THE ROLE OF COMMUNITY PARTICIPATION AND ENVIRONMENTAL MANAGEMENT AGENCIES IN FLOOD RISK MANAGEMENT IN KOGI STATE, NIGERIA

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BY

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DECLARATION

I hereby declare that this work is the product of my research efforts undertaken under the supervision of Prof. Mohammed Bello Shitu and Prof. Maharazu A. Yusuf, and has not been presented anywhere for the award of a degree or certificate. All sources have been duly acknowledged.

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CERTIFICATION PAGE

This is to certify that the research work for this thesis and the subsequent write-up by Ali Danbaba Ameh (SPS/14/PGE/00008) were carried out under our supervision.

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APPROVAL PAGE

This thesis has been examined and approved for the award of PhD in Geography (Environmental Management)

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DEDICATION

This research work is dedicated to Almighty Allah whom I dwell my strength and hope in all endeavours.

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ABSTRACT

The research was conducted to investigate the role of flood vulnerable communities and environmental management agencies in flood preparedness, response and recovery activities in Kogi state, with the aim of producing a model for community and government response for effective flood risk management. Questionnaires, interviews and Focus Group Discussions were used to obtain data, andresultswere described using percentage. Chi-square was used to test the hypothesis. The results were presented in tables. The questionnaire was administered to members of the flood vulnerable communities, FGDs were held with members of community based organizations, while the interviews were held with staff of establishments saddled with responsibility of flood management. Results show that 77.5% of urban communities understand community participation, while only 30.8% of rural communities understand community participation. The results also reveal that most rural communities participate in flood management through self-mobilisation (71.4%), while most urban communities (30%) participate in information giving and only 24.2% of them participate by self-mobilisation. Majority of rural communities (83.5%) participate in all the stages of flood risk management, while 40% of urban communities participate in all stages. 70.4% of urban communities play the various roles in flood management, while 51.6% of rural communities play the various roles in flood management.Results show that majority of respondents in rural communities (70.5%) indicated none involvement of the agencies in flood management in their communities, while, 44.2% of urban communities indicated agencies involvement in response activities in their communities. On the issue of effectiveness, majority of rural and urban communities indicated the preparedness, response and recovery activities of the agencies ineffective, It is therefore recommended that Kogi state should adopt the model for effective and sustainable flood risk management in the state and Nigeria in general.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Flood event like other natural hazards has become a major environmental challenge across the globe. In many regions flooding has become more intense and frequent as climate change impacts continue to affect precipitation intensity, duration and frequency (Parry *et al.,* 2007). Flooding is one of the most destructive types of natural disaster that strikes humans and their livelihoods around the world. In 2011 alone, 106 million people were affected by floods all over the world, and most of these victims come from Asian countries whose populations are exposed to recurrent flooding (UNISDR, 2012). There is a general increase in the trend of climate-related disasters since year 2000 (UNISDR, 2013). Between 2002 and 2011 the average annual disaster frequency observed was 394 events while in 2012, a total of 357 naturally triggered disasters were registered (Centre for Research on the Epidemiology of Disasters, 2013). These disasters have resulted in huge physical damages and economic loss worldwide.

In most countries of the world, flooding is a major disaster with highest frequency of occurrence, wider area coverage and highest impact amongst all forms of disasters (Jinadu, 2015). In Nigeria, flooding is a major annual disaster. The country has a long history of seasonal flooding. The situation is becoming more severe in the recent times due to the effect of climate change and other related factors. The flood disasters witnessed in Nigeria in 2010 - 2012 were phenomenal and highly devastating. In particular, the ones that occurred between August and October, 2012 in the country had high disastrous impacts on human lives and properties and disrupted the normal functioning of several communities. Apart from these, other isolated flood disasters recorded in Nigeria between 2013 and 2015 has wreaked havoc on communities and brought about economic loses (Jinadu, 2015).

The first responders to disaster in any community are community institutions like Community Based Organizations (CBOs), Faith Based Organizations (FBOs), and Non- Governmental Organizations (NGOs). The effort of this community emergency management structure is complemented by Emergency Management Volunteers (EMV) and if more resources are needed, SEMA and NEMA can bring in additional resources (NDMF, 2010). In the analysis by Few *et*

al. (2005), it suggested that improving coping response of the communities is the key to the success of reducing flood risk. In this connection, restoring the natural functions of rivers and floodplains, planning and management practices, involving the local communities in the river basin management, capacity development of the local institutions are found to be effective measures of sustainable flood management. The rationale for community involvement or community-based activities is because community-based activities (and community-based organizations) are deeply rooted in the society and culture of an area, they enable people to express their real needs and priorities, allowing problems to be defined correctly and responsive measures to be designed and implemented (Twigg, 1999). Twigg also argues that existence of community-based organizations allow people to respond to emergencies rapidly, efficiently and fairly, and therefore available community resources (even it is small in amount) will be used economically.

Flood preparedness measures or forecasting, early warning and response are more feasible solutions as they are readily implementable and would entail less cost (UN-ISDR, 2011). Community participation however is a mandatory pre-condition for these measures to work. For one, sophisticated assessments done by experts are meaningless without the participation of the local people (Murase, 2008). Local population would have local knowledge regarding vulnerabilities and capacities. They are repositories of traditional coping mechanisms suited for their specific environment that they have developed from previous experiences in dealing with disasters. Due to exposure and proximity to hazardous conditions, a local population responds first even before assistance from aid givers arrives at times of crisis by using what is available locally, a timely response is possible**.** Timeliness in emergency response is critical because this determines how many lives would be saved or how many properties can be prevented from being damaged (Murase, 2008).

Over the years, the Nigerian Government and International donor agencies like UNICEF, UN and EU as well as non-governmental organizations have committed a lot of resources to flood disaster management in the country. However, much progress has not been made in the areas of flood disaster risk reduction, recovery and community resilience (Jinadu, 2015).Public participation in decision-making concerning flood prevention and protection is needed, both to improve the quality and the implementation of the decisions, and to give the public the

opportunity to express its concerns and to enable authorities to take due account of such concerns (EU Water Directors, 2003).

1.2 STATEMENT OF RESEARCH PROBLEM

Flooding is an annual occurrence in most places of Nigeria particularly in the riverine areas of Kogi state. Studies have shown that about 20% of the Nigerian population is at the risk of flooding (Etuonovbe, 2011). Flood causes death and displacement of communities among other hazards. The nationwide effect of the 2010 flood in Nigeria had about 1,555 people killed; 258,000 people displaced and properties destroyed. In Nigeria, the year 2012 flood reports had far higher casualties than any other in the history of the country, (NEMA, 2012). The year 2012 flood event in Nigeria was described as the worst in recent times. Kogi State was the most affected state due to its location at the confluence of the country's major rivers (Niger-Benue Rivers).

Jinadu (2015) examined the challenges of flood disaster management in Nigeria, using the 2012 flooding as a reference point. The flood disaster management efforts such as flood early warning services, fund disbursement for rehabilitation and recovery, preparation of action plans, disaster relief operations were found not to have yielded expected outcomes. He stressed that management efforts were constrained by continuous occupation of flood prone areas, poor community attitudes to early warning information, low institutional capacity, mis-management of relief funds and non-implementation of disaster plans. Obeta, (2014) studied Institutional approach to flood disaster management in Nigeria. He discovered the absence of well-articulated, organized institutional structure to co-ordinate response activities during emergency conditions. Existing response procedures were found to be ad-hoc, ineffective and poorly coordinated notwithstanding the plethora of agencies involved. Kingsley and Christopher (2013), seek out sustainable strategies for enhancing the structure and mode of operations of flood management agencies in Nigeria as a whole, and in the flood vulnerable communities of Anambra State in particular. They stressed reviewing and implementing flood control and management policies while incorporating public participation among other mitigation measures towards ensuring social, economic and environment empowerment of the people.

Adedeji, *et. al.* (2012) examined the level of preparedness and capacity building to tackle urban flooding in Nigerian cities. The study concluded that lack of proper spatial planning and land use management coupled with incapacity of governments to ensure good urban governance exacerbate the cases of urban flood in Nigeria. A GIS-based spatial planning and land use management can be a versatile tool in building capacities for flood disaster reduction and preparedness to ensure sustainable urban development. Augustine and Akinlolu (2015), examined empirical survey of causative factors and preventive measures of flood in Kaduna, Nigeria. The common factors that cause flooding were poorly constructed drainage, heavy rainfall and improper waste disposal. The preventive measures for flooding were to increase awareness at all levels (community, local, state and federal) of the risk of flooding, appropriate response techniques in mitigating flooding via implementation of flood control policies and flood early warning system to control flooding in Nigeria. These studies have shown lack of competence on the part of flood management agencies to manage the disaster alone, therefore, there is need to re-strategize flood management in Nigeria.

Liman, *et al.,* (2015) investigated flood risk and vulnerability assessment of Kogi state, Nigeria. It was observed that most of the settlements in Lokoja and environs are located on and around the stream network and on the flood plain. Discharge or release of water in any form over this terrain, will lead to accumulation of water in the stream network expanding its course. It is found that built up or urban areas within the 1000m buffer zone are areas that are vulnerable to flood when there is extreme release of water in any form (heavy rainfall, release of water from dam or dam failure). Aderoju, *et al.,* (2014) looked at Geospatial Assessment of 2012 Flood Disaster in Kogi State, Nigeria. It was deduced that 73 communities in 9 Local governments Area (LGA) in Kogi state which are Lokoja, Kotokarfi, Bassa, Ajaokuta, Ofu, Idah, Igalamela-Odolu, Dekina and Ibaji were directly affected by the flood in 2012 and the estimated number of Internally Displaced Persons (IDP) was about 303,000. Anunobi (2014), focused on flood risk management in a high risk zone, the confluence of rivers Niger and Benue at Lokoja, Nigeria. The study showed a near total lack of governmental intervention in the flood risk management.

Community activities play an important role as a front-line of flood management because Integrated Flood Management (IFM) seeks for practical aspects of managing floods; community

participation becomes fundamental and essential for each stage of the management, that is, preparedness for, response to and recovery from flood disasters (World Meteorological Organization WMO, 2008). In the absence of organized community participation, most of the activities are carried out at individual or household level driven by individual necessity. If the activities based on individual initiatives are pooled together and carried out in an organized manner at community level, vulnerability and risks due to floods can be substantially reduced APFM (2004).

Involving stakeholders and empowering community participants in activities at all levels, from local to national, provide a more effective path for solving sustainable resource management issues. The role of community participation in disseminating information amongst a community, particularly local knowledge, that leads to better facilitation of action (Kelly, 2001). Kelly (2001) identified that participation results in learning, and learning is often a prerequisite for changing behavior and practices.

Best practice places stress on co-operation and community participation. It has become apparent that top-down approaches to disaster risk management, ignoring the local capacities and resources failed to address the specific local needs of vulnerable communities. In response to the limitations of this top-down methodology, the community-based disaster management is seen as an alternative approach (ADPC, 2007). Community participation becomes fundamental and essential for each stage of the management, that is, preparedness for, response to and recovery from flood disasters (World Meteorological Organization (WMO), 2008).

Flood risk management has attracted a lot of interest among many researchers. Several studies have been conducted on this subject. However none have been able to make a detailed flood risk management framework where management agencies sees flood vulnerable communities as partners in progress (participatory). This research therefore develops a model that combines both the bottom-up and top-down approaches for effective and sustainable flood risk management in Kogi state and Nigeria in general.

1.4 RESEARCH QUESTIONS

i. What are the community based flood risk management roles in Kogi State?
ii. What are the roles of environmental management agencies in Kogi State?

iii. What is the perception of the communities to the response of environmental management agencies in flood risk management in Kogi State?
iv. What effective model of community and government response for flood risk management is suitable in Kogi state?

1.4 AIM AND OBJECTIVES OF THE STUDY

The aim of the study is to examine community participation and environmental management agencies engagement in flood risk management in order to profound a model for effective and sustainable flood disaster management in Kogi state.

The objectives of the study are to:

i. Identify community based flood risk management role in Kogi state.
ii. Examine the roles of environmental management agencies in flood risk management in Kogi State .
iii. Examine the community based flood risk management initiatives of environmental management agencies in Kogi State.
iv. Develop a model for community and government response for flood risk management in Kogi state.

1.5 SIGNIFICANCE OF THE STUDY

Kogi State has been faced annually with the challenge of flood disaster management. Flood cannot be totally stopped in Kogi state due to the interplay of rivers. The state harbors the two major rivers in Nigeria, which is Rivers Niger and Benue. These rivers passed through several communities in the state. Effective management strategy like model for community and government response for flood risk management can assist in management that will reduce flood impact.

The state needs to develop a flood management measures that will reduce the impact of flood disaster on the vulnerable communities. Effective and sustainable flood management which involves collaboration between flood vulnerable communities and environmental management agencies will assist in reducing annual damages caused by flooding annually; it will also reduce the huge annual expenditures wasted on IDPs, response and recovery.

The result of the study will provide information on how Kogi state environmental management agencies can collaborate with communities for sustainable flood risk management that will save annual damages and financial waste experienced in the state. The research will also be useful to the general public as useful contribution to knowledge. In fact, the study will serve as a major impact to ministries and agencies concerned with environmental management in the state and Nigeria in general.

1.6 SCOPE OF THE STUDY

The spatial scope of the study covers Ibaji, Idah, Koton-Karfe, Lokoja, Ofu, Igalamela-Odolu, Omala and Ajaokuta Local Government Areas that rivers Niger and Benue flow through in Kogi state, while the content scope includse the role of community participation, role of environmental management agencies and flood risk management. The temporal scope covers data from 2012.

CHAPTER TWO

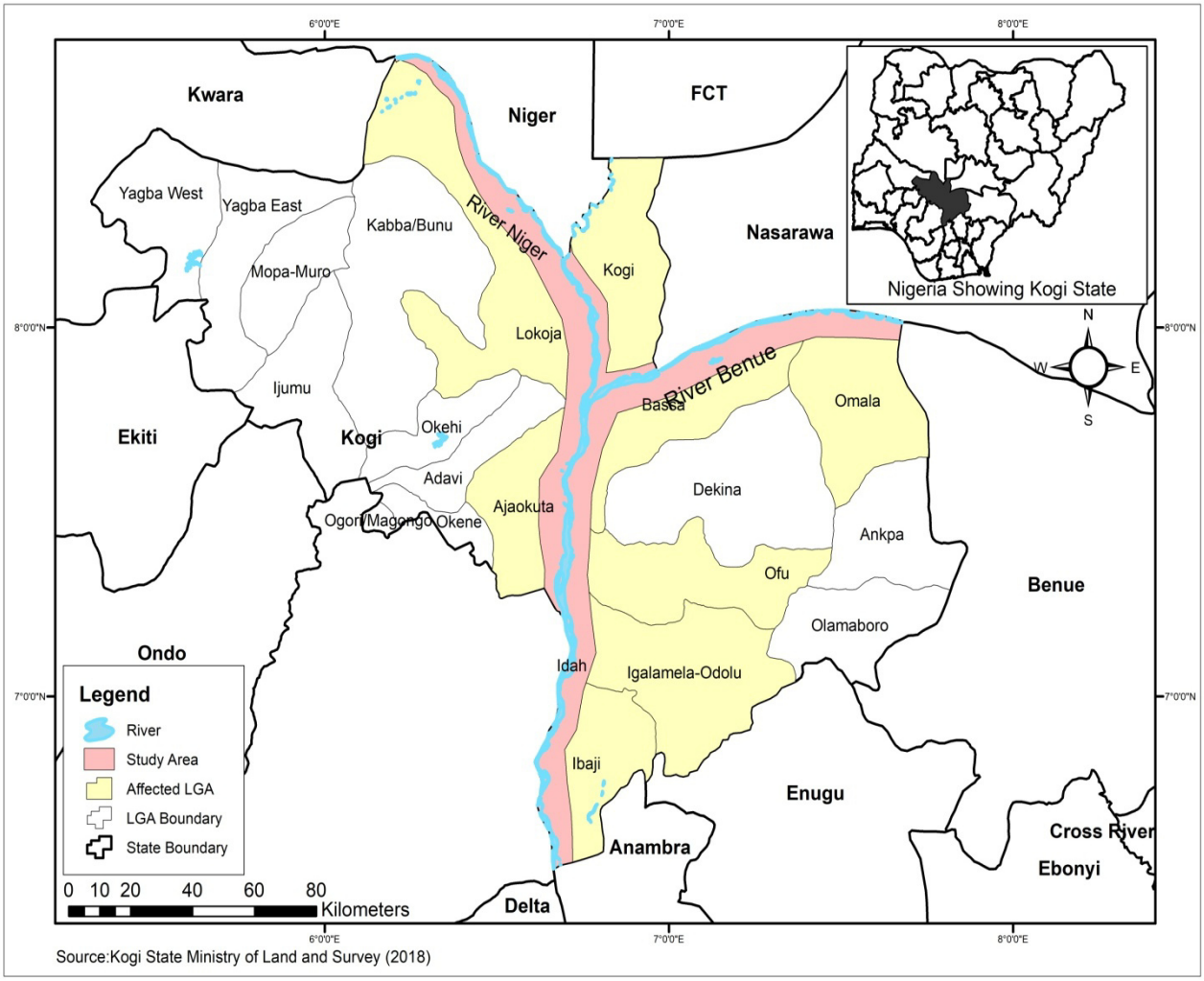
THE STUDY AREA

2.1 LOCATION AND EXTENT

Kogi state is in the central region of Nigeria, located on the latitude 7° 30´N and longitude 6° 42´E with a total land area of 29,833km2. Kogi state share boundary with Federal Capital territory (Nigeria) to the North, Nassarawa state to the Northeast, Benue state to the South, Enugu state to the Southeast, Anambra state to the south, Edo state to the Southwest, Ondo and Ekiti to the West, Niger state to the North and Kwara to the Northwest. Kogi state has 21 Local Government Areas and they are; Adavi, Ajaokuta, Ankpa, Bassa, Dekina, Ibaji, Idah, Igalamela-Odolu, Ijumu, Kabba/Bunu, Kogi, Lokoja, Mopa-Muro, Ofu, Ogori/Magogo, Okehi, Okene, Olamaboro, Omala, Yagba East , Yagba West (Figure 1) It is popularly called the confluence state because of the confluence of River Niger and River Benue at its capital Lokoja. Lokoja is the first administrative capital of modern-day Nigeria. The state was formed in 1991 from parts of Kwara and Benue States respectively. The state as presently constituted, comprises the people of the defunct kabba province of Northern Nigeria.

2.2 PHYSIOGRAPHY OF THE AREA

The land rises from about 300 metres along the Niger-Benue confluence, to the height of between 600 metres above sea level. Agbaja plateau, which ranges from 335 to 336 metres above sea level, and the much higher Okoroagbo hills at Ogidi in Ijumu Local Government Area are some of the predominant of land forms of the state. The state is drained by the Niger and Benue rivers and their tributaries. The confluence of the Niger and Benue rivers which could be viewed from the top of mount patti is located within the state. The river is navigable as far as Garua in the rainy season. The bigger rivers have wide flood plains such as the portion of the lower Niger in Kogi state, which is more than 1,600 meters wide at Lokoja, while the small streams have narrow valleys. The two major rivers in Nigeria (Rivers Niger and Benue) flowed through several communities in nine Local Government Areas in Kogi state (Ibaji, Idah, Igalamela-Odolu, Ofu, Ajaokuta, Bassa, Omala, Lokoja and Kogi) (Figure 1). These rivers annually overflow its banks to flood the communities (SEMA, 2012).



Source: Kogi State Ministry of Lands and Survey (2018)

Fig 1: The Riverine Areas and the most Flood Prone L.G.As in Kogi state.

2.3 CLIMATE

Kogi state experiences two distinct climatic seasons; namely dry (November to March) and wet (April to October) seasons. A period of cold, dry, dusty winds known as "Harmattan" occurs from December to February annually as a result of the northeasterly winds. Kogi state has a mean temperature range between 240C to 340C with a relative humidity of 70% in dry months and 90% in wet months.The general rainfall is undulating. The state has an annual rainfall of between 1,100mm and 1,300mm between April to October (Aderoju *et al,* 2014).

2.4 POPULATION AND LANDUSE

Kogi state has a population of 3,595,789 according to 2006 population census which was the 24th in the ranking of most populous state in Nigeria (NPC, 2006). There are three main ethnic groups and languages in Kogi state; Igala, Ebira, and Okun (Part of Yoruba) with other minorities like Bassa, a small fraction of Nupe mainly in Lokoja, Gwari, Kakanda, Owuro people (similar to Yoruba) Ogori, Magongo and the Eggan community under Lokoja Local Government. The land use is determined by location of the area, the predominant land use is residential and farming. Most of the population lives in the rural areas and farming is their most activities. In urban areas like Lokoja, Idah, Koton-Karfe, Itobe, Okene and Yagba land use is residential, commercial and social. There is also commercial land use such as Ajaokuta Steel Company and Dangote Cement Company in Obajana in the state (Aderoju *et al,* 2014).

2.5 ECONOMIC ACTIVITIES

Agriculture is the main concern of the economy. The Kogi people live largely in peace among themselves and their environment, they use slash and burn farming methods; each family tends to farm at varying altitudes of the sierra, producing different crops to satisfy the range of their needs, There are many farm produce from the state notably coffee, cocoa, palm oil, cashews, groundnuts, maize, cassava, yam, rice, melon and they also raise cattle on the highlands. Mineral resources include; coal, limestone, iron, petroleum and tin. The state is the home of the largest iron and steel industry in Nigeria known as Ajaokuta Steel Company Limited, one of the largest cement factories in Africa, Dangote Cement, Obajana. The state by virtue of its geography, offers tourist unique experience, these attractions include natural land features, facilitating sceneries, historic monuments and relics. There are also many important tourist attractions in Kogi state which include the colonial relics (such as Lord Lugard House), the confluence of river

Niger and Benue, Ogidi (an African town with formation of igneous rock mountains, traditional art and craft industry).

2.6 ENVIRONMENTAL MANAGEMENT AGENCIES

In Kogi state, State Environmental Management Agency (SEMA) is saddled with the responsibilities of flood risk management at the state level, while Local Environmental Management Committee (LEMC) handle flood cases at Local Government level. SEMA is located at the state secretariat in Lokoja and LEMC is supposed to be located in each local government secretariat. SEMA is responsible for organizing all the machineries for emergency management in the state. It is supposed to inform or alert all organizations that work with them during disaster management and also give early warning information to flood vulnerable communities, prepare camps, evacuate affected victims, camp and maintain such victims. LEMC assists disaster affected victims in their local government areas and report to SEMA on the extent of such disaster.

2.7 COMMUNITY BASED FLOOD MANAGEMENT INITIATIVES

Most flood vulnerable communities in Kogi state have community flood management committees built from community based organizations such as faith based, youth, women organizations, elders forum etc. These committees and organizations play vital role in flood management in their various communities using local knowledge and available resources. They make some initiatives such as organizing community members, informing community members on issues concerning floosing, evacuation and harboring of flood affected members during flooding events.

CHAPTER THREE

CONCEPTUAL ISSUES, THEORETICAL FRAMEWORK AND LITERATURE REVIEW

3.1 INTRODUCTION

This chapter deals withconceptual framework,theoretical frameworkand literature review concerning community participation and environmental management agencies in flood risk management.

3.2 CONCEPTUAL ISSUES

3.2.1 The Philosophy of CommunityParticipation

Community participation has long been a subject of active discussions in the field of political, administrative sciences and community based activities. One may consider community participation as an action that incorporates the demands and values of citizens into public administration services.

Kumar (2002) argues that participation in this regard deals with encouraging participants to take initiatives and actions which are stimulated by their own thinking and deliberation and over which they can exert effective control. Nampila (2005) agrees that different individuals in the same community may have different interests and may not necessarily want to participate in development projects.

With community participation, the people decide, act and reflect on their actions as conscious subjects. The common belief is that involving citizens in rural programmes and empowering them have the potential to boost their livelihoods and foster development (Kakumba and Nsingo, 2008). Such involvement facilitates the reversal of the inequalities that have been developed under colonialism by helping people to engage in the process of identifying problems and acting on them.

3.2.2 Community Participation Concept Defined

Community participation is one of the key ingredients of an empowered community (Reid, 2000). Community participation occurs when a community organises itself and takes full responsibility for managing its problems. Taking full responsibility includes identifying the problems, developing actions, putting them to place and following through. Theron (2005)

pointed out; there are considerable differences of opinion as to what community participation is, and it follows that there will be many arguments about the universal definition. The term citizen or public and participation are often used interchangeably.

Community participation is the process of "giving people more opportunities to participate effectively in development activities, empowering people to mobilize their own capacities, be social actors rather than passive subjects, manage the resources, make decisions and control the activities that affect their lives" (Sproule, 1996). The United Nations (1981) sees community participation as the creation of opportunities to enable all members of a community to actively contribute to and influence the development process and to share equitably in the fruits of development. Community participation is a complex mechanism, and in effect there is no single blue print. Hence, each area is characterised by different dynamics and demographics. This view is held whilst taking cognisance the fact that development does not occur successfully if beneficiaries are not part and parcel of the process of planning and implementation of the process.

Community participation means empowering people by developing their skills and abilities so that they can negotiate with the rural development system and can make their own decisions in terms of their development needs and priorities (Theron, 2005). Community participation is a continuous two way process which involves the full understanding of processes and mechanisms through which development problems are investigated and solved. It covers a spectrum of activities ranging from passive involvement in community life to intensive action-oriented participation in community development.

Community participation is a citizen action that influences or seeks to influence policy decisions or as an action that incorporates the demands and values of citizens into public administration services. People's participation is essential to do with economic and political relationship within the wider society; it is not just a matter of involvement in project activities but rather the process by which rural people are able to organize themselves and, through their own organisation, are able to identify their own needs, share in design, implement, and evaluate participatory action (Kumar, 2002).

3.2.3 Levels of Community Participation

It is important for Kogi state environmental management agencies (SEMA), National environmental management agency (NEMA) to understand the levels and modes of community participation in their management processes. Theron (2005) states that some levels are more relevant than others to ensure authentic public participation. These approaches become more relevant when the impact of participation is assessed in relation to a programme or project, and the degree of participation becomes a central feature in this regard (Fokane, 2008).

The seven levels of community participation as highlighted by Theron (2005) are as follows:

1. **Passive participation.** Passive strategies very often involve a one-way flow of information from the planners to the public (Kumar, 2002). People "participate" by being told what is going to happen or has already happened. Participation relates to a unilateral top-down approach by the authorities. The information being shared belongs to outsiders or professionals.

2. **Participation in information giving.** This level does not constitute community participation because they merely require the community to judge a finished or almost finished product. People participate by answering questions posed in questionnaires or telephone interviews or similar public participation strategies. The public do not have the opportunity to influence proceedings as the findings of the research are neither shared nor evaluated for accuracy.

3. **Participation by consultation.** People participate by being consulted as consultants/professionals/planners and external officials listen to their views. The professionals define both problems and solutions and may modify these in the light of the people's responses. The process doe not include any share in decision-making by the public, nor are the professionals under any obligation to take on board people's views.

4. **Participation for material incentives.** People participate by providing resources, for example labour, in return for material rewards. This helps to reduceoverall costs, and participants in return receive a resource (Nampila, 2005). This typology takes place in rural environment, where, for example farmers provide the fields but are not involved in the experiment or learning process. The people have no stake in prolonging the activities when the incentives end.

5. **Functional participation.** People participate in a group context to meet predetermined objectives related to the project, which may involve the development or promotion of externally initiated social organisations. Such involvement does not tend to occur at the early stages of project cycles or planning, but rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators, but may also become self-dependent.

6. **Interaction strategies.** People participate in a joint analysis, the development of action plans and capacity building. Participation is seen as right, not just the means to achieve project goals.

7. **Self-mobilisation strategies**. People participate by taking initiatives independent of external institutions to change systems. This bottom-up approach allows people to develop contacts with external institutions for resources and the technical advice they need, but they themselves retain control over how resources are used. Such self-initiated, bottom-up and self-reliant mobilasation and collective actions ma or may not challenge an existing inequitable distribution of wealth and power.

3.2.4 Strategies for Public Participation

There is a wide spectrum of views and ways of achieving community participation in flood risk management. Fokane (2008), states that there is no definite method that can be used to come up with a one-size-fits-all combination of strategies, because strategies range widely in complexity, creativity and impact. It is believed that each strategy has its advantages and shortcomings. Their efficiency depends on other factors, such as the competence of the public participation practitioner and the appropriateness of tool in use (Fokane, 2008). The various strategies for community participation can be classified into a variety of groups depending on one's interest. Among the most relevant strategies are those that relate to:

1. Pretty *et al* (1995) typology 7: Self-mobilisation

Self mobilisation strategy is found where people participate by taking initiatives independently of any external institutions to change systems. The people themselves retain control over how resources are used. This bottom-up approach allows people to develop contacts with external institutions for resources and the technical advice they need

2. Oakley and Marsden's mode 4: Authentic public participation

This strategy is seen as an active process by which the community influences the direction and execution of a programme with the view to enhancing their wellbeing in terms of income, personal growth, self reliance or other values which they cherish.

3. Arnstein's (1969) level 1: Public control

In this case the public has the degree of power to govern a project, programme or institution without the influence of the government officials.

3.2.5 Benefits of Community Participation

According to Burkey (1993) citizen participation involves organised efforts to increase control over resources and regulative institutions in a given social situations, on the part of groups and movement of those hitherto excluded from such control. Kakumba and Nsingo (2008) institute that community participation lies on the involvement of citizens in a wide range of administrative policy-making activities, including the determination of levels of service, budget priorities, and the acceptability of physical construction projects in order to orient government programmes toward community needs, build the entire public support, and encourage a sense of cohesiveness and humanity within the society.

The common belief is that involving citizens in rural programmes and empowering them have the potential to boost their livelihoods and foster development in their area (Kakumba and Nsingo, 2008). The development efforts should start by recognizing people's potential, and proceeds to their enhancement and growth. Citizen participation can be viewed from the perspective of benefits to be gained and cost to be borne. Participation in development is now being sought the world over, not because it is a fad but because there has been a consensus on the useful of participation in development programs.

Community participation empowers the primary beneficiaries of development programmes or project by helping them to break away from a dependency mentality. Creighton (2005) also state that community participation promotes self-confidence and self-awareness. Nampila (2005) agrees that this heightened consciousness makes people continuously aware of the reality about them and of their own capacity to transform it. When people have the freedom to participate in activities, itgives them dignity and self-respect.

Another advantage of community participation is sustainability (Kumar, 2002). Generally, management interventions are funded by either government or by donor agencies. Experience has shown that management interventions from external assistance projects usually fail to sustain the required level of management activity once support or inputs are diminished or withdraw by funding agencies. People's participation is regarded as an essential prerequisite for the continuity of activities. The involvement of local and utilisation of local resources generates a sense of ownership over management interventions to the community. This sense of ownership is essential for the sustainability of the interventions even after external funds cease to flow (Kumar, 2002).

Community participation ensures that projects are developed according to the needs of the people (Raniga and Simpson, 2002). This can improve the outcomes of projects through cost sharing, increased efficiency and effectiveness. Through community participation, resources available for development projects will be used more efficiently and fewer costs will be incurred if the people themselves are responsible for the project (Kumar, 2002).

Community participation encourages community self-reliance. Many development interventions have been seen to create a kind of dependence syndrome. For instance, in India, there is a widespread government development programmes, people have started looking to the government for solutions to every problem that they face (Kumar,2002).The ultimate objective embraces all the positive effects of genuine participation by rural people. Self-reliance demolishes their over-dependency attitudes, enhances awareness, confidence and self-initiative. It also increases people's control over resources and development efforts, enables them to plan, implement and also to participate in development efforts at levels beyond their community.

Community participation teaches communities how to resolve conflict and allows for different perspectives to be heard. In this way, learning is promoted and people will be able to help themselves (Baum, 1999 in Nampila, 2005). Communities will be able to assess their own situation, organise themselves as a powerful group and work creatively towards changing society and building up a new world Nampila (2005). This increased capacity of individuals, allow communities to mobilise and help themselves to minimise dependence on the state and leads to a bottom-up approach (Nampila, 2005).

3.2.6 Encouraging Community Participation

There are many ways of promoting community participation. The activities of thecommunity are not considered to be the special vicinity of a knowledgeable but it is thebusiness of everyone (Reid, 2000). Community participation is an essential part ofhuman growth, which is the development of self-confidence, pride, initiative, creativity,responsibility, cooperation. Kumar (2002), state that participation istherefore being increasingly viewed as the process of empowering the local people ingeneral. Community participation must be more than a policy statement- there must begenuine commitment to encourage participation in all aspects and at levels ofdevelopment rather than a policy. The most important action the local authorities cantake to encourage community participation is to welcome local people to contribute to theactivities which are to be implemented or implemented.

People should feel that they can influence the outcome of the project in order for them to participate (Nampila, 2005). United Nations document (1981) state that communityparticipation create opportunities which enables all members of a community to activelycontribute to and influence the development process and to share equitably in the fruitsof development. Rural development strategies can realise their full potential only throughthe motivation, active involvement and organisation at the grassroots level of ruralpeople. Citizen participation particularly is the essence of democracy. The outcomes of a communityparticipation process cannot be predetermined because people are unpredictable. Theprocess must be flexible in order to adapt to unforeseen circumstances. It is not alwayspossible to satisfy everyone, which can result in some people not approving of theinitiative.

Conditions should be created under which collaborative dialogue can occur aroundissues that are critical to the community. All viewpoints should be heard and all citizensshould have an equal chance to participate in the decision-making process. Communityparticipation should seek to give a “voice” to those normally excluded from the process. This means that the various types of work carried out by voluntary bodies for the benefitsof the public should not only be clearly recognizable but also be readily available to thepublic.

Nampila (2005) reveals that the other mode to strength the community participation isthrough the welding of public/community/private partnerships built on existingorganisational strengths.

Community groups need to be remunerated for undertakingtasks of infrastructure management and maintenance in partnership or under contract tolocal government. Only if communities and beneficiary groups participate in projectoperation and maintenance will sustainability be assured. If communities are to enter into partnerships with government for the implementation and management of localeconomic development and infrastructure projects, the capacity to sustain thesepartnerships will need to be created (Nampila, 2005). The normal education systemshould give more instruction on the social functioning of the community and theresponsibility of the individual citizen.

3.2.7 Factors that affect Community Based Disaster Risk Management

Kakumba and Nsingo (2008) outline the number of challenges facing community participation in development processes as follows:

a) Inadequate financial capacity

In order for rural communities to play an active role in the community development, it is necessary for their members to have access to resources. The weak financial position of local communities not only reduces the capacity of communities to participate into development projects, but also affect the whole process of rural development (Kakumba and Nsingo, 2008). Having inadequate resources negatively impacts a rural community's ability to effectively influence and develop policy compared to other players in the policymaking process. For example, corporations and professional organizations often have access to large amounts of financial and human resources. This creates an inequity whereby communities that may be affected by flood do not have the same opportunity to participate in and influence the process.

b) Lack of general information

Aref and Redzuan (2009) have indicated that the rural citizens feel that there is a lack of access to information about government programmes and services. Rural Canadians have reported that the information that is available on policy, government programmes and services is difficult to obtain and interpret. There is a desire to learn about and access information about government programmes and services that is understandable, concise and timely.

c) Absence of rural representation in the decision-making process

Aref and Redzuan (2009) assert that living in a democratic society means we elect representatives to speak on our behalf at the government level. By virtue of their larger population, urban areas tend to have greater representation in the National parliament and Provincial legislatures than rural communities. The greater number of urban representatives is one factor that can lead these elected bodies to have a more urban focus and reduce the influence rural community members have in the decision making process. Specific communities and groups of community members must also be considered in the rural policy-making process.

d) Socio-economic structure

The pathetic socio-economic position of the rural people obstructs them from meaningful participation (Kakumba and Nsingo 2008). Bear in mind that the rural population is associated with low levels of education, high illiteracy rates, poor infrastructure and communication means obstructing their civic competence. Kakumba and Nsingo (2008), states that the weak internal structure of most community organisations such as non-government organisations, civil society and lack of broader representation of the people's voice make them rather superficial.

3.3 THEORETICAL FRAMEWORK

Theories of community participation have received considerable academic attention particularly since the early 1990s but have been a source of debate since 1960s.This study will seek to borrow from some of the theories in an attempt to explain the need for community participation in flood risk management.

3.3.1 Arnstein's Ladder of Participation

The seminal work on the subject of community participation was by Arnstein(1969).The importance of Arnstein"s work stems from the recognition that there are different levels of participation from manipulation or therapy to what can be viewed as genuine participation. In the theory, he explains that there are eight ranks in the ladder and each of the ranks represents the type of participation and degree of citizen control over development.

In rank one and two participation takes the form of manipulation, in rank one and therapy in runk two. Three and four represent participation by informing and consulting respectively. These

levels of tokenism allow have-nots hear and have a voice but hardly offer power to ensure that the powerful heed to their voices .There is neither follow through or assurance of changing status. The fifth is a graduation of participation from tokenism to placation.

Placation allows the have-nots to advice the powerful continue to retain the right to decide. The sixthpartnership, the seventh, delegated power and the eighth citizen control. These runks stand for genres of participation that provide citizens with increasing degrees of decision –making power. The ladder promotes the idea that participation should allow for, redistribution of power that enables the have not citizens presently excluded from the political and economic processes to be deliberately included in the future .Participation is the means by which citizens can include significant social reform which enables them to share in the benefits of the affluent society.

3.3.2 Pretty's (1995) Typology of Participation

Another typology of participation arising from participatory democracy was presented by Jules Pretty in 1995. While Arnstein's ladder looks at participation from the perspective of those on the receiving end, Jules Pretty's typology of participation speaks more to the user of participatory approaches. Moreover, pretty's typology is less bound to only urban areas and has a wider usage. Rudqvist and Woodford-Berger indicated that Pretty's typology starts with inferior types of participation and then proceeds to the better ones.

According to Pretty (1995), in the Passive type of Participation, people are merely being informed of what has already been decided or has already happened. It involves unilateral announcements by an administration or project management without any form of listening to people's responses. The typology goes on to better forms of participation such as Participation by Consultation, in which people participate by being consulted or by answering questions and also by means of material contribution, in which people participate by contributing resources, for example, labor, in return for food, cash or other material incentives.

The next form is Functional Participation, which demonstrates the type of participation that is in many cases associated with effective debates: Functional Participation is considered by many organizations as a tool for fulfilling project goals and, especially, helping to reduce costs. People

may participate by forming groups to meet predetermined objectives related to a particular project. This is the most common type of participation in community development.

The last two forms of participation in Pretty's typology are the fair and firm kinds of participation. Interactive participation is defined as a learning process through which local groups take control over decisions, thereby gaining a stake in maintaining structures and resources. Participation is seen as a right and not just the means, to achieve project goals. The process involves interdisciplinary methodologies that seek multiple perspectives and make use of systemic and structured developing contacts for resources and technical learning processes. In 'self-mobilization', people take the initiative independently of external organizations, assistance, while retaining control over these resources at the same time. Self-mobilization can develop and spreadif governments and NGOs provide collaboration for a strong framework of support.

3.3.3 Robert Chambers: Participatory Rural Appraisal

Chambers (1994) argues that to promote the development of the disadvantaged people, change agents must transform into learners .They must abandon their top-down attitudes, professional expertise and institutional behaviors. They must constantly reflect on the extent to which their actions inhibit development on their subjects. Chambers assumes that personal changes in the behavior and attitudes of development practitioners lead to professional changes. Mwanzia and Strathdee (2010) explains that participation is a method, a process and outcome of development, research and empowerment. They explain that participatory methods are important to get information from the marginalized because most policy-makers are unaware of the needs of the rural poor as most of them live in the urban centers and do not share the social circumstances, or class origins of those they profess to help.

3.4 LITERATURE REVIEW

3.4.1 Floods and Disaster Management: Global Perspective

(a) Floods

Large and damaging floods occur every year. Heavy floods visited Pakistan, India and China in the summer of 2010, Colombia from October to December 2010 and Australia during the austral summer 2010/11. In 2010, there were nearly 2000 immediate fatalities from monsoonal flooding in Pakistan (Syviski and Brakenridge, 2013). In 2011, severe flooded were reported in

Mozambique, Namibia, South Africa and Uganda in Africa; Brazil, Columbia and United States in the Americans; and Cambodia, China, India, Korea, Philippines, and Thailand in Asia. It has high material damage, particularly developed countries (Kundzewicz, 2012). In 2012, "killer floods," inducing more than 50 fatalities each occurred in Madagascar, Niger and Nigeria in Africa; Bangladesh, China, India, North and South Korea, Philippines and Russia Asia; and Argentina, United States and Haiti in the Americas.

(b) Disaster Management

Increase in disasters, whether large or small, will threaten development gains and hinder the implementation of the Millennium Development Goals (ISDR, 2008). Though, developing nations bears much burden of natural disasters where over 95% of disaster related deaths occur (IFRC, 2008), floods in Guatemala, earthquakes in China, drought in Angola, cold wave affecting much of Europe. The impacts of disaster in 2012 were felt around the world. Efforts have been geared towards reducing flood related problems around the world.

Hyogo Declaration, made at the World Conference on Disaster Reduction in Kobe, Hyogo (Japan) is one of the moves to manage disaster around the world. It sets out the Hyogo Framework for Action (HFA -2005-2015). The Framework was signed by 168 countries; its goal was to build the resilience of nations and communities to disasters by achieving substantive reduction losses from disaster by 2015. The framework was organized according to five priorities for action; Make Disaster Risk Reduction a Priority, Know the Risks and Take Action, Build Understanding and Awareness, Reduce Risks and Be Prepared to Act. Since the adoption of HFA, many efforts have made at global, regional and local levels.

3.4.2 Floods in Nigeria

(a) An Overview of Flood in Nigeria

Occurrences of floods in the cities and towns of Nigeria in recent times have been great concern and challenge to the people, government and researchers (Aderogba, 2012,; Aderogba*et al.,* 2012). From Lagos, Ibadan, Abeokuta, Calabar, Port-Harcourt and Warri in the southern region, through Ilorin, Lokoja, Abuja and Minna in the middle belt to Kano, Kaduna, Jalingo, Maiduguri and Gombe in the North. The rain wash away streets, battering dams , collapsing bridges, submerging buildings, killing people, trapping some in their homes and separating thousands of

others from theirs. “Nothing is spared by marauding floods” (Adedeji and Kyoro, 2011). In 1980, Ogunpa stream killed several people and completely grounded socio-economic activities of the area, in August 2008, the residents of Makurdi were thrown out of their residences and their farmlands left impoverished after two days of heavy down pour of heavy rainfall. It was described as disastrous (Taiwo, 2008, Adedeji and Kyoro, 2011).

Floods in Nigeria are usually predictable, occurring in the rainy season as sporadic flash floods, especially along the coastal regions, riverbanks, waterways and estuaries. In 2012, however, Nigeria experienced severe flooding across the nation destroying properties, farms and displacing millions of people from their homes (NEMA, 2012). The Nigerian Hydrological Services Agency described the 2012 floods as the worst flooding disaster the country had ever experienced. The Agency recorded peak water level of 12.84m and maximum discharge of 31.692m/s at the confluence of Rivers Niger and Benue at Lokoja, Kogi State on September 29, 2012, causing devastating destruction of lives and properties together with economic loss in Nigeria.

(b) Factors Influencing Flood in Nigeria

Developing nations such as Nigeria are at great risks of flooding hazards due to urbanization which triggers flooding through construction of buildings along flood plains , thereby restricting free flow of water (Ijeoma, 2012). Also, as urbanization grows, population of the cities rises, causing climate changes in storms, winds and rainfall, create high flow in rivers due to hard surface and buildings (Action Aid, 2006). Low level of education, poor communication and infrastructures especially in the rural communities who are more vulnerable play a huge role in the level of impacts of climate change (Faruata, *et al.,* 2011). Management/adaptation Strategies, especially for flooding have to be structured in a sustainable manner to meet the present need, socially, economically and environmentally while preserving and protecting the future (WHO, 2012).

Other researchers discussed the factors that influence flooding in Nigeria under four main themes: (i.) hydrological factors, (ii) waste management factors, (iii) institutional factors, and (iv) awareness factors

3.4.3 Flood Disaster Management Initiatives in Nigeria

Nigeria as a country has shown a long time commitment to issues of the environment and disaster management. The country has either acceded to or ratified a number of international treaties, conventions and disaster management frameworks including Rio Declaration (1992), Climate Change Convention (1992), Rotterdam Convention (1998), Kyoto Protocol (2001) Hyogo Framework for Action (2005 -2015), Rio+20 Declaration (2013) and the Sendai Framework (2015). In all of these treaties and conventions, Nigeria has strived to implement programmes of environmental management and disaster risk reduction. Specific flood disaster management activities of Nigeria, most especially in the aftermath of the 2012 event as identified by Jinadu, (2015) are enumerated below:

i. Flood Warning Services

Effective warnings maximise a community's ability to adapt to an impending flood and help minimise loss and trauma. They are deemed to be a crucial factor in reducing the risk of loss of life, and are often a most cost effective measure in regions where defences are not physically or economically feasible (DEFRA, 2006).

Flood early warning services are provided by the Nigerian Meteorological Agency (NIMET) in collaboration with National Emergency Management Agency (NEMA), National Orientation Agency (NOA) and the Dam Authorities in Nigeria. NIMET produces annual Seasonal Rainfall Prediction (SRP) and issues out warnings on excess rainfall and possible flooding every year. An agreement was signed between the Nigerian and Cameroonian Government on sharing early warning information with respect to the release of water from Lagdo Dam in Cameroon, which was the major cause of the 2012 flooding (Jinadu, (2015).

ii. Preparation of Reports and Disaster Management Plans

In the aftermath of the 2012 flooding, Nigeria, with the support of the United Nations Systems European Union (EU) and other Development Partners conducted the Post Disaster Needs Assessment (PDNA) of 2012 flood disaster. The PDNA provided information on the effects and impacts of the 2012 floods, the financial requirements for rehabilitation of victims as well as the framework for recovery and reconstruction. The country was also supported by the UNDP and the World Bank/Global Facility for Disaster Reduction and Reconstruction (GFDRR), to prepare

the National Disaster Recovery Strategy/Framework and 2012 Flood Recovery Action Plan for emergency recovery and mitigation. The Flood Recovery Action Plan is modeled on that of the US, the UK, New Zealand and it is regarded as the first of its kind in Africa (Jinadu, 2015).

iii. Fund Disbursement for Flood Rehabilitation and Recovery

In the aftermath of the 2012 flood disaster, the Federal Government established a Presidential Committee on Flood Relief and Rehabilitation and released the sum of N17.6 billion for disbursement to the affected States and relevant Federal Agencies. The affected states received N 13.3 billion, while the agencies received N 4.3 billion (Odogwu, 2013). The Economic Community of West African States also gave Nigeria $382,000. The affected States were categorized into four groups – A to D. States in category A got N 500 million each; category B got N 400 million each; B got N300 million while category D got N 250 million each. The funds were meant for rehabilitation, recovery and preparedness for disaster risk reduction in the affected States.

iv. Flood Vulnerability Mapping

In order to prepare for and reduce the risk of future floods, NEMA in collaboration with Office of the Surveyor-General of the Federation (OSGOF) and National Space Research and Development Agency(NASRDA) conducted flood vulnerability mapping exercise in 17 States to identify communities at risk and safe relocation sites. The mapping was done based on the 2012 flood extent and elevation of the areas mapped (NEMA, 2014). The maps were made available to responsible authorities in the State for the purpose of planning and flood disaster preparedness.

v. Construction of Relocation Shelters in States affected by Flood

The Presidential Committee on Flood Relief and Rehabilitation initiated flood shelter projects in the aftermath of the 2012 floods and awarded contracts worth N5 billion. For instance, Bauchi, Benue, Niger, Kogi and Delta States commenced the building of 2 blocks hostel accommodation for people that might be displaced by future flooding disasters. The concept of flood temporary shelter was based on providing wet season homes for peoples who depend and live in flood prone areas for livelihoods. Such people are to be temporary housed in upland during the peak of wet\flooding season.

3.4.4 Institutional Approach to Flood DisasterManagement in Nigeria

Disaster management in Nigeria is defined as the "coordination and integration of all activities necessary to build, sustain, and improve the capability to prepare for, protect against, respond to and recover from threatening or actual natural or human-induced disasters (NEMA, 2010).Prior to 1960s, response to flood disaster conditions in Nigeria was an exclusive preserve of private individuals and groups in affected areas (Obeta, 2009). There was no specific, well-formulated institutional response procedure for tackling flood episodes. The federal government's pioneer intervention agency came into being during the First, Second and Third National Development Plans of 1962-68, 1970-74 and 1975-80 respectively, through the establishment of the federal and state ministries of works (Ibitoye, 2007).

The Natural Disaster Department of these ministries were mandated to create awareness among the citizenry on flood and associated hazards and to develop sound response strategies to combat flood events through properly cost programme of adjustment, abatements and protection (Kolawole *et al.,* 2011). In addition, these agencies were mandated to identify, seek and acquire the necessary data needed to combat flood and associated natural disasters (Anih, 2004). These agencies assisted greatly in identifying and characterizing flood-prone areas in Nigeria. They designed and developed weak drainage channels (especially in urban areas), diversion channels and dams to store surface runoff. These structures helped to reduce flood damage potentials in various parts of Nigeria (Ibitoye, 2007). In 1988, the Federal Environmental Protection Agency (FEPA) was established as a unit in the Federal Ministry of Works and Housing. FEPA was mandated to develop policies and programmes which can secure Nigeria from the negative impacts of ecological disasters (Obeta, 2009)

In 1999, the Federal Ministry of Environment was established. The ministry was, among other things, mandated to assess the flooding potentials of watersheds across as well as to determine, design, develop and/or authorize the development of appropriate flood mitigation measures in these watersheds (Kolawole *et al.,* 2011). The Flood, Erosion and Coastal Zone Department of the ministry categorized flood- prone areas in Nigeria into three, namely:

1. The low lying coastal areas: This area is generally low-lying and has a unique drainage. The south flowing rivers and their tributaries find their way to the Atlantic Oceans through this area thereby increasing the areas vulnerability to flood (Adeaga, 2008).

2. The Niger Benue trough: This trough consists of extensive flood plains of the Niger River and Benue-its largest tributary. This region is relatively densely populated and frequently flooded (Etuonovbe, 2011).

3. Urban and built-up areas: (especially in southern Nigeria-Lagos, Ibadan, Benin, Warri, Port-Harcourt, Uyo and Calabar). In Nigeria urban areas are growing rapidly due to a combination of factors such as rapid population increases, agglomeration of industries, social amenities etc (Rashid, 1982). Uncontrolled urbanization and other anthropogenic and physical factors lead to frequent flooding in Nigerian urban areas (Wahab, 2011).

The continued propensity of flood incidents in Nigeria necessitated the establishment of additional institutions from the late 1990s to assists in flood disaster management in Nigeria (Ndukwe *et al.,* 2011). The new institutions are:

i. National and State Emergency Management Agency (NEMA)

ii. National Commission for Refugees (NCFR)

iii. Federal Environment Protection Agency (FEPA) (established earlier in 1988) and

iv. Nigerian Metrological Agency (NIMET)

NEMA procures and distributes relief materials in the form of food items, non-food items and bedding materials to the affected victims while a technical mitigation committee of FEPA undertakes flood impact assessment responsibilities and develop structural and nonstructural measures. NCFR prepare emergency shelters or find suitable accommodations for internally displaced persons. NIMET studies the pattern of precipitation nationwide and acquires, classifies and preserves metrological data needed for flood prediction and forecasting. Non-governmental organizations, particularly the Red-Cross society respond by providing cash and relief materials to affected persons or by ensuring that those who lost their lives are properly buried (Ndukwe *et al.,* 2011).

3.4.5 Organization of Emergency Management in Nigeria

At the federal level, NEMA is the lead agency for managing disasters through its six zonal offices spread across the country (Fagbemi 2011). At the state level, the Federal Government mandated the establishment of State Emergency Management Agencies (SEMAs) and at the local level, mandated the creation of Local Emergency Management Agencies (LEMAs) (NDMF 2010; Fagbemi 2011). All the three emergency management agencies are charged with the

responsibility of developing capabilities to prepare, prevent, respond to, and recover from disasters (NDMF 2010). Other players in Nigeria's emergency management system include, but are not limited to, the military, police, para-military, and CSOs (NDMF 2010). In addition, Disaster Response Units (DRUs), which can be summoned from military formation across the country, are also important players in Nigeria's emergency management system (NDMF 2010). Disaster Management structures are backed-up by an enabling law at all levels of government. The establishment of Disaster Management structures at all levels of governance (federal, states and local) in Nigeria centres on the principles of shared responsibility and the need to ensure proper integration and collaboration among stakeholders (NEMA, 2010).

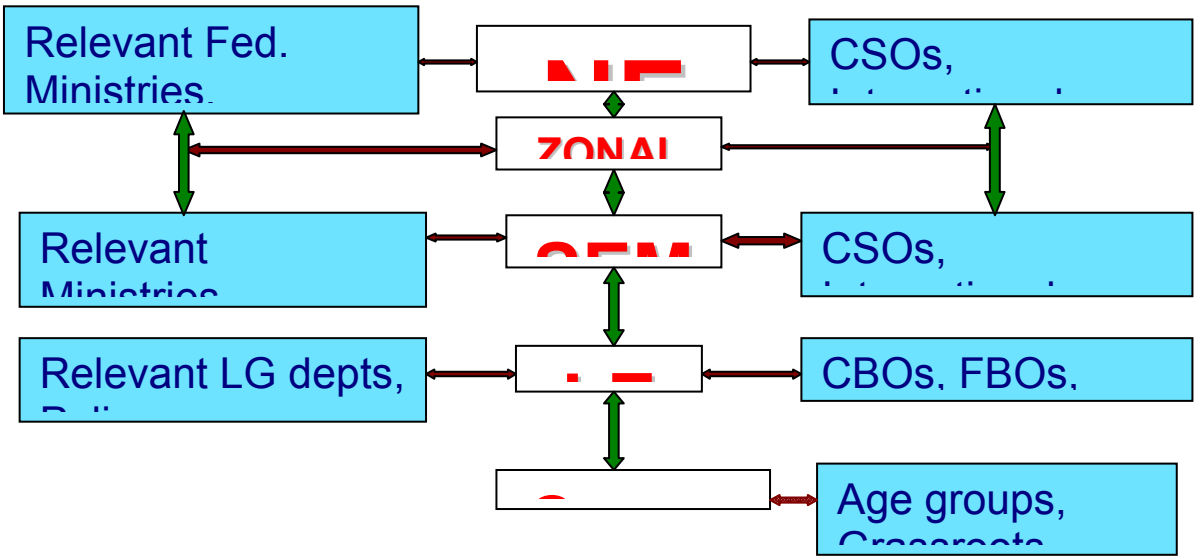


Fig. 2: Coordination of Disaster Management in Nigeria (NEMA, 2010)

(a) Roles of the Federal Government in Disaster Management

The Federal Government through the National Emergency Management Agency (NEMA) performs the following disaster management functions (NEMA, 2010):

i. Formulate policy on all activities relating to disaster management in Nigeria;
ii. Coordinate the activities of other stakeholders in Disaster Management.
iii. Co-ordinate plans and programmes for efficient and effective response to disasters in the country;

iv. Co-ordinate and promote research activities relating to disaster management in the country;

v. Monitor the state of preparedness of all organizations and agencies which may contribute to disaster management in Nigeria;

vi. Collate data and report from relevant agencies to enhance forecasting, planning and field operations of disaster management;

vii. Educate the public on disaster prevention and control measures;

viii. Co-ordinate and facilitate the provision of necessary resources for search and rescue and other types of disaster curtailment activities;

ix. Co-ordinate and support the activities of non-governmental organizations and development partners engaged in disaster managementin the country.

x. Mobilize financial and technical resources from private sector, international non-governmental organisations and development partners for the purpose of disaster management in Nigeria;

xi. Collect emergency relief materials or supplies from local, international and non-governmental agencies for distribution to the people affected by disaster**;**

xii. Work closely with SEMA and LEMA to assess and monitor where necessary the distribution of relief materials to disaster survivors and Internally Displaced Persons (IDPs), refugees, and those adversely affected by mass deportation and repatriation from any other country as a result of crises, disasters or foreign policies;

xiii. Assist in the rehabilitation of survivors, IDPs and refugees where necessary, and those adversely affected by mass deportation and repatriation from any other country as a result of crises, disasters or foreign policies;

xiv. Prepare the annual budget for disaster management in Nigeria;

xv. Process relief assistance to such countries that have experienced disasteras may be determined by the Federal Government of Nigeria from time to time;

xvi. Foster strong working relationshipwith all relevant National and International Agencies including the United Nations institutions for the reduction of disasters.

xvii. Facilitate the establishment of enabling legislation and monitor the activitiesof State Emergency Management Agency (SEMA) and Local Emergency Management Authority (LEMA).

xviii. Perform such other functions which, in the opinion of the Governing Council are required for the purpose of enhancing effective disaster management in Nigeria

(b) The Roles of State Governments in Disaster Management

TheState Government through the State Emergency Management Agency (SEMA) performs the following disaster management functions (NEMA, 2010):-

i. Formulate policy on all activities relating to disaster management in the state;
ii. Co-ordinate plans and programmes for efficient and effective response to disasters in the State;
iii. Co-ordinate and promote research activities relating to disaster management in the State;
iv. Monitor and provide feedback to NEMA on the state of preparedness of all organizations and agencies which may contribute to disaster management within the State;
v. Collate data and report from relevant agencies in the state so as to enhance forecasting, planning and field operations of disaster management, and supply same to NEMA for planning purposes.
vi. Educate the public on disaster prevention and control measures within the state;
vii. Co-ordinate and facilitate the provision of necessary resources for search and rescue operations and other types of disaster curtailment activities within the state;
viii. Mobilize support and resourcesfrom the National Emergency Management Agency (NEMA) when damages and need assessments are considered beyond the capacity of the state to respond,
ix. Facilitate the enabling legislation for the establishment of Local Emergency Management Authority (LEMA) for all the Local Governments in the state.
x. Work closely with LEMA for distribution of relief materials to disaster vicitims;
xi. Perform such other functions which, in the opinion of SEMA Governing Council are required for the purpose of enhancing disaster management in the state.

(c) The Roles of Local Governments in Disaster Management

TheLocal Government through the Local Emergency Management Authority (LEMA) performs the following disaster management functions (NEMA, 2010):-

i. Coordinate disaster management activities and respond to disaster events in Local Government area.

ii. Monitor and provide feedback to SEMA on the status of preparedness of all organizations and agencies which may contribute to disaster management within the Local Government Area.

iii. Collect and collate data on disaster and disaster risk areas in their respective Local Governments, and share same with SEMA.

iv. Mobilize support and resourcesfrom the State Emergency Management Agency (SEMA) when damages and need assessments are considered beyond the capacity of the Local Government to respond.

v. Establish and develop Disaster Management capacity of community structures**.**

(d) Roles of Communities in Disaster Management

The community structures (Neighbourhood associations, schools, Community Based Organisations (*CBOs), Faith Based Organisations (FBOs), Non Governmental Organisations (NGOs) etc.***)** perform the following functions in disaster management (NEMA, 2010):-

i. Ensure commitment and preparedness of community members to disaster management.

ii. Sensitize and build the capacity of communities that constitute disaster fronts in preparation for initial response to disaster threats.

iii. Mobilize community resources and build community capacity and resilience to prepare for, respond to and mitigate the impact of disasters.

3.4.6 The Challenges of Flood Disaster Management in Nigeria

Nigeria lags behind many other countries in flood disaster management, United State of America, Britain, Australia, Canada, India, Pakistan, China, Bangladesh and Philippines considerably more efforts are directed towards flood disaster management both at national and provincial levels. Government and citizens in these countries fight flood hazards through carefully developed and properly coordinated response and recovery activities that drastically reduce flood-loss potentials (Cupta, 2007).

An assessment of the various flood management programmes in Nigeria reveals that the level of success in flood disaster preparedness, rehabilitation and recovery is still very low (Adebayo *et al.,*2013). The outcomes of flood disaster management activities are not commensurate with the level of resources committed by the Government. Some of the challenges faced in the

management of flooding disasters as identified by (Jinadu, 2015;Adebayo *et al.,*2013) include, but not limited to, the following:

i. Occupation of Flood Plains and Poor Response to Early Warning.

The flood plains of the major rivers in Nigeria have become permanent abode for several fishing and farming communities who depend on the areas for their economic livelihoods. There are over 350 of such communities that live in small settlements in Niger State alone. The Government has not been able to relocate vulnerable communities in Nigeria despite all warnings and sensitization efforts. The majority of the people living in flood-prone areas have refused to relocate due to social and economic attachment to their place of abode while the Government could not provide alternative abode and livelihoods for few of the communities that are ready to relocate. The situation is made worse by limited access to warning information by rural communities and poor attitudes of some communities that received but often ignore early warning messages(Jinadu, 2015).

ii. Emergency Response Delay due to Poor Accessibility

Many rural communities in Nigeria face the problem of difficult terrain and poor accessibility in times of emergency. Coastal communities in Anambra, Rivers, Bayelsa, Cross River and Akwa-Ibom and Delta States as well as those living on the flood plains of River Niger and Benue in Sokoto, Kebbi, Niger, Kwara and Kogi States are often cut off in time of flooding disasters. As a result, emergency response and relief assistance are often delayed. Also, situation report from the 2012 emergency response indicated that some areas were difficult to access and the humanitarian situation in some remote camps was unclear (OCHA, 2012). The problem of poor accessibility is further demonstrated in the case of Patani town of Delta State where NEMA and State officials found it impossible to send relief materials to over 3, 000 flood victims in temporary camp in October, 2015 (Arisenigeria, 2015).

iii. Mismanagement of the Ecological and Flood Relief and Rehabilitation Funds

Mismanagement of the ecological fund for addressing environmental problems has been a major challenge in Nigeria. In year 2012, the Senate Committee on Public Accounts uncovered an abuse of the fund to the tune of N154.9 billion (Odogwu, 2013). There were several cases of diversion of the ecological funds to non-environmental projects in many States. Also, there are

many reports of gross mismanagement of the N17.6 billion released to the Presidential Committee on Flood Relief and Rehabilitation in the aftermath of the 2012 flooding disaster. The relief funds did not reach the targeted flood victims as the State Governments in Nigeria diverted the funds for various political purposes.

iv. Low Institutional Capacity and Inadequate Coordination

There is the challenge of low institutional capacity for disaster management in the country. As a federation, the NEMA Act 50 of 1999 established the National Emergency Management Agency (NEMA), State Emergency Management Agency (SEMA) and Local Emergency Management Committee (LEMC) for emergency management at the federal, state and the local levels respectively. These institutions, most especially the SEMAs and LEMCs, lack adequate capacity in terms of manpower, skills and equipment. As a result, little or no emergency management activities are happening at the state and local level, leaving the main business of emergency response to NEMA, which has limited operational capacity to cover the entire country. Some of the States have no functional SEMAs while LEMC have not been established in most States of Nigeria. Also, effective coordination of disaster management activities of line ministries and stakeholder agencies remain a problem as the National Platform for Disaster Risk Reduction established in Nigeria is not functional.

v. Non-implementation of Disaster Management Plans

One major challenge of flood disaster management is the non-implementation of existing reports and plans. Today, the country parades numerous reports and disaster plan such as the National Disaster Response Plan (NDRP), Search and Rescue (SAR) & Epidemic Evacuation Plan, National Pandemic Response Plan, etc. Most of these plans are not being implemented. More importantly, the PDNA report of 2012, the National Disaster Recovery Strategy/Framework and 2012 Flood Recovery Action Plan, which provide comprehensive strategies and programmes for flood disaster preparedness, mitigation and recovery have not been implemented since 2012 (Jinadu, 2015).

vi. Poor Enforcement of Land Use Regulation Laws.

The nature of physical development in many towns and cities in Nigeria bears testimony to weak urban planning and poor implementation of existing development control laws. Incidences of

illegal development and river bank encroachments in many settlements increase the risk of urban flooding. The poor implementation of the land use planning and development control provisions of the Urban and Regional Planning Law of 1992 and inadequate drainage systems have made most settlements vulnerable to flooding disaster. The problems of political influence, inadequate funding and illegal planning approvals have combined to weaken effectiveness of urban planning institutions in Nigeria.

3.5 RELEVANCE OF THE CONCEPTS AND THEORIES TO THE STUDY

The concepts and theories dwelled on the issue of participation, so the understanding of the importance of participation by the government and flood vulnerable communities would assist in flood risk management in Kogi state and Nigeria in general.

The common belief is that involving citizens in rural programmes and empowering them have the potential to boost their livelihoods and foster development in their area (Kakumba & Nsingo, 2008). Community participation empowers the primary beneficiaries of development programmes or project by helping them to break away from a dependency mentality (Burkey, 1993). Community participation promotes self-confidence and self-awareness. Nampila (2005) agrees that this heightened consciousness makes people continuously aware of the reality about them and of their own capacity to transform it. When people have the freedom to participate in activities, it gives them dignity and self-respect. Community participation encourages community self-reliance. Many development interventions have been seen to create a kind of dependence syndrome. For instance, in India, there is a widespread government development programmes, people have started looking to the government for solutions to every problem that they face (Kumar, 2002). The ultimate objective embraces all the positive effects of genuine participation by rural people. Self-reliance demolishes their over-dependency attitudes, enhances awareness, confidence and self-initiative. It also increases people's control over resources and development efforts, enables them to plan and implement and also to participate in development efforts at levels beyond their community.

Community participation teaches communities how to resolve conflict and allows for different perspectives to be heard. In this way, learning is promoted and people will be able to help themselves (Nampila, 2005). Communities will be able to assess their own situation, organise themselves as a powerful group and work creatively towards changing society and building up a

new world Nampila (2005). This increased capacity of individuals, allow communities to mobilise and help themselves to minimise dependence on the state and leads to a bottom-up approach (Nampila, 2005).

CHAPTER FOUR

RESEARCH METHODS

4.1 INTRODUCTION

This section deals with the methods and all the procedures that were applied in conducting this study. It explains the research design, population, sample size, sampling procedure, data collection methods and the procedures of analyzing the data collected from the field.

4.2 RESEARCH DESIGN

The study used survey research design method. The method allows for flexibility in the study of a complex or an evolving phenomenon with human and organisational interplay.

The entire research activity was as follow;

Reconnaissance survey was carried out to help acquire the necessary materials like maps, documented materials as well as information from SEMA, LEMC and communities.Structured questionnaire was administered to purposively sampled respondents from the flood affected communities in the nine Local Government Areas because of their experience in flooding events. In-depth-interviewwas held with SEMA officials in the state because they saddled with the responsibility of flood management and Focus Group Discussions (FGD)was held with major key players in the flood risk management in the sampled communities, especially officials of community based organizations that organize flood management activities.The data collected from structured questionnaires was analysed using Chi-square, while the data from FGD and in-depth-interview was transcribed, interpreted through narrative analysis.

4.3 SOURCES OF DATA

The study used both primary and secondary data sources

4.3.1 Primary Sources

The primary sources of data for this research includethe flood affected people in the community, the officials of community based organizations and staff of SEMA.

4.3.2 Secondary Sources

This secondary source of data includes the reports from agencies such as NEMA, SEMA, ministries and written materials from communities on the subject matter.

4.4 POPULATION AND SAMPLE SIZE

The population of the study is 8,451 people that are affected by flood in the flood vulnerable communities in Kogi state as indicated by SEMA, (2012)**.** Using Sample Size Table of Research Advisor (2006) at 99% confidence level,a sample of six hundred and ten (610) respondents was drawn from the population. Size of respondents were determined after estimating the sample size of respondents taken for each community (Table 1).

Table 1: Population of the Study Area and Sample Size

L. G A	SAMPLED COMMUNITIES	POPULATION	Sample Size
Lokoja	Adankolo	158	11
	Cantonment	107	8
Ajaokuta	Ajaokuta Native Village	485	35
	Adogo	144	10
Kogi	Edeha	1,009	73
	Koton-karfe	196	14
Bassa	Shintako	879	64
	Oguma	168	12
Idah	Ugwoda	183	13
	Ichala	31	2
Igalamela-odolu	Odolu	936	68
	Ogbogba	262	19
Ibaji	Onyedega	1,006	73
	Ejule-Ojebe	199	14
Ofu	Itobe	724	52
	Olukudu-Ibaji	123	9
Omala	Bagana	1,724	124
	Otutubatu-Manejo	113	9
Total	**18 Communities**	**8,451**	**610**

Source: Adopted from SEMA, 2012

4.5 SAMPLING PROCEDURE

This study employed both probability and non- probability sampling, this was because stratified and simple random sapling methods were used to get the desired sample. The two techniques were used in order to explore suitable sampling methods. Lokoja, Kogi, Ajaokuta, Ofu, Igalamela-Odolu, Idah, Ibaji, Bassa and Omala Local Government Areas were regarded as nine strata. Stratified sampling was used to ensure that the different groups or segment of a population acquire sufficient representation in the sample. Each stratum was consisted of flood vulnerable

communities. Then, two communities were randomly selected from each stratum. Respondents were also selected proportionally from each community using simple random sampling.

The study dealt with role of community participation and environmental management agencies in flood risk management, therefore, list of all community affected by flood in the nine local government areas was obtained respectively from Kogi state environmental management agency (SEMA). The list was regarded as sampling frame from which the entire sample was drawn.

4.6 DATA COLLECTION PROCEDURE

The study employed the following data collection procedures:

4.6.1 Structured Questionnaire

In order to generate information relating to community based flood risk management initiatives, the role of flood management agencies, effectiveness of flood risk management initiatives by environmental management agencies, and strategies for effective flood risk management. Structured questionnaire was administered on the sampled respondents from the sampled communities in the nine Local Government Areas. Three research assistants were sort and trained on questionnaire administration. The questionnaire was administered to the respondents in their various communities. The respondents were assisted in filling the questionnaire in case of any difficulty such as illiteracy and blind.

4.6.2 Focus Group Discussions (FGD)

Focus Group Discussions were held with stakeholders (members of Community based organizations and community flood management committees) in the flood vulnerable communities that were purposively selected (because of their knowledge and experience in participation in flood disaster management in their communities). The study got the participants by prior visit to the traditional leaders of the sampled communities to seek their consent and request for such stakeholders for FGD.

Six Focus Group Discussions were held in all, two FGDs in two randomly selected communities along the three major river roots in the state (Figure 1). The Focus Group Discussions were carried out in Edeha, Cantonment, Shintako, Bagana Ugwoda and Itobe respectively. Six (6) to twelve (12) members of community based organizations participated in the Focus Group

Discussions depending on the available representative. Four of the FGDs were held under tree, while two were in front of community leader's house.

4.6.3 In-depth Interviews (IDI)

In-depth Interviews were held with SEMA officials in the state. Four staff of SEMA were interviewed. The interview gathered information on the agencies role in flood risk management, engagement with communities, challenges and the way forward. This interview was held with officials of Kogi State environmental management agencies in their offices in Lokoja (appendix III).

4.7 METHODS OF DATA ANALYSIS

The data produced from Focus Group Discussions and in-depth- interview were transcribed and interpreted through narrative analysis by explaining the responses. Verbatim quotations from participant's contributions were used. While the responses from 610 structured questionnaires were coded and inputted into Microsoft Excel (2007) and transformed to Statistical Package for Social Sciences (SPSS) version 20 where it was subsequently subjected to descriptive and inferential statistical analysis. Descriptive statistics particularly percentages were used. Chi-square was used to test the hypothesis. The results were presented in tables.

CHAPTER FIVE
RESULTS AND DISCUSSION

5.1 COMMUNITY BASED FLOOD RISK MANAGEMENT INITIATIVES

This section presents results and discussions of the findings on community based flood risk management initiatives.

5.1.1 Demographic Information of Respondents

The demographic characteristics of the respondents considered in this section include gender, age, educational qualification and length of period lived in the area.

Majority of the respondents (55%) were females (Table 2). This information represents the gender imbalance amongst community members. The women have been assumed to be acting as household heads in the absence of partners sought for employment in other urban and semi-urban areas which have better economic conditions. According to Action Aid (2006) rural communities have limited job opportunities, which result in emigration of breadwinners. Regarding the age of respondents, Table 2 shows that most of the respondents (39%) have fallen within the age of 25-30 years. This shows that the respondents comprised of people that have experienced flooding in their various communities and has adequate knowledge of flood risk management. On the issue of education, majority of them (32%) have attained primary education, but most of the women don't have any form of education. The respondents that attained tertiary education (10%) are mostly government workers with schools, health etc. Theron (2005) states that illiteracy is an inhibiting factor in community participation. This is because illiterate people may be marginalised by professional and technical communication during the community participation process. Finally, majority of the respondents have lived in their communities for over 10 years (85%). This indicates that they have adequate knowledge of flood risks and the management initiatives in their various communities

Table 2: Demographical Information of Respondents

Item	Frequency	Percentage
Gender		
Male	275	45
Female	335	55
Age		
18-24	140	23
25-30	110	39
31-35	122	20
36+	238	18
Educational Qualification		
Tertiary	59	10
Secondary	54	9
Primary	194	32
Informal	30	4
None	273	45
Length of Period Lived in the Area		
1-10 Years	92	15
Over 10 Years	518	85

Source: Field Survey, 2018

5.1.2 Community Evidenceof Environmental Management Agencies

Majority of the flood vulnerable communities (12 communities) do not have evidence of flood preparedness, response and recovery activities of environmental management agencies, while, (6 communities) show evidence of the agencies (Table 3). This shows that rural communities such asAjaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda do not benefit the activities of environmental management agencies, while urban communities like Adankolo, Cantonment, Nataco, Koton-Karfe, Onyedega and Itobe evidenced the preparedness, response and recovery activities of the agencies such as SEMA and LEMC. Federal Government of Nigeria (2013) Post Disaster Needs Assessment (PDNA) on 2012 flood revealed that most flood vulnerable communities are not benefiting from management activities of NEMA, SEMA and LEMA due inadequate fund from federal, state and local governments. This contributes to the in-evidence of the agencies by most flood vulnerable communities.

Table 3: Flood Vulnerable Communities and Environmental Management Agencies Evidence in Kogi State

S/No	L. G A	Flood Vulnerable Communities	Rural/Urban	Population	Evidence Env. Mgt Agencies
1	Lokoja	Adankolo	Urban	158	Evidence
		Cantonment	Urban	107	Evidence
2	Ajaokuta	Ajakuta Native Village	Rural	485	Not Evidence
		Adogo	Urban	144	Not Evidence
3	Kogi	Edeha	Rural	1,009	Evidence
		Koton-karfe	Urban	196	Evidence
4	Bassa	Shintako	Rural	879	Not Evidence
		Oguma	Urban	168	Not Evidence
5	Idah	Ugwoda	Rural	183	Not Evidence
		Ichala	Rural	31	Not Evidence
6	Igalamela-odolu	Odolu	Urban	936	Not Evidence
		Ogbogba	Rural	262	Not Evidence
7	Ibaji	Onyedega	Urban	1,006	Evidence
		Ejule-Ojebe	Rural	199	Not Evidence
8	Ofu	Itobe	Urban	724	Evidence
		Olukudu-Ibaji	Rural	123	Not Evidence
9	Omala	Bagana	Rural	1,724	Not Evidence
		Otutubatu-Manejo	Rural	113	Not Evidence
	Total	**18 Communities**		**8,451**	

Source: Field Survey, 2018

5.1.3 Level of Understanding of Community Participation in Flood Risk Management

The findings indicate that there is different understanding about community participation amongst community members in Kogi state. Urban communities, intellectuals, people with education and those that participated in flood management activities had a better understanding of community participation than people at rural level (Table 3).

Majority of the respondents in urban communities (77.5%) such as Cantonment, Adankolo, Nataco, Koton-Karfe Onyedega and Itobe(Table 3) indicated that community participation include all the enlisted items, 11.3% of them sees participation as management agencies engaging community members in flood risk management. This is largely because urban communities are more educated, enlightened, and have easy access to environmental management agencies. On the other hand, most of the respondents from the rural communities (30.8%) like Ajaokuta native Village Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji,

Bagana, Otutubatu-Manejo, Banda and Ugwoda (Table 3) agree to all the items, 28.4% indicated community members engaging in flood management, 21.4% sees it as agencies engaging community management processes, while 19.5% supports training of community members in management strategies. Despite the understanding of community participation by the urban communities, making the rural communities to understand community would pay better because majority of annually flooded communities lies in the rural areas. This shows that there is little understanding about community participation in flood risk management by the community as the large majority of the community respondents.

Theron (2005) agrees that community participation is the process of empowering people by developing skills and abilities so that they can make their own decisions in terms of needs and priorities. Sproule (1996) states that community participation of people is the process of "giving people more opportunities to participate effectively in development activities, empowering people to mobilise their own capacities, be social actors rather than passive subjects, manage resources, make decisions and control the activities that affect their lives." The Chi-square revealed that there is significant difference in the community knowledge on community participation in urban and rural communities at 0.05 level of significant (Table 4 and Appendix I).

Table 4: Distributions of Respondents according to Understanding of Community Participation in Flood Risk Management.

	Response		Location		
			Urban	Rural	
Community Understanding of Participation	Community members engaging in flood disaster management in their area	F	14	105	
		%	5.8	28.4	
	Environmental management agencies engaging community members in flood disaster management	F	27	79	
		%	11.3	21.4	
	Training members of the community in flood ,disaster management strategies by environmental management agencies	F	13	72	
		%	5.4	19.5	
	All of the above	F	186	114	
		%	77.5	30.8	
TotalX^2 = 131.603a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.1.4 Community Level of Participation in Flood Risk Management

Table 5 gives a picture of the respondents level of participation in flood risk management. This shows the different levels of participation between the urban and rural communities. It revealed that majority of the respondents (71.4%) in rural communities such as Ajaokuta native Village Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda (Table 3) indicated self-mobilisation, 15.9% supports participation for material incentives, 8.6% indicated passive participation and 3.2% participation in giving information The major reasons for self-mobilisation was lack of the presence of environmental management agencies for intervention in flood disaster management in rural communities It further revealed that respondents in the urban communities (30%) indicated to participate in information giving, 24.2% participate through self mobilization, 20.4% indicated for material incentives, 16.7%for passive participation, while, 8.8% participate by consultation. The agencies tend to gather information from members of flood vulnerable communities and also engage some in labor like drainage and waterways cleaning.

Majority of the respondents participate in flood risk management through self-mobilisation as indicated in Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities and some urban communities (Table 3). Most of these communities develop different mechanisms in the management of flood disaster because of long period living in the area and experience of flood disaster in their communities. The Chi-square revealed that there is significant difference in the community level of participation in urban and rural communities at 0.05 level of significant (Table 5 and Appendix I)**.** The finding is line with Pretty, (1995) self mobilization strategy where people participate by taking initiatives independently of any external institutions to solve their problems.

Table 5: Distribution of Respondents according to Community Levels of Participation in Flood Risk Management

	Response		Location		
			Urban	Rural	
Level of Community Participation	Passive Participation	F	40	32	
		%	16.7	8.6	
	Participation in information giving	F	72	12	
		%	30.0	3.2	
	Participation by consultation	F	21	3	
		%	8.8	0.8	
	Participation for material incentives	F	49	59	
		%	20.4	15.9	
	Self-mobilisation	F	58	264	
		%	24.2	71.4	
Total X^2 = 169.976a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.1.5 Community Level of Involvement in Flood Risk Management

The rationale for community involvement or community-based activities is because community-based activities (and community-based organizations) are deeply rooted in the society and culture of an area, they enable people to express their real needs and priorities, allowing problems to be defined correctly and responsive measures to be designed and implemented (Twigg, 1999).

Table 6 shows the different levels of involvement between the urban and rural communities. It revealed that majority (63.3%) of the respondents in urban communities such as Cantonment, Adankolo, Nataco, Koton-Karfe Onyedega and Itobe (Table 3) indicated involvement in all levels, of flood management, while, 17.1% do not involve at all. For respondents in rural communities, 43.2% indicated involvement in all the processes, but, 4.6% of the rural respondents indicated not involvement in any of the processes. The major reasons for involvement in all levels was lack of the presence of environmental management agencies for preparedness, response and recovery in flood vulnerable communities The flood vulnerable communities, either urban or rural, plan, make decisions and implement for effective flood risk management The Chi-square revealed that there is significant difference in the community level

of involvement in urban and rural communities at 0.05 level of significant (Table 6 and Appendix I)..

Table 6: Distribution of Respondents according to Level of Involvement in Flood Risk Management

	Response		Location		
			Urban	Rural	
Level of Community Involvement	Planning process	F	13	71	
		%	5.4	19.2	
	Decision making process	F	26	46	
		%	10.8	12.4	
	Operation process	F	8	76	
		%	3.3	20.5	
	Not at all	F	41	17	
		%	17.1	4.6	
	All of the above	F	152	160	
		%	63.3	43.2	
TotalX^2 = 87.035a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.1.6 Community Stage of Participation in Flood Risk Management

Table 7 shows the stages at which flood vulnerable communities engage in flood risks management. 83.5% respondents from rural communities like Ajaokuta native Village Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda (Table 3) indicated participation in all stages of flood risk management in their area, 9.5% indicated involvement in preparedness stage, 6.8% involvement in response stage, while, only 0.3% of the respondents from rural communities reported engagement in recovery stage of flood risk management. The major reason for rural communities involvement in all the stages is self commitment to protection from flooding. It also show that majority of the respondents from urban communities (40%) Cantonment, Adankolo, Nataco, Koton-Karfe Onyedega and Itobe (Table 3) reported participation at all stages of flood management. While 29.2% and 21.3% indicated involvement in only response and preparedness stages (table 7). The Chi-square revealed that there is significant difference in the community stage of participation in urban and rural communities at 0.05 level of significant (Table 7 and Appendix I).

Table 7: Distribution of Respondents according to Stage of Participation in Flood Risk Management

	Response		Location		
			Urban	Rural	
Community Stage of Participation	Preparedness	F	51	35	
		%	21.3	9.5	
	Response	F	70	25	
		%	29.2	6.8	
	Recovery	F	23	1	
		%	9.6	0.3	
	All of the above	F	96	309	
		%	40.0	83.5	
Total X^2 = 134.904a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.1.7 Community Roles in Flood Risk Management

Having effective techniques and tools in flood response measures allows reducing damage to property and repair costs (Ahern, 2011; Liao, 2012). Table 8 shows that both urban and rural communities play numerous activities in ensuring flood risk management in their various communities. It revealed that majority of respondents in urban communities (70.4%) such as Cantonment, Adankolo, Nataco, Koton-Karfe Onyedega and Itobe (Table 3) reported engagement in all the enlisted roles, other 12.1% indicated cleaning of drainage and waterways, while, 10% of the urban respondents involve in evacuation and camping of flood affected victims (table 8). For rural communities, most of the respondents (51.6%) reported engagement in all the enlisted roles, 20.8% reported the community role as organizing of relief materials, but, 10% of the respondents not engagement in clearing of drainage and waterways, evacuation and camping of flood affected victims and psycho-social support to victims of flood in their various communities. The flood vulnerable communities achieved these benefits through community based organizations.

Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities ((Table 3)) mostly engage in early warning information, organize flood management committees, blockage of flood possible areas and organizing of relief materials. While majority of urban respondents engage in cleaning of drainage and waterways, evacuation and camping of flood affected victims. The Chi-square

revealed that there is significant difference in the community roles in urban and rural communities at 0.05 level of significant (Table 8 and Appendix I).

Table 8: Distributions of Respondents according to Community' Role in Flood Risk Management

	Response		Location		
			Urban	Rural	
Community Roles in Flood Risk Management	Early warning information to community members	F	2	37	
		%	0.8	10.0	
	Organizing flood management committees	F	1	28	
		%	0.4	7.6	
	Blockage of flood possible areas	F	2	37	
		%	0.8	10.0	
	Cleaning of drainage and waterways	F	29	0	
		%	12.1	0.0	
	Organizing of relief materials and food	F	3	77	
		%	1.3	20.8	
	Evacuation and camping of flood affected victims	F	24	0	
		%	10.0	0.0	
	Psycho-social support to victims	F	10	0	
		%	4.2	0.0	
	All of the above	F	169	191	
		%	70.4	51.6	
Total X^2 = 202.2333a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.1.8 Achievements of Communities in Flood Risk Management

Table 9 shows the various achievements of flood vulnerable communities in flood risks management in their area. It indicated that a lot has been achieved by both urban and rural communities in flood risk management in their various communities. The table revealed that majority of respondents in urban communities (67.5%) like Cantonment, Adankolo, Nataco, Koton-Karfe Onyedega and Itobe (Table 3) agrees on all the items, 14.6% on strengthening of community response to flood management. On the other hand, 37.6% of respondents from rural communities like Ajaokuta native Village Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda (Table 3) reported strengthening of community response to flood, 21.6% indicated reduction in damages and 15.9% of them indicated effective intervention. Having effective techniques and tools in flood response measures allows reducing damage to property and repair costs (Ahern, 2011; Liao, 2012). The

Chi-square revealed that there is significant difference in the community achievements in urban and rural communities at 0.05 level of significant (Table 9 and Appendix I).

Table 9: Distribution of Respondents According to Achievements of Communities in flood risk management

	Response		Location		
			Urban	Rural	
Achievements of Community Participation In Flood Risk Management	Early preparation	F	0	14	
		%	0.0	3.8	
	Prompt intervention	F	2	23	
		%	0.8	6.2	
	Effective intervention	F	13	59	
		%	5.4	15.9	
	Reduction in damages	F	28	80	
		%	11.7	21.6	
	Strengthening of community response	F	35	139	
		%	14.6	37.6	
	All of the above	F	162	55	
		%	67.5	14.9	
Total X^2 = 181.527a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

It was revealed that the community based organizations (CBOs) and community flood management committee (CFMC) play vital roles in flood preparedness in their various communities. In the first place, committees are formed from the CBOs and other stakeholders in the flood vulnerable communities.

In rural communities such as Ajaokuta Native Village, Shintako, Oguma, Ichala, Odolu, Ogbogba Ejule Ojebe, Olukudu-Ibaji, Bagana and Otutubatu-Manejo (Table 3), the committees play several roles such as; organizes community members, organize community members for community labour such as sand bag filling of all possible flood areas and clearing of drainage and water ways, and the use of town criers to inform community members in the form of early warning information in preparedness for flood preparedness. The urban communities such as Cantonment, Adankolo, Nataco, Koton-Karfe Onyedega and Itobe (Table 3) have little roles to play because of their access to media for early warning information and drainage/water ways clearance by the agencies before rainfall. Some Participants recognised the role of communities as quoted below:

> *"Community through CBDs and Committees organizes members for labors such as sand bag fillings of flood entrance areas, clearing of drainages and water ways in preparation for flood." "The community informs members about flood preparedness through town-criers in the community" "Community generates resource by tasking members of the community for financial and material contributions in preparation for flood"***Kaka Ibrahim – Adogo**

The findings revealed the flood response activities of communities through CBOs/committees as evacuation of flood affected residents and their properties to a safe harbor in neighbours, provide them with food and clothing within the period of the disaster. While in severe cases the entire community residents move to live with relatives in other communities.

The response activities of communities recognized by participants are quoted below:

> *"The CFMC organize and evacuate flood affected residents to safer neighbor houses, while those with severe flood cases leave their communities completely on several cases, the committees ensure that the victims are being fed, cloth and given the necessary care from the resources generated during flood preparedness"...* **Achemu Yakubu – Ejule-ojebe**

It was also revealed that urban communities such as Adankolo, Cantonment, Nataco, Koton-Karfe, Onyedega and Itobe (Table 3) has less work to do at preparedness stage of flood risk management. The access of such communities to media and proximity to environmental management agencies make it possible for early warning messages and drainage clearing by both the agencies and communities in flood preparedness. It is confirmed that the agencies go around such urban communities with vehicles and speed boats giving early warning information and also get pay labors to clear drainages and water ways. Though, the communities assist the agencies in the clearing of drainage and water ways in their areas. The findings also revealed that some communities such as Ugwoda, Onyedega and Edeha only get early warning information but do all other activities on their own.

The participants further revealed the recovery activities of flood vulnerable communities as organizing of residents for labor, tasking of residents for financial contributions, repairing of affected roads drainages, school structures, town halls and all public properties using the community labor and available resources. The flood vulnerable communities also achieve their recovery
activities through committees.

"the community based organizations (CBOs) organize community members, task them to raise fund for repairs of flood damaged facilities such as drainages, roads, schools, hospitals, markets and all other buildings used by the public" …
Achemu Yakubu – Ejule-ojebe

Table 10: Summary of Community Roles in Flood Risk Management

STAGE	ROLES
Preparedness	• Organizing community members for labor • Regular check of water levels • Giving of early warnings to community ;members via CBOs and town-criers • Blockage of flood possible via sand bag • Cleaning of drainages and water ways • Tasking of community members for material and financial contributions • Evacuation of members before flooding
Response	• Evacuation of flood affected victims in the community • Accommodation of flood affected victims • Provision of food and other necessities to the victims
Recovery	Rebuilding and repairs of flood affected facilities such as: • Roads • Culverts • School buildings • Hospital buildings • Market stalls etc.

Source: Field survey, 2018

5.1.9 Challenges of Community Participation in Flood Risk Management

As reflected in Table 11, majority of the respondents in urban communities (79.2%) indicated that communities are faced with all the enlisted challenges of community participation, 9.6% sees poverty as the challenge, 6.3% are of lack of information as lack while 5% is lack of flood management skills. The case is different for respondents in rural communities, 44.9% agree to all

the enlisted challenges, 28.6% of them reported lack of early information, while, 26.5% indicated poverty as challenges of flood risk management. In Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities (Table 3), lack of early warning information and poverty was identified to be the major challenges. Dukeshire and Thurlow (2002) support the assertion that rural citizen's feel that there is a lack of access to information about government programme.

Kakumba and Nsingo (2008) also noted that the pathetic socio-economic position of the rural people obstructs them from meaningful participation. This is because the rural population is associated with low levels of education, high illiteracy rates, poor infrastructure and communication means obstructing their civic competence. The Chi-square revealed that there is significant difference in challenges of participation in urban and rural communities at 0.05 level of significant (Table 11 and Appendix I)..

Table 11: Distribution of Respondents According to Challenges of Participation in Flood Risk Management

			Location		
	Response		Urban	Rural	
Challenges of Community Participation In Flood Risk Management	Lack of early information	F	15	106	
		%	6.3	28.6	
	Lack of management Skill	F	12	0	
		%	5.0	0.0	
	Poverty	F	23	98	
		%	9.6	26.5	
	All of the above	F	190	166	
		%	79.2	44.9	
Total X^2 = 105.636a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.2 ROLES OF ENVIRONMENTAL MANAGEMENT AGENCIES IN FLOOD RISK MANAGEMENT

The results and discussion on various roles of environmental management agencies before, during and after flood disaster in both urban and rural flood vulnerable communities are examined in this section.

5.2.1 Stage of Involvement of Environmental Management Agencies in Flood Risk Management

Table 12 shows the various roles of environmental management agencies in flood vulnerable communities. It revealed that majority of respondents in rural communities (70.5%) reported that that environmental management agency was not involved in most stages of flood risk management in their communities, though, while 21.9% of them indicated activities of the agencies response stage.. Flood preparedness, response and recovery are done by the communities either through community based organizations or individual bases. This shows that most communities are committed with flood management matters in their area. Post Disaster Needs Assessment (PDNA, 2013), supports this assertion that most flood management activities are carried out by the flood vulnerable communities. On the side of respondents from urban communities, 44.2% reported the roles of the agencies as response stage, while, 29.2% in preparedness stage.

The Chi-square revealed that there is significant difference in the environmental management agencies stage of involvement in urban and rural communities at 0.05 level of significant (Table 12 and Appendix I).

Table 12: Distribution of Respondents According to Stage of Involvement of Environmental Management Agencies

	Response		Location		
			Urban	Rural	
Stages Of Environmental Management Agencies Engagement in Flood Management	Preparedness	F	70	27	
		%	29.2	7.3	
	Response	F	106	81	
		%	44.2	21.9	
	Recovery	F	23	1	
		%	9.6	0.3	
	All of the above	F	12	0	
		%	5.0	0.0	
	Not at all	F	29	261	
		%	12.1	70.5	
Total X^2 = 222.575a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.2.2 Preparedness Activities of Environmental Management Agencies in Flood Risk Management

The environmental management agencies have different activities at different stages of flood risk management. The activities are transition in nature.

Table 13 shows that there are different opinions in urban and rural respondents in flood preparedness role of environmental management agencies. Majority of respondents (89.2%) in rural communities such as Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda (Table 3) reported that environmental management agencies was not involved in flood risk management preparedness in their communities. Though 8,1% indicated early warning information from the agencies. This indicates that most rural communities are committed to flood management matters in their communities. The major reason is that most of these rural communities are not easily accessible and environmental management agencies do not have adequate facilities/ resources to meet up with the entire flood vulnerable communities in the season of flooding. The table also shows that most respondents (58.3%) from urban communities such as Adankolo, Cantonment, Koton-Karfe, Onyedega and Itobe (Table 3) indicated enjoying flood warning, evacuation. While few others indicated that the agency participated in evacuation of community members before flood disaster. Post Disaster Needs Assessment (PDNA, 2013), supports this assertion that environmental management agencies could not play their roles do to funding problem. The Chi-square revealed that there is significant difference in the environmental management agencies preparedness activities in urban and rural communities at 0.05 level of significant (Table 13 and Appendix I).

Table 13: Distribution of Respondents according to activities of Environmental Management Agencies in Flood Preparedness

	Response		Location		
			Urban	Rural	
Flood Preparedness Role of Environmental Management	Early warning information	F	140	30	
		%	58.3	8.1	
	Organising and training of community members	F	31	7	
		%	12.9	1.9	
	Evacuation of community members before flood disaster	F	7	3	
		%	2.9	0.8	
	None of the above	F	62	330	
		%	25.8	89.2	
Total X^2 = 255.037a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

The finding shows that majority of the flood vulnerable communities are not enjoying the activities of environmental management agencies. Most of the participants from rural communities such as Shintako, Oguma, Ichala, Odolu, Ogbogba Ejule Ojebe, Olukudu-Ibaji, Bagana and Otutubatu-Manejo indicated lack of agencies preparedness activities in their various communities. The urban communities such as Adankolo, Cantonment, Nataco, Koton-Karfe, Onyedega and Itobe do enjoy flood preparedness activities of environmental management agencies. The communities enjoy the preparedness activities such as early warning information through the radio, television and use of vehicle and speed boats to announce early warning to the flood vulnerable communities.

> "*Most of us in the urban communities have radio, television and other means of getting information. We are always informed on the magnitude of the anticipated rainfall by the environmental management agencies through the media and announcements*." … **John Aduku -Cantonment**

Most communities in Lokoja and environs do enjoy the activities of environmental management agencies because the agencies ensure that the communities gets early warning information and also hire laborers to clear drainages and water ways in preparedness for flood.

The preparedness activities of environmental management agencies enjoyed by the communities are:

i. Early warning information
ii. Drainage and water ways clearing and
iii. Enforcement of evacuation before flooding.
iv. Hire of labor for drainage cleaning before rainfall

5.2.3 Response Activities of Environmental Management Agencies in Flood Risk Management

At the response stage, the environmental management agencies are expected to evacuate flood affected victims, camp such victims in safe areas and supply them with relief materials. This is because the agencies have activities scheduled for particular management stages. Table 14 shows the activities of environmental management agencies during response stage of flood risk management in urban and rural communities.

Majority of respondents (83.8%) in rural communities like Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and

Ugwoda(Table 3) reported that environmental management agencies were not involved in flood disaster response activities in their communities, 6.5% for cleaning of drainage and 5.7% of the respondents reported evacuation of flood affected victims This indicates that most people are committed with flood management matters. While most respondents (40%) from urban communities such as Adankolo, Cantonment, Koton-Karfe, Onyedega, and Itobe (Table 3) reported that the agencies participate in evacuation of flood affected victims, 19.2% indicated camping of affected victims, 15% for cleaning of drainage and waterways, only 5.4% indicated supply of relief materials. Communities with good access roads tend to benefit from activities of environmental management agencies than rural communities without good access. The Chi-square revealed that there is significant difference in the environmental management agencies response activities in urban and rural communities at 0.05 level of significant (Table 14 and Appendix I).

Table 14: Distribution of Respondents according to Response Activities of Environmental Management Agencies in Flood Response

	Response		Location		
			Urban	Rural	
Flood Response Role of Environmental Management Agencies	Evacuation of flood affected victims	F	96	21	
		%	40.0	5.7	
	Cleaning of drainage and waterways	F	36	24	
		%	15.0	6.5	
	Camping of flood affected victims	F	46	2	
		%	19.2	0.5	
	Supply of relief materials and food	F	13	5	
		%	5.4	1.4	
	All of the above	F	24	7	
		%	10.0	1.9	
	None of the above	F	25	310	
		%	10.4	83.8	
Total X^2 = 334.645a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

Findings show that environmental management agencies tend to be more functional in areas that government can notice their presence than remote or rural communities.

The participants revealed that urban communities such as Adankolo, Cantonment, Nataco, Koton-Karfe, and Itobe and others along Abuja road and within Lokoja township enjoy the response activities of environmental management agencies in the state. The research revealed the response activities of the agencies as

i. Evacuation of flood affected residents
ii. Camping of flood affected residents and
iii. Supply of relief materials to camped flood victims

This corresponds with the assessments of Federal Government of Nigeria (2013) Post Disaster Needs Assessment (PDNA) on 2012 flood, that the available little resources of the agencies are geared to urban communities that are close to the agencies which are easily accessible and less cost. Anunobi (2014) also states that there is near total lack of government intervention in flood risk management in Kogi state.

5.2.4 Recovery Activities of Environmental Management Agencies in Flood

Majority of respondents in rural communities (96.2%) such as Ajaokuta native Village Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities (Table 3) reported that their communities are not enjoying any flood recovery activities of environmental management agencies. The major reason is that most of these rural communities are not easily accessible and environmental management agencies do not have adequate funding from state and local government to meet up with the recovery needs of the entire flood vulnerable communities this is in line with the assertion of PDNA, (2013) that agencies are not adequately funded. This indicates that most communities are committed with flood recovery matters in their areas. The table also indicated most respondents from urban communities (65%) like Cantonment, Adankolo, Nataco, Koton-Karfe Onyedega and Itobe (Table 3) reported that the agencies are not playing any recovery roles in their communities, though 35% of them reported environmental management agencies participated in the assessment and rebuilding of flood affected structures in their communities. The Chi-square revealed that there is significant difference in the environmental management agencies recovery activities in urban and rural communities at 0.05 level of significant (Table 15 and Appendix I).

Table 15: Distribution of Respondents according Recovery activities of Environmental Management Agencies in Flood Recovery in flood vulnerable communities

	Response		Location		
			Urban	Rural	
Flood Recovery Role of Environmental Management Agencies	Assessment and rebuilding of structures	F	84	14	
		%	35.0	3.8	
	None at all	F	156	356	
		%	65.0	96.2	
Total X^2 = 105.198a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

In the case of recovery, the findings revealed that urban communities such as Adankolo, Nataco, Ganaja, Koton-Karfe, Adogo, and Itobe and others along Abuja road and within Lokoja tend to benefit from the recovery activities of environmental management agencies. The FGDs revealed the recovery activities of environmental management agencies as

i. Repairs of flood affected roads
ii. Water facilities
iii. Electricity facilities
iv. Drainages
v. Culverts
vi. Schools and hospital buildings

National Disaster Management Framework (NEMA, 2010), spelt the various roles of environmental management agencies from national down to communities. The research revealed the various roles of the agencies at preparedness as

(i). Organizing and informing all stakeholders in flood risk management in the state such as National Inland Water Authority (NIWA), media, ministry of health, local government, road safety, national union of road transport, ministry of education, red-cross society, community leaders and all para-militaries on preparation for flood disaster in the state,

ii. Dissemination of early warning information to flood vulnerable communities through via media, local government environmental management committees, community leaders and public announcements via boats and vehicles,

(iii). Identifying of camps and provision of all needed amenities before flooding,

(v). Evacuate high flood prone vulnerable community residents. The findings concur with strategies of (SEMA, 2012).

On further discussion with the participants, the findings revealed that urban communities such as Adankolo, Cantonment, Nataco, Koton-Karfe, Ugwoda and Itobe do benefit from the response activities of environmental management agencies. The research identified rescue and evacuation of flood affected victims by stakeholders such as police, civil defence, red cross and health officials, the affected victims are then moved to the already prepared camps, while at the camps the interview revealed that the flood affected victims are supplied relief materials such as food, blankets, clothes and drugs.

The respondents revealed that the agencies are only involved in the assessments of impacts of the flood on the flood vulnerable communities at the recovery stage. The agencies get data of the affected victims for a feed back to the state government and National Emergency Management Agencies.

The literally quotations from respondents are reflected below:

> ***"At the preparedness stage**, the agencies notify all stakeholders like Ministries of health, environment, education; National Inland Water Authority (NIWA), Local government, security agencies, media, community leaders and NGO's."* **…Hassan Ayegba - Lokoja**
>
> *"**The agencies also** identify higher risk areas, then identify safer place (upland) where people can be moved to before the flood disaster, it prepare the identified area to make habitable before flood disaster occur"* **…Hassan Ayegba - Lokoja**
>
> *"The agency use speed boat from National Inland Water Authority (NIWA) with information gadgets to give early information to communities living along the rivers"***…Mr. Okolo- Lokoja**
>
> ***"At the response stage**, the agencies notify all stakeholders like Ministries of health, environment, education; National Inland Water Authority (NIWA), Local government, security agencies and NGO's to swing into action of rescue, transport, medical care and camping of flood affected victims in order minimize the damages the damages that could be incurred from flood disaster where every stakeholder played assigned role"***…Mr. Okolo- Lokoja**

Table 16: Summary of Environmental Management Agencies Roles In Flood Risk Management

Stage	Roles
Preparedness	• Organizing and informing all stakeholders in flood risk management in the state such as National Inland Water Authority (NIWA), media, ministry of health, local government, road safety, national union of road transport, ministry of education, red-cross society, community leaders and all para-militaries on preparation for flood disaster in the state, • Dissemination of early warning information to flood vulnerable communities through via media, local government environmental management committees, community leaders and public announcements via boats and vehicles, • Identifying of safe areas for camps and provision of all needed amenities before flooding, • Evacuation of high prone flood vulnerable community residents in preparation for flood.
Response	• Evacuation of flood affected victims in the community • Camping of flood affected victims • Provision of relief materials to the victims
Recovery	• Rehabilitation of flood affected victims • Assessments of the impacts of flood for report

Source: Field Survey, 2018

5.2.5 Challenges Faced by SEMA and LEMC in Flood Management

The state environmental management agencies are faced with some challenges that affect their abilities to effectively manage flood risk. The challenges make it difficult to adequately prepare for, respond to and recover from flood disaster in Kogi state. PDNA (2013) report also concurs with the non performance of environmental management agencies.

The findings revealed that funding is one of the major challenges impeding the proper functioning of environmental management agencies in the state. The interview revealed that agencies at the state and local government levels have not effectively carry out their roles in flood risk management as a result of lack of funding from the governments. This findings also concurs with PDNA (2013) report that environmental management agencies are not funded. The interview also indicated that the environmental management agencies have not carry out tangible

roles of disaster management since the year 2012 because of fund. The agencies have not being able to respond to any disaster distress calls since then.

On probating further, funding of environmental management agencies by the government was identified as challenge for effective flood disaster management in the state. There is also problem of inadequate man-power; the findings also indicated that the agencies don't have adequate man-power to meet up with the problems of flooding in the state. This contributes to the ineffectiveness of the activities of environmental management agencies. There is also problem of inadequate vehicles for the agencies; even the available ones are faulty and also fueling problems for quick response to flood disaster.

On further discussions with the agencies, It was reveald that the agencies give early warning information via media (radio and television), local government committees, community leaders and public announcements via boats and vehicles, but, most members of flood vulnerable communities do not comply or adhere to the warnings. The challenges faced by environmental management agencies in flood risk management are:

i. In-adequate Funding
ii. In-adequate man-power
iii. In-adequate vehicles
iv. Non- compliance or cooperation of flood vulnerable communities

The literally quotations from respondents obtained during the interview are reflected below:

> *"The agencies at the state and local government level are not adequately funded to execute their roles in flood risk management"*…**Hassan Ayegba-Lokoja**

> *"We also lack enough man-power, vehicle that can be used for quick response to meet the challenge of flooding in the state","We have not being able carryout any disaster management roles since the year 2012 due to problem of funding from state government","We don't have money, vehicles and other necessary equipments for flood management in flood communities as were assigned"***…Mr. Okolo- Lokoja**

These challenges made both SEMA and LEMC toothless bulldogs, which hinders effective functioning of the agencies in flood risk management.

5.2.6 Ways to Improve Management Strategies of Environmental Management Agencies

The findings of the interview indicated adequate funding of the agencies by government as one of the ways to improve flood management activities of the agencies in flood risk management.

PDNA, (2013) reports lack of adequate funding from the governments affects the proper functioning of the agencies. When agencies are adequately funded, there will be reduction in the effects of flood on vulnerable communities.

On further discussions with the agencies, employment of more staff is important, because inadequate man-power was one of the identified problems. Considering the area covered by flooding in the state and the available staff cannot go round to perform their duties in time of flooding. The interviews also identify supply of adequate vehicles to the agencies as another way of improving the roles of the agencies for effective flood risk management in the state.
The research identified the ways to improve the management strategies of the agencies as :

i. Adequate funding of the agencies by the governments
ii. Employment of adequate man-power
iii. Provision of adequate vehicle
iv. Establishment of laws to support enforcement of flood vulnerable communities

5.3 EFFECTIVENESS OF FLOOD RISKS MANAGEMENT ACTIVITIES OF ENVIRONMENTAL MANAGEMENT AGENCIES IN FLOOD VULNERABLE COMMUNITIES IN KOGI STATE

The effectiveness of activities of environmental management agencies in flood risks management is seen from the perspective of the flood vulnerable communities benefiting and not benefiting from flood management activities. The findings are stated below:

5.3.1 Effectiveness of Flood Preparedness Roles of Environmental Management Agencies

It has been observed from the previous findings that environmental management agencies have not played the expected roles in flood disaster management in most urban and rural flood vulnerable communities in Kogi state. Table 17 shows that majority of the respondents from rural communities (91.9%) reported that environmental management agencies preparedness initiatives were not effective in their communities. Most of the respondents Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities (table 3) reported that environmental management agencies were not involved in flood disaster preparedness in their communities, therefore, not effective. While most respondents from urban communities (60%) such as Adankolo,

Cantonment, Koton-Karfe, and Itobe (Table 16) indicated that preparedness activities are effective, though (40%) of the urban respondents reported it not effective. The major reason is that the urban communities are close to government facilities. The Chi-square revealed that there is significant difference in the effectiveness of preparedness activities of environmental management agencies in urban and rural communities at 0.05 level of significant (Table 17 and Appendix I).

Table 17: Distributions of Respondents according to Effectiveness of Flood Preparedness Roles of Environmental Management Agencies.

	Response		Location		
			Urban	Rural	
Effectiveness of Preparedness Activities of Environmental Management Agencies	Effective	F	96	30	
		%	40.0	8.1	
	Ineffective	F	144	340	
		%	60.0	91.9	
Total X^2 = 90.342a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.3.2 Effectiveness of Flood Response Roles of Environmental Management Agencies

It has also been observed from the previous findings that environmental management agencies have not played tangible roles in the management of flood disaster in most urban and rural communities in Kogi state. Table 18 indicates that majority of the respondents from rural communities (88.4%) reported that environmental management agencies response initiatives were not effective in their communities. Most of the respondents Ajaokuta native Village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities (Table 17) indicated that the agencies do not play response role in their area, therefore, not effective. However, 11.6% others indicated that environmental management agencies response initiatives as effective in their communities. Urban communities (66.2%) such as Adankolo, Cantonment, Edeha, Koton-Karfe, and Itobe (Table 3)indicated environmental management agencies response initiatives as not effective in their communities. While, 33.8% reported the response activities of the agencies as effective. They benefits from early warning information, evacuation and camping, supply of relief materials rescue activities of the agencies. The state and local governments does not adequately fund environmental

management agencies and give all needed support to execute its mandate. The Chi-square revealed that there is significant difference in the effectiveness of response activities of environmental management agencies in urban and rural communities at 0.05 level of significant (Table 18 and Appendix I).To buttress the ineffectiveness of the agencies, Federal Government of Nigeria (2013) Post Disaster Needs Assessment (PDNA) on 2012 flood revealed that most flood vulnerable communities are not benefiting from response activities of NEMA, SEMA and LEMA due inadequate fund from federal, state and local governments and therefore ineffective.

Table 18: Distributions of Respondents according to Effectiveness of Flood Response Roles of Environmental Management Agencies

Response			Location		
			Urban	Rural	
Effectiveness of Response Activities of Environmental Management Agencies	Effective	F	81	43	
		%	33.8	11.6	
	Ineffective	F	159	327	
		%	66.2	88.4	
Total X^2 = 44.013a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.3.3 Effectiveness of Flood Recovery Roles of Environmental Management Agencies

The previous findings have shown that environmental management agencies have not played vital roles in the management of flood disaster in most urban and rural flood vulnerable communities in Kogi state.

Majority of respondents from rural communities (99.7%) such asAjaokuta native Village Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda rural communities (Table 19) reported that environmental management agencies recovery activities were not effective in their communities. The table also indicated that 86.7% of respondents from urban communities such as Adankolo, Cantonment, Koton-Karfe, and Itobe (Table 18) reported not benefiting from recovery activities of the agencies. Though, 13.3% of them reported to benefit from road repairs, drainage and culverts rebuild, repairs and rebuilding of public structures. This had occurred because the state and local governments do not adequately fund environmental management agencies and give all needed support to execute its

mandate. The Chi-square revealed that there is significant difference in the effectiveness of response activities of environmental management agencies in urban and rural communities at 0.05 level of significant (Appendix I).

Table 19: Distributions of Respondents According to Effectiveness of Flood Recovery Roles of Environmental Management Agencies

Response			LOCATION		
			Urban	Rural	
Effectiveness of Recovery Activities of Environmental Management Agencies	Effective	F	32	1	
		%	13.3	0.3	
	Ineffective	F	208	369	
		%	86.7	99.7	
Total X^2 = 48.545a		F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

5.4 MODEL FOR COMMUNITY AND GOVERNMENT RESPONSE TO FLOOD RISK MANAGEMENT IN KOGI STATE

Having effective techniques and tools in flood response measures allows reducing damage to property and repair costs (Ahern, 2011; Liao, 2012). This section deals with the existing models, suggested strategies and the proposed model for effective flood risk management in Kogi state.

5.4.1 Flood Risk Management Model in Kogi State

There are two situations in flood risk management identified in Kogi state. The first situation is that some communities solely depend on government for flood management in their area. In this case, the people wait for SEMA to make decisions and planning of flood risk management, SEMA informs Local Environmental Management Committees (LEMC) and other stakeholders on the plans and decision on flood risk management. This corresponds with the Top-Down Model by Reddy (2002). In the top-down model of participation, the governments decide and provide for the communities which develop a sense of dependency and lethargy among the people as shown in Fig. 3. The top-down approach is where only environmental management agencies make decisions and plans on flood risk management without the involvement of flood vulnerable communities. The model is characterized by expectancy, dependency, laziness and also non-participatory and effective communication among stakeholders. This top-down strategy

is found not to give the desired result because the state annually records high damages from the effects of flood disaster.

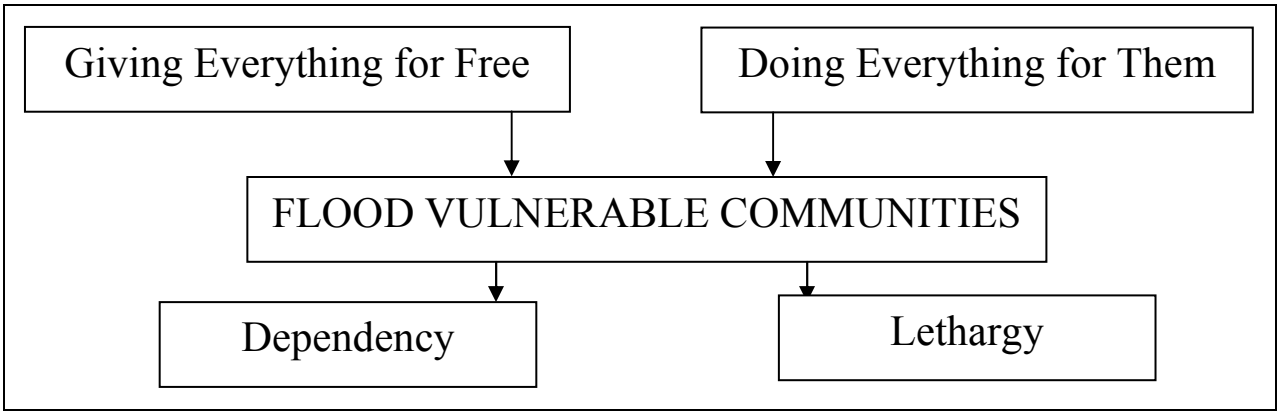


Fig. 3:Top-down Model adopted from (Reddy, 2002)

The second situation was that some of the flood vulnerable communities in Kogi state are found to take initiatives to manage their flood problems because they are the ones directly affected. This is line withPretty (1995) Self-Mobilisation strategy in typology of participationis where people participate by taking initiatives independently of any external institutions to change systems. The strategy use local knowledge and mostly limited resources. The problem with this flood management strategy is lack of adequate technical knowledge.

5.4.2 Suggested Strategies for Effective Flood Risk Management in Kogi State

This describes the suggestions on strategies for effective flood risk management in Kogi state. Majority of the affected people (52%) suggested effective communication, participatory approach, formulation of community based disaster management plan and integrated flood management as strategies that could provide sustainable flood risk management in the community (table 20). While (20%) are of the view that effective communication between disaster management stakeholders could also enhance flood risk management. Then (17%) of the respondents indicated participatory approach as strategies that could also provide sustainable flood disaster management.10% of them supports formulation of community based disaster management plan. Participatory approach would enable community leaders and environmental management agencies to hear the needs and problems from the people themselves and this makes communities to feel part of management activities. Another factor is that community members would also hear and know the issues concerning flood risk management strategies from the side

of the environmental management agencies and apply same for effective flood risk management. Fokane (2008) agrees that bottom-up approaches allow people to retain control over how resources are used and also be able to influence direction, planning and processes of the flood risk management.

Table 20: Response according to Strategies for Effective Flood Risk Management.

Strategies for Effective Flood Risk Management	Frequency	Percentage
Formulation of community based disaster management plan	61	10
Integrated flood management	5	1
Effective communication between disaster management stakeholders	123	20
Participatory approach involving community groups	102	17
All of the above	319	52
Total	**610**	**100**

Source: Field Survey, 2018

The findings show lack of awareness, information, capacity building, socio-economic problem and poverty as challenges of flood risk management. Participatory approach was one of the suggestions highlighted by participants. The involvement of flood vulnerable communities in the management process by environmental management agencies will expose the agencies to peculiar problems of flood vulnerable communities through their interactions. The participatory approach will also allow the agencies buy and sell flood risk management ideas. The suggestions by the participants are reflected by the following response:

> *"Engaging flood vulnerable communities in all planning process will assist in disaster reduction because community members will be in the picture of management processes to get early preparation and respond promptly"* ***Mr. Abdulrazak - Cantonment***

Another suggestion by the participants was information, when flood vulnerable communities are adequately informed on flood issues, the management will tend to be effective because of early preparation. The suggestions by the participants are reflected by the following responses:

> *"I see Effective communication between the community and all stakeholders in flood risk management as a strategy that can assist to reduce the annual lost incurred from flood disaster"* ***Mal. Idisu Ademu -Edeha***

"In my opinion I think timely early warning information and intervention is a way to reducing lost and damages we experience every year" ***Mal. Idisu Ademu -Edeha***

It also revealed that environmental management agencies need to build the capacity of flood vulnerable communities. When the communities are empowered they will be able manage their environment with ease for minimal loss. The suggestions by the participants are reflected by the following response: *"*

"I think capacity building of the members of flood vulnerable communities is very important because such communities will be capacitated to manage flood risk on their own" ***Ochai Adah-Itobe***

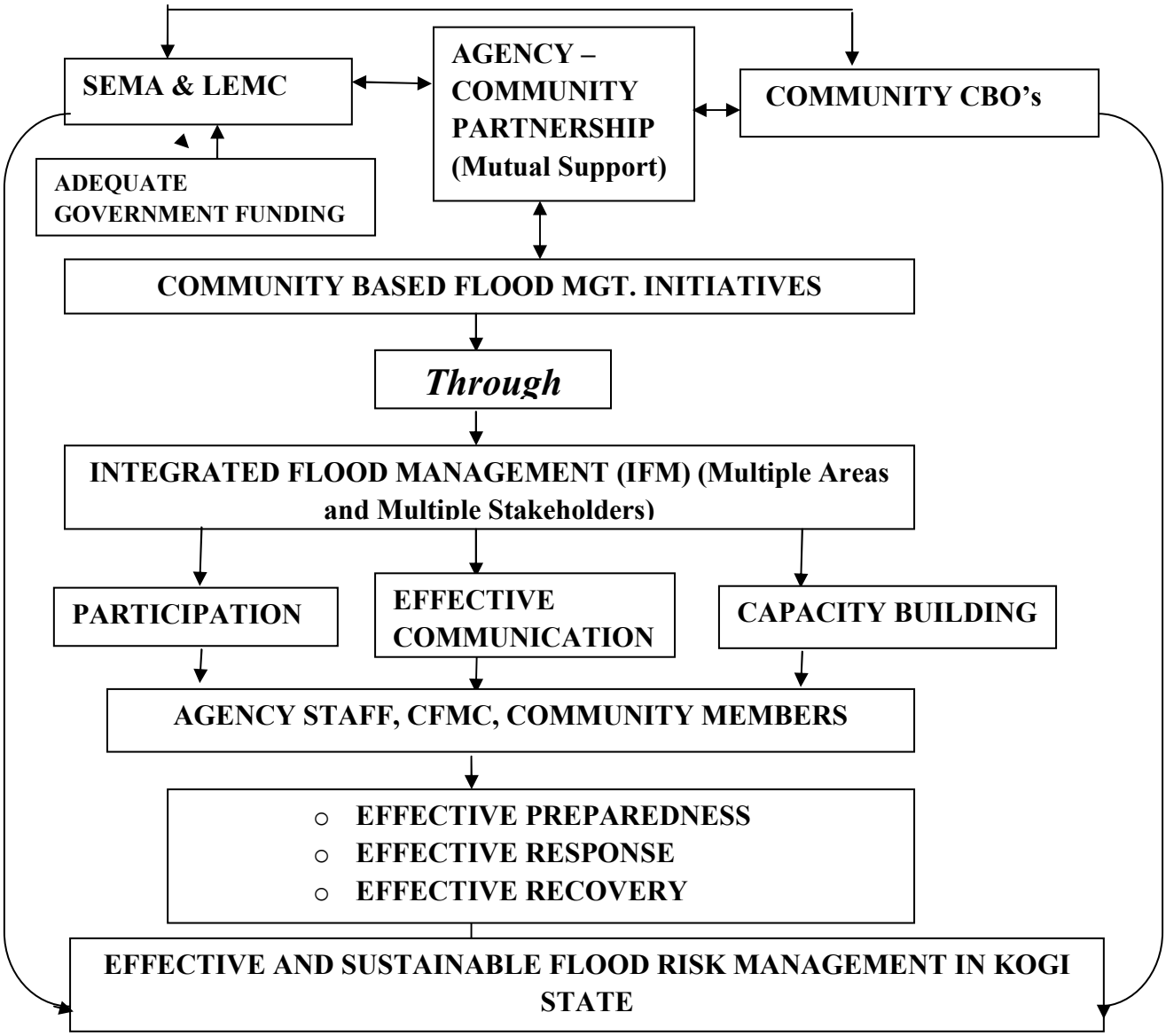
5.4.3 Assumptions of the Proposed Model for Kogi State

An alternative model was proposed based on suggestions by respondents and review of frameworks on flood risks management (fig 4). The proposed model is based on five assumptions as follows:

i. Two way flow not top-down approach as in the Reddy, (2002) model
ii. Community engagement at the core of flood risk management response
iii. Learning and sharingthrough effective communication and capacity building
iv. Trust and confidence for flood risk management
v. Strengthening of Preparedness, Response and Recovery

5.4.4 Description of the Proposed Model

The proposed model involves the participation of members of flood vulnerable communities and staff of environmental management agencies in flood risk management. SEMA and officials of community based organizations such as faith based organization, youth organization, forum of community elder, and women organizations that form the community flood management committee would partner (staff of SEMA and LEMC + Members of Community Flood Management Committee) to decide and plan on initiatives that are effective in flood management (Community Based Flood Management Initiatives). The model looked at (Integrated Flood Management) which involves stakeholders like ministry of health, ministry of education, security organizations, media, red cross society, and national inland waterways, flood vulnerable communities and environmental management agencies as the medium to plan together on the best practice for flood management, multi areas such as flood preparedness, response and recovery through participation, effective communication and capacity are emphasized with the aim for Effective and Sustainable Flood Risk Management.. Most importantly, the model is build on interaction between environmental management agencies and flood vulnerable communities on participation in flood management in order to reduce impact of flood disaster.



Source: Based on Field survey and Data Analysis, 2019

Figure 4: Proposed Model for Communities and Environmental Management Agencies Response to Flood Risk Management in Kogi State

The process for engagement in flood risk management needs an early focus on mobilization of the members within the community and interaction between various stakeholders for effective and sustainable flood risk management. The model here (Fig 4) is to bridge the gap in flood risk management between environmental management agencies and flood vulnerable communities.

Against the shortcomings of the top-down approach, the above model is proposed. The proposed model is designed in such a way to encourage the participatory approach. It is two ways flow

because it combines both top-down and bottom-up approach for mutual understanding and supports on issues of flood risk management between flood vulnerable communities and environmental management agencies. The communities are fully involved in all the aspects of flood management because they have local knowledge regarding vulnerabilities, capacities and have developed local coping mechanisms suited for their specific environment from previous experiences in dealing with flood disaster. The proposed wants the situation flood vulnerable communities and government agencies comes together to plan and execute flood management processes. Federal Government of Nigeria (2013) in Post Disaster Needs Assessment (PDNA) of 2012 flood recommend the inclusion of community and use of local knowledge and skills to ensure the optimal use of local initiatives, resources and capacities. WMO, (2008), Serre, *et, al*, (2010), Satterthwaite,(2013) and Lu and Stead, (2013) suggests a collaborative approach in flood management, this is because it involves the integration of top-down and bottom-up approach among decision makers, independent organizations and citizens.

The proposed model also encourage integrated flood management because of the importance of full range of stakeholders, the full range of interactions between floods and the places of human habitation is also important. Communication is seen as the nexus that anchors the relationships among the three elements of disaster management namely: preparedness response and recovery (Owolabi *and Ekechi* 2014). The model identifies participation, effective communication and capacity building as product of IFM. These participation, effective communication and capacity building is between staff of agencies, Community Flood Management Committee (CFMC) and community members with the intention to plan for and work together for effective flood preparedness, response and recovery. When these are effective, there will be sustainable flood risk management in Kogi state. Then, community can live with flood and also have maximum reduction in the annual damages recorded from flood disaster.

Table 21: An outline of the Proposed Model and Contributions in the Model (Figure 4)

Characteristics of Model	Contribution to Flood Risk Management activities
Adequate Government Funding	• Provision Material resources • Provision Human resources • Provision Financial resources
Agencies – Community Partnership (Mutual Support)	• Sharing and learning from each other about flood management strategies.
SEMA and LEMC	• Planning of flood risk management strategies • Partnership with flood vulnerable communities • Builds problem solving skills of communities • Mobilization of stakeholders • Provide access to resources
`Community, CBO's	• Builds sense of community • Mobilization of members • Partnership with flood management agencies • Builds problem solving skills of communities
Integrated Flood Management (IFM)	• Management that considers water, soil, vegetation and economic activities • Management that considers the views of all stakeholders such as SEMA, LEMC NGO's and communities
Effective Communication and Capacity Building	• Identification of information channels • Regular communication between stakeholder • Educating for best practice • Workshops for best practice • Training for best practice • Enhancing community capacities
Effective and Sustainable Flood Risk Management in Kogi State	• **Community living with flood** • **Maximum reduction in damages from flood disaster**

Source: Field Survey, 2018

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 SUMMARY OF FINDINGS

The findings of this study can be summarized as indicated below:

The study revealed that flood vulnerable communities have different initiatives in flood management. However, there is variation in flood risk management between the urban and rural communities. 83.5% of rural and 40% of urban respondents indicated participation in all phases of flood management (preparedness, response and recovery). The management activities of the people include; early warning information through town criers, organizing flood management committees, blockage of flood possible areas, cleaning of drainage and waterways, organize relief materials and camping of victims. 70.4% of urban and 51.6% of rural respondents indicated participation in all flood management activities.

The role of environmental management agencies also follows the pattern of preparedness, response and recovery. The study revealed that most activities of environmental management agencies are mostly concentrated in urban communities. It is worth noting that Adankolo and Cantonment (Lokoja Local Government), Koton Karrfe (Kogi Local Government), Onyedetga (Ibaji Local Government), and Itobe (Ofu Local Government) benefit from flood risk management activities of environmental management agencies. The study show that the role of the agencies include; organizing and informing of stakeholders such as National Inland Waterways Authority (NIWA), media, Ministry of Health, Local Governments, Road Safety, Road Transport Union, Red Cross Society and Ministry of Education. Other activities of the agencies include dissemination of early warning information, evacuation of high prone communities, identification of safe areas for camping, evacuation of flood affected victims, supply of relief materials, rehabilitation of victims and assessment of flood disaster impacts. The findings show that inadequate funding and manpower from the state and local government impede on effective functioning of the agencies. 91.9% of rural 60% of urban respondents revealed that preparedness role of the agencies is ineffective, 88.4% of rural and 66.2% of urban respondents indicated response role of the agencies ineffective. .99.7% of rural and 86.7% of urban respondent sees recovery role of the agencies ineffective.

The study revealed top-down and self-mobilisation approaches in flood risk management are the existing management strategies identified in the study area. It revealed that most rural and some urban communities manage flood through self-mobilization because they do not feel the impact the agencies. It also revealed that some urban communities that are easily reached by the agencies depend on the activities of the agencies in flood management.

6.2 CONCLUSION

The study revealed that majority of respondents (79.2%) urban and (44.9%) rural flood vulnerable communities identified lack of early warning information, lack of management skill and poverty as the block to community participation in flood risk management in Kogi state. As a result of these factors, the people in the flood vulnerable communities could not adequately participate in flood management.

The finding also shows that inadequate funding of the agencies as the major challenge that impede the proper functioning of the agencies, inadequate man-power and non compliance of flood vulnerable communities to early warning information as other problems for effective flood management by the agencies. These problems affect the performance of environmental management in flood risk management in the state.

It also revealed that most of the rural and some urban flood vulnerable communities do not benefit from the preparedness, response and recovery activities of environmental management agencies, therefore, the roles of the agencies is termed not to be effective because only few flood vulnerable communities do benefit from their management activities. Many flood vulnerable communities self-mobilization strategy of flood management which mostly lack adequate skill Community and environmental management agencies model would address the problem of flood disaster management in Kogi state and Nigeria in general.

6.3 RECOMMENDATIONS

The following points are recommended for both flood vulnerable communities and environmental management agencies:

There should be functional medium of early warning information between the flood vulnerable communities and environmental management agencies so that early preparedness can be enhanced to reduce damage arising from flood disaster.

Some members of community based flood management committee should be trained on skills of flood management by the agencies so that activities of self mobilization can be enhanced and impact of flood disaster can be reduced. Lack of funding from state and local government and manpower is identified to impede proper functioning of the agencies. The study therefore recommends that the state and local governments should develop a better of generating fund for the agencies, and employ more manpower that could cover most of the flood vulnerable communities in the event of flooding for effective flood management in the state.

The study recommends that state and Federal governments should adopt the proposed community and environmental management agencies model of flood risk management that consider collaboration between flood vulnerable communities and environmental management agencies as a measure for effective flood management.

For Community and Environmental Management agencies model of flood risk management to function, there must be community institutions such as Community Based Organizations, faith based organizations, and NGO's /Community Flood Disaster Committees, there must be effective communication link between the various stakeholders in flood risk management, there both the flood vulnerable communities and the agencies must also be ready to partner for effective flood management

6.4 RECOMMENDATION FOR FUTURE RESEARCH

The following research is recommended for future studies:

A comparable or similar study on the role of community participation and environmental agencies in flood risk management in other states in order to find if the communities and environmental management agencies participate in flood management

There is the need to apply GIS to similar study to map out areas of self-mobilization and top-down.

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APPENDICES

Appendix I: Chi-Test of Difference in Participation

Variable	X^2 Value	P. Value
Community Understanding of Participation	131.603[a]	
Level of Community Participation	169.976a	.000
Level of Community Involvement	87.035a	.000
Community Stage of Participation	134.904a	000
Community Roles in Flood Risk Management	202.233a	000
Achievements of Community Participation	181.527a	000
Challenges Community Participation	105.636a	.000
Stages of Environmental Management Agencies Engagement	222.575a	000
Preparedness Role of Agencies	255.037a	.000
Response Role of Agencies	334.645a	000
Recovery Role of Agencies	105.198a	.000
Effectiveness of Preparedness Activities of Agencies	90.342a	.000
Effectiveness of Response Activities of Agencies	44.013a	000
Effectiveness of Recovery Activities of Agencies	48.545a	.000

Appendix II:Questionnaire

The study is on community participation and environmental management agencies engagement in flood risk management in Kogi state.

Please for each of the following statement tick your response in the space provided

SECTION A

Biodata of Respondents

1. Gender

Male	
Female	

2. Age

18-24		25-30	
31-35		36 Above	

3. Educational Level

Tertiary		Secondary	
Primary		Illiterate	

4. Length of Period Living in the Area/Community

1-10 Years	
Over 10 Years	

SECTION B

This section consists of questions that seek to collect information about the community based flood risk management initiatives in the area.

1. What is your understanding of community participation?
   i. Community members engaging in flood disaster management in their area
   ii. Environmental management agencies engaging community members in flood disaster management
   iii. Training members of the community in flood disaster management strategy by environmental management agency
   iv. All of the above
   v. Any other (Specify),,,,,,,,,,,,,,,,,,,,,,,,,,,,,
2. In what ways do you participate in flood management in your area?
   i. Through community based organizations
   ii. Through environmental management agency engagement
   iii. Through individual effort
   iv. Any other (Specify),,,,,,,,,,,,,,,,,,,,,,,,,,,,,
3. At what level does involvement of the community in flood risk management take place?
   i. Planning process

ii. Decision making process
v. Operation (Implementation) process
vi. Not at all

4. At what stage do you participate in flood management?
   i. Preparedness
   ii. Response
   iii. Recovery
   iv. All of the above

5. What is your role in flood disaster management in the area?
   i. Blockage of flood possible areas
   ii. organizing of relief materials and food
   iii. evacuation and camping of flood affected victims
   iv. psycho-social support to victims
   v. all of the above
6. In your view, what are the achievements of community flood management organizations in the area?
   i. Early preparation for flood disaster management
   ii. Prompt intervention in flood disaster management
   iii. Effective interventions in affected communities
   iv. Reduction in damages from flood disaster
   v. Strengthening of community response to flood disaster
   vi. All of the above
7. What challenges does the community face when participating in flood disaster management in the area?
   i. Lack of early information
   ii. Lack of intensive flood management skill
   iii. Poverty
   iv. All of the above
   v. Any other (Specify),,,,,,,,,,,,,,,,,,,,,,,,,,,,,

SECTION C

This section consists of questions that seek to collect information about the roles of environmental management agencies in the area.

1. In what stage do environmental management agencies engage in flood management in the area?
   i. Preparedness
   ii. Response
   iii. Recovery
   iv. All of the above
   v. Not at all

2. What role do environmental management agencies play in flood disaster preparation in the area?
    i. Early warning information
    ii. Organizing and Training members of community in flood management strategy
    iii. Evacuation of community members before flood disaster
    iv. All of the above
    v. None of the above
3. What role do environmental management agencies play in flood disaster response in the area?
    i. Evacuation of affected victims in the community
    ii. Camping of affected members
    iii. Supply of relief materials and food
    iv. All of the above
    v. None of the above
4. What role do environmental management agencies play in flood disaster recovery in the area?
    i. Assessment and rebuilding of structures in the community
    ii. Compensation of flood affected victims
    iii. Mitigating against future flood disaster
    iv. All of the above
    v. None of the above

SECTION D

This section consists of questions that seek to collect information about the effectiveness of flood risk management initiatives by environmental management agencies in the area.

1. How do you observe the flood preparedness roles of environmental management agencies in flood risk management in your community?
    i. Effective
    ii. Not Effective
2. How do you observe the flood response roles of environmental management agencies in flood risk management in your community?
    1 Effective
    2 Not Effective
3. How do you observe the flood recovery roles of environmental management agencies in flood risk management in your community?
    1. Effective
    2. Not Effective

SECTION E

This section consists of questions that seek to collect information about effective models of community/government response for flood risk management to be developed for the area.

1. In your view, which strategy or strategies community authorities can use to ensure meaningful participation in flood management in the area?
   i. Through formulation of community based disaster management organizations
   ii. Through integrated flood management
   iii. Through effective communication with the disaster management stakeholders.
   iv. Bottom-up approach
   v. All of the above
2. In your view, which strategy or strategies environmental management agencies can use to ensure meaningful participation in flood management in the area?
   i. Structural and non- Structural measures
   ii. Through active involvement of members of flood vulnerable communities
   iii. Bottom-up approach
   iv. Through effective communication
   v. All of the above Through Community Based Orgaanisations
   vi. All of the above

Appendix III: Focus Group Discussions Schedule

1. What is the role of your organizations at preparation stage of flood risk management in your community?
2. What is the role of your organizations at response stage of flood risk management in your community?
3. What is the role of your organizations at recovery stage of flood risk management in your community?
4. How is flood management organizations formed in your community?
5. How does one become a member?
6. What are the roles of environmental management agencies in the following flood disaster management stages in your community?

i. Preparation
ii. Response
iii. Recovery

7. How do environmental management agencies engage your organizations in the management of flood disaster in your community?
8. How successful is environmental management agency's flood management initiatives in your community?
9. In your view, at what stage of flood disaster management does environmental management agencies involve in management in your community?
10. In your view, what other initiatives can environmental management agencies and communities adopt for a sustainable flood disaster management?

Appendix IV: In-Depth Interview With Kogi State Environmental Management Agency

1. What is the role of your agency at preparation stage of flood risk management in the state?
2. What is the role of your agency at response stage of flood risk management in the state?
3. What is the role of your agency at recovery stage of flood risk management in the state?
4. What is the coping capacity of the flood vulnerable communities recognized by the agency in the state?
   i. Preparation
   ii. Response
   iii. Recovery
5. How does your agency engage flood vulnerable communities in the management of flood disaster in the state?
6. How successful is your agency's flood management initiatives in the state?
7. In your view, what other strategy can the agency and communities initiate for a sustainable flood disaster management?