COMMUNICATION IN NATURAL DISASTER MANAGEMENT: A STUDY OF 2005 FLOOD RISK AWARENESS CAMPAIGN AMONG THE RESIDENTS OF JALINGO METROPOLIS

BY

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MSC/SOC/SCI-34745/2012-2013

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FACULTY OF SOCIAL SCIENCES

AHMADU BELLO UNIVERSITY, ZARIA

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DECLARATION

I declare that this dissertation entitled COMMUNICATION IN NATURAL DISASTER MANAGEMENT: A STUDY OF 2005 FLOOD RISK AWARENESS CAMPAIGN AMONG THE RESIDENTS OF JALINGO METROPOLIS has been carried out by me in the department of Mass Communication, Ahmadu Bello University, Zaria. The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this was previously presented for another degree at this or any other institution

JIBRIL GORI ISA _____ _____

Signature Date

CERTIFICATION

This dissertation titled COMMUNICATION IN NATURAL DISASTER MANAGEMENT: A STUDY OF 2005 FLOOD RISK AWARENESS CAMPAIGN AMONG THE RESIDENTS OF JALINGO METROPOLIS by **JIBRIL GORI ISA** meets the regulations governing the award of the degree of Masters of Science in Mass Communication of the Ahmadu Bello University Zaria, and it is approved for its contribution to knowledge and literary presentation

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DEDICATION

I dedicate this research work to my late parents Alhaji Jibrilla Gori and Hafsatu (Saye), may their gentle soul rest in Aljannah.

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Abstract

This study examined the communication channels employed by Taraba State Government before, during and after 2005 flood disaster in Jalingo metropolis. The major communication strategies used were identified and their effectiveness evaluated on the affected communities. The study was premised on risk communication theory and survey, in-depth-interview and Focus Group Discussion methods were employed to obtain the data. The Findings show that Radio, television, newspapers and magazines were the major channels of communication used by Taraba State Government. Among these communication channels Radio was found to be the major channel of communication through which quick campaign warning messages were sent to the people at risk. Likewise, the study found that communication strategies used by Taraba State Government before, during and after flood disaster on risk campaign awareness are advocacy visit to the flooded communities and door-to-door strategies. Against this background door-to-door communication is considered a very good medium for communicating disaster information in the studied area. Finally the study recommends that the State Emergency Management Agency (SEMA) be more effectively funded and equipped with state of the arts equipment's to meet national/international disaster response standards, so that it can more effectively respond to the ever changing challenges on natural disaster management.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Nigeria like most other countries of the world is faced with increasing threat of natural disasters from flooding epidemic. In the last three decades, the impact of flooding have increasingly assumed from significant to threating proportion. Resulting in loss of lives, collapse of buildings/bridges destroyed farmlands, causing water shortages, affecting human health among other. The case is similar in Taraba state, the 2005 flood disaster have serious social and economic impacts on the community. Flood disaster affects people's lives and livelihoods in many ways; according to Bantaje (2005) about one hundred (100) people were feared dead during the flood, particularly during the collapse of the Nukkai Bridge.

While Taraba Television (TTV) reported that property worth millions of Naira were destroy in the August 7th, 2005 flood, farmlands running into thousands hectares of land were destroyed. It was also reported that the rainfall drowned several people that were on the bridge when the bridge was submerged by the flood. About twenty six (26) bodies were recovered which includes the body of an Assistant Commissioner of Police who died in the case of persuading victims to vacate the bridge. Although Jalingo town is exposed to flood every year but 2005 and 2011 is more severe; flood occurrence is always associated with topography of the area which is an undulating plain interrupted in place by low rising hills and traversed by two different rivers as well as the poor/inadequate drainage network within the town. This has been a source of worry and challenge to the government at various levels. Ochongor and Konye in Tsegyu (2015) report on the impact of

communication plays as a major role in the enlightenment and education of the populace about the menace of disaster either to accept or reject any government initiative or programme. As such Mass Media no doubt, is the fulcrum on which awareness campaign on the menace of natural disaster (flood) is disseminated to the target audience. At all times, members of the public need to be aware of the realities of their environment and what happens within the environment attaining this desire is the whole essence of public enlightenment. Communication is the means by which the public are linked to the updates in the society. For this to be successfully achieved the citizenry should be kept abreast of the goings-on in the society. One of the ways of achieving this is through public enlightenment. Public enlightenment enables the public to know their right, obligations and duties among other things. For public enlightenment to be effective, the source must address the issues through appropriate content, message structure and effective delivery.

1.2 Statement of Research Problem

Natural disasters come without warning and they cause widespread devastation like economic damage and loss of thousands of human lives globally. For instance in Jalingo metropolis, the 2005 flood disaster has caused extensive socio-economic dislocation with catastrophic consequences ranging from loss of lives and destruction of human habitation, Agricultural produce, water resources, terrestrial ecosystem, and biodiversity and affecting human health among others. Nevertheless, a study conducted in Jalingo metropolis by Oruonye (2012) Showed that only 23.7% of the respondents were aware of the flood prone nature of the study area. Based on the aforementioned, this study set out to assess the communication strategies employed by Taraba State Government through its agencies like SEMA; in risk awareness campaign among the residents of Jalingo metropolis. Based on this, this study set to investigate and assess he

communication strategies employed by the Taraba State Government through its Emergency Management Agency, (SEMA), with the bid to promoting awareness among Jalingo residents. Such communication strategies include; Radio/Television jingles, door-to-door, interpersonal visitation. So this study would assess the efficacy of these communication strategies as it relates to the risk awareness campaign and possible mitigations of flood in Jalingo metropolis.

1.3 Aim and Objectives of the Study

The aim of this study is to assess the risk strategies used in awareness campaign for flood prone area in Taraba State using Jalingo metropolis before, during and after the 2005 flood disaster. The specific objectives are to:

i. Identify the communication channels employed by Taraba State Government before, during and after the 2005 flood disaster.

ii. To know the major communication strategy used by Taraba State Government before, during and after the 2005 flood disaster.

iii. Assess the effectiveness of these communication strategies on the affected communities.

1.4 Research Questions

The following research questions were further formulated from the research objectives:

i. What types of communication channels were employed by Taraba State Government before, during and after the 2005 flood disaster?

ii. Which were the major communication strategies used by Taraba State Government before, during and after the 2005 flood disaster?

iii. Did the communication strategy address the needs of the communities?

1.5 Scope of the study

The scope of the study gives a brief description of the area of coverage of the study or area of concentration (Olatunji, Adeeko and Kasali, 2012). This study focused on the communication strategies, how effective were the communication strategies and what other communication strategies might have been employed.

The study was delimited to the 2005 flood disaster campaign in Jalingo with concentration on four selected communities which reside within flood prone areas namely; Anguwan Baraya, Anguwan Yadang, Primary Board and Sabon gari. This period was chosen because over one hundred people lost their lives while some lost their properties worth millions of Naira and farm land running into thousands of hectares were wash away (Bantaje, 2005).

1.6 Significance of the study

The present body of literature on risk awareness campaign reviewed by the researcher indicate that study conducted in the study area generally examined the flood risk perception and response in the study area. It was observed that despite the relatively high level of flood perception in the area the resident's response to the flooding by way of using flood preventive and mitigative measures were very poor. The studies did not study the campaign strategies of Taraba State Government towards sensitising Jalingo residents on flood risk awareness. This study, therefore, indicates a gap in knowledge in the study area.

It is hope that the findings of this study will assist the Taraba State and Federal government to manage flood hazards speedily and in a coordinated manner. The study will also assist government and other agencies that are interested in developing a

sustainable response procedure to fight flood hazards. The study will also provide a baseline data for future studies on flood risk awareness campaign in Jalingo metropolis.

1.7 Limitations of the Study

Some of the limitations involved in this research work are; some of the respondents refused to answer the questionnaires on the ground that the research would be of no benefits to them. While in the case of government officials particularly the State Emergency Management Agency (SEMA) informant; was very curious and sceptical to discuss with the interviewer freely becomes according to him, he was not authorized to disclose anything pertaining the Agency to any outsider. Hence this has implications for the generalization of the findings.

1.8 Operational definition of Terms

Communication Strategies: these are measures/steps taken by Taraba State Government to minimize the effects of flood disaster for example, advocacy visit to the flooded areas and interpersonal visitation. The communication strategies was used in this work to depict the contact met from Taraba state Government with the flood affected areas.

Communication Channels: these are medium through which risk awareness campaign information is disseminated to the target audience, for instance Radio, Television, and Newspaper at interpersonal level etc.

Risk Awareness Campaign: This is well informed actions taken by Taraba State Government to achieve a specific goal of raising people awareness about the menace of flood in Jalingo metropolis.

CHAPTER TWO
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter examines and reviews related concepts used in the study. Concepts like communication strategy, natural disaster, risk communication, risk awareness campaign and communication channels are reviewed. Similarly, research works on related empirical literature are also reviewed and finally, the study adopted risk communication model as the theoretical framework.

2.2 Review of Related Concepts

This section entails an explanation of the core concepts that are visible from the variables on the topic. Thus, the concept of communication strategies, natural disaster and risk communication will be reviewed to provide the focus for this study.

2.2.1 Natural Disaster

The word disaster is from the French and Italian word 'disaster'. The origin of disaster dates back to the beginning of humanity and that explains why whenever the issues of disaster are mentioned; they are usually discussed in relation to mankind and its environment. By definition disaster is described as a;

> Significant disturbance in the daily operation of a group of people which may lead to loss in terms of human life, the economy, as well as the affected environment; surpassing the group's ability to use their own resources to cope with the situation (UNISDR, 2002 p.24).

Wassenhove (2006) is on the view that "a serious disruption that physically affects the functioning of a system as a whole posing a significant and widespread threat to human life health, property or the environment". He further explains that a disaster can be natural or artificial/ man-made. According to Blaikie (1994), a natural disaster is de-fined as a natural event which has catastrophic consequences for living things and

property in the vicinity. Natural disasters include slow onset disasters, such as famine, drought and Sudden Impact Disaster (SIDs) such as volcanic eruptions, earthquakes, landslides, floods among others (Wassenhove, 2006).

Flood as the subject matter of this study is usually caused by climate change. Climate change, according to Copeland (2013) cited in Owolabi and Ekechi (2014) is a sudden shift in the average weather condition experienced in a particular region over a period of time has been identified as the cause of heightened frequency and intensity of widespread disaster such as tropical cyclone (Hurricane, and typhoons), floods, droughts and desertification, erosion and landslide. Beside, climate change also produces extensive socio-economic dislocation in the world in a way that impose great strains on water resources, agriculture, food security, human health, terrestrial ecosystem and biodiversity (Kolawole, 2011 cited by Owolabi and Ekechi, 2014).

Over the, years, there have been disastrous occurrences in the world some with marginal impacts while others with enormous consequences. Owolabi and Ekechi (2014) states that disaster happens everywhere, it may be natural or man-made and it strikes, it makes no distinction between developed and developing nations. There is no part of the world from the industrialized nations of America and Europe to Asia and Africa that has not experienced one form of disaster or the other. The only difference is in the degree of impact it had on the affected area and people; which is the function of effective disaster warning system put in place. For example, Hurricane Katrina caused severe damages worth $25 billion and about $ 75 billion in recovery recorded for less casually than the Indian Ocean Tsunami in Sri Lanka in 2004 and Pakistan earthquake in 2005 while Hurricane Katrina claimed about 1,604 lives and 200 missing in New Orleans, Sri Lanka lost about 38,195 and Pakistan lost about 100,000 people respectively (BBC, 2006).

The disparity in the above statistics illustrates two important facts. The first is that there was efficient disaster management system put in place in America than in Sri-Lanka and Pakistan hence the minimal effect the disaster had on human lives is less on developed countries than developing ones. The second is that human community is daily susceptible to the danger and hazardous situations (Samarajiva *et al.,* 2005 cited by Owolabi and Ekechi, 2014). However, this may not necessarily result in disaster if adequate disaster warning signals are promptly sent to the vulnerable population. For example, within the last two decades, the issue of climatic change and its attendant impacts have prompted increase attention from scientists environmentalists, disaster management experts and governments and for which several conferences, seminars and workshops (e.g. The formation of international strategy for disaster reduction in 2000, the Millennium Declaration in the year 2000 and the second world conference on disaster Reduction in the year 2005) have been organized in order to proffer workable and efficient solutions on how to tackle the problem.

Although, Nigeria is the focus of this study which has similar experiences of various degrees of disasters on flooding and epidemic are natural ones. The others, such as, air or road mishaps, oil spillage, fire outbreak, pipeline vandalism and terrorism are man-made and are avoidable. In most cases, whether natural or artificial, Nigeria has always been caught unawares because there has not been any sufficient disaster awareness communication management system in place and as such each time disaster struck, it usually resulted in significant human and economic losses to the state.

Based on the foregone, in the history of flooding's in Nigeria, the worst experienced was recorded between July and October, 2012 when 363 people lost their lives, 2.1 million people across ten (10) states were displaced and 18,282 were injured (NEMA, 2012). Similar unfortunate experience befell Ibadan the capital of Oyo State in August

2011 when scores of lives were lost and properties worth N20 billion were destroyed. The yearly recurrence of flooding in Nigeria with disastrous consequences serve to illustrate the country's ill-preparedness and lack of efficient disaster awareness management plan by the government at all levels and the appropriate authorities, particularly, communication which is an essential part of the disaster awareness creation/management techniques has been observed to be inefficient otherwise the people should have learnt their lessons from repeated calamities and avert it if they were adequately informed.

Thereupon, by Decree 12 of 1999, the Federal Government established the National Emergency Management Agency (NEMA) as the successor to the National Emergency Relief Agency (NERA), which was established by Decree 48 of 1976 and broadened the mandate of NEMA beyond mere provision of relief which was the statutory function of National Emergency Relief. NEMA/SEMA, by its mandate is vested with the authority to manage all disasters in Nigeria, though with an emphasis that one does not need to wait until there is a disaster at hand before taking action. According to NEMA (2003), the Decree 12 of 1999 empowers the creation of State Emergency management Agencies (SEMA) to perform similar functions at the State levels and also monitor the Local Governments.

This agency according to section 16 of the Federal Republic of Nigerian Official Gazette (1999), the functions and powers of the agency include among others, the information of all policies on all activities relating to disaster management in Nigeria and coordinate the plans and programme for efficient and effective response to disaster at national level. NEMA functions on the principle via three stages of the pre-emergency phase, the emergency phase, and the post-emergency phase (NEMA, 2003).

However, Nigeria like any other nation in the world is having her own share of disasters. Prominent among them are fire disasters, religious and ethnic crisis, bomb blast, oil spillage, rain storms, floods, automobile and air accidents. For instance, according to Aladegbola and Akinlade (2012), Nigeria recorded her first air crash on April 10, 1948 in Kano, and since then Nigeria has had the misfortune of 102 air crashes losing 1,026 lives in the process including the 98 that died in October 2006, two kilometres from Abuja airport. Similarly, Fire Disaster is also not an exception. Most public buildings like Cocoa house, NITEL Building, and several markets have been gutted by fire. In Nigeria, it has become apparent that every fire incident is always blamed on a story of delay arrival of fire fighters and equipment, usually attributed to lack of water and other logistics like communication problems from the appropriate government agencies. For Bomb Disaster: Nigeria experienced a sudden bomb blast within one of its military cantonment in Lagos on January 27th, 2001 before the advent of boko haram. The Government had to call foreign experts to detonate bombs after the explosion killed many and those trying to escape drowned in a canal and several others rendered homeless. Most cities in Nigeria like Lagos, Ibadan and Port Harcourt have witness a similar experience of disasters .With proper planning and attention, most of the disaster situations would have been averted.

According to Yates, Alam, Twigg, Guha-Sapir and Hoyois (2002) the strategies used to reduce disaster are:

i. improving the community's resilience;

ii. incorporating risk reduction efforts in disaster prone areas;

iii. identifying and working on origins of the risk that a community may face and

iv. Enhancing responsibility towards survivors of disaster events.

Furthermore, the fact that disasters are frequent and increasing in the world today raises the need for the use of communication strategies in disaster management planning as mention by Asian disaster reduction centre (ADRC, 2004). On this subject, it is necessary to be conversant with the following guides:

I. Disaster preparedness,

II. Disaster responses recovery

III. Emergency response in water areas.

Disaster preparedness

According to the World Health Organization (2007) preparedness is a wide range pre-disaster programme that strengthens the personnel capability, enhancing technical and managerial efforts of governments, international organizations, non-governmental organizations, private sector , media organizations body and the disaster prone communities to satisfactorily respond to emergency and disaster situations. Preparedness process among others includes planning, emergency personnel training, warnings systems, and training, resource inventories, emergency personnel contact list of public information (ISDR, 2008, Ulari, 2013).

Disaster responses and recovery

Disaster response and recovery are the overall immediate actions taken by government agencies and disaster management professional to meet the basic needs of disaster victims until more permanent and sustainable solution are worked out (Warfiled, 2008; Khan and Khan, 2008). According to VUSSC (2009) and Owolabi and Ekechi (2014)

the goals are to guarantee the survival of significant number, restore essential services as quickly as possible, repair and replace damaged infrastructure, reactivate the economic activities so as to prevent or minimize reoccurrence. These activities consist of campaign around the disaster prone areas, evacuation of victims, search and rescue, impact assessment, logistics and relief distribution, securing the affected area and people, rehabilitation and reconstruction (Hodgson and Palm, 1992; Stephenson and Dufranc, 2002).

Emergency response in water areas

Various flood mitigation measures must be put in place that would involve all stakeholders at the local, national, regional and interregional levels that are very appropriate to effectively address local situations. A balance between structural and non-structural measures to manage floods and reduce losses is required, where the emphasis is shifting from large structural solutions to innovative measures in flood proofing and improved building codes to non-structural flood measures such as land use regulation, flood plain management, compensation schemes, insurance schemes and the improved participation of local communities prone to flood hazards (ISDR, 2004).

2.2.2 Risk Communication

According to Owolabi and Ekechi (2014) the frequent manner at which flooding disaster happens in Nigeria, leaving scores of deaths and monumental devastation has provoked the questioning of the media's role in disseminating vital disaster warning information to the vulnerable population. Responding to this call, Aspinwall advocates that 'risk communication messages should be designed to encourage a group of people to perform certain risk reduction measures by way of giving them information and promoting why these measures are the best means of reducing their specific risks' (p.88).

UNISDR (2002) is on the view that risk communication as 'the processes of informing the general population, increasing their levels of consciousness about risks and how to take action to reduce their exposure to hazards' (p. 340). According to Covello (2008) risk communication is a science based approach to communicate effectively in high concern situation. Wallaski (2011) refers to risk communication as process of communicating information by a public or private organisation to an audience. This means that risk communication helps the audience understand their risk as well as what activities they can undertake to prepare for the hazard.

Equally Walaski (2011) highlighted that one of the earliest and most useful for understanding crisis communication was developed by Fink. Fink's four stage of a risk communication include the following:

- **Prodromal**: This is about identifying clues that a crisis is about to occur. Even when some argued that crisis shows no hint. But, however majority believed that no crisis occurred without any warning.

- **Crisis Breakout**: This stage represents the earliest events that are part of the crisis. That is identifying the event that produces a specific type of crisis(e.g. artificial, natural among others)

- **Chronic**: In this stage the organisation works to address the effects of the crisis.

- **Resolution**: At this stage, the organisation determines that the events are no longer problematic and no longer affect the various audiences.

Another study carried out by Scott Wilson (nd) cited by Richard, Reilly and Jones (2003) has provided a valuable contribution to the on-going refinement of risk

communication in flood management. In order to reach a greater percentage of the population at risk an increasingly sophisticated approach to communication is required. This approach needs to recognize the difference within the general public and target messages and technique to meet the needs of those different groups. Furthermore, successful risk communication opens up new ways of working with the community such as:

i. Building trust with community
ii. Encouraging self-help;
iii. Utilizing community expertise, and
iv. More effective public participation in decision making.

However, before now majority of the African countries do not have a holistic approach to deal with the disaster and issues of risk, instead view disasters as rare acts of God that could be neither predicted no avoided. For instance, in South Africa before 1994 they have no any framework for disaster risk reduction. This approach resulted in a disaster management thrust that was solely reactive and focused only on post-disaster measures designed to deal with the consequences of disaster (Van Niekerk, 2005). But recently various National regional and global frameworks for disaster risk management were establish, among them we have the African Regional Strategy for Disaster Risk Reduction and the Hyogo Framework for action a global blueprint for disaster risk reduction efforts during decade 2005-2015, National Emergency Management Agency(NEMA) and State Emergency Management Agency(SEMA) among others.

On the contrary, maintaining the objectives of this agency has been hard on most of the countries in Africa that are financially burdened and handicap in delivering adequate risk minimizing physical infrastructural interventions. Also, low income communities

cannot afford insurance and other financial risk transfer tools. Therefore, to curtail these elements they must be an increased political will and commitment along with governance and legislative support, provision of finances and resources, improved risk assessment, education and increased public awareness, and the integration of risk communication into emergency response (Chagutah, 2009 cited UNISDR, 2004) infact there will be decrease in vulnerability in a specific community and thus prevent and constrain the impact a hazard may have (UNISDR, 2002:24).

Many studies detail the low level of flood awareness exhibited by occupants of flood plains and other flood prone areas (Mendel, 2011 cited in Waterstone 1978). Awareness may be natural high in areas where flooding occurs regularly but is often deficient in locations subject to low frequency but high impact events. In an ideal situation, heightened awareness of flood risk would lead to mitigation activities and preparedness, which in turn reduce the impact of flood events. In Afghanistan, for example, a drama-based disaster awareness campaign was conducted via the medium of national radio. This was found to have been very successful in raising awareness of flood risk and in maintaining natural forest flood barriers (United Nations, 2007). The secret of success in such campaigns is to trigger local debates around issues that are relevant to the communities at risk.

For UNISDR (2005) disasters can be substantially reduced if people are well informed about measures they can take to reduce vulnerability and they are motivated to act. In the same vein, Twigg (2004) emphasizes that all disaster reduction programmes should include communication and awareness rising as a centre, on-going element, and should have a clear strategy for doing this. Information is critical, it may be the only form of disaster preparedness that the poorest people can afford (Chagutah, 2009; cited IFRC, 2005:12).

However, as Buys (2005:8) observed that local mechanisms for raising the public awareness of climate related risks and risk reduction options remain weak, with no observable change of behaviour, even where attempts are made to build a culture of risk avoidance through communication interventions. To bridge this gap between the provision of information and appropriate societal response to environmental change development scholars and practitioners have often turned to development communication. Development communication campaigns have been used extensively since the 1960s; Snyder (2003:168) and Moemeka (2000:13) describe development communication as the application of the principles and practices of the exchange of ideas towards the achievement of development objectives.

The dominant paradigm of 'development underwent extensive interrogation and criticism of its top-down and paternalistic development and development communication models by scholars and practitioners in the 1970s (Huesca, 2003 p.209 cited by Chagutah, 2009, p.117)'. Such participatory approaches stress the importance of the cultural identity of local communities and of democratization and full participation at all levels of planning, development communications. Basically it has become a tradition that government have to listen to people, and their problems and solutions must be collectively identified (Twigg, 2004:166). Participation is held as being necessary in order to share information, knowledge trust, commitment and a right attitude in risk awareness planning and implementation communities should not be passive recipients of information; and risk awareness efforts must be based on faith in the people's capacity to contribute and participate actively in the task of transforming society (Chagutah, 2009:117 cited Servaes, 2004:61). In order to effectively change risk behaviour, the target audience's risk perception, priority areas must be identified

taking into consideration the context of the community's situation (Paton, Johnson, Bebbington, Lai and Houghton, 2001).

According to Chagutah (2009:16) risk reduction in African context where physical and financial mitigating measures are not easily realized due to financial constraints, public awareness may be the most accessible and practical tool of reducing risks in the most vulnerable communities. This is more, so because public awareness on public risk challenges are seen as crucial drivers of natural disaster policies and government response.

In a nutshell, raising awareness is only one part of a wider strategy of flood risk interventions. It should be accompanied by information on measures and steps which will mitigate the flood risk. According to United Nations (2007) this was illustrated in a Vietnamese scheme, which was targeted at a range of interest groups (including builders, teachers and school children); this provided success in encouraging home owners to invest in flood and other related hazards resistant buildings. It is important for any awareness campaign to try and engage local communities so that maximum benefit can be obtained for the people at risk.

2.2.3 Risk Awareness Campaign

The societies have long been intrigued by potential power of mass media to help and solve problems. Therefore, it should be possible to use mass media to get people act on behalf of their own health and well-being. Based on this assumption various organizations and governments in recognizing the potent tool of mass media and communication in general towards the improvement of public health and specifically to combat killer diseases such as malaria, polio and a host of other deadly diseases, International Organization like World Health Organizations, United Nations and relevant agencies have used mass media extensively in providing public enlightenment

and advocacy role in stemming the tide of these deadly diseases. For instance, the role Back Malaria campaign and the immunization programmes are good examples where the mass media are largely used to popularise the campaign. Bello in (Tsegyu 2015). Similarly a study was carried out by Kiragu and OMotara also in (Tsegyu 2015). To determine the influence of mass media messages in promoting family planning approaches in Nigeria. The results of their study attested to the fact that mass media campaign via Radio Television and print as well as advocacy proved to be successful in communicating policy to the people.

2.2.4 Communication Strategies

Communications strategies are defined as a holistic planning approach to engage a target audience to ensure greater effectiveness (Murphy, 2014). The process of communication is not complete until the intended receivers got the message and responded to it. Therefore, for any communication strategy to be effective, it is essential that both the message and the means of communication are chosen to meet the specific needs of the target audience. This means that for different audience (for instance farmer, traders, civil servants and so forth) both the messages and the communication tools used (for instance formal training sessions, posters/brochures, leaflet drops, newspaper and magazines articles) must be accommodating. On this note, how well the information is received depends on what information was sent, how it was packaged, the channels used and of course, the understanding ability of the receiver.

According to Wash –cluster (2008) communication strategy needs to be established to guide the awareness campaign and ensure coordination between stakeholders; the government especially at the local level, prone communities and NGO's to develop a strategy for a coherent and comprehensive pre and post flood awareness campaigns with the support from media. The different communication channels will be dependent on the

target audience and cultural considerations. It is important for communicators to realize that messages regarding flood risk are competing in an environment of information bombardment.

Walaski (2011) confirmed that the method used in communication strategy varies from oral methods such as press conferences, television, Radio, drama, interview, Art and photography exhibitions, disaster day campaigns, adverts songs public meetings and safety meetings. While the written communication methods range from the traditional press release to brochures, safety posters, leaflet drops, Newspapers and magazine and newsletters. And the new methods include: Rob calls podcasts, websites, blogs and social networking sites.

In the same vein, UN/ISDR (2002) believed that when designing a communication strategy it's necessary to understand the literacy and language skills of the intended audience. They argued that is a critical factor in communication strategy design. For instance, Afghanistan is prone to earthquakes and droughts, as well as floods. Partly because of its mountainous geography, the country has some of the most isolated villages in the world. As around 80 % of Afghans have radio sets in their homes, the approach adopted was to integrate disaster risk reduction (DRR) messages into BBC world service's educational radio programme called New Home, New Life. The programme has been found to be a cost effective and efficient way to reach the large section of the population who have radio sets in their homes, given that direct engagement with isolated communities is otherwise extremely difficult (UN/ISRD, 2007).

Thus, care should be taken to select media which will not only reach the sectors of the population most at risk, but also those best able to target hard to reach audiences. This

may due to the nature of the audience or their locations; for instance is the targeting of women led households in Cambodia (MRC and ADC 2007). In Senegal the methods used to communicate included plays, exhibitions media broadcasts, , interviews, photo exhibitions and open air conferences (IFRC 2010).

However, in Nigeria the pattern is similar with the rest of the developing countries of the world, no one mediums is all sufficient for this purpose, all are means to a common goal and any one can be used in combination with another to produce results. For instance newspaper and magazines cannot make much impact at the grassroots level where more than 56% of the population can neither read nor write. Besides, out of the literate audiences about 30% cannot read English but indigenous languages. Notwithstanding, community, newspaper can serve this purpose but the question is how many of such community based papers published in Nigeria (Owolabi and Ekechi, 2014).

The same is applicable in television reaching the rural communities in Nigeria where about 70% of inhabitants live without electricity (Owolabi and O'Neill 2013, cited by Owolabi and Ekechi, 2014). Though radio can be operated on battery but the people will still face the challenge of broadcast in the day or night when the radio and televisions are switched off for any reason? Another equally challenging condition is how many languages will electronic media broadcast in multilingual nation like Nigeria? These are what disaster information managers must take into consideration when sending out disaster warning. Depending on the target population, combination of media channels may have to be used in certain situation to reach the target audience in order to produce mass effect (Lanihun, 2002).

Furthermore, with the advancement of information and communication technologies mobile telephones are now dependable and efficient communication channels. Through telephone, quick warning messages can be sent by making calls and sending pre-determined short message service (SMS) to several people. Another noteworthy development from internet and satellite telephone technologies is the advent of social media such as Facebook, Myspace, Youtube, twitter, blog and micro blog etc through which disaster messages can be disseminated and feedback received immediately (Owolabi and Ekechi, 2014).

Furthermore, Wilson (1997) cited by Owolabi and Ekechi, (2014) added that apart from traditional mass communication organs and the modern satellite aided media mentioned above, there are well organized indigenous communication channels that can be used to disseminate information to mass rural and urban populace in times of emergency. These include market women leader charismatic opinion leaders, influential religious leaders, trade union leaders, mobile theatre group and cinema.

Similarly, according to Underwood (2010) cited by Ngang and Kuo (2010) Web 2.0 applications such as twitter, blogs, and wikis are increasing used as a means of improving disaster response, the dual-use technology is very important during disasters as it over-comes the difficulties of using different communications equipment and eliminates the time lag by government administrative bottle necks. For example, direct first hand reports from a disaster with a phone can provide a realistic picture of the situation than in-accurate television broadcasts. In line with this dual-use technology, she explains the peer-to-peer incident notification system that builds on the concept of human sensors which collects and relay information about disasters, to first responders and the general public using mobile phones. She also explains another new ICT innovation in disaster management, the UNICEF‟s Bee, an open source emergency

telecommunications system. This system provides Internet access in areas where infrastructure is non-existent or unusable. It requires no tools, and can be installed by a field worker and be operational within 30 minutes. Working with Rapid SMS, it helps UNICEF provision supplies appropriately and gives workers immediate warnings of potential health risks and disease outbreaks.

Taraba State Government Strategy

After 2005 flood disaster Taraba State Government responded to problem of flooding in the study area by embarking on a number of activities through the State Emergency Management Agency (SEMA) and ministry of Environment and Urban Development and media.

Media in the state such as NTA, Taraba Television (TTV) and Taraba State Broadcasting Service (TSBS) to create awareness of the danger of dumping waste/refused into drainages in the study area. Casual labourers were employed to evacuate the waste/refuse dumped into the drainages to allow for free flow of water. The government has also embarked on annual advocacy visit to the flood prone communities with aim of creating awareness.

2.2.5 Concept of Communication Channels

Under this concept of communications channels of information dissemination the following channels of information dissemination will be discuss:

Inter-Personal Channels of Information Communication

According to Omogor (2013) Inter-Personal Channels of Information Communication referred to as face-to-face communication. It is the exchange of ideas and information between sender and receiver. The mode of interaction is usually of a conversational nature and involves the exchange of either verbal or non-verbal information between

two or more people in a face-to-face or voice-to-voice setting. Interpersonal communication dominates our activities at home, office, market and elsewhere. It helps to break the barrier of formal relationships, generates warmth and creates harmony that is necessary for socio-economic development.

The goals of interpersonal communication are interconnected because of the multiple nature of human interaction. Aderibigbe cited in Omogor (2013) believed that interpersonal communication is the major means of linking the rural farmers since a majority of them are illiterate.

Marketplaces as channels of information dissemination

There are various societal activities that take place in the rural environment and the rural people go to the market to share information from one society to another. Awa in Omogor (2013) observed that many issues, persons and village events are discussed in market places more than elsewhere. He suggested that market sites could be used to disseminate rural development information to women faster and effectively since most village women go there. Bame in Omogor (2013) noted that this mode of communication is development oriented and messages are self-evident.

Role play, song, dance and drama as channels of information

Songs and poems are useful channels of information acquisition and dissemination among people. Fayose in Omogor (2013) opined that singing is usually associated with work, hunting, warfare, funeral, title taking, birth and nursing, moonlight plays and

many forms of ceremonies. Songs deal with all types of social events and life in the community at large. Some songs ridicule undutiful fathers, lazy mothers, wayward children and some encourage the well behaved to keep it up. Fiofori in Omogor (2013) stated that the traditional networks exist as speech surrogates: these are talking drums, gongs, oral narratives, stories, songs, incantations, drama, body movement- dances, games and expressive play activities. Festivals are integral parts of life in the rural communities. During such festivals, drama and role-play are used not only as a means of entertainment but also as a means of imparting socially accepted norms and values.

Lecture demonstration and shows

Lectures, demonstrations, and shows, are also methods of information dissemination to both the elites and rural people. To support this, Lapido cited in Omogor (2013) emphasized that lectures and demonstrations are effective means of passing new information to a group. For example, a lecture on oral rehydration therapy (ORT) may be combined with the demonstration of how to prepare the sugar/salt solution for the treatment of diarrhoea. Ajakaiye in Omogor (2013) suggested that agricultural shows and exhibitions should be used to educate farmers on improved methods of farming. It offers opportunity to farmers to see and consider for adoption, results of materials used in research institutes and agro-allied concerns; and it helps farmers in assessing the success of previous efforts and in formulating policies that would help farming population of rapid agricultural development, Aina in Omogor (2013) opined that it is

an excellent technique for reaching a larger number of farmers with convincing evidence of the efficiency of improved farm practice.

Modern channels

Communication, entertainment and information are important for rural living, as they are for urban. Bame in Omogor (2013) noted that access to modern communication media, makes rural lives more productive and comfortable. Today, rural projects, businesses, schools and growing number of households make daily use of audio-visual equipment's like radio, television, video, mobile phone and so on. The services are wide, and they could be as crucial as a 2-way radio link between a remote clinic and an urban hospital or a computer for a rural NGO office or a radio cassette player used in a household for entertainment. The modern communication equipment for rural people such as radio, telephone, video and video-player and public address system GSM are very important channels of information acquisition and dissemination to rural people. The use of GSM by the rural dwellers enables them to communicate timely and accurately with people outside their environment. Furthermore, households' demands for television, video and radio may increase in the rural areas if indigenous language is used for transmission.

Audio visual channels

Radio cassette players can be operated with batteries if the community can afford it. A battery television set will be very useful in the teaching of new skills. Films, slides or

videotapes presented on any subject-matter relating to health, income generation and the general environment will be useful in educating the rural people. Audio-visual technologies offer rich opportunities for skills acquisition and in solving meaningful problems. Munyua in Omogor (2013) observed that traditional and modern Information Communication Technologies (ICTs) could be used concurrently to speed up the circulation of information. In many African countries, ICTs are used in drama, dance, folklore, group discussion, meetings, exhibitions, demonstrations, visits, farmers' fields, schools, agricultural shows, radio, television, telephone calls and many others. Audio-visual media are popular with illiterate rural people. It gives them opportunity to see and discuss complete agricultural techniques before using them. Audio-visual technology also improves mental retention, and for these reasons educators are making use of videos, television programmes, films, slides and pictures in training sessions. The radio also plays a major role in delivering health messages to rural people. The media can do more to circulate information to rural farmers. Morgan in Omogor (2013) discovered in his study that rural radio listening in the Meru, Nithi and Tharaka Districts of Kenya indicated a penetration of 69% among rural households. But men owned 80% of the radio listening patterns. Women preferred programmes containing easily understood, interesting and relevant information. The possession of radio sets, access to newspapers, and television sets in the rural area are positive indicators of information development. The media programmes are meant for demonstration and to

educate the communities on modern agricultural and health practices. In Gambia and Ghana, the radio soap operas, according to Babalola in Omogor (2013) have motivated men and women to seek and use family planning services. And in Nigeria the Anambra State Ministry of Health used radio programmes such as "Dibi ezi na ulo" (Family Doctor) and "Ezina ulo" (our family) to influence the health habits of the people.

2.3. Review of Empirical Literature

Numerous empirical studies have shown the media have the power to enlighten and educate the populace to accept or reject any new government initiative. One major ways of promoting risk awareness by mass media is through awareness campaign. In fact many authorities have been cited on awareness campaign where the result of the findings shows significance of awareness campaign to the betterment of the target audience.

Ezekiel and Peter (2014) conducted a study Assessed the use of radio and other means of information dissemination among the residents of Ado-Ekiti. It is a survey research employing descriptive research design of the survey type, the instrument used to collect data was questionnaire. The sampled population was one hundred and twenty residents of Ado-Ekiti (120) were selected to participate in the study using simple random sampling technique while the collected data was analysed using tables, bar chart, simple percentage and frequency count, mean and standard deviation. The findings revealed that radio is the most important instrument in information dissemination because it reaches larger percentage of the people irrespective of their location; it promotes the level of awareness of the people on socio-political and economic issues and it also enable people to be adequately informed about programmes and activities of the government. The cost of accessing information through radio, television and use of

mobile phone were not expensive as shown by the study while that of internet, satellite and cable television were expensive. Radio was mostly used to access information followed by mobile phone, television, newspaper, social network, satellite and cable television followed by the internet. The three major problems facing the residents of Ado-Ekiti in accessing information were poor television signals, high cost of purchase, installation and subscription of satellite television and many cannot afford the cost of internet connectivity. It was concluded that more need to be done to improve accessorises of the residence of Ado- Ekiti to information most especially the internet and cable television.

The study has relevance with the present research on channels uses for dissemination of information but the previous study has difference on the present research work for instance the previous one was conducted in Ekiti state while the present one is in Taraba state, this shows that it differ in terms of geographical location, objectives as well as population of the study.

Omogor (2013), the study on the channels of information acquisition and dissemination among the rural dwellers; the descriptive research was employed for the study. It discovered that: Town-criers, marketplaces, socio-political meetings, traditional festival, role play, songs and dance, demonstration, lecture and exhibition, GSM handsets, television, radio, and newspapers are channels of information that are used to acquire and disseminate information among rural dwellers. The study recommends among other that the indigenous languages should be used for radio and television news to enable rural dwellers understand the message better since study has shown that many rural people cannot read or write; that modern and traditional information acquisition and dissemination channels should be used by information agent working in the rural areas; that

further study should be carried out to discover the best acceptable channels to each categories of rural people.

Churi , Mlozi, Tumbo Et Al.(2012) conducted research on Understanding Farmers Information Communication Strategies For Managing Climate Risks In Rural Semi-Arid Areas, Tanzania. Crop production risk caused by climate variability cannot be managed in the absence of climate information. Despite the use of various communication strategies by rural communities in Tanzania, access and use of agricultural information is inadequate to cope with challenges in crop production. This study aims at assessing farmers information needs, examine communication strategies used and hence recommend information and knowledge sharing strategies for improved decision making. In addition, the study examined how modern ICT used together with tradition methods can reduce risks and improve crop productivity of smallholder farmers. A cross-sectional research design and simple random sampling techniques were used for the study. Interviews using structured questionnaires and focus group discussion were conducted to collect primary data from farmers and extension workers. Data were analysed using descriptive statistics where Statistical Package for Social Science (SPSS) was used. The findings showed that smallholder farmers require climate, market and agricultural inputs information to make strategic and tactical farm-level decisions for managing climate variability and extreme events. Climate information was found to be important factor for making decisions. Radio was found to be an important communication channel by the respondents in the study area, for communicating climate information. In addition, the respondents used extension officers and fellow farmers to access climate, market and agricultural input information. Mobile phones were noted to be preferred by

surveyed farmers for communicating agricultural information. The study concluded that, efforts to improve adaptation capacity of smallholder farmers in rural areas should target the extended use of information technology for improved access to climate information and advisories. Furthermore, development initiatives for managing risks of climate variability should focus on improving climate forecasts issued by Tanzania Meteorological Agent (TMA). Farooqi, (2014) Institutional Approach to Flood Disaster Management in Nigeria: Need for a Preparedness Plan. Failure of the country's intervention strategies to satisfactorily ameliorate the sufferings of flood victims and speed-up the recovery processes justify the need for the adoption of a more efficient and innovative response plan to tackle flood emergency conditions in Nigeria. Going through the history of institutional response arrangements during flood episodes, this paper discovered the absence of well-articulated, organized institutional structure to co-ordinate response activities during emergency conditions. Existing response procedures were found to be adhoc, ineffective and poorly coordinated notwithstanding the plethora of agencies involved. Lagos state government has, however, developed a preparedness plan which is currently assisting all stakeholders, including those living in flood-prone areas, to anticipate/ implement recovery measures speedily in order to reduce flood damage potentials. Using the Lagos model as a case study, the paper appreciates the value of a preparedness plan and highlights its centrality in flood disaster management. Based on the positive effects of the Lagos model, the paper suggests that the federal and other state governments in Nigeria to follow the footsteps of Lagos state government by developing similar flood disaster management preparedness plans. This will enhance their ability to develop and speedily implement effective response and

recovery measures. Nhendodzashe & Nhendo (2013), *An assessment of the information dissemination channels used by the Zimbabwe Women's Resource Centre and Network in the provision of HIV/AID information to women. In light of a high HIV/AIDS prevalence rate among women in Zimbabwe;* this study sought to assess the extent to which the Zimbabwe Women's Resource Centre and Network (ZWRCN) were effective in disseminating HIV/AIDS information to combat the pandemic among women. Literature reviewed that in as much as information was crucial in the fight against HIV/AIDS; there are other strategies that should be employed in combating HIV/AIDS to complement information dissemination activities such as economic empowerment of women and promotion of gender equality. The evaluation research design was used to accomplish the research objectives. The population of the study consisted of thirty-five women and five ZWRCN staff. Thirty out of the thirty-five women responded to a questionnaire whilst three out of five ZWRCN staff members responded to an interview. The study revealed that most women did not have access to HIV/AIDS information they needed. Where such information was available, it was not based on formal needs assessment, hence, mostly irrelevant. The study recommended the ZWRCN to engage in effective needs assessment as well as partnering with other organisations whose mandate was gender and HIV/AIDS. The expected outcome of this recommendation was hoped to ensure the reversal of the pandemic among women. Of major importance was the introduction of outreach programmes where officers would collect, document and provide access to the needed information.

Okaka (2009), *Assessing Uganda's Public Communications Campaigns Strategy for Effective National Health Policy Awareness*. Uganda government's national health policy communication campaign strategy has been done in a socio-economic, legal and environmental context dominated by chronic poverty, ignorance, disease and official corruption. Deficiencies in the national health policy awareness, knowledge, risky behaviour and superstitions have increased the incidents of illnesses, diseases, deaths and poverty in Uganda. It emerged that a combined use of both mass media and interpersonal communication channels provide the maximum audience exposure to the intended national health policy messages to the target audiences. Effective communication campaign strategy is critical in creating, raising, developing and sustaining the national health policy awareness for the desired health behaviour change in the country. The current national strategy does not synchronize epidemic dynamics with prevention messages. Its major focus on the mass media compromises the role of interpersonal communication to individuals in making personal decision. The message design is not audience-centred and too general to appeal to an individual audience.

Thainiyom (2011), *A Media Campaign to Increase Awareness and Prevention of Human Trafficking in Asia MTV and USAID launched, "MTV EXIT (End Exploitation and Trafficking).* A multi-media, multi-platform awareness and prevention campaign against human trafficking that has reached over 20 million people in 21 countries in the Asia Pacific. This study describes the campaign background, design and message strategies and the outcome evaluation of the MTV EXIT documentaries, which were developed to build knowledge and influence attitude and behaviour of the target

audience on human trafficking. Both quantitative and qualitative research methods were employed for the outcome evaluation in six selected countries: China, India, Indonesia, Japan, Philippines and Thailand. Quantitative data was collected before and after documentary exposure through surveys using online access panel while qualitative data was gathered from focus groups. The Mind-Set Barometer, an indicator in which knowledge, attitude and behaviour measures were weighted and incorporated into a composite score, was used in quantitative evaluation to measure the effects of campaign exposure. While some variations could be observed, the Mind-Set Barometer scores increased across all sites during the post surveys, showing positive effects of documentary exposure among research participants. The qualitative research provided key insights that the MTV EXIT documentaries had great potential in raising awareness about the issue, but should include stronger call to action to engage audience. This paper calls for the anti-trafficking community to conduct rigorous campaign evaluation to access outcomes, impacts and values of their communication activities. It also advocates that media campaigns can be effective tools in creating awareness and increasing prevention of human trafficking. A Media Campaign to Increase Awareness and Prevention of Human Trafficking in Asia: Background Strategies and Outcome Evaluation of the MTV EXIT Campaign.

Oruonye (2012), *an assessment of Flood Risk Perception and Response in Jalingo Metropolis Taraba State, Nigeria;* Flooding is now an annual occurring event in Jalingo metropolis especially after heavy rainstorm which is further worsened by the nature of topography of the area. The study area consist of undulating plain interrupted in places by low rising hills as well as poor/inadequate drainage network. The knowledge of the public flood risk perception is considered a crucial aspect in modern flood risk management as it steers the development of effective and efficient flood mitigation

strategies. This study examines the level of individual flood risk perception and behavioural response in Jalingo Metropolis. The survey design method was employed in this study. This involves interviewing people living in the study area using structured questionnaires. 252 respondents were randomly selected from three of the most affected areas in the Metropolis. These include Mallam Gabdo, Mafindi and Low cost areas. In each ward/unit, 84 structured questionnaires were administered. Descriptive statistics were used to analyse the data. The result of the findings shows that 23.7% of the respondents were aware that the area was prone to flooding, while 76.3% were not aware. Also about 67.6% of the respondents said that they have evacuated their houses and shops to flooding in the area while 32.4% have never evacuated their houses or shops to flood problems in the area. This study recommends the need to educate the people living in the flood plain on the dangers of continuous occupation of the area.

A study carried out by O'sullivan and Bradford (2011) with the titled *improving communication strategies for effective flood risk management*. An extensive quantitative research of at risk communities across Europe was carried out. A comprehensive questionnaire was distributed at risk to various flood types in four case study areas across Ireland. Analysis focused on flood experience and awareness, pre-flood communication and preparedness as well as during flood communication. The research uses a people centred and knowledge systems approach which represents an advance of the currently used information deficit model. From these results, lack of awareness is a potential barrier to communicating and building capacity to cope with flooding. Respondents that were asked to self-assess their level of preparedness for future flood had confidence in their preparedness levels especially those who had been flood multiple times than those who were flooded once and the most preferred communication strategies for receiving information was door to door communication

followed by brochures/leaflets delivered, radio, phone call, SMS, email, scrolling warning on TV screen and website.

Similarly, Mavhura (2011) thesis entitled Community Strategies to Enhance Flood Risk Communication in the Zambezi valley, Zimbabwe explores the social vulnerability related to risk communication gaps at the community level and discusses the creation of strategies to enhance information sharing, bottom up activities and partnership development. These objectives were achieved using mixed methods: interviews, surveys and a workshop discussion. The study identified potential physical and socio-political vulnerabilities from all hazards occurring in the valley and reviewed that the valley residents were affected by lack of communication regarding forecasted information and emergency plans and procedure during the 2008 flood disaster. The results also highlight a number of external pressures exerted by national flood plain policies and procedures that restrict risk communication and affect social vulnerability in Zambezi valley.

Likewise, in a study titled *Towards Improved Public Awareness for Climate Related Disaster Risk Reduction in South Africa: A Participatory Development Communication Perspective* by Chagutah (2009). Details how, among many other measures to limit the adverse impacts of natural hazards, the implementation of effective public awareness activities to increase the knowledge among communities of the risk they face and what risk minimising actions they can take. Result shows that capacity for the execution of successful communication for development campaigns in disaster risk reduction activities should be bolstered at all levels of government.

Tsegyu (2015) in a study an appraisal of mass media awareness campaign in curbing the spread of ebola virus disease among residents of Minna, Niger state, Nigeria with the

aim of examine the communication strategies adopted to curb health risk. Shows that several strategies were used, Radio and television jingles had the most with 50% percent, closely followed by print media and social media.

Furthermore, Owolabi and Ekechi (2014) in a research titled *Communication as critical Factor in Disaster Management and Sustainable Development in Nigeria* with aim of observing the various communication methods engaged in disaster management and also evaluating the interplay of the different communication channels with other disaster management tools. It shows that the most common channels of communication were print and electronic media, new media and indigenous media such as gong, town crier, opinion leader among others.

In another study *title Analysis of Editorial Discourse on Environment Challenges in Nigerian Newspapers: The Case of 2012 Flooding: by* Okoro, Odoemelam and Martin (2013). Shows that flooding has become a serious challenge in Nigeria because it is among the most frequent and costly natural disasters in terms of human hardship and economic loss and they have caused untold damage in the last couples of years. Their study noted that most flood victims do not get compensation or relief due to the politics involved in the allocation processes. They concluded that flood control needs the cooperation of government, community effort and enlightenment programmes through environmental education and mass media.

2.4 Theoretical Framework

This study is anchored on Risk Communication model (RC) as the theoretical framework. The Risk Communication Model is propounded by Covello Vincent in 21980. This theory shall be discussed in an attempt to explain the role of the risk communication during disaster.

2.4.1 Risk Communication Model.

The Risk communication model is about exchange of information on risk caused by environmental, industrial, agricultural process policies or products individual groups and institutions (Glik, 2007). According to Covello (2008) Effective risk communication model is based on several models that describe how risk information is processed, how risk perceptions are formed and how risk decision are made. The several models that encompasses risk communication model are four namely:

- Risk perception model
- Mental noise model
- Negative dominance model
- Trust determination model

Risk perception model

The risk perception model identified that the risk which kill or harm people and the risk that alarm and upset people are often very different. For example, Covello (2008) clarified that there is virtually no correlation between the ranking of hazards according to statistics on the annual mortality and the ranking of the same hazards by how upsetting they are to people. This means that they are many risks that make the public worried and upset but cause little harm. Similarly, they are risk that kill or harm many people, but do not make them worried or upset.

This model highlighted factors that influence an audience's perception of risk. Covello and Sandman (2001) listed 15 factors they believe most important in audience risk perception model.

Voluntariness: if the audience understand the risk to be voluntary (e.g. smoking, mountain climbing etc.) they are more likely to accept it because they understand their role in experiencing the implication of the risk, than risk taken as involuntary (e.g. exposure to harmful chemical etc.)

Controllability: when audience perceive that they have control over the risk, they are more likely to accept the implication of it.

Trust: risk from activities associated with individuals, institutions or organisations lacking in trust and credibility are judged to be greater than risk from activities associated with those that are trustworthy and credible.

Familiarity: previous knowledge of the risk or experience by the audience are more likely to be accepted because of the increased level of knowing what might or might not happen.

Fairness: Risks from activities believed to be unfair are judged to be greater than risks from fair activities.

Benefits: risk from activities that have clear benefit a judged to be good

Understanding: the greater the level of risk understanding the higher the acceptance.

Uncertainty: if the audience perceive the risk to have a degree of certainty in various dimensions and in the scientific information available about it, they are more likely to accept the implication of it.

Dread: when emotions with regards to a risk are less intense and fearful, the more likely they are to accept the implications of it.

Reversibility: risk activities with reversible adverse effects are more likely to be accepted.

Human and natural origin: Risks generated by human action are judged to be greater than risk caused by nature.

Ethic/moral: risks perceive to be morally or ethically acceptable are more likely to be accepted.

Accidental history: risks from activities with a history of major accidents or frequent minor accident are judged to be greater than risks from activities that receive little.

Personal stake: if audience member perceive the risk to be limited in its personal implication and consequence, the more likely they are to accept the implication of the risk.

Catastrophic potential: if the audience perceive that the amount of fatalities, injuries and illness from a risk are minimal, they are more likely to accept the implication of it.

Mental Noise Model

The mental noise model focuses on how people process information under stress (Covello, 2008). Mental noise is caused by the stress and strong emotions associated with exposures to risk. This means that when people are stressed and upset, their ability to process information can become severely impaired. Similarly, the model holds that when people are in a state of high concern or perceive a significant threat, their ability to process information effectively and efficiently is severely impaired (NRC, 1989).

In other word, in high stress situations, people typically display a substantially reduced ability to hear, understand and remember information. For example, Covello and Sandman (2001) state that when people are stressed and upset they typically can attend to no more than three messages at time. Processed information at four or more level below their educational level and focus their attention on information they hear first and last.

Trust Determination Model

The third model is trust determination model. A central theme in the risk communication model is the importance of trust in effective risk communication. According to Glik (2007) he maintains that when people are upset they commonly do not trust authority. Trust, therefore, must be established well in advance of an actual crises event. Research indicates that proactive community outreach is one of the most effective means of achieving this goal (Santos, Covello, and McCallum, 1996).

Elaborating on the Trust, Covello (2008) believed that trust is generally recognised as single most important factor to determining perception of risk. Therefore, only when trust has been established can other risk communication goals such as consensus building and dialogue be achieved. Furthermore, research indicates that the most important trust determination factors are:

Listening, caring, empathy and compassion

Competence, expertise and knowledge

Honesty, openness and transparency.

Accountability, perseverance, dedication and commitment

Responsiveness, objectivity, fairness and consistency.

Negative dominance model

The last model of risk communication according to Covello and Sandman (2001) is the negative dominance model. The negative dominance model describes the processing of negative and positive information in high concern and emotionally charged situation. The model is based on a central theorem of modern psychology. When people are upset they put greater value on losses and other negative information or outcomes than on gains or positive information and outcomes (Maslow, 1970).

This means that negative messages should be counter balanced by a larger number of positive or solution-oriented messages. According to Covello (1998) more specifically risk communication are most effective when they focus on what is being done rather than what is not being done. In the same vein, Covello and Sandman (201) states that;

> another practical implication of negative dominance model is that communications that contain negatives (e.g. words such as; no, not, never, nothing, none and other words with negative connotations tends to receive closer attention, are remembered longer, and have greater impact than messages with positive words (p. 146).

2.4.1.1 Relevance of the model

The relevance of risk perception model captures the fear and anxiety generated among inhabitants of Jalingo, especially during the 2005 flood disaster. Therefore, in setting any strategy the policy makers have to consider the fear and anxiety of the target audience, of the models under risk communication theory, these theories as a matter of fact forms bedrock for media campaign planners in planning campaigns of this nature. The campaign is to sensitise the residents of Jalingo about flood and the risk involved in

not listening to campaign. Therefore, the theory will go a long way in juxtaposing the campaign and the concomitant dangers involved in not heeding advice of Taraba state risk awareness campaign. The most relevant are the risk perception model and trust determination model. The trust determination model is central to explaining the strategies used in raising awareness campaign by the Taraba state on disaster management. There is need for trust in the campaign if the flood prone communities are to accept any information from the government.

2.4.1.2 Criticism of the models

The criticism of the theory according to Covello (2001) is psychological, sociological and cultural. These are factors that create public misperceptions and misunderstanding about risks. As a result of these factors people often make biased judgments or use only a small amount of available information to make risk decisions.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the method of data collection as well as the analysis of the data. It presents the research design, the study area, and the population, sampling procedure, the sample, the research instruments, validity and reliability of the research instruments and data collection procedure for analysis.

3.2 Research Design

The study adopted Qualitative and Quantitative research methods. According to Wimmer and Dominic (2000) combining qualitative and quantitative method is regarded as triangulation. Triangulation rests on the premise that the weakness in each single method will be compensated by the counter balancing strength of another to fully understanding the nature of a research problem.

Under qualitative method the researcher conducted In-depth interview. In-depth interview according to Berger (2000) is a conversation between a researcher and an informant. Basically, in-depth interview are discovery oriented research method that are well suited for describing a phenomenon from the perspective of someone who presumably has information of interest on the phenomenon (Berger, 2000), while Wimmer and Dominick (2000) describe In-depth interview as a hybrid of the one-on-one interview approach in which a respondent is invited to a field service location or a research office for an interview

While Focus Group schedule, according to Poindexter and McCombs (2000),"Is a qualitative research method that uses open-ended, follow-up and probing questions to search below the surface of a small group of participants' attitudes, opinions, and behaviours to understand motivations, feelings and reactions". Focus groups rely on the

participants, words to provide insight, participants behave and respond the way they do (Poindexter and McCombs, 2000).

Thus, in-depth interview was carried on three key informants; District head of Jalingo, secretary of SEMA (state emergency management agency) and an environmental activist. On the other hand Focus Group Discussion was also conducted with members of the affect communities in Jalingo metropolis. The goal of this kind of method is to deeply explore the respondent's point of view, feelings and perspective in respect of issue under investigation.

The quantitative aspect used in the study was survey. According to Berger (2000) surveying is a research method researchers use to get information about certain groups of people who are representation of some larger group of people of interest to them. Wimmer and Dominick (2000) further state that surveys are now common place in all areas of life. Decision makers in businesses, consumer and activist groups and media use survey results as part of their daily routine.

3.3 Study Area

Study area according to Ujo (2000) is the geographical location to be covered by the study. Therefore, the study area is Jalingo metropolis in Taraba State, Nigeria. The area is situated in the North Eastern part of the country. Jalingo is located between latitudes 8° 47′ to 9° 01′ N and latitudes 11° 09′ to 11° 30′ E, it is bounded to the North by Lau local government area, to the East by Yorro local government area to the South and West by Ardo Kola local government area.

3.4 Population of study

A research population is described as a well-defined collection of individuals or subjects known to have similar characteristics. Babbie (2005) defines a population or

universe as the theoretically specified aggregation of survey elements from which the researcher gathers information.

According to National Population Census (2006) Jalingo is made of one hundred and thirty nine thousand, eight hundred and forty-five people (139,845). However, considering the focus of the study, only people living within flood prone areas form the population of this research will be study. According to SEMA (2015), the estimated number of people living in the four flood prone areas in Jalingo metropolis is twenty four thousand three hundred and fifteen (24,315).

3.5 Sample size

Tull and Hawkins (1993) define a sample size as those individual chosen from a population of interest as the subject in an experiment. The researcher arrived at 379 as sample size from the population of 24,315 in flood prone areas of Jalingo metropolis. The sample size for this study was determined via Raosoft online calculator with the margin error of 5% and confidence level of 95% (see appendix i).

3.6 Sampling Technique

Bello and Ajayi (2000) define sampling as a systematic process used to select a required portion of a target population. Therefore, the sampling technique used for this study is multistage sampling.

First, the researcher purposively selected the most devastated areas among the flood prone areas. According to SEMA (2015) Reports, Anguwan Baraya, Anguwan Yandang, Anguwan Primary Board and Anguwan Sabon- Gari are the most devastated areas. Relying on the SEMA reports the researcher decided to purposively pick the above mentioned areas.

The second stage is to stratify the selected wards into streets. Thereafter, all the streets were selected and a systematic random sampling was done to give questionnaire to

respondents. The respondents were selected by picking any male or female individual that appears from the selected nth houses in the streets. The third house was selected in each street. This was replicated in all the other areas, until the final questionnaire was submitted.

3.7 Instrument for data collection

This study triangulated three research methods that are; Survey, In-Depth Interview (IDI) and Focus Group Discussion. For survey questionnaire was used as instrument, for In-depth interview, interview guide was used and also, for FGD, focus group guide or schedule was used.

The survey method is justified in this study because it is a suitable method for gathering information from a large number of respondents on a given issue. While the case of qualitative research i.e. In-Depth-Interview (IDI) and Focus Group Discussion (FGD) on the other hand "allow individuals under investigation to respond freely using their own linguistic codes and displaying their natural behavioural form" (Gunter, 2000).

3.8 Method of Data Collection

Primary data was obtained from the field with the use of questionnaires as well as the in-depth interview for key informant and FGD. While secondary data on the other hand was collected from sources such as textbooks, journals, online publication, seminars, published dissertation work that contain relevant materials relating to the study.

3.9 Validity and Reliability of Instrument

To ensure that the validity and reliability of the data collected was achieved, the drafted instruments were given to the team of supervisors and other experts in the Department of mass communication Ahmadu Bello University Zaria. After validation of the instrument pilot study was conducted at Kantiyel village were thirty seven (37) victims of the flood were used as despondence. The corrected instruments were used for pilot

testing and ascertain the validity and reliability of the instruments for this study. Equally thirty seven (37) copies of questionnaire were administered to the residents of the area to test and validate the reliability of the instrument. The data collected from the pilot testing were analysed using statistical techniques. The result of the pilot study shows reliability score of 0.988. This showed that the instruments were reliable.

3.10 Data Presentation and Analysis

The descriptive analysis technique was used to analyse the data for the study. This gives opportunity for the interpretation and explanation of the content of the data. Ogbuoshi (2006) noted that the descriptive data analysis is used for descriptive studies, which involves the use of questionnaire. Thematic textual analysis was chosen for its ability to assist with the presentation, analysis and interpretation of concepts patterns and theme embedded within qualitative data (Braun and Clarke, 2006). The data obtained was summarized in clear and simple terms. The essence is to give room for both the quantitative and qualitative techniques to be used together. A thematic analysis was used for In-depth interview and FGD. A statistical software called statistical package for social sciences popularly known as SPSS version 22 was used in analysing the returned questionnaires.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND ANALYSIS

4.0 Introduction

This chapter presents, interprets and analyse data gathered from the field in respect to the research work, data was gathered using questionnaire, in-depth interviewed (IDI) Guide and Focus Group Discussion (FGD) Guide as instruments.

1.2 Data Presentation

The result of this study are presented taking into consideration the various research objectives of the study, namely: to determine the communication channels employed by Taraba State Government before, during and after the 2005 flood disaster, to determine the major communication strategies used by Taraba State Government and to assess the effectiveness of the strategies to the community.

As mentioned earlier, this study employed the questionnaire, in-depth interview schedule and Focus Group Discussion schedule as instruments for data collection. There were a total of three hundred and seventy nine (379) copies of questionnaire administered to the four selected flood prone areas in Jalingo metropolis, out of which three hundred and sixty two (362) were dully filled and returned by the respondents. These represent about 94% of the total questionnaire. The researcher also conducted interviews with staff of State Emergency Management Agency (SEMA) Taraba State, District Head of Jalingo, environmental activist and a Focus Group Discussion was conducted with two registered farmer associations who are residing within the four selected flood prone areas in Jalingo Metropolis. Data collected through all these instruments are presented, interpreted and analysed.

Table 1: Demographic Parameters of the respondents

Age Bracket	**Frequency**	**Percentage**
18-27	67	18.7
28-37	129	35.9
38-47	96	26.7
48-57	43	11.9
58-above	27	7.4
Total	**362**	**100**
Gender	**Frequency**	**Percentage**
Male	275	76
Female	87	24
Total	**362**	**100**
Educational Qualification	**Frequency**	**Percentage**
Primary school level	40	11
Secondary school level	75	20.7
OND/NCE	92	25.4
HND	50	13.8
B.Sc.	71	19.6
Others (specify)	34	9.4
Total	362	100
Occupation	**Frequency**	**Percentage**
Traders	70	19.3
Farmers	91	25.1
Civil servants	152	42
Others	49	13.5
Total	**362**	**100**

In terms of age distribution, Table 1 shows that most of the respondents are within the age bracket of 28-37 years. This is connected to the fact that 129 respondents representing 35.9% fell within the age bracket of 28-37 years. Looking at the table very closely, we can see also that about 96 respondents representing 26.7% fell within the age bracket of 38-47 years. Going by this, it can be projected that most of the respondents at the flood prone communities in Jalingo metropolis belong to active class because two age (28-37 and 38-47 years) distributions had the highest frequencies represent 62.6% of the total number of respondents.

In respect of gender distribution, 275 respondents equalling 76% are male respondents at the four selected flood prone communities in Jalingo metropolis are male. While 87 female respondents representing 24% (Table 1). Looking at the figures, majority of the respondents are male this is because the areas under study are Muslims dominated of which the researcher had limited access to female than male.

In terms of educational distribution, 92 respondents with 25.4 % have OND/NCE, 75 respondents with 20.7% had secondary school level certificate, 71 respondents representing 19.6% had B.sc certificate (Table 1). These results revealed that most of the respondents are educated.

Table 1, shows that 152 respondents representing 42.2% are civil servant followed by 56 respondents representing 22.31% are farmers, the first two categories of the respondents represents about 64.54%of the respondents, 70 respondents with 19.3 % are traders and 49 respondents representing 13.5% had other occupation. This is a true representation of the areas under study because majority of the habitants are either civil servant of low cadres or peasant farmers who are involved mostly in dry season farming known as “Lambu”.

RQ1. What types of communication channels were employed by Taraba State Government before, during and after the 2005 flood disaster?

Table 2: Comments on which organization gave the warning?

Names of organisation	**Frequency**	**Percentage**
SEMA	40	44.4
NEMA	26	28.9
NIMET	24	26.7
Total (no. those that got the msg.)	90	100
Total	**362**	

In response table 2 result shows that State Emergency Management Agency (SEMA) had the most frequency with 40 respondents representing 44.4%, followed by National Emergency Management Agency (NEMA) with 26 respondents representing 28.9% and NIMET had the least with 24 respondents representing 26.7%. This result indicates that SEMA is closer to the people than the likes of NEMA and NIMET.

Table 3: Types of channels respondents got their warning

Types of channels	Frequency	Percentage
Interpersonal channel	5	5.5
Radio	51	56.7
Television	18	20
Ward head	6	6.7
Newspaper and magazines	10	11.1
Total (no. those that got the msg.)	90	100
Total	**362 (100)**	

The table 3 indicates 51 respondents which represent 56.7 % got their warning information through radio While 18 respondents who are representing 20% of the respondents got their warning information through TV. This is also true because most of the respondents are enthusiastic listener of radio. Hence, based on this radio broadcast can be proven to be a very good medium.

Table 4: Frequency on if there was channels of communication with SEMA.

Response	Frequency	Percentage
Yes	162	66.7
No	81	33.3
Total (no. of yes to rescue)	**243**	**100**
Total (no. of questionnaire)	**362**	

Table 4 shows that 162 respondents representing 66.7 % said yes that there was a channel of communication between them and the government during the resettlement process, while 81 respondents with 33.3% said there were no channel of communication between them and the government during the resettlement process.

RQ2. Which were the major communication strategies used by Taraba State Government before, during and after the 2005 flood disaster?

Table 5: Distribution of respondent's opinion on the best information strategy

Response	**Frequency**	**Percentage**
Door to door communication	187	51.7
Phone cells/sms	37	10.2
Leaflets deliver	8	2.2
Radio/Television/Jingles	115	31.8
Faith base organisation	15	4.1
Total	**362**	**100**

Looking at the table 5, it indicates 187 respondents representing 51.7%of the respondents preferred door to door communication as the best channel of communicating flood disaster information, while 115 respondents representing 31.8 % preferred radio. This result indicates that door to door communication was proven to be a very good medium because of its quick feedback.

In an interview with SEMA staff he affirmed door to door is more effective because its two way process when you speak to someone and he gives you feedback they communication has taken place. While the district head suggests the use of traditional leader since we know better than everybody. For the focus group, they suggest that the government should involve their association.

Table 6: Comments on why respondents prefer the option expressed on table 5

Response	**Frequency**	**Percentage**
No language barrier	162	44.8
Reliability	71	19.6
Easy and fast	83	22.9
Made in Places of worship	46	12.7
Total (no. of response)	**362**	**100**
Total (no. of questionnaire)	**362**	

Table 6 shows that in response to the question 162 respondents said they chose the best strategy to pass information as mentioned in table 5 because of no language barrier. The following comments were made by the respondents. 'Door-to-door communication I prefer this because I felt everyone would get informed and people who cannot read and write can be communicated too'. 'It also solves the problem of language barrier'.

While, some of the respondents that went for reliability, fast and easy and information passed in place of worship had this to say 'It also gives room for people living around

the flood prone areas to have first-hand information about the danger of flood'. 'Phone and calls/SMS would have been the easiest and fastest means of communicating far emergency purpose'. 'If the information would make more impact if the announcements are made in the places of worship'.

Table 7: Frequency of those that got the warning messages

Warning messages	**Frequency**	**Percentage**
No	272	75
Yes	90	25
Total	**362**	**100**

From table 7, only about 90 respondents representing 25 % said they got warning either from the government or a non-government organization, while 272 respondents representing 74 % did not get any warning before the flood disaster. This indicates that most of the respondents lost their properties to flood because of the absence of warning message.

Response from the interviewees (the SEMA, Environmental activities and District head) indicates that people were alerted of the eminent danger. Furthermore, District head also elaborated that "until now the affected areas by the flood was not a settlement area. Historically, every son and daughters of Jalingo cannot construct a residential house there".

RQ3 Did the communication strategy address the needs of the communities?

Table 8: Respondents reaction to the warning

Reaction	**Frequency**	**Percentage**
Moved part of my property	9	10
Planned to move by couldn't before the flood	23	25.6
Move to a safer place	18	20
No action taken	40	44.4
Total (number of those who got the warning message)	**90**	100
Total (number of questionnaire)	**362**	

From the table 8, one can depict that the channels of warning has not made positive impact on the respondents because only 18 respondents who represent 20% of the respondent acted affirmatively to the warning message, while 23 respondents representing about 25.6 % of the respondents have planned to move to safer place but could not before the flood. This is in line with what Sullivan and Bradford (2011) observe that "for public at risk to process a warning effectively, they must trust the source of warning find the source to be reliable and also comprehend the message".

Response from the Focus Group indicates that "the information on flood is very negligible compare to other issues especially politics". This has led to poor awareness creation due to poor attention given to the issue by the government and its owned media respectively.

Table 9: Frequency on whether the communication strategy address respondents needs

Response	Frequency	Percentage
No	156	65.4
Yes	84	34.6
Total (no. of yes to rescue)	**243**	**100**
Total(no. questionnaire)	**362**	

Table 9 indicates that 156 respondents who represent 65.4% said that the communication with government has not address their needs while 84 respondents with 34.6 % said their communication with government have address their needs.

This position is supported by focus group discussion. In the session they maintained that 'This has led to poor awareness creation due to poor attention given to the issue by the government and its owned media respectively'. 'The communication channel between the government and the victims was very poor as such our needs were not addressed' (focus group discussion, 2015).

Qualitative Data

Key Informants Interview

A key informant's interview was conducted in Jalingo on 23th, 24th and 27th November, 2015 with three key informants; District head of Jalingo, Secretary State Emergency Management Agency (SEMA) and the Secretary Safe the environment a Non-governmental Organization (NGO). The interview was conducted in a separate place

each of the interviews lasted between 20-30 minutes respectively and it was done in English language consequently.

A Focus Group Discussion (FGD): it was also conducted on the 25th November, 2015 for the two registered Farmers Association residing in the flood prone area in Jalingo metropolis a total number of thirteen (13) people were interview. The researcher serves as moderator while Salihu Ali, a producer/translator with NTA Jalingo conducted the interview in Fulfulde/Hausa languages respectively. The interaction took place at the House of Alh Salihu Abubakar who is also the chairman of the vegetable growers. The first session took place in the morning and lasted for 45 minutes while the second session took place at Lamorde River and it lasted for 51 minutes. Both the three key informants were selected based on their knowledge about flooding in Jalingo metropolis which researcher believes would be of benefit to the research work. While for the Focus Group it can enable the researcher understand feelings and reactions of the respondents by expressing their opinions freely with probing questions by researcher.

FGD and IDI Data

In their interview on communication strategies employed by the government before, during and after 2005 flood disaster in Jalingo metropolis, According to SEMA informant is on the view that: "there is a warning system people are alerted of the eminent danger".

His answer indicates that Taraba State government have knowledge of the disaster and necessary measures have been put on ground to alert the flood prone communities about the imminent danger of the flood.

Secondly on the effectiveness of government communication employed among the dwellers of the affected communities. The secretary said: "different forms of communication channels were employed to reach out to communities prone to flood

disaster ahead of the incidence so that people can get prepare and leave the areas that are prone to flooding".

According to District head of Jalingo, He said: that "the affected areas by the flood were not a settlement area. Historically every son and daughters of Jalingo cannot construct a residential house there". But for the District head, he is having a contrary view.

"I think if the government can recognize the traditional institutions as one of the stakeholder would have averted the loss of lives and properties because we have a strong channels of communication right from the grassroots to the Emir all information concerning each hamlet is reported to (Jauro) Dagachier Maianguwa village head then to the District head before it get to the Emir. "The traditional rulers are very important and instrumental in the success of every good programme, due to their influence proximity to the communities and a good knowledge of the local environment and realities. For the vegetable growers" They noted that there are some fault plays on the side of government because we are not given much regards that is why we were not consulted in any decision taken on our behalf. This show that the government is taken decision without a clear understanding of the target audience's needs, wants perceptions and present patterns. This observation also agrees with (Middelburg and Ostend 2013). They avers that it is important that there is a clear understanding of the target audience's needs, wants, perceptions and present patterns for the successful implementation of all programmes.

Thirdly on the question what people perception of government gesture in settling the flood victim to a safer place according to the secretary. "The perception of the people is that must of the affected people are poor civil servant some petty traders and farmers who cannot afford to erect a new structure with a little assistant from the government."

On the people perception of government gestures by resettling the people to a safer place by District head "While for the vegetable growers association their view is that; "Government intervention did not reach us because the right people are not identified and those who got the government relief packages are only those with good connections or those who have godfathers within the government cycle benefited". From the explanation of both the secretary of SEMA and that of District head they are sympathetic to the government they do not want to say anything that would paint the government black especially the District head who was a member of committee on flood disaster.

While vegetable growers we strongly believe that SEMA failed to go round the state to obtain first information on flood disaster as it claimed. Instead SEMA depended on politicized reported submitted to it from the local government areas. As if that is not enough, SEMA did not satisfactorily account for the thirty-one million (N31, 000,000:00) only released to it for logistics. The inability of all the victims benefiting from the relief materials was mainly SEMA's laxity. In fact some people who benefited from the relief materials were not victims of flood disaster".

Lastly, the questions concerning the most effective communication strategies among the people by government, the secretary answer by saying communication is two way process when you speak to someone and he gives you feedback they communication has taken place. But some of the challenges is when people are not enlightened and other places where they do not understand the language, then interpreters is needed as well as all, other stakeholders for the programme to make impact.

"While the District head of Muri responded saying that essentially their hands are tied ideally their supposed to provide clear advice to government on how best to allocate land or plots for but, residential and industrial because we know it, better than

everybody. For the vegetable growers when asked to suggest on the best possible ways of communication strategies among the flood victims by government, government should involve their association and other genuine stakeholders in any matters affecting them like given them relief materials compensation to be able identified the real and genuine affected farmers".

Good afternoon sir? Can you tell us your name and you r occupation.

Interviewee: my name is Muhammed Sani I lived in Jalingo I am an environmental activists, I read Geography in University of Maiduguri about twenty-seven years ago.

Interviewer: how do you assess communication strategies employed by Taraba State government in creating flood risk awareness during the 2005 flood disaster in Jalingo metropolis?

Interviewee: Well the 2005 flood disaster is one of the worst flood disasters Jalingo had experienced in the last 70 years, my father was over 80 years old then, he said Jalingo had a similar experienced when he was about twelve years old. In terms of effectiveness of the communication strategies employed to educate the people about the menace of flood is either through Radio, Opinion leaders which includes religious community leaders and civil society organization, but I want to tell you the state government owned media, they do not have any permanent programme dedicated to flood disaster, for instance (TSBS) Taraba State Broadcasting Services have about two magazine programme that is "Issues and events" and "kwaryar Kira" these are magazine programmes which covers all issues of interest to the public from time to time but for TTV I don't know any programme meant to educate flood victims about the menace of the flood.

Not only that these state government owned media are not airing any programme in respect of flood awareness as social responsibility to serve the people where they are

operating; I can tell you last time we went to Wukari with the SEMA to distribute relief materials for victims we suggested to the SEMA secretary to invite TSBS to cover the events, he decline on the ground they do not have money to pay for their transport to and fro of the reporters.

Sir apart from the two state government owned media what other types of communication channels do you think are very effective in addressing the communication challenges? **Interviewee;** the civil society organization, face to face channels of communication, religious base organization as well as the community leaders these organizations are leaving with the vulnerable people they have trust and confidence on them than the government; I want to give you example with 2012 flood disaster relief the federal government gave Taraba State about four hundred million naira to assist the flood victims the money was diverted. About thirty million naira was given to SEMA to provide relief materials and logistics to the victims. The money was also misappropriated. A committee was set up by the Taraba State House of Assembly to investigate the matters, SSG and some commissioners were indicated and latter sacked by Acting Governor Garba Umar (UTC) and asked to refund the amount each of them misappropriated.

Sir in your discussion you said face to face communication strategies are the best why? **Interviewee:** Yes face to face communication is the best because we meet with the vulnerable one in one and speak their language as well as advocacy visit to the community leaders. Let me tell you more than 50% of Local Government in Taraba State are vulnerable to flood, but the unfortunate thing is that Nigerian Meteorological Agency (NIMET) usually predict flood event but the government especially state and local governments failed to act on time this contribute negatively to the problem.

Sir on a final notes what is the way is out.

Interviewee: One of the strategies is that you know flood cannot be prevented neither can be eradicated totally. Nevertheless they damage they cause can be minimize. To reduce the losses from flooding, several measures must be put in place. These include relief and rehabilitation, prediction, forecasting, warning monitoring and regulation. In addition legislation to ban blocking of water channel either by dumping of refuse or erecting a structure on the water channels must be passed immediately. For all these measures to be successful information on the nature, extent and severity of the flood must be provided for people to act very fast.

4.3 Discussion of Findings

The discussion of these findings is based on the research questions of this study which are:

RQ1: What types of Communication channels employed by Taraba State Government before, during and after 2005 flood disaster?

This research question was generated to give an answer to objection number 1 which seeks to know the communication channels employed by Taraba State Government, before, during and after 2005 flood disaster.

The quantitative data in table 3 provided the answer to the question. Amongst the various channels respondents got their warning information 56.7% indicate that they got their information through Radio. Also from the qualitative date one of the interviewee opined that Radio is one of the effective channels of disseminating information to educate the people about the menace of flood in Taraba State and Jalingo metropolis in particular. This finding indicates that Radio is believed to have capacity which can cut through the barriers of illiteracy (Baran, 2002).

The findings seems to be in line with DTF report (1994) that explains that Radio is the most used while the local Televisions is used to a lesser extent. On the other hand the internet is hardly used for the purpose of information dissemination in disaster preparedness in Africa.

RQ2: which were the major communication strategies used by Taraba State Government before, during and after 2005 flood disaster.

The second research question was asked to determine the major communication Strategies used by Taraba State. One of the key informant answered this question when he said Door-to-Door is more effective because it is two way process when you speak to someone and he gives you feedback they communication has taken place. While the district head suggested the use of traditional leaders since we know better than 51.7% of the respondent's preferred Door-to-Door communication as one of the major strategy of communicating flood disaster information. While table 6 the respondents said they chose the door-to-door communication strategy to pass information because of no language barrier in the communication process. This is in line with Omoger (2013), who argued that door-to-door communication dominates our activities at home, office, market and elsewhere. It helps to break the barrier of formal relationships, generates warmth and creates harmony that is necessary for socio-economic development. Therefore the finding indicated that Door-to-Door communication strategy is considered a very good medium for communicating disaster information.

RQ3: did the communication strategy address the need of the communities?

This research question was generated to gives an answer to objectives three which seeks to find out whether the communication strategy have address the needs of the communities?

Table 8 from the quantitative data it was found that the communication strategies adopted have failed. This is clear when44.4% of the respondents indicated that they have not taken any action when receive the warning information from government, while 25.6% intend to take action before the flood but could not.

Response from the Focus Group was also corroborated where the said "the information on flood is very negligible compare to other issues especially politics." This has led to poor campaign awareness due to poor attention given to the issue by government. We strongly believes that SEMA failed to go round the state to obtain first-hand information on the flood disaster as it claimed instead SEMA depended on politicized reports submitted to it from the local government areas. This is in line with O'sullivan and Bradford (2011). They argued that for public at risk to process campaign warning information effectively they must trust the source of the information to be reliable. Their views are also in line with Lu in Rasila and Mudau (2012) asserts that portrayal of poor image by communities is a sign of communication gap between government and its people. And this impacted negatively on development initiatives.

Therefore, the findings indicates that the strategies adopted in response to flooding by way of flood preventive and mitigate measures were very poor.

4.4 **Findings**

The findings from this study are as follows:

- The communication channels used by Taraba State Government during the 2005 flood disaster were interpersonal channel, radio, Television, ward head, newspaper and magazine.
- The best of the communication channels was Radio.
- The communication strategies used by Taraba State Government during 2005 flood disaster were ineffective in reaching and mobilising the people at risk.

- The recommended communication strategy by the respondents was door to door communication.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

In this chapter, the researcher look at the summary of the study, the conclusion and recommends with aim to assess the risk awareness campaign for flood prone area in Taraba State using Jalingo metropolis before, during and after the flood disaster.

5.2 SUMMARY OF THE STUDY

This study explores the communication in natural disaster management: a study of flood risk awareness among the residents of Jalingo metropolis. The scope of the study is anchored on four objectives as follows:

i. To identify the communication channels employed by Taraba State Government before, during and after the 2005 flood disaster.
ii. To determine the best communication strategies used by Taraba State Government.
iii. To assess the effectiveness of these communication strategies on dwellers of the affected communities.

The scope was limited to flood victims of 2005 flood disasters in Jalingo metropolis. Thereafter, the study adopted risk communication model propounded by Covello (2001). Three research methodologies were employed namely; survey, focus group discussion and interview. Data were gathered with aid of multi-stage techniques (purposive, stratified, and systematic random sampling techniques) and some research instruments (questionnaire, Focus Group Discussion and interview schedule). The research instruments administered were 362 questionnaires, 3 people interview, and one focus group discussion. Data was analysed with the support of statistical package for social science (SPSS).

Findings from the study shows the communication strategies used by SEMA during the 2005 flood disaster were interpersonal channel, radio, Television ward head, newspaper and magazine. The best of the communication strategies was Radio; this is because most of the warning information was gotten through radio with 51 respondents which represent 56.7% got their warning information through radio. Likewise, the best strategy to give information on flood awareness campaign was through door to door communication as the best channel of communicating flood disaster information representing 51.7% of the respondents. Similarly, the evaluation on the effectiveness of the government communication strategies used among the dwellers of the affected communities shows that the channels of warning has not made positive impact on the respondents because only 18 respondents who represent 20% of the respondent acted affirmatively to the warning message.

5.3 CONCLUSIONS

From the analysis of data generated and the various findings that have been made, some conclusion can be drawn;

Firstly, the study concludes that radio is the most widely acceptable means of communication. The study concludes that government at all levels should use radio in disseminating their programmes because it is one of the medium that cut across the barriers of illiteracy.

Similarly, the study concludes that Door-to Door-channels of communication was also proven to be one of the most effective methods for the disseminating of information in the study area.

It also concludes that even if the information channels are effective they still have some challenges when people are poorly enlightened as well as language barrier it must be address before any programmed will be effective. More so, the study concludes that the

most disturbing threat posed to government programmed or strategies is the lack of political will to properly fund and equipped SEMA with state of the art equipment, as well as professional competence and dedication from its staffs

Moreover, the study concludes that traditional institutions should to be incorporated into government sensitization programmes because of their influence proximity to the communities and good knowledge of the local environment and realities.

5.4 CONTRIBUTION TO KNOWLEDGE

The contribution of the study communication in Natural Disaster Management: A study of flood risk awareness among the residents of Jalingo metropolis to the existing body of knowledge has shown that;

i. The flood victims in Jalingo metropolis preferred the door to door communication as compare to other communication channels used by Taraba State Government during the 2005 flood disaster. Through this study the researcher hoped to have created awareness about the vulnerable nature of Jalingo metropolis to natural disaster and the rising need of public awareness and the use of communication to mitigate the negative impacts of these disasters.

ii. The study also reveals that although the use of communication (such as radio) is very important in disasters in Jalingo, but still yet it was not effective because of the absence of trust, familiarity among others. The stakeholders face lots of difficulties in sensitizing the flood prone communities because of existing barriers to awareness creation.

iii. It is hoped that this study has laid a foundation for further studies in the field of risk communication in Jalingo. Despite this contribution they had quite a number of limitations.

iv. And lastly lack of dedication, funding, communication strategy and equipment by State Emergency Management Agency (SEMA) which negatively affected the management of 2005 flood disaster.

5.5 RECOMMENDATIONS

Based on the findings of this study the researcher therefore recommends the following:

i. SEMA and other respective body in charge of disaster management should endeavour to employ other communication channels such as; phone call/ SMS, Facebook, twitter and 2go.

ii. They should be synergy between State Emergency Management Agency (SEMA) and traditional leaders, religion leader and other civil society organisations, so that communication strategies can be effective.

iii. The government should establish a good relationship centred on trust with the people to allow them accept any call to disaster and also implement government program without any hitches.

5.6 SUGGESTION FOR FURTHER STUDIES

One of the weaknesses of this study is the fact that it was not able go deep into various channels of communication. In the future we suggest that studies in this direction could try to look at the following areas;

- the use of radio in disaster awareness in Nigeria
- the use of social media in disaster awareness in Nigeria
- The use of traditional communication in disaster awareness in Nigeria.

In this way some precision can be obtained on how radio, social media and traditional communication are used in disaster awareness preparedness or response phase of disaster.

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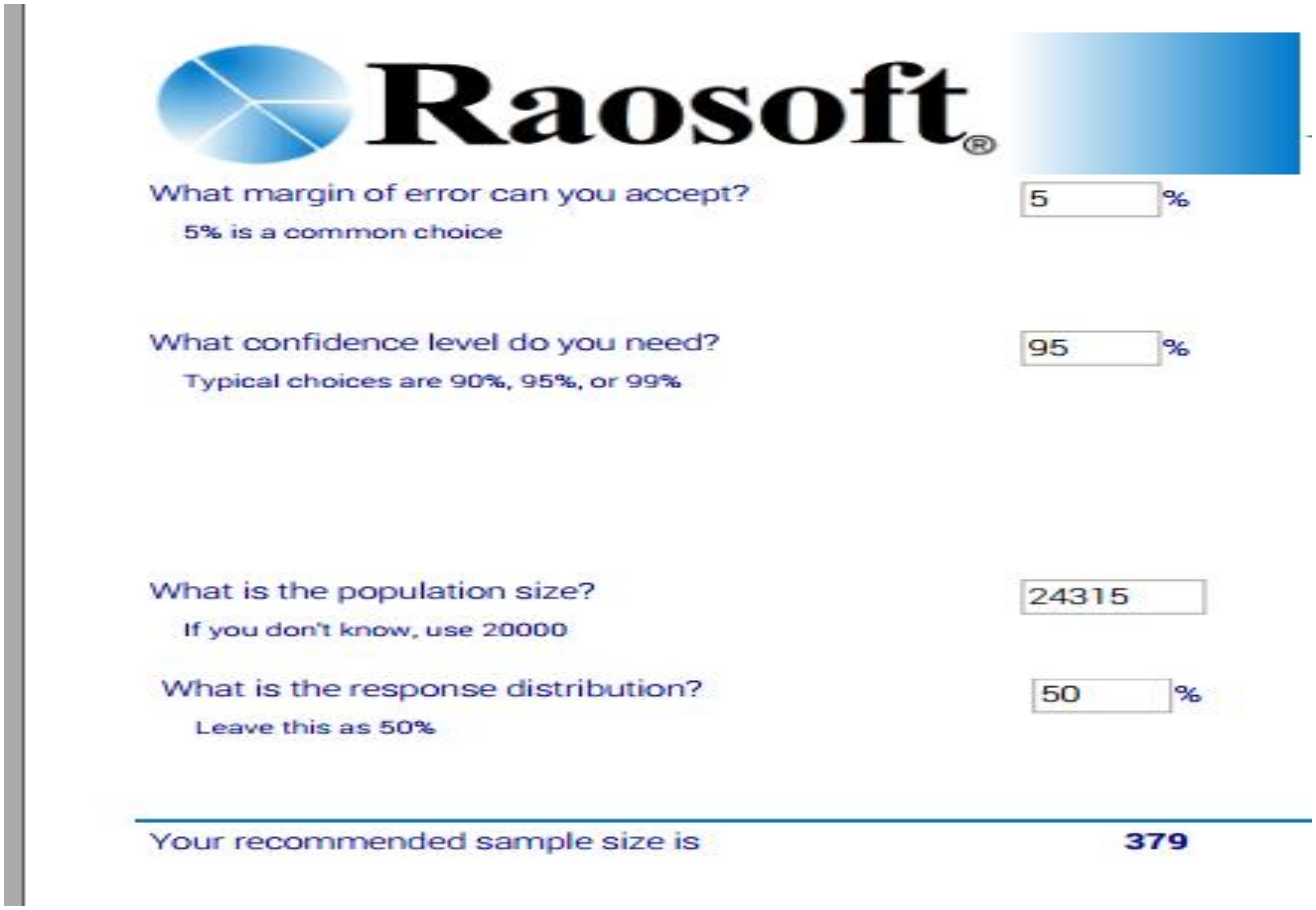
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Appendix i

Sample size calculator



Appendix ii

Department of Mass Communication

Faculty of Social Science

Ahmadu Bello University,

Zaria

Date: _____

Dear Respondents,

I am a Post Graduate Student of the Department of Mass Communication in Ahmadu Bello University, Zaria. This questionnaire is aimed at generating information for the purpose of this research titled **"*Communication in Natural Disaster Management: A study of Flood Risk awareness among the residents of Jalingo Metropolis*".** It will be greatly appreciated if you agree to fill it with utmost speed and sincerity. Your responses will be treated with confidentiality and used only for academic purposes.

Thank you.

Yours faithfully,

Section A: Socio-Demographic Characteristics of Respondents

1. Gender :

   (a) Male [ ] (b) Female [ ]

2. Age: a). 18-27 [ ] b). 28-37 [ ] c). 38-47 [ ] d). 48-57 [ ] e). 58 and above [ ]

3 Highest Educational attainment:

(a) Primary [ ] (b) Secondary [ ] (c) NCE/OND [ ] (d) Nursing [ ] (e) HND [ ] (f) University [ ] (g) Others, specify [ ]

4. Occupation: a. Trader [ ] b. Farmer [ ] c. Civil servant [ ] c. Others [ ]

Section B:

1. Did you witness the 2005 or 2011 flood disaster in this community?
   a. Yes [ ] b. No [ ]
2. If yes to the above, did you lose anything inform of human live or property?
   a. Yes [ ] b. No [ ]
3. If yes to the above, can you state two or three of such properties?

   _____

   _____
4. Before the flood, did you get any warning from government or non-government organization? a. Yes [ ] b. No [ ]
5. If yes, which organization gave the warning

   _____
6. If yes through what channel did you get the warning?
   a. Interpersonal channel [ ] b. Radio [ ] c, TV [ ] d Ward Head [ ] e. News Paper and Magazine [ ].
7. What was your reaction to the warning?

   a. I moved part of my property [ ] b. I planned to move but couldn't do so before the flood came [ ] c. I moved out to a safer place [ ] d. I did not take any action [ ] e. Others [ ].
8. If the flood met you here, how best can you describe the experience?

   _____

_____

9. Which of the following do you prefer as the best method/strategy to give your information on flood awareness campaign

   a. Door-to-door communication [ ] b. Phone call/SMS [ ] c. Leaflets deliver [ ]

   d. Radio/TV Jingles [ ] e. Faith base organization [ ]

10. Why do you prefer your option above?

    _____

    _____

11. Was there any rescue effort during the flood disaster? Yes [ ] no [ ]

12. If yes, who were responsible for the rescue efforts?
    a. Government [ ] b. NGO [ ] c. nearby communities [ ] d. Faith based organization [ ] e. Individuals [ ]
13. After the disaster, did government or NGO do anything to help your recovery?
    a. Yes [ ] b. No [ ]
14. If yes, what exactly did they do?
    _____
15. How else do you think government could have assisted you better than what they did?

    _____

    _____

16. After the flood was there any channel of communication between you and the government or its agency, especially during the resettlement process
    a. Yes [ ] b. No [ ]
17. If yes, did the communication address your needs
    a. Yes [ ] b. No [ ]
18. If No, why?

    _____

    _____

19. What is your perception about the government gestures of re-settling flood victims to safer place
    a. Very good [ ] b. Good [ ] c. Neutral [ ] d. Bad [ ] e. Very bad [ ]

20. Where you part of those given plot of land/building materials to relocate to a safer place by the state government?
    a. Yes [ ] b. No [ ]
21. If yes to the above why did you find your way back here?

    _____

Appendix iii

Interview schedule for the FDG and IDI

Dear Respondents,

I am a post Graduate student of the Department of Mass Communication in Ahmadu Bello University, Zaria. This interview is aimed at gathering information for the purpose of this research titled **"Communication in Natural Disaster Management: A Study of Flood Risk Awareness among the residents of Jalingo Metropolis."** It will be greatly appreciated if you agree to answer the question I am going to pose with utmost speed and sincerity. Your responses will be treated with confidentiality and used only for academic purposes.

Thank you

Yours faithfully,

R Q 1

1. Before the flood, did government give any warning to you?
2. During the flood, what did government do in terms of : (i) Response
   (ii) Information on the current issue and the precaution needed to be taken

R Q 2

3. When you got the information, how useful was it to you?

R Q 3

4. What did government do at the aftermath of the flood?
5. How can you rate government responses to the victims of the flood?

R Q 4

6. In your own opinion which communication channel do you found more appropriate to reach people during early warning signals?
7. What is the level of trust or consciousness of the people towards government information?
8. Can you suggest the best ways government can effectively relate information to communities.

Appendix iv

INTERVIEW WITH SEMA SECRETARY/DISTRICT HEAD

In their interview on communication strategies employed by the government before, during and after 2005 flood disaster in Jalingo metropolis,

> "There is a warning system people are alerted of the eminent danger".

His answer indicates that Taraba State government have knowledge of the disaster and necessary measures have been put on ground to alert the flood prone communities about the imminent danger of the flood.

Secondly on the effectiveness of government communication employed among the dwellers of the affected communities. The secretary said:

> "Different forms of communication channels were employed to reach out to communities prone to flood disaster ahead of the incidence so that people can get prepare and leave the areas that are prone to flooding".

This statement indicates the government is proactive about the menace of the flood by sensitizing the flood prone communities to take measures before the occurrence of the flood.

According to District head of Jalingo;

> "The affected area by the flood was not a settlement area. Historically every son and daughters of Jalingo cannot construct a residential house there".

His answer indicates that there is a wide gap of communication between the policy makers and the traditional institutions in the state.

But for the District head, he is having a contrary view.

> "I think if the government can recognize the traditional institutions as one of the stakeholder would have averted the loss of lives and properties because we have a strong channels of

> communication right from the grassroots to the Emir all information concerning each hamlet is reported to (Jauro) Dagachi Maianguwa village head then to the District head before it get to the Emir. "Based on the statement above without incorporating the traditional rulers it would be very difficult to achieve the government set goals. It is in line with (Ngang & Kuo 2010)".
>
> "The traditional rulers are very important and instrumental in the success of every good programme, due to their influence proximity to the communities and a good knowledge of the local environment and realities.

Thirdly on the question what people perception of government gesture in settling the flood victim to a safer place according to the secretary.

> "The perception of the people is that must of the affected people are poor civil servant some petty traders and farmers who cannot afford to erect a new structure with a little assistant from the government."

On the people perception of government gestures by resettling the people to a safer place by District head

> "First of all a committee was inaugurated and saddle with a responsibilities of identifying the number of people who lost their lives, houses farm lands along the flood prone belt in Jalingo metropolis and took record of all what happen, from there a provision of temporary accommodation was made for the victim, then relief materials were distributed by government such as food items and other relevant materials like cloths, blankets, buckets as well as money and building materials. After the government have acquire a large portion of land and distribute it to the victims, but unfortunately many of the victims sold their land and went back to the same place they were occupying before the disaster".

From the explanation of both the secretary of SEMA and that of District head they are sympathetic to the government. They do not want to say anything that would

paint the government black especially the District head who was a member of committee on flood disaster that;

> "Was accused of politicizing and mismanaging the relief materials meant for flood victims, they were accused turning the whole issue of avenue where privileged persons who were involved in the management of the fund played roles which seems to undermine the trust of their offices (Focus Group, 2015)".

"While the District head and responded saying that essentially their hands are tied ideally their supposed to provide clear advice to government on how best to allocate land or plots for but, residential and industrial because we know it, better than everybody.

Good afternoon sir, Can you tell us your name and your occupation?

Interviewee: my name is Muhammed Sani, I lived in Jalingo I am an environmental activists. I read Geography in University of Maiduguri about twenty-seven years ago.

Sir where are you living?

Interviewee: I am living in Sabon-Gari quarters in Jalingo town.

Sir, have you witness any flood disaster in Jalingo metropolis?

Interviewee: Yes I have witness all the flood that took place in Jalingo from late 60s to date because I have never leave Jalingo for a complete two months except when I was at Maiduguri, because I did my primary and secondary schools here in Jalingo.

Interviewer: how do you assess communication strategies employed by Taraba State government in creating flood risk awareness during the 2005 flood disaster in Jalingo metropolis?

Interviewee: Well the 2005 flood disaster is one of the worst flood disasters Jalingo had experienced in the last 70 years, my father was over 80 years old then, he said Jalingo had a similar experienced when he was about twelve years old. In terms of

effectiveness of the communication strategies employed to educate the people about the menace of flood is either through Radio, Opinion leaders which includes religious community leaders and civil society organization, but I want to tell you the state government owned media, they do not have any permanent programme dedicated to flood disaster, for instance (TSBS) Taraba State Broadcasting Service have about two magazine programme that is "Issues and events" and "kwaryar Kira" these are magazine programmes which covers all issues of interest to the public from time to time but for TTV I don't know any programme meant to educate flood victims about the menace of the flood.

Not only that these state government owned media are not airing any programme in respect of flood awareness as social responsibility to serve the people where they are operating; I can tell you last time we went to Wukari with the SEMA to distribute relief materials for victims we suggested to the SEMA secretary to invite TSBS to cover the events, he decline on the ground they do not have money to pay for their transport to and fro of the reporters.

Sir apart from the two state government owned media what other types of communication channels do you think are very effective in addressing the communication challenges?

Interviewee; the civil society organization, face to face channels of communication, religious base organization as well as the community leaders these organizations are leaving with the vulnerable people they have trust and confidence on them than the government; I want to give you example with 2012 flood disaster relief materials the federal government gave Taraba State about four hundred million naira to assist the flood victims the money was diverted. About thirty million naira was given to SEMA to provide relief materials and logistics to the victims. The money was also

misappropriated. A committee was set up by the Taraba State House of Assembly to investigate the matters, SSG and some commissioners were indicated and latter sacked by Acting Governor Garba Umar (UTC) and asked to refer the amount each of them misappropriated.

Sir in your discussion you said face to face communication strategies are the best why?

Interviewee: Yes face to face communication is the best because we meet with the vulnerable one in one and speak their language as well as advocacy visit to the community leaders. Let me tell you more than 50% of Local Government in Taraba State are vulnerable to flood, but the unfortunate thing is that Nigerian Meteorological Agency (NIMET) usually predict flood event but the government especially state and local governments failed to act on time this contribute negatively to the problem.

Sir on a final notes what is the way out?

Interviewee: One of the strategies is that you know flood cannot be prevented neither can be eradicated totally. Nevertheless the damage they cause can be minimizing. To reduce the losses from flooding, several measures must be put in place. These include relief and rehabilitation, prediction, forecasting, warning monitoring and regulation. In addition legislation to ban blocking of water channel either by dumping of refuse or erecting a structure on the water channels must be passed immediately. For all these measures to be successful information on the nature, extent and severity of the flood must be provided for people to act very fast.

Appendix v

FOCUS GROUP DISCUSSION (FGD)

INTRODUCTION:

The study was conducted on the 25/11/2015 brought together the members of the two registered association of farmers who are residing in the four affected quarters in Jalingo metropolis who were affected in the 2005 flood disaster.

=DISCUSSIONS AND INTERACTION: =

The focus group interacted with Alhaji Salihu Abubakar who is the Chairman irrigation farmers Kogin Babangida and the remaining twelve members, six drowned from each of the association include, Alhaji Saidu Abdullahi, Malam Sa'ad Jika, Sani Admu, Ishaq Aliyu and Babangida Salihu.

In their opening statements of the group discussion both participants decried the way and manner in which the flood disaster ravaged their entire farm lands.

According to Alhaji Saidu Abdullahi, Malam Sa'ad Jika and Sani Aeternu to be specific, they owned seven to eleven farm lands in different locations along the river banks but lost the entire produce at the point of harvest to the flood disaster.

They faulted government intervention aimed at reducing the hardship experienced during the disaster. According to the words of Alhaji Saidu Abdultahi ***"Government intervention did not reach us because the right people ore not identified and those who got the government relief packages are only those with good connections or those who have relatives within the government cycle benefited".*** He however confirmed that he was only given ten thousand naira (N10, 000.00) as compensations on the eleven farm lands lost to the flood disaster.

According to the words of the of Malam Sa'ad Jika "Most of these farmers who collected the ten-ten thousand naira compensation nearly die of high blood pressure due to shock and disappointment from the government gesture". Contributing on the level of shock and disappointment by the farmers Alh. Saidu Abdullahi said ***"right from time of the disaster till now, many farmers are yet to recover from the great shocker of the little government intervention called relief".***

To Ishaq Aliyu ***"I inherited about six farm lands from my late father and they ore my source of livelihood, I started sponsoring myself to school but my dream of becoming a lawyer was cut short since the day I lost the whole harvest on the farmlands and right now, out of the six farm lands submerged by the flood***

only two were able to be identified because the water has turned some farm lands into lagoon".

Sharing his experience on the loss of farm land Yusuf A. Saidu described the 2005 flood disaster in Jalingo as a major calamity to his survival. He said ***"right from the time I was born, I have never witnessed such a terrible misfortune because I lost everything but Allah on my side; I was able TO manage to recover from the great calamity".*** He added that the assistance from the government was too migger given to few selected individuals with some of them not truly the genuine affected farmers.

Babangida Salihu in his testimony said *"I* ***have counted my loses with great pain and I neglected the assistance of government when I saw it was too small to solace my temper".*** He noted that he noticed some fault play on the government side when the relief materials committee was constituted without including members of farmers Association in ascertaining genuine affected farmers.

When asked or on what advise the farmers would be able to offer to Government on the best way to minimize level of destructions, Alhaji Saldu Abdullahi has this to say. ***"During the first flood disaster of 2005 I went to Jolingo locol Government and met with the then Local Government Chairman Alhaji Ali Sani Kona and suggested to him that The authority should sent a bulldozer to clear some heals of obstructions loath on the river banks and some in the middle of the river, the Local Government Chairman asked why and I told him that I have the experience of noticing sings of flood and the authority ignored the advice. After two to three months flooding waters come and devastated houses and farmlands"***. They don't give us much regards, the farmers added.

Contributing to the discussion, Alh. Salihu Abubakar has his view this way ***"the government needs to dreg the river Lamorde so that whenever there is flood it will not cause much destruction".***

Both Babanglda Salihu, Yusuf Saidu and Isahq Aliyu concede on the need to drag the river to accommodate more water. They believe that the flood disaster does not occur on annual basis, ***"it usually occurs after over one to two decades".***

When asked to suggest on the best possible ways to reach out to the affected farmers in terms of giving them government assistance, the Chairman Irrigation farmers Alh. Salihu Abubakar, Sa'adu Jika and Babangida Salihu suggested that the government should be able to involve their Association in the relief materials committee and the compensation Committee to be able to fish out real and genuine affected farmers.

They are also of the opinion that government should relocated them to a safer place to continue with their irrigation farming activities as well as construct earth dam for the purpose of the farming activities.