KI 015).
"We conduct sensitisation campaigns before the floods come and send information through the imams and chiefs." (KI 009).

The community main source of floods information was the interpersonal medium; this was also the communicators' preference. This findings agree with the NORC (2013), findings which revealed that during emergencies the affected people best accesses the interpersonal channel of communication for information needs because its available and does not depend much on technology which fails during such disaters.

In interpersonal communication, Aristotle theory of rhetoric concerns itself with the 'how' of what is being said. During emergencies it's very important for the communicators to know how to format the message to evoke the right emotion, pathos is employed to put the target audience on the right frame of mind in order to perceive the risk, words are chosen correctly in a language familiar to the community. Interpersonal sources can use nonverbal communication to evoke emotions of fear and make the community members perceive the flood risk as an emergency and take appropriate action. Also ethos is employed by ensuring people familiar to the residents are the message bearers. Having lived in the community the chiefs and imams understand the needs, feelings, attitudes beliefs and most of demographic characteristics of the community members , they can therefore empathise with the community members. These are also credible people with positions of authority who are trusted by the community already. Trust is very important is a message is to be perceived in the intended manner. People tend to trust messages from trusted sources.

4.2.1.3 ICT Media

Information, communication, and Technology (ICT) refer to tools used to create, store, disseminate, and manage information. ICT is broad enough to encompass, Television, radio and newspaper however for the purposes of this study tools covered under ICT comprised of mobile phone, computers and internet. Information out put included, calls, sms, emails, chats, updates and tweets. Key informants have embraced ICT and reported using, SMS, apps, social media, mobile phone calls, emails and loud speakers to communicate to the community.

Two of the respondent reported using Apps; one used Whatsapp to give updates to community leaders and conformed receiving videos and pictures from the community. They shared the photo graphs of the situation they were in. Another key informant said their organisation had an app that was updated by the minute with fresh news, one key informant confirmed they used sms to communicate to the community; they sent warning messages guiding the residents to evacuate. Another respondent conformed that their organisation received negative criticism on social media and was quick to add that they used that to improve on the areas that had been pointed out. All fifteen respondents confIrmed to have called the chief and shared information or sought clarification, shared emails amongst the crisis team members and one team member used loud speaker mounted on a car to move around the village telling people to move to higher grounds.

Here are some of their sentiments on the use of ICT from key informant interviews.

> *"We use Whatsapp for updates and community members share events as they happen" (KI 001).*
> *"We send sms". (KI 004)*
> *"Our app is updated by the minute" (KI 003)*

When communicating with each other, ICT is surely fast and desirable, followed up with a call to ensure the message was delivered and the required action taken. However, when communicating to the community, the stakeholders may not do follow up to check if sms they shared were received and action taken. To communicate is to share information that can be understood by the receiver; the sms may show delivery report to a receiver who is too illiterate to comprehend. Social media criticism shared taken positively can lead to improvements. The loud speaker concept definitely communicates using local languages they reach many people and the message is also instantly delivered. This one leaves no doubt, but are there roads to reach the community? Responses from the community on ICT indicated that they had not embraced ICT use at the time this study was being conducted; the following excerpts demonstrate this;

Q: Do you know how to use apps and sms?

P9: App nini ni? (What is an app?)

P1 I: don't know how to read the sms

P17: I cannot afford the internet"

P12: Sijui kutumia hiyo happ…yaitwa nini? (I don't know how to use a happ. What is it called)...Waves hands up in the air in confusion and laughs

The level of poverty and literacy in this area puts ICT out of reach for many of the community members, they can hardly afford to buy data to access the Apps, worse still many cannot read and that why they rely on what is read and interpreted for them by the imams, youth leaders and chiefs. Most do not even know what an app is.

If only the community was to fully embrace ICT and take full advantage of the rhetoric in ICT, there would be continuous learning, sharing, participation and a very efficient feedback loop. Social media and Apps allow for all to participate, give opinions and seek opinion; dialogue happens on social media, it has become a public sphere enabled by internet and gadgets like phones and computers powered by internet. Participatory communication theory advocates for such freedom of ordinary people joining the debate and contributing, those who share videos of situation of the ground help create content and seek help from the relevant authorities. This participation is emancipating. Rhetoric features in ICT inform of repetition, tweets are retweeted all day long, and chats are forwarded and shared in the same measure. As long as one has a smart phone and airtime to access, the information placed online is so much presenting opportunities for persuasion. Videos and pictures on the apps that are constantly updated similarly provide visual rhetoric that evoke emotions, and in turn elicit action (Zappen, 2009).

This study agrees with the findings of a study in Europe where despite the internet gaining popularity as communicating platform due to its freshness and timelines it remained a reserve of the educated and the young (Klose & Wagner, 2009). Similary the tools chosen albeit fast , efficient and rerliable are not accessible to all the the target community members.

4.2.1.4 Print media

Only four of the key informant's organisations used print media, mostly government institutions and the organisations communicating at a high level to the media and to other stakeholder organisations. Some quotes on print media by key informants;

> *"As a government institution we use letters a lot."(KI 006)*
> *"We communicate at a higher level using the newspaper."(KI 008)*

"We prefer nationwide detailed coverage, we therefore use newspaper."(KI 002)

The community on the other hand hardly got information from the print media, Participants claimed they did not know how to read and came across newspapers in Garissa town; letters were not popular here too. The following sentiments on the same from focus group discussions

P7: Gazetti naionea Garissa huko, huku hakuna (We only see newspapers when we visit Garissa town)

P13: Barua...Hapana…. (Letters no)

Print media is very appropriate for giving broad background information with depth, more so when one wants to provide evidence and logic. One of the crisis team member organisations was accused of causing flooding down the Tana Basin, whereas their actions were in mitigation it was not easy to explain the same to community. Using print media the organisations was able to defend its actions by offering the reader an evidence based reasoning of its activities. Here we see the theory of rhetoric being employed in form of logos.

Elsewhere around the world, similar cases of blame and counter blame concerning floods and communication or lack of it among all stakeholders are abounding. In 2009, the A Vuong hydropower dam in the central province of Quang Nam released 150 million cubic meters of water during Storm Ketsana, worsening flooding that killed at least 163 people and caused over $786 million worth of damage. In 2013, water discharged from nine hydropower dams was blamed for

worsening flooding triggered by a tropical depression that killed 41 in the central region, which has the most hydropower dam projects in Vietnam (VnExpress, 2016).

4.3 Community Sources of Information on Floods

The community comprised of four focus group participants; chiefs, elders, and farmers. Their various sources of information are demonstrated in the table below;

Table 4.2 Community sources of flood information

Sources of information	NO of participants using	Total NO of participants
Imams	40	45
Chiefs	37	45
WRUAs	33	45
Youth leaders	30	45
Farmer groups	25	45
Bandas	20	45
School heads	13	45
Health officers	10	45
Sms	10	45
Local fm stations	6	45
Television	4	45

Forty participants, out of the total 45, got their information from imams and Chiefs, WRUAs and Youth leaders followed in popularity. All the 25 farmers from the two farmer focus group discussion reported getting flood information during their farmer meetings. 20 participants intimated they got information from the village bandas where they sought shelter most afternoons from the scorching sun and engaged in discussions. School heads and health officers were also sources of information for the local community members, the head teachers sent the students home

with messages for their parents and at times communicated directly to them during school meetings.

On the other hand the heath officers were also sources of information to those who visited the health facilities. Other sources though not prominent were local FM stations, sms and television. From the foregoing it's clear that the community got most of the information on floods from interpersonal sources. In this case one of channels, 'chiefs', used by all the members of the crisis team to communicate to the community matches the source of community information under interpersonal sources. This indicates a degree of success in information dissemination and provides opportunities for the crisis team members to utilise other credible information sources within the community like Imams, Youth groups and WRUAs who were influential, accessible and trustworthy. The following excerpt from FGDs demonstrated this;

Q: Where do you get information on floods from?

P2: Chief huwa anatuelezea (the chief tells us)

P5: Imam Msiktini (Imams in mosques)

P19: Viongozi wa vijana huwa hawachelewi kutupasha haya wakienda mtandaoni wanajua (Youth leaders are keen to inform us about such things, when they visit the internet they know)

P20: Village bandas or hotels in the afternoon when the sun is too hot we sit have coffee and chat about such news

P16: From school heads and health center, they warn us about diseases that come with the floods

From the above sentiments from the community it's clear that though the chief and imams are entrusted with much of the information by the communicators there are other avenues with reach, credibility and influence in the community and they are literate too.

The community has embraced interpersonal means as the main source of information, chiefs, and imams. Youth leaders, bandas (public shade where the men gather later when the sun is too hot to rest and discuss issues over a cup of tea) school heads and health officers. All the other information pathways like sms, radio and television have minimal use due to accessibility and usability factors. However, all this communication channels should be used together to enhance the weight of the messages and embrace the use of other quicker means. The youth can access Whatsapp or Red Cross app get urgent messages call the chief and imams to rely the information.

These means are preferred by the community because they are familiar to them and more so the people used as message bearers have influence in society. This approach agrees with Aristotle's theory of classical rhetoric where the deliverer of the message must be credible and familiar thus trusted by the receiver. It anchors on ethos, the fact that the sources live among them makes it even easier because they understand culture and can overcome barriers of religion and culture, by finding words to encourage them to take action, they can also repeat the messages many times through imams baraza and bandas, thereby employing pathos.

This sentiments agrees with findings of a study cited earlier in chapter two of this study that posit that continuous engagements encourages community members to ask questions about the expected hazards uncertainty and protective measure and to meet their needs and expectation. Regular interaction among key stakeholders clear all doubt and enhance community empowerment that is a recipe to flood risk preparedness (Abunyewah, 2016). All these teams including farmer groups and WRUAS can drive this initiative and have repetitive outreach programs within the community, in their language, within their locality and with familiar people. Once the emotional connection is established people definitely reason and begin to take the required action.

4.4 Appropriateness of communication channels

4.4.1 Selection of Communication Medium

Selecting the medium of communication to use greatly depends on the nature of the message. For instance some messages are routine while others are urgent Affordability is another huge determinant of the channel to use, the cost of sending that message on the part of the sender should be considered but the cost of receiving should also be factored in when communicating to the

community, Both the sender and the receiver must have supporting technological support ,the means used should be reliable to ensure that message reaches its destination.

Theme two addresses the third objective; it compares and contrasts the factors influencing the selection of medium for the communicators versus the reality on the ground for the target audience. Is the communicator's convenience overshadowing the essence of communicating to the target audience? The sub themes below explore the appropriateness of their chosen channels.

4.4.1.1 Assumption versus Reality

In emergency situations almost all of the messages sent out are urgent, in this particular study most of the key informants asserted that they used the fastest method to convey information. They used Apps, loudspeakers around the villages; they called the chiefs and sent out sms to the community members whose phone numbers they obtained from the chiefs. In doing so they believed that this was the ideal way to communicate this urgent messages on time so the community can act in good time, below are some of the excerpts from key informant interviews

> *"We do real time location based push notifications on our app during emergencies, updated by the minute. We also use loud speakers around the villages to notify them, call the chief, and use sms, this way, the information moves faster" (KI 003).*

On the contrary the community reported receiving late information on floods, and there was no enough time to salvage anything. They intimated that the loud speaker would have been good if it had been able to reach them, they added that during the floods the roads were impassable and the loudspeaker mounted vehicle could not reach them. They added that due to bad radio frequency they tended to get stale news. Most said they did not know how to read or use apps. The following excerpts from FGDs demonstrate this;

P3: The information comes late

P7: We relay the information as soon as we get it, One of the chiefs reiterated.

P4: I don't know how to read.

P14: Kusema ukweli hakuna muda wa kutosha kuhamisha vitu vyetu (there is no enough time to move our things).

P17: Kungekuwa na njia ya kujua ni nini tunaweza lima isipatwe na haya mafuriko (.if there was a way to know what to farm to avoid the floods)

P8: Hakuna frequency mzuri na ikiwa utaskia hii habari, hii mafuriko ikiwa (no clear frequency and if you get you find stale news, the floods will be upon us)

P20: Hii loudspeaker sijaiona mimi, labda Garissa town. Huku gari tapita wapi, wakati ya mafuriko barabara haipitiki (I have not seen the loud speaker, during the rains the roads here are impassable they cannot reach us)

From the two groups of quotes the communicating stakeholders chooses very fast means of ICT communication tools, sms are very fast, Whatsapp, calls, other apps. In deciding this communicators assume the target community has the supporting technology needed, knows how to use, and has money to buy air time and most of all will understand the urgency being communicated.

Most of the key informants assumed that many of the community members had phones and could afford airtime. Below are some of their sentiments on the availability of their choice of communicating medium;

"Most can afford phones and know how to use them" (KI 002).
"Air time denominations are as low as kshs 20" (KI 007).
"Chiefs live among them" (KI 003).

The community however felt some of the communication mediums were unavailable to them due to illiteracy and poverty. The quotes below demonstrate this;

P6: Most times, I do not understand sms

P13: Sometimes there is no money to buy airtime

P9: Some people do not have phones

Besides lacking money to buy airtime the community also indicated infrastructure failure as a hindrance as most times there was no electricity and solar points were far;

P9: No electricity to charge phone in Nanigi, solar too far

P7: I charge my phone but use sparingly to monitor the herders

P11: Electricity during rains and floods is a big problem

Comparing the two definitely spells disparity on the choice of medium used and what the community can afford to buy and be able to use .Infrastructure development is also a barrier, if there is no electricity they cannot charge phones, and if they are not literate they can also not read and understand what has been shared. The mediums are therefore inappropriate if most of target audience cannot access them.

The cost of channel is a key factor to consider for the communicators but similar considerations should be given for the community, they should be able to able to pay access fee to view the asps, sms and to own the gadget through which to view. Meanwhile target audience may have the phone

but fail to understand the message because they cannot read. This creates a ripple effect because one who cannot read sms cannot navigate an app. Poverty is another obstacle, they can hardly afford gadget and airtime yet most of the communicators believe the phones are cheap and affordable. So ultimately the means chosen may not be available to the community members.

They insist the radio frequency is poor and the news come a little bit too late. Farmers would wish they received the news earlier to harvest or to know what to plant and when. The poor infrastructure does not favour the communicator since when it rains the roads are impassable, loud speakers on cars cannot reach the villages. The issue of usability, literacy levels and infrastructural failure has featured again. From the foregoing it's clear that the two are not on the same page, the communicators, choice is not fully serving the target audience but it serves their mandate to disseminate the information. If a message can be delivered instantly but not decoded then communication is cot complete and therefore the tool used is inappropriate.

The theory of rhetoric is not applied by the communicators in that they failed to understand the community so as to adopt the right channels to communicate to them. Rhetoric is the way communication is directed towards a particular target audience to achieve an intended goal. Purpose of the messages and the audience are therefore crucial, the messages for this study are designed to communicate for the purposes of inspiring action. The target audience, characteristics ought to have been known, their feelings, and expectations. Bad choice of the channels alienates the community from the messages. A good audience research would have revealed the channels most appropriate to use. Youth leaders accessing ICT communication tools could have been used to spread urgent messages through imams.

4.4.1.2 Doubts versus Trust

For any message to be considered received by the target audience it has to be understood. Credibility is built on trust, if the target audience trusts the communicator they tend to believe and take action. They need to be approached by someone familiar to them and mediums of communications familiar to them as opposed to peculiar. Key informants from communicating organisations believe that the community trusts them because they mean well and are there to help them. The target community also agrees that they trust the chiefs and imams, they are familiar to them, they trusted some messages too but were quick to point out that they could not read messages and those who could read tended to call the communicators hotline to confirm or the chief or later listen to radio. These doubts definitely spell diminished trust. Some of the key informants had this to say;

"They trust our good record". (KI 005)
"We help them" (KI 011)
"We mean well".(KI 014)

Some of the community members from focus group discussions had the following weighty remarks;

P8: Where does Garissa start and where does Tana River start?

P11:Hii eneo ndio tegemeo tu (this is our only hope)

P15: If we move we will be displaced

At this juncture the researcher investigated more to understand some of these sentiments and after a lengthy discussion the following underlying issues were revealed.

4.4.1.3 Underlying Issues Informing Doubts

The 2010 constitution of Kenya, Article 62: Public land sub article (L) states that land between the high and low water marks is public land. The larger productive area of Bura East lies in such an area a stretch from Mbala Mbala to Kipini, in between lays Nanigi, Jambele, Mansabubu and Guyo. Hola in Tana River is a basin. Further, this area is a wetland, its productive throughout the year. Its inhabitants are the Malakotes and Pokomo Bantus from Tana River, the Cushitic Somalis of Garissa. Bantus are farmers by orientation whereas the cushites are pastoralists by orientation. The languages spoken are Somali and Swahili, their current main preoccupation is farming which they embraced as a fall back plan after droughts wiped their herds. This wetland is productive and none of the counties can lay claim to it. So the Malakotes of Pokomo may feel unwelcome moving to high grounds into communally owned Somali lands, and it is the only option because by then, Hola, which is a basin, is fully flooded. On the wetland they build temporary shelters because it's not for human settlement they are only supposed to farm when it's safe.

Enforcing this rules is not easy where there exists inter county wrangles on where the border between Garissa and Tana River lies.

4.4.1.4 Unfamiliarity Breeding Mistrust

The discussion continued on text messages, the community members asserted that they failed to trust one source and had to confirm from another because of lack of clarity that left them confused, not knowing which action to take. Other times they were just doubtful and wanted affirmations from people they were familiar to. Below are some of their quotes;

Q: Do you trust your sources of information?

P7: We confirm because sometimes we are not sure of the action to take

P10: Sometimes we receive messages with clear instructions but no affirmations from those we trust.

The researcher requested for clarification on this an example of such a message, and the sample text is as below, the person went on to explain why the text below was not as straightforward as it appears. Albeit the sms being clear the residents claim if they received it before they heard from their chief they did not take any action since the sms does not even specifically address the Bura residents. The sms below is not customised as they would like.

Below are some of the quotes demonstrating their sentiments on the above text message

P18: Hii sasa ni mzuri, lakini unaipata hii na hujaskia kutoka kwa chifu utaelekea wapi, saa ingine tunakaa tu (Sometimes you get this good sms but you have not heard from the chief, on where you are to move, we just stay)

Another one added;

P4: Hii haiongei kuhusu sisi watu wa Bura. (It's not speaking about us Bura residents)

The sentiments from the some of the residents indicted doubt, anxiety and ignorance. Looking at that text message one would assume it is simple and direct but to some of the community members who claim their trusted chief or imam may not have communicated about moving, a lot is left unanswered. They also insist it not meant for them because it's not addressed to Bura. Maybe the messages should be customized in order to resonate with them. In addition it's hard to trust when there many unresolved issues.

Factors like urgency, availability of channel, cost and credibility influenced the selection of medium to communicate to the community. The key stakeholder convenience overshadowed the reliability of the medium chosen especially in ICT, broadcast, and print media. This very fact proves some of the channels used were ineffective but Interpersonal channels were effective because they employed ethos and used people familiar to the community members. In future incorporating other channels after establishing their reliability would provide richer and faster communication. To do so the communicating organisation must learn and understand the communities well in order to know which channels work best by understanding the barriers to these channels. Audience research is important Pathos appeals bring human experience and touches the heart, the ability to empathise is crucial, but then again the communicators can only empathise if they understand the underlying issues facing this community.

Understand that albeit sending out these seemingly clear messages they are not decoded as expected because the community is doubtful. The doubts arise from unresolved issues within the communities and breed resistance. These findings agree with the findings of a research done in

Europe indicating that flood risk communicators should develop information tools that meet the demand of different user groups (Klose & Wagner, 2009).

4.4.2 Relationship between the crisis team and the community

This theme addresses the effects of the relationships between the communicating organisations and the communities**;** it is interrogated through the lens of community participation.

4.4.2.1 Community Participation

Key informants asserted that crisis team members collaborated in information gathering and dissemination. They dialogued in the crisis team and involved community in information sharing. They were quick to point out that religion was a major hindrance to communication. The quotes below from key informants' interviews best exemplified this;

> *"We collaborate with other key stakeholders and dialogue on the county steering group" (KI 010)*
> *We involve the community they even share pictures and videos on Whats*app" (KI 004).
> *Sometime, religion is a barrier to communication"* (KI 009).

The community members asserted that communicators only told them what to do and sometimes listened to them. Some participants intimated that the WRUAs sometimes represented communities in dialogues. A section of participants claimed only God could control the floods. Most participants from the Fgds asserted that they had a reason to stay on the wetland and that the communicating team should understand them. Below are some the excerpts;

Q: Are you involved in collaborative communication with the crisis team members?

P12: They tell us what to do".

P9:Saa ingine wanatuskiza (Sometimes they listen to us)

P1:WRUA zetu huwa zatushikilia sana kwa mazungumzo (our WRUAs represent us in dialogue)

P4: Allah pekee ndiye anajua hatima ya hii mafuriko. (Only God knows the way the flood will end).

P17:Sisi kuna kile kinatufanya tukae hii mahali… hii mahali twapigania pia, watuelewe.(We have a reason for staying here...We even fight to be here. They should understand)

After more discussions the same issues of border and wetland management emerged. The fear of being displaced is real. The lack of alternative to farming and the lack of crop information are all unexplored community needs that breed resistance, ignorance and indifference. Some other participant added that the wetland was their only hope that even though they evacuated they did so unwillingly because all they owned were the crops on the ground and not ready for harvest. They complained on the lack of crop information to allow them plan what to plant. Below are some of the excerpts;

P6:Ndio, na sisi hili eneo ndio tegemeo, tunaondoka lakini saa ingine kila kitu yako iko chini ya mchanga (Yes but for us this is our hope we normally move but sometimes everything you own is under the soil)

P13: Hakuna wa kuelezea tujipange aje manake mafuriko huja kila msimu (there is no one to show us how to plan because the floods comes every time it rains).

The key informants insisted there was collaboration with the community, but some community members felt this was not the case while others felt they were not involved. There also seemed to be other underlying issues that needed to be understood by the communicators and addressed in a manner that resonated with the target community. The communicator should employ empathy to best understand these underlying issues.

Amongst the crisis team organisations there is collaboration and full participation, they actually have a county steering group convened by the county commissioner's office and comprising the major stakeholder organisations. They discuss, assign roles and plan coordination during flood emergencies. Chiefs do not belong to this steering group; they get the information from the county commissioner's office. The team also email and call each other. They say they involve the community but from the sentiments of the community this may not be the case. The source must understand the audience and involve them at the level of empowerment participation. This creates capacity even for future events. It creates champions, and a lot of learning goes into it (Servaes, 2008). The communities already have social groups like farmers, youth, and WRUAs which communicators could engage this resonates with the Participatory communication theory which advocates for an informed representative sample from the community. This findings agree with findings of a study conducted at the African Sahel, where the community's indigenous knowledge was sought in a participatory manner to help understand their resilience. n Burra's case, an audience research, and eventual participation would help reveal their vulnerabilities (Nyong, 2007) The level of participation is surely not yielding much success, the ordinary community member is yet to be heard.

4.4.3 Perceptions

Perception is perfect way to gauge appropriateness of communication channels. Situation at the time and past experiences are perception influencers whereas feedback is determined by perception**.** At the onset of the focus group discussions, the researcher sought to understand the community's perception of the flood risk in Bura East. After some discussion on what floods were. It was clear that most understood what a flood was and claimed it was a perennial activity in that area. Table 4.3 displays sentiments from focus groups.

Table 4.3 Community understanding of floods

Focus group participants	Sentiments on what is a flood
P10	Maji mingi kupita kiasi *(*a lot of water more than normal)
P2	Maji ya kuzoa mimea.(water uproots plants)
P13	Mto Tana hufura zaidi (river tana swells exceedingly)
P17	Maji mengi (a lot of water)
P12	Maji ya yajaa pahali kote (water fills everywhere)
P3	Maji maharibifu (destructive water)

Further probing to find out if they felt at risk of flood disaster revealed that, most took the matter lightly and as a common occurrence, the fact that the 2018 floods were more destructive didn't seem to inform otherwise. Table 4.4 displays their sentiments on whether they felt at risk of flood destructions.

Table 4.4 Community perception of flood risks

Focus group participants	Their sentiments on if they felt at risk during the floods
P19	Kila mwaka mafuriko yaja, ila hii mwaka imezidi (every year the floods come but this year is too much).
P1`	Mimea yaadhirika tunapanda ingine (crops are affected we will plant again)
P16	Kila mwaka napoteza mimea, hii mwaka hivo hivo.(.every year I lose crop , this year the same thing)
P11	Ya mungu haya, itapita tu kama kawaida.(it's God's will , it will come to pass as usual)
P20	Unajua hii mafuriko yaanza zamani ila ya hii mwaka imezidi. (You know this flood started a long time ago , only this year it's too much)
P6	watu wa msalaba wako kusaidia hawa…(the people of the cross are there to help these people)
P4	Mafuriko hii imekuwa (floods have been here)

From their sentiment s above they seemed to accept that floods come and affect their crops but they start all over again, they were a people resigned to their fate. The excerpt below best exemplifies how situation at the time affect the community's perception of the floods. Such attitude of indifference breeds resistance

P17:We have no alternatives but this…farming, after droughts has almost finished our animals now this is our fall back plan.

The communicating organisations assert that they understand the perennial nature of floods in this area and always communicate to try and mitigate the same. They were quick to add that the 2018 flood situation was intense and that the community needed to change its perception of this risk .Below are some sections from key informants' interviews;

> *"We see flood all the time, but this year the damage was a lot, they need to fear this occurrence not to view it as an everyday thing. We need to repeat our messages until they begin to take timely action" (KI 012)*

The crisis team members and the community agree on the fact that floods are perennial in this area, crisis team however understand that due to climate change and prolonged silting of the Tana basin the magnitude of the floods will vary and the destruction may increase, that's why they say that the community need to fear the floods, not take it like just another perennial occurrence. They should employ imagery, exaggerations, and words that connote fear in their communications to the community so as to instill a sense of responsibility and fear of loss. The culture of dependency encouraged the lack of fear of loss. These people knew they would get help after the floods; they have no sense of personal responsibility at times.

The community's past experiences with the floods clouds their perceptions, the floods have not wrecked much damage before so they not alarmed. Past experiences should deter the communities from resistance but in Bura the perennial nature of floods which have not caused much damage like the 2018 one has made them reluctant, unlike in other areas like Manawatu-Wanganui in New Zealand where the floods wrecked so much havoc, that communities are now championing mitigating strategies and cooperate in implementing what is communicated. Loss has taught them

the hard way (Wim Kellens, 2012). The crisis team intensifies communication during this period in a repetitive manner, employing the classical theory of rhetoric to try and change perception of the community members.

4.4.3.1 Feedback

The crisis team members also get information on floods from their fellow team mate organisations. KMD for instance would inform all the others on impending heavy trains. Table 4.5 outlines some of the actions taken by the crisis team members.

Table 4.5 Crisis team feedback

Action	NO of mentions	Total NO of respondents
co-ordinate resources mobilization by communicating to other crisis team members	I	15
Increase alerts	2	15
Activate the mitigation committee	10	15
Redistribute information received from other stakeholders	1	15
Some stake holders engage in blame game	2	15
Engage in consultative dialogue with parents and other stakeholders	2	15
Customise the messages to suit the situation	1	15
Share current status with other crisis committee members	4	15
Educate on sanitation and first aid	2	15

Table 4.5 shows that out of 15 crisis team members 10 joined the dialogues on the crisis team and4 of the respondents shared current status of the flood situation. Education on sanitation, engaging in consultative dialogue with parents and increasing alerts shared the same level of mention with two respondents each. Message customisation and coordination for resource mobilization shared same level of single mention each. Two of the team members reported receiving blame. The table below depicts the feedback the crisis team got from the community after releasing this flood emergency information.

Table 4.6 Community Feedback

Feedback	NO of mentions	Total NO of respondents
Resistance	10	15
Criticism	1	15
People move to higher grounds	4	15
Disease outbreak	1	15
Calls to confirm via hotlines	1	15
Shared images and videos on WhatsApp	1	15

Table 4.6 shows that 4 respondents mentioned people move to higher grounds and 10 mentioned experiencing resistance as part of feedback they got after releasing the information. One of the stakeholders mentioned that community members called hotline numbers, another one mentioned that community members shared flood images and videos via Whatsapp. One member mentioned experiencing backlash on social media while another mentioned receiving new reports of disease outbreaks.

The feedback from both groups is well displayed in the tables above. The key informants respond positively while the community has mixed reaction, there those who wait before they respond to confirm from other sources, others resist while others hope God will not forsake them.

Action or feedback elicited is highly dependent on how the message was perceived. Effective messaging rarely encounters resistance or delays in giving the expected feedback. The community's situation at the time, lack of alternatives, prior experiences all inform perception and determine feedback. If communicators utilise logos, ethos and pathos effectively the feedback is bound to be positive meaning the communication was successful. The key stakeholders using ICT have no way of knowing how their messages are decoded, and these findings conform to the findings by Spiekermann, on the feedback loop that lacks a way of checking if the information sent is implemented by the target audience (Spiekermann, Kienberger, & Norton, 2015). Only the interpersonal sources have a feedback loop albeit through a third party. If the community has feedback to give the chief, the latter will relay the same to the communicators and wait to hear from them, in the process time is lost and urgency is no longer of essence. Communicating risk is a two way process, the receivers must decode and give feedback, once this aspect is clear to the communicators they should start focusing on the values and needs of the community targeted by this communication. They should then adjust their communication to these needs and values to enable the target community judge their risk situation and make informed decision based on factors such as levels of preparedness (Renn, 2005).

4.4.4 Communication Needs

Content and relevance is important in any communication. Effective communication with communities ensures they have access to timely, accurate, and relevant information via channels that are culturally appropriate and accessible for different groups. The communications should be participatory and inclusive. Below are some of the quotes from both key informant and Fgds exploring communication needs.

4.4.4.1 Information Inadequacy

Crisis team members claimed there was a disconnection in government institutions and this created gaps in a communication that was supposed to be seamless. Another team member asserted that they tried to give enough information to enable community members take appropriate action. The following quotes are from two key informants;

> *"There is a disconnection in Government institutions." (KI 013)*
> *"We give enough information" (KI 016)*
> *"We are always on time".(KI 005)*

On further clarification on what the disconnection in government referred to, the researcher discovered the following challenge faced by crisis team member organisations especially government institutions. The government operates as many parts of a whole but very independent with clear mandate. If the meteorology department for instance relays weather reports on expected heavy rains, this piece of news cannot be collaborated by another from a department tasked to measure magnitude of floods warning about the same. The flood one comes later and probably late. The community too had something to add on communication needs;

> P10: No crop information, we have not seen the extension officers since devolution of Agriculture
>
> P7: Hii inafaa kuanza mapema, na wenye wanasema hawajui kwa kwenda waelezwe mapema (this communication should start early and those who say they do not know where to go to be advised early)

From their quotes it is clear that there is omission of crop information and an absence of the would be communicators from the community, it is almost like the wait in vain for this crop information.

They also prefer early warnings in order to avert losses and remove doubts and confusion on where to relocate to after evacuation.

4.4.4.2 Frequency of messaging

The key informants asserted that their organisation communicated as need arose and whenever there was anything to say. Meaning the frequency increased with demand for messages and decreased as the demand subsided. The Fgds confirmed this, the following excerpt best exemplify this;

> P4: Wakati wa mafuriko huwa twapata hizi aarifa (we get these messages during floods)

According to the theory of rhetoric such people who need to improve their perception of this danger should have constant communication on the channels available to them, repetition of messages in mosques should occur throughout the year till they internalise the fact that this event is dangerous. However in this study this had not happened yet prior to the 2018 floods, the crisis team members had however noted the need to engage in continuous communication to ensure they even made floods champions from the community, at that point the community will have taken ownership and control.

4.4.4.3 Media

One of the Key informants felt the media did not prioritise weather reports and misinterpreted weather reports. Another key informant added that translation by media to local languages tended

dilute the message and sort of downplay its importance; below are some sections from the key informants' interviews

> *"Media does not prioritise weather reports; you will find they are the last on news bulletin. By then all viewers have switched attention. Misinterpretation by the media, blows things out of proportion and sometimes downplay things that can be misleading" (KI 005)*
> *Sometimes what we hear after translation on local fm is not exactly what we desired this may dilute the message impact" (KI 007).*

The media is faulted for misinterpretation, downplaying some issues when blowing others out of proportion. These findings are similar to research findings of a 2013 flood event study in Salzburg Autria in which it was confirmed that the transfer of information from and between the hydrological agencies, weather forecast services, towards the media and responders was often unsatisfactory, misleading, or interpreted incorrectly. An analysis of media reports, interviews with responsible decision-makers, and results from a local stakeholder workshop attested to this (Rufat, Tate, Burton, & Maroof, 2015).

However in Kenya, in the 2018 floods the media really employed good use of imagery as discussed in chapter two of this study until some communities and stakeholders alike began to take desired action as the floods escalated. Both on Television and social media, the media was relentless, awash with fresh updates as, with people submerged in raging floods to the neck, perfect use of emotions to elicit action.

Focus group discussion participants claimed they could not understand the graphs and texts in weather reports on Television. They also claimed the local fm stations delayed the news during translations. Below excerpts confirm these;

P13: Wenye runinga saa ingine hatuwezi elewa hizo mepi mepi na maandishi za ripoti ya anga (Sometimes those of us who own television do not comprehend the maps and texts on weather reports)

P5 : Nilikuwa Nairobi nikapata habari ya hii Garissa yetu, nikipigia huyu…..Points at his fellow farmer…..aniambia bado sikia, hadi hiyo jioni (I was in Nairobi and I heard about the floods in Garissa but when I called him, he told me he had not heard till evening)

The content displayed graphically or textually by media may not be understood by some members of the community, this should be simplified to ease understanding. Local languages are not prioritised by the mainstream media, and translation may take long for a local FM station try to decode the messages and relay later. According to Rufat et.al (2015) Radio due to editorial reasons delays information. During a flood event in Austria 2013 urgent information related to the early warning of floods, based on current rainfall forecasts by the meteorological service was issued by the hydrological service, passed on to the media on Friday afternoon, but only used on Saturday morning for the news reports. By then it was too late. Later that Saturday afternoon the hydrological service communicated a much more severe event which the media delayed to transfer to the public until Sunday morning.

4.4.4.4 Research

Crisis team informants asserted that there was no much research done earlier to inform the occurrences in that part of Garissa, and the escalated floods brought a lot of blame and counter blame and endless court cases. One of the informants' emphasised on the need for studying and

mapping the Laghas in order to ascertain the volume they drained into the tana and its impact. He added that the Laghas may have caused much of the flooding long before the seven fork dams overflowed. His sentiment is captured below;

> ***"****No research is carried out to inform the occurrences, that's why there a lot of blame in the media and even court cases. The Laghas in Garissa should be studied especially the many that drain into the River Tana in Bura East area, the actually caused most of the floods long before the overflow of seven forks dam"(KI 004).*

Further investigation on this revealed that, on the 26th of April 2018, Garissa received nonstop rain for 24 hours, a total of 126mm instead of the normal 80mm in the same duration, the land became very saturated , the dry river beds swollen and drained into the already highly silted Tana River. This was long before the overflow of the dams. The heavy rains, silt and numerous Laghas contributed much to the floods. So when looking at cause and mitigation this would be a crucial area to research on. Elsewhere in Austria, high levels of precipitation and antecedent soil moisture in the Salzach catchment, produced a flood discharge with a return period of about 100 years at the downstream reaches of the Salzach, in June 2013. The Salzburg City water gauge station measured 8.51 m, 15 cm higher than catastrophic floods in 2002, which resulted in damage of an estimated three billion Euros for Austria (Rufat, Tate, Burton, & Maroof, 2015) Proper research revealed the exact causes of the floods.

The stakeholder organisations also claimed to understand the needs of the community, a point that was highly contested by the participant of the Fgds;

P3: They do not really understand our needs sometimes.

Lastly exploring the communication needs, there is information inadequacy, Key informant using broadcast blamed media for misinterpretation and lack of prioritisation, this scenario also happened in Salzburg where several alerts were misinterpreted by media and ended up disrupting coordination and causing a lot of delays and eventual damages (Samuel Rufat, 2015). If such news mislead the community then they will stop trusting that channel, it starts being incredible. On research, there is need for audience research to understand the target community and therefore be able to involve them in a participatory manner. There is need to extend the audience research to understand all the barriers to effective communication for the community and the communicators , understand underlying issues including geographical and political ones so as to engage from an informed perspective.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Overview

This chapter summarises the main points of evidence in this study. It offers a conclusion, recommendations and suggested areas of further research.

5.2 Summary of findings

This study set out to investigate what channels of information were best suited for flood emergency communication in order to elicit the right action. The research was informed by the fact that the media carried a lot of stories regarding this issue. It was evident that crisis team members communicated but in spite of all these communication the floods still caused a lot of damages in this area meaning the communication failed to elicit the right action from the community. The research used key informants from the crisis team organisations and focus group discussions to get the community's opinion on the appropriateness of the communication channels to communicate to them during the 2018 floods in Bura East area. The research's specific objectives were; to identify the communication channels used by the crisis committee to communicate to the community about floods, to investigate the community's sources of information about floods and lastly to examine the appropriateness of communication channels used in disseminating emergency information during floods.

5.2.1 Communication channels used by the crisis team

In the case of identifying the communication channels used by the crisis committee to communicate to the community about floods, the findings suggest the crisis team used various

communication channels like, ICT communication tools, interpersonal channels, broadcast media, and print media. Unfortunately most were incongruent with the channels the community could access. The crisis communication team used ; broadcast media mainly the radio , local FM stations and television, they also used print media which included newspaper and letters, they used interpersonal mediums majorly the chiefs and imams and they also employed ICT communication tools which included computers for emails and mobile phone for calls, sms, and Apps

5.2.2 Community sources of information on floods

On the other hand the community's sources of information were majorly interpersonal safe for a few who could access radio, television and ICT communication tools. Community's main sources of flood information were interpersonal. They got their information from imams, chiefs, youth leaders, WRUAs, Banda discussions, famer groups, school heads, and health officers. They also got some information from local FM stations, the television and sms.

5.2.3 Appropriateness of communication channels

Lastly regarding the matter of examining the appropriateness of communication channels used in disseminating emergency information during floods the study found out that that despite the channels chosen by the crisis team being efficient in that they were fast, cost effective and affordable , the same could not be said for the community. The community, could not afford, and be able to use some of the channels, mostly ICT, print and broadcast media owing to other underlying issues in the community like illiteracy, poverty and infrastructural failure.

During emergencies, communication is very crucial; unfortunately many communicators face the difficulty of effecting the desired communication in order to achieve the expected feedback (Farnham, 2005).

The broadcast category used by the key stakeholder organisations to communicate to the target audience was not accessible to many of the target communities. Interpersonal communication channels used by the stakeholders were largely accessible and convenient for the target community, ICT on the other hand was good when used to communicate amongst the crisis team but to the target community barriers like poverty, illiteracy usability, and infrastructural failure posed a challenge. Albeit being fast and reliable ICT was not the best information pathway to reach the community. Four key informants used print media but this too was not accessible to the community.

Aristotle's theory of rhetoric explores how the message is packaged and the channels used to deliver it. The most successful channel in this case and as per this theory is interpersonal information path ways. By using the chiefs, imams, schools heads and communicating to parents directly .This are all people who are trusted by the community and who also understand the community so they deliver the message with empathy. The interpersonal means employs ethos perfectly. Other factors that informed appropriateness include; selection of medium, relationships between the crisis team and the community, community perceptions of the communicators' communication tools, and the flood events and also the understanding of the communication needs of the community. Just like rhetoric theory, participatory communication theory leans heavily on trust and familiarity to gain credibility. The two theories have resonated well with the study.

5.3 Conclusions

This research has identified the gaps in the crisis team member's communications during the 2018 Bura East floods as incongruity in the channels used by the communicating stakeholders versus what the community could access as their source of information. The research has identified the channels used by the crisis team to communicate to the community as, ICT mediums, broadcast, print media and Interpersonal channels whereas the community sources of information have been identified majorly as interpersonal.

The research has confirmed that the communicators considered the following factors when selecting the channel of communication; accessibility, urgency and credibility. The research has also confirmed that these factors were not informed by a good participatory audience research but they were based on assumptions as opposed to reality of the people. The research has also confirmed that the use of inappropriate channels created doubts and diminished trust. It is imperative for the crisis team to learn and understand the receiver's demographic characteristics so they can devise reliable channels to use to achieve a great perception that elicit positive feedback. The same familiarity will enable sound participation that would be a learning opportunity for both parties. The underlying issues like border disputes, the wet land management, omission of agriculture information yet it's their sustainability are major problems that can be addressed through dialogue, research and collaboration between the community and the crisis team members. This study has concluded that the medium of the message determines how the target audience is reached and desired action elicited. In emergency situations, the communication should come from familiar, credible empathetic sources.

5.4 Recommendations

Channel Diversity: Each channel of communication has its strengths and weaknesses but a combination of several channels ensures precision in communication. Therefore the community should embrace all this channels even if it means using interpreters to aid in understanding. Those literate in the society could access information from ICT sources and through platforms such as chief baraza, farmer meetings, village bandas, and mosques share and dialogue on the way forward.

Media: Crisis team members like KMD should employ imagery in their weather reports to the media, to accompany texts and graphs or in place of. For instance a video of houses being swept away by ranging flood water can stir fear emotions on the target community and push them to take action to avoid such occurrences happening to them. Moreover such memories will trigger proactive action in case of an impending flood event. If a weather story is packaged well the media will want to prioritise it too as it captures the attention of viewers. The media should be trained to report weather properly so as to communicate the desired effect, avoid wrong translations and misinterpretations.

Political Interference: This matter was highly politicised and this made the flood victims, in this case, the community very resistant and entitled to pity. Floods is a natural disaster , aggravated by climate change and therefore County leadership of Garissa should treat it as such rather than trying to lay blame on other team members they should have been on the forefront telling the people to evacuate to salvage as much as possible.

Research: Research should be carried out to map and manage the Laghas and share this information with all team members and community in order to come up with solutions and avoid the blame game Kenyans witnessed escalating on the Television and print media about the seven fork dams. The crisis team member organisations should carry out audience research on the target

community to understand any underlying conflicting issues, cultural and religious barriers that hinder communication, this way they will communicate from an informed perspective, one with empathy.

Advocacy Campaigns: During the advocacy campaigns, sensitisation and other outreaches the community should be allowed to participate fully to enable member organisations understand their needs and empower them to take lead in flood mitigation strategies including communication. Crisis team members should hold prior advocacy campaigns repetitively using pictures and videos to demonstrate and emphasis on the message, set early lead times to do intense communication, like a month before the rains.

Communication Needs: Reintroduce agriculture experts to deliver the crop information the community is missing, farming is now their alternative after droughts has diminished their chances in pastoralism so it's wise to have the missing link to advise on the type of crops that can be harvested before the floods come, to avoid total crop loss.

Technology: Improve on weather focus tools, water magnitude measuring tools should be installed further up the Tana River to allow WRA, measure the force long before the water reaches Garissa. Currently, the only tool is on the Tana Bridge in Garissa Town, by the time the measurements are taken it is a little too late, the raging waters are already in Garissa.

Lessons Learnt: All communicators should have post floods evaluation to gather lessons learnt and use them to better their communication strategy.

5.5. Recommended areas of research

This study recommends further research in; Participatory communication for social change in Bura East Garissa County. The culture of dependency has persisted in this ASAL area for so long, political interference does not help the situation but empowering the people through interactive participation will help them in self-emancipation and come up with ways of embracing the opportunities provided by the floods and cutting back the losses accruing from the same. Other dams can be built down the Tana River to store water for irrigation, but the people need to voice such needs.

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APPENDICES

Appendix I: Focus Group Discussion Guide

1. What is a flood?
2. Are you at risk of floods?
3. Where do you get information on flood emergencies?
4. What kind of information do your sources give you?
5. How frequently do you receive this communication?
6. What kind of actions do you take after receiving the information?
7. Have you ever been involved in any collaborative communication with crisis committee members?
8. What are some of the challenges you face in obtaining information?

Appendix II: In depth Interview Guide

Bio data

Name of Organisation	
Position held in the organisation	

1. Which channels do you use to disseminate your information to other stake holders?
2. How often do you release information on floods?
3. What feedback do you get after releasing this information?

_____

_____

_____

4. What immediate communication measure do you take in case of a flood emergency?

_____

_____

_____

5. Do you conduct collaborative communication with other stakeholder organisations and the community?

a) Yes

b) No

6. If yes above, how often is this collaborative communication?

_____

_____

_____

_____

7. What factors influence your choice of communication medium?

_____

_____

_____

_____

8. What are the some of the challenges you encounter when disseminating flood communication?

_____

_____

_____

9. Do you have confidence the community will perceive the information you share as you desired and act accordingly

_____

_____

_____

Appendix III: Certificate of Field Work

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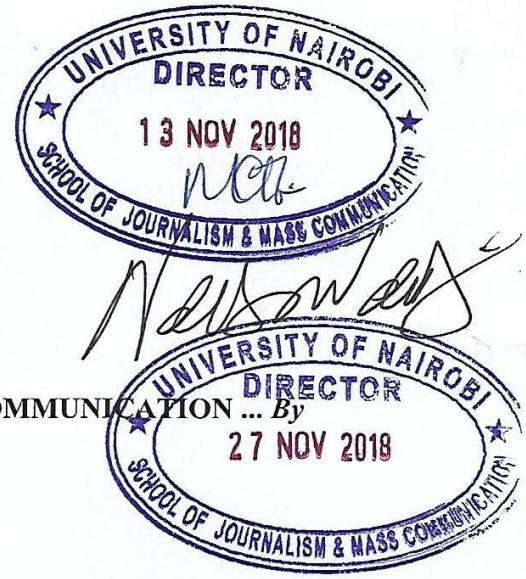
Name: MARTHA MUTHEBE

Title: THE APPROPRIATNESS OF EMERGENCY COMMUNICATION CHANNELS USED BY THE GARISSA COUNTY CRISIS TEAM: CASE OF THE 2018 FLOODS IN BURA EAST WARD

Dr Consolata Mukoya SUPERVISOR	 SIGNATURE	15/08/2018 DATE
Dr Samuel Singi ASSOCIATE DIRECTOR	 SIGNATURE	15/08/2018 DATE
Dr. Nelti Ndati DIRECTOR	 SIGNATURE/STAMP	16.8.2018 DATE

UNIVERSITY OF NAIROBI DIRECTOR 16 AUG 2018 SCHOOL OF JOURNALISM & MASS COMMUNICATION

Appendix IV: Originality Report



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This is to certify that all corrections proposed at the Board of Examiners meeting held on 02/11/2018 in respect of M.A/PhD. Project/Thesis defence have been effected to my/our satisfaction and the project/thesis can be allowed to proceed for binding.

Reg. No: K50/87879/2016

Name: Martha Muthere

Title: THE APPROPRIATNESS OF EMERGENCY COMMUNICATION CHANNELS USED BY THE GARRISSA COUNTY CRISIS TEAM: CASE OF THE 2018 FLOODS IN BURA EAST WARD

Dr. Consolata Mutinja SUPERVISOR	 SIGNATURE	8/11/2018 DATE
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