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AN INSIGHT ON FLOOD MANAGEMENT, RISK AND CONTROL MEASURES IN NIGER STATE

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Abstract

Apart from the rains, Niger State is home to three HEP dams which contribute to flooding in some parts of the state through operational management of their reservoirs. Indeed, one of the factors that prompted the creation of Hydroelectric Power Producing Area Development Commission (HYPADEC) in which Niger State is a member is to, among other things, look into the destructive effects of dam-related flood water on the ecology, livelihood and wellbeing of both the upstream and the downstream locations of the dams. Niger State is the most affected by the dams because other HYPADEC states namely; Kwara, Kogi, and Kebbi states are either upstream or downstream of the dams. Only Niger has locations both upstream and downstream and also houses the three dams, Kainji, Shiroro and Jebba. This aspect of flood which is contributed to by the normal dam operations affects all HYPADEC states in general and Niger State in particular. Consequently, it becomes necessary to assess the vulnerability of parts of Niger State to floods and suggest strategies for reducing the disaster or risk of flood events.
There have been several studies on flood in Nigeria in general but Niger State in particular has few studies reviewed on the subject matter.

Keywords: Flood Management, Mitigation and Preparedness

1.0 Introduction

A crucial point about understanding "natural" disasters is that they are not purely the result of natural events, but the product of the social, political and economic context in which they occur. Disasters are now

occurring at a scale and frequency that is causing unprecedented impacts worldwide. One simple reason is that the world's population is higher than ever before; thus there are more human beings to be potentially impacted, and more are being forced to live in high-risk areas. However, scientific evidence also indicates that weather-related hazards are becoming more frequent and intense due to the impact of climate change. Over two decades (l988—2007), 76% of all disasters were hydro~meteorological in nature. Widely-reported examples include the devastating hun-icanes Mitch (1998, Central America) and Katrina (2005, USA); the European heat wave (2003); and severe floods in Mozambique (2000) and Northern India (2008), (Gabriel, 2010).

Floods are common natural disasters occurring in most parts of the world resulting in damages and loss of human life and livelihood sources, deterioration of environment and retardation to development (Wizor&Week, 2014). A flood results when a stream runs out of its confines and submerges surrounding areas (Stephen, 2011). Similarly, Kates (1985) defines flood as an overflow of an expanse of water that submerges land. European Union (2007) sees flood as a temporal covering of land by water, not covered by water before the incidence. Sada (1988) sees flooding as unusually high rates of discharging; often leading to inundation of land adjacent to streams, and it is usually caused by intense or prolonged rainfall.

Floods are a natural part of the hydrological cycle. However, they have the potential to cause fatalities, displacement of people, and damage to the environment which may also severely endanger the economic development (EU Floods Directive 2007).

The Asian and Pacific region is the most flood-prone area in the world. It is very much affected by natural hazards such as

floods, windstorms and high tides caused by the monsoon climate including cyclones or typhoons, and tsunami caused by tectonic motions such as earthquakes and volcanic eruption under the sea. These natural hazards bring severe disasters in all countries in the region where social change, in terms of population and economic growth, is the most dynamic in the world.

In Nigeria, the issue of flooding is a major concern mostly in the coastal parts of the country (Rivers State) where frequent flooding occurs on bottomlands near a river or stream, where the watercourse might overtop its banks. Thus, the most significant of them all is the flood of 2012 where the people experience losses in properties, agricultural produce and even lives. It was estimated that Nigeria suffered combined losses of more than $16.9b in damaged properties, oil production, agricultural and other losses due to flood events in 2012 alone (Amangabra, &Obenade, 2015;Egbenta, Udo, &Otegbulu, 2015).

The occupancy or use of flood-prone areas involves a degree of risk. Risk is exposure to an undesired event. It can be expressed in probability that the event will happen, often during a calendar year.

According to EU Directive (COM, 2006) for flood management, "flood risk" is the likelihood of a flood event together with the actual damage to human health and life, the environment and economic activity associated with that flood event. In this context flood risk can be considered as the actual threat, in other words the real source of flood hazard to the affected areas. The quantification of flood risk results either in monetary units or in loss of life units, if the losses are measurable, or in qualitative terms (e.g. allocation in classes) in the case of intangible damages (social, environment, cultural) to the affected areas.

2.0 Literature Review

2.1 Flood

Floods, according to Umeuduji (2010), are "natural events which mainly happen when catchments receive unusually high amounts of water." "It is a visible expression of excessive accumulation of surface water over an area in question" Therefore, floods are results of precipitation proceeding at a rate which exceeds infiltration and surface evacuation.

Floods are among the most devastating natural disasters in the world. This phenomenon claims more lives and cause more property damage than any other natural phenomena (Etuonovbe, 2011). It is also worthy of note that they are the most common and recurring disaster in Nigeria (FGN, World Bank, EU, 2013).

The United States Agency for International Development (USAID) placed flood under Hydrologic hazard. Others in this category or classification include Desertification, Salinization, Drought, Erosion, Sedimentation and Storm surges. A further classification identifies 2 major types of floods: (a) Land-borne floods, or river flooding, which is caused by excessive run-off brought by heavy rains, occurring when the capacity of stream channels to conduct water is exceeded and water overflows banks and (b) Sea-borne floods or coastal flooding, caused by storm surges, often exacerbated by storm runoff from the upper watershed (USAID, 1990).

Elenwo (2015), describes floods as "naturally occurring phenomena that are part of the physical and biological process which have shaped our nation's landscape", while Ward (1978)) defines it as a "body of water which rises to overflow land, which is not normally submerged". It can also be explained to occur when water accumulates across an impermeable surface and cannot rapidly dissipate it (Chiadikobi, et al, 2011).

Describing flooding as a period when "extremely heavy rains occur in a watershed, causing the streams to rise to spectacular levels that result in great damage to human property and even sometimes significant loss of life" Arbogast (2011) also explains a flood stage as "the level at which stream discharge begins to spill out of the channel into the surrounding area".

2.1.2 The 2012 Floods in Nigeria

Floods can occur as a result of several factors. They can be as a result of transgression, global warming (melting of the permafrost) or as an after effect of earthquakes, vulcanicity suchastsunamis or due to hurricanes and heavy, persistent torrential rainfalls. It could also result when urban expansion eats into marginal lands; or due to small and inadequate drains (Umeudiji, 2010).

In 2012, globally, there were 905 natural disasters, 93% of which was weather-related disasters – including flood, heat weaves, cold waves, drought and wildfires. The overall costs were US $ 170 billion and insured losses amounted to US $70 billion (World watch Institute, 2013). In sub-Saharan Africa, drought and floods together account for 80% of loss of lives (African Union, et al; 2008). And Nigeria is not also immune from such disasters, especially floods, storm surges, and coastal erosion among others. In the 2012 floods in Nigeria, more than 30 states of the 36 states were affected, resulting to 363 deaths and displacing an estimated 3.8million persons. The damage caused to physical and durable assets was put at US $9.5billion; while the overall impact on the nation's GDP was a staggering N570 billion (PDNA Report, 2013)

The 2012 flood in Nigeria was reported by NEMA to be the worst flood hitting the country in 40 years. The rains began in early July of that year. But heavy down pour at

the end of August and the beginning September of that same year led to catastrophic floods in some parts of the country. The two major rivers, the rivers Niger and Benue overshot the banks, inundating farmlands, destroying farm products, displaying millions of persons submerging buildings, damaging properties, causing bridges to collapse and resulting in 363 deaths. Mostly affected were communities, villages and towns along the banks of the Niger and Benue rivers, and their tributaries. In the Niger Delta, majority of the coastal/riverine communities were partially submerged and farmlands and infrastructure impacted. Some of the intensifying factors include the bursting and overflow of the Kainji and Shiroro dams in Niger State, the overflow of Jebba Dam in Kwara State, as well as the release of water from Lagdo Dam in neigbouring Cameron Republic.

2.1.3 Flood Vulnerability

During risk management and flood damage assessment, flood vulnerability is an important component for a successful assessment. Disaster occurs when people are vulnerable. Therefore it is essential to develop the perception of vulnerability (Klein 2004). International Panel For Climate Change (IPCC) defined vulnerability as the inability to manage the impacts of climate change and sea-level rise (IPCC 1992). Different methods have been developed by researchers to assess flood vulnerability. The fear of flooding is very visible despite the continuous awareness about vulnerability (Birkmann 2007).

The effectiveness of vulnerability evaluation methods and their impacts on flood mitigation and adaptation has increased doubts in people (Khan 2012). Environmental, economic, social and political factors at the local level has influence on the process of vulnerability measurement which has renderedit complex

(Jixi Gao 2007). Several factors such as the living conditions, infrastructures, authority's policy, social inequalities and the economy affect the vulnerability of a community. Therefore, the level of vulnerability is different for people based on the factors above (Pandey, Singh and Nathawat 2010). Vulnerability is measured by the degree of exposure, sensitivity and resilience.

2.1.4 Causes of Flooding in Nigeria

Generally, causes of flood in Nigeria could be as a result of Natural Cause or Human Cause.

Natural Cause in form of

1. Heavy or terrential rains / rainstorm
2. Oceans storms and tidal waves usually along the coast.

Or Human Causes.

1. Burst water main pipes
2. Dam burst levee failures
3. Dam spills.
4. Shrinking of wetlands and water ways for housing development
5. Disregarding planning ordinances and building on floodplains and natural water ways.

Flooding occurs throughout Nigeria in following forms:

1. Coastal flooding
2. River flooding
3. Flash floods
4. Urban flooding
5. Dam burst levee failures

2.2 Non-Governmental Organizations (NGOs)

Non-Governmental Organization or NGOs have long existed in various forms for centuries. But it is however, during the 1980s and 1990s that they rose dramatically to high prominence, especially in international development. NGOs are now recognized as key third sector actors on the

landscape of development, human rights, humanitarian action, environment and public advocacy, among others.

NGOs can be defined as non-profit, voluntary citizen's groups which are organized on a local, national or international level. Task oriented and driven by people with a common interest, they perform a variety of service and humanitarian functions. They are independent of government and active in diverse sectors, rendering services ranging from humanitarian, educational, health care assistance, to public policy, social, human rights, research, policy analysis and conflict resolutions, among others.

According to Haddow, et al, (2017) NGOs "have come to playa vital role in the response to and recovery from disasters, filling gaps left by national and multilateral organisations. They have significantly improved the ability of international relief efforts to address the need of victims with a diverse range of skills and supplies".

NGOs are "best known for two different, but often interrelated types of activity – the delivery of services to the people in need and the organization of policy advocacy, and public campaigns in pursuit of social transformation" (Lewis, 2010). "In being 'not-governmental', according to Bebbington, et al (2008), NGOs 'constitute vehicles for the people to participate in development and social change in ways that would not be possible through government programmes. In being 'not government' they constitute 'space' in which it is possible to think about development and social change in ways that would not be likely through government programmes" (Bebbington, et al, 2008).

However, the word "NGOs" contains a be wilding variety of labels. In many cases, the use of different terms does not reflect descriptive or analytical rigour, but is

instead a consequence of the different cultures and histories in which thinking about NGO has emerged (Lewis, 2010). NGOs can be further defined according to their functionality. For example, Religious groups, Interest groups, Residents organisations, occupational organisations, Educational organisations, etc (Haddow, et al, 2017). Thus, in this regard and for the sake of this research, we have merged all forms of non-governmental, non-profit oriented organizations, be they faith-based, community-based, or otherwise, into that single term Non-Governmental Organizations, (NGOs).

2.2 Hazards and Disasters

So far, the international community's response to disasters has been mostly reactive, with only limited budget invested in prevention. This makes Peduzzi (2006) wonder that even if there were a willingness to invest in prevention, the question would be, where? The main challenge within the field of disaster reduction is to change people's perception so that they can recognize this notion of disasters as the outcome of a development process whereby societies have implicitly generated vulnerabilities and risks which become evident during the disaster (Villagran de Leon, 2006). But, assessing vulnerability and risk to natural hazards such as earthquakes can be regarded as an ill-structured problem, i.e., a problem for which there is no unique, identifiable, objectively optimal solution (Rashed and Weeks, 2003).

2.2.1The Disaster Management Cycle

The purposive undertakings before, during and after any disaster occurrence is exemplified in the prevailing concept that regards disaster management as a cycle with different phases, from preparedness, to prevention, mitigation, to response, and recovery. This relationship has enabled disaster relief activities to adopt the

development approach over the traditional adhoc relief approach (de Guzman, 2003).Thus, the Disaster Management phases include the "Pre-Disaster Phase- with activities which are taken to reduce human and property losses; the Disaster Occurrence Phase – which include those initiatives taken to ensure that the needs and provisions of victims are met and suffering is minimized; and the Post Disaster Phase, which involves response with a purpose to achieve early recovery and rehabilitation of affected people immediately after the disaster (Khan, 2008).However, the disaster management cycle could also be simply divided into two phases of Pre-Disaster and Post-Disaster (see diagram below)

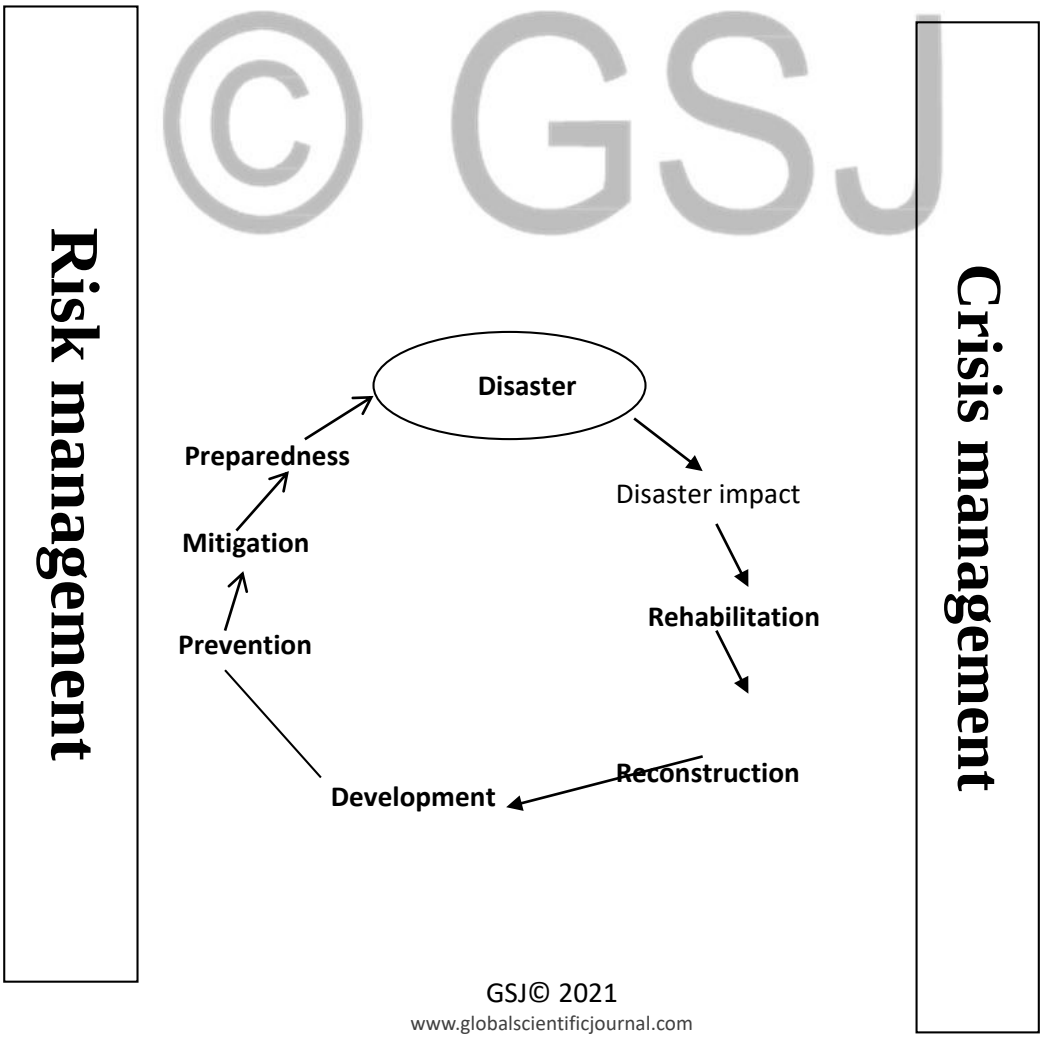

Figure 2.1: The Disaster Management Cycle

The followings are the activities in each of the disaster management phases.

1. Prevention: These are activities and measures aimed at avoiding existing and/or new disaster risks. Thus, disaster prevention "expresses the concept and intention to completely avoid potential adverse impacts of hazardous events" (UNISDR, 2009). It aims to reduce vulnerability and exposure in such contexts where, as a result, the risk of disaster is removed. Succinctly put, Disaster Prevention involves actions taken to avoid an incident from occurring or protecting lives and property.

2. Mitigation: Slightly similar to Disaster prevention and sometimes used interchangeably with Prevention, Disaster Mitigation are activities that are tailored or designed to reduce or eliminate the risk to persons and/or lessen the actual or potential effects of consequences of an incident.

According to USAID (1990):

> *"included in the concept of disaster mitigation is the basic assumption that the impact of disasters can be avoided or reduced when they have been anticipated during development planning. Mitigation of disasters usually entails reducing the vulnerability of the elements at risk, modifying the hazard- proneness of the site, or changing its functions*",

Mitigation could be Structural or Non-structural ("man-adopts-to-nature"). Structural include resistant construction, structural modifications, construction of barriers, deflection or retention systems,

transport, health and water infrastructure and relocation, among others. Non-structural may be in the form of behavioural modification and control such as regulatory measures, educational/community awareness, environmental control planning and preparedness, among others. Importantly, it should be noted that mitigation measures could take place prior to and/or after a disaster event.

In any event of flood disaster, for example, mitigation would involve a strategy of vulnerability reduction to enhance an increase in the capacity of local communities and organizations to prevent, prepare for, and respond to the impact of such disaster. It is a strategy that combines changes at community level with changes to national and international policies and practices" (Oxley, 2005).

According to the International Federation of Red Cross and Red Crescent Societies, (IFRC), the main risk reduction strategies for flood and water hazards include land-use control and planning; retaining walls and levees along rivers, and sea walls along coasts; retrofitting; water regulation (reservoirs); increased vegetation reforestation; contour plowing or terracing; preservation of farm ponds and other water holding areas; use of sand bags, raising building above flood levels; awareness of water hazards; crop cycles modified to avoid flooding season, flood resistant crops; flood evacuation plans, as well as monitoring and early warning systems (IFRC, 2000).

3. Preparedness: These are activities necessary to the extent that mitigation measures have not or cannot prevent disasters from occurring.. This is aimed at "building the capacities needed to efficiently managing all types of emergencies and using the knowledge developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the

impacts of likely, imminent or current disasters; thereby achieving orderly transitions from response to sustained recovery" (UNISDR, 2009).

The goal of disaster preparedness programmes is to achieve a reasonably satisfactory level of readiness to respond to any emergency situation through programmes that strengthen the technical and managerial capacity of governments, agencies, organizations and communities.

The activities included in this phase include contingency planning, stockpiling of equipment and supplies, evacuation plans, arrangements for coordination, public information, inventory compilation, training exercises and emergency drills, early warning systems, networks of emergency responders, protocols, and shelter facilities. All these must be supported by formal institutional, legal and budgetary capacities carefully encapsulated in a comprehensive preparedness plan.

4. Response: Response to disaster or emergencies is/are action(s) "taken directly before, during or immediately after a disasterin order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected" (UNISDR, 2009). The response processes "begin as soon as it becomes apparent that a hazard event is imminent and last until the emergency is declared to be over" (Coppola, 2011).These activities are predominantly focusedon the immediate and short term needs and are sometimes called disaster relief.

According to Coppola (2011), the Response Phase of disaster management is further divided into the Pre-disaster Actions Phase and the Post disaster Action Phase. The former include activities such as early warnings and evacuation, pre-positioning of resources and supplies as well as last minute mitigation and preparedness measures. Under the post disaster response actions

include search and rescue, first aid, evacuation, disaster assessment (situation and needs assessment and reporting), water, food and shelter. Medical treatment, sanitation, safety and security, emergency social services, donation and volunteer management, as well as coordination; among others. Significantly, response also includes the execution of emergency plans and actions to support short term recovery. Also, it should be noted that the division between the response stage and the subsequent recovery stage is not clear cut as some response actions such as temporary housing and water supply may extend well into the recovery stage, (UNISDR, 2009).

2.2.2 Level of Awareness of Flood Hazard

Akuro, Gordon and Williams (2013) conducted a study on public perception of tidal flooding Hazards on Bonny Island, Rivers State; Nigeria. The aim of the study was to make out the most vulnerable areas on the Island to the tidal inundation and also assess the local community adaptive capacity to the tidal surge. The study made use of questionnaire survey, 270 questionnaires were administered to 15 identified communities on the Island that regularly experience tidal floods. The findings from the study revealed that nearly two-third of the respondents (67.6%) "…in our study area had good knowledge of the causes, time of occurrence and impact of tidal flood on Bonny Island; that the flood coincides with the spring tides" during the raining season which is responsible for its severity occasioned by the building of shanty-type houses within the waterfront and the swamp area resulting in flood bondages that can last for several days; The time it takes the floodwater to totally recede according to 77% of the people is 12hrs 45mins. Loss of life, household property, business time, sicknesses resulting from flood ponds that breed diseases vectors etc

are some of the impacts reported by the people. The study also revealed that there are no effective mitigation and adaptation strategy put in place in the event of a catastrophic ocean surge. No early warning, no community education as a result respondent show a great level of indifference to the impact caused by the flood by their attitude and lack of preparedness. The study recommended that there are a number of actions that can be taken by both agencies and the public to mitigate the adverse impacts of flooding such as improving flood forecasting and warning systems. Warning messages can be broadcast on television and radio weather bulletins as well as the use of mobile phones. Public awareness of flood risks should be highlighted through annual national awareness campaigns and "Flood Awareness" weeks. Dedicated telephone helpline can be launched whereby people can telephone the "Flood line" number and receive information on the latest flooding situations in their area, and also receive information on how to cope with flooding.

Nkwunonwo (2016) conducted a study on a review of flooding and flood risk reduction in Nigeria. The study stated that the prevalence of flooding within Nigeria which has been generally attributed to climate change and poor urban planning is an issue of critical importance within the context of national development. From 1985 to 2014, flooding in Nigeria has affected more than 11 million lives with a total of 1100 deaths and property damage exceeding US$17 billion. Although more frequent floods are recorded in Niger, Adamawa, Oyo, Kano and Jigawa states possibly due to the influence of rivers Niger, Benue, Ogun and Hadeja, Lagos state seems to have experienced most of the floods in the country. With rapid population growth and urbanization in the country the risk of flooding to human lives and properties

assumes critical dimensions. The findings revealed that poor awareness of the hazard is a major challenge towards its management. This created a major gap in the knowledge of how to improve on the current efforts towards addressing the challenges of flooding in Nigeria. Since attempts to tackle the hazard appear to be limited, this study was driven by the need to identify those limitations in the flood management efforts in Nigeria. Recommendations were suggested based on a critical review of flooding and its management in Nigeria, allied with globally acknowledged 'best practices' in flood risk reduction and lessons learned from other countries' experiences of flooding.

2.2.3 Level of Preparedness towards Damage and Loss Prevention

Ezemonye and Emeribe (2014) carried out a study on flooding and household preparedness in Benin city, Nigeria. This study examined Disaster Risk Reduction (DRR) in the light of household preparedness in Benin City, Nigeria.It was conducted from 2011- 2012, in Benin City, Edo State, Nigeria. The year 2011 was devoted to understanding the fundamental factors related to flooding and human habitations, the flood prone areas and the pattern of flooding. Primary and secondary data were used for the study. Data collected from the field were subjected to various parametric statistical analyses. The Pearson Product moment correlation (r) was used to evaluate the relationship between household preparedness and influencing socioeconomic variables of the households. To determine the extent of spatial variation in household preparedness for flooding, a one-way single factor Analysis of Variance (ANOVA) was utilized. A multiple correlation was used to describe the relationship between household preparedness and the independent variables (measured as factors indicatingresponse to flooding). The findings confirm that there is

no household preparedness in relation to flood and 95% of the respondents indicated that their religious believe system is a major governing factor to the none utilization of preparedness as a response to any disaster. The ANOVA test shows that there is a significant difference among households in terms of their flood disaster preparedness. A multiple correlation analysis indicated that religious belief and lack of funds determine household preparedness levels as these two variables explain the highest variance in the socio-economic factors influencing utilization of flood disaster preparedness measures. The study recommends the exploration of household preparedness as first mitigation strategy in the light of the hopeless nature exhibited by households in events of flood disasters. Sensitization of households on the need for saving money towards ameliorating flood impact is needed while strengthening institutional preparedness targeted at disaster risk reduction.

Odunola and Balogun (2015) carried out a study on analyzing household preparedness on flood management in riverside: A focus on Apete community in Ibadan, Nigeria.This study evaluated the level of households' preparedness on flood management along Apete river in Ibadan, Nigeria. The study utilized concept of disaster preparedness and environmental planning and management which provided the analytical framework. Random sampling procedure was used to administer questionnaire in the study area. A structured questionnaire focusing on socio-economic characteristics of residents, causes, effects of flood disaster, control measures and households' level of preparedness on flood management was administered to 172 households' heads (44 in Fanawole, 41 in Morubo, 35 in Papa, 2 in Apete-Oja and 27 in Akere). A thorough interview was conducted with community

representatives on coping strategies employed. Qualitative data were content analyzed while quantitative data were analyzed with descriptive statistics and Pearson Product Moment Correlation at 0.05 level of significance. Causes of flood were accredited to heavy rainfall (97.1%), change in river course (45.3%), dumping of waste in water bodies (94.8%), poor drainage system (89.5%), dam failure (55.8%) and narrow bridges (77.9%). Respondents' mean values of the effects of flood were disruption of public and personal property (3.94), disruption of traffic flow (3.73) and destruction of agricultural land (3.35), loss of lives (3.22), outbreak of diseases (3.24) and sewage spill (3.25). The mean values of flood control measures adopted were: proper waste disposal (3.92), ensuring functional drainage (3.68), demolition of buildings along flood plain (3.22) and re-channelization of water bodies (2.62). While households' level of preparedness on flood management were: flood disaster campaign awareness (3.65), use of concrete embankment (3.41), vehicles' tyres as walkway (3.29), relocation of residents during rain peak period (3.33), erection of plank for residents' movement (3.17) and use of sand bag (3.12). The study revealed that there is a significant relationship between the effects of flood disaster and households' preparedness on flood management (r=0.480). The study recommended the need for scaling up households' preparedness initiatives and effective development control measures, among others.

Annegret, Heidi, Meike& Bruno (2007) did a study on Coping with floods: preparedness, response and recovery of flood-affected residents in Germany in 2002. The study stated that In August 2002, a severe flood event occurred in Central Europe. In the following year, a poll was performed in Germany in which 1697

private households were randomly selected from three regions: (a) the River Elbe area, (b) the Elbe tributaries in Saxony and Saxony-Anhalt, and (c) the Bavarian Danube catchment. Residents were interviewed about flood characteristics, early warning, damage, recovery, preparedness and previously experienced floods. Preparedness, response, financial losses and recovery differed in the three regions under study. This could be attributed mainly to differences in flood experience and flood impact. Knowledge about self-protection, residents' homeownership and household size influenced the extent and type of private precautions taken, as well as the residents' ability to perform mitigation measures. The study recommends that to improve preparedness and response during future flood events, flood warnings should include more information about possible protection measures and also different information leaflets with flood mitigation options for specific groups ofpeople, e.g. tenants, homeowners, elderly people or young families, should be developed.

3.0 Conclusion

Having review the foundation and a deep insight on the flood, flood management, the risk involvement, preparedness, this copy of this paper will be useful for scholars, researchers in the suitable field to support the future research based on flood on different states in Nigeria and the use of Nigeria as a case study for Africa and the world at large to be less prone to flood since is an inevitable natural event that would occur. Nevertheless, this paper will do the following:

- To pursue an integrated multi-hazard approach for sustainable development to reduce the incidence and severity of disasters;
- To place disaster risk at the center of our political priorities and policies;

- To integrate disaster risk reduction in all our development work;
- To strengthen the capacity of disaster prone countries to address risk;
- To invest substantively in disaster preparedness;
- To reduce the relief-development gap and thereby reduce vulnerability;
- To enable civil society actors and affected communities to strengthen their resilience to disasters;
- To reduce the gap between what we know and what we do, with the critical ingredient being political commitment.

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