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AN ANALYTICAL STUDY OF VULNERABILITY AND ADAPTIVE MEASURES TO FLOOD DISASTER IN RIVERS STATE: A CASE OF AHOADA WEST LOCAL GOVERNMENT AREA.

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Abstract

The study was carried out to analyze the vulnerability and adaptive measures to flood disaster in Rivers State focusing on Ahoada west local government area. Structured questionnaire was used in collecting data from a total of number of one hundred and eighty (180) respondents in Ahoada west local government area out of which one hundred and seventy two (172)were retrieved. Data for this study were collected from primary and secondary sources. The primary source was from structured questionnaire as mentioned above while the secondary data was collected from books, journals, past student project newspaper etc. The data for this study were analyzed with simple descriptive statistical tools like frequency and percentage. The study analyzed the socio-economic characteristics of recipient in the study area, identified the causes of flood outbreak, ascertained how often flood outbreak occurred in the study area, identified factors militating against the efficient management of flood disaster and how vulnerability of flood disaster can be minimized and identified in areas most vulnerable to flood disaster and adaptive strategies adopted by the people.

Key Words: Flood disaster, Vulnerability, Adaptive Measures, Ahoada West,

Rivers State

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

In the previous four decades, they have been severe economic loses which has been as a result of flood and this have increase and resulting in deaths and socio economic rampage, as well as damaging the environment . (Munich Re, 2002).Frequent flooding and different perils have been seen as a genuine risk to the idea of sustainable improvement. 33% of all deaths, 33% of all injuries are brought about by surge and other characteristic fiasco (Askew, 1999. Most importantly, flood disasters is caused by human-induced vulnerability which is a result of man communicating with his surroundings through his involvement in designing and locating of infrastructure, exploitation of natural resources, rising population etc (Hualou, 2011).

Floods are as results of when water from rainfalls settles across an impermeable surface and cannot evaporate. Rapid storms moving over a particular location can cause flooding while dams can generate flood on low-lying terrain which often causes significant damage. The 2012 flood incidence in Nigeria lead to damaging effects and this was so severe that it was categorized as an all-round disaster. States that were affected within the 36 states of the Federation, included Anambraand 34 states capital and communities that had the painful experience caused by the flood. Out of the 21 Local government territories in Anambra state, Eight LGAs were affected. Five out of those affected 3 make up the Omambala area and were the most adversely affected by the incidence. Buildings and other properties worth millions of naira were affected, while many persons were displaced (NEMA, 2012, ANSEMA, 2012, NIHSA, 2013).Research on poverty, water and flood observed that there was a rise of flood occurrences and its intensity in recent years; resulting to death, and many persons injured , people were rendered homeless, the environment wasn't spared as well as the agriculture sector was impacted, (Abdul-Akeem Sadiq, 2012, Bariweni Ol, 2012,The 2012 flood incidence was a sad experience in Nigeria for the very first time states such as Ekiti, Katsina, and the Federal Capital Territory (FCT) didn't felt the impact of the damaging effect of the 2012 flood but however, all the other Nigeria state felt the serious harm brought on by flooding. From available records of The 2013 Annual Flood Outlook (AFO)for Nigeria its shows how flooding affected about 156 Local Government Areas while emphasizing the need to reduce and turn flooding into an array of opportunity so as to change the society through a higher realm of sustainable efforts.

These are the facts that have prompted this research

1.2 Statement of the Problem

In recent times, the occurrence of calamitous events has been increasing, threatening the safety of Nigeria's growing population and also the built environment. This has manifested in every day news of loss of lives and properties across the country as hardly will there be a day without a catastrophic event. Evidently being seen by the developing environmental change, the expanding wave of calamity moderate down the pace in fulfillment of the Millennium Development Goals (MDG's) which have now metamorphosed into the Sustainable development goals (SDG's) Obasanjo (2005), this occurs because primary institutions are often under lock and keys during flood and earthquakes, leaving women and mothers including young teenagers with more stress and work load resulting in poor health conditions. Also, catastrophes including the regular ones that go unnoticed by the outside world, influence neediness diminishment endeavors from numerous points of view. They have macroeconomic contacts with broad harm to foundation and beneficial capital. The change of direction of revenue into response to disaster has also impact fiscally as cost of living or rise in food thereby threatening food security and precipitating crimes Since the ability of the government to meet the need of social welfare of the people is weakened due to the unavoidable channeling of available resources to clean up and rebuild the damaged assets to restore livelihood, the impact of disaster has negative consequence on every aspect of a society. According to ISDR (2004), vast amount of money are spent annually on response to situations of disaster. The number of death and colossal destruction on the built environment caused by a catastrophic event is of serious concern to the entire world.

Also, the prevalence of HIV/AIDS epidemic and malaria as well as cholera outbreaks is some of the threatening biological hazards that are eliciting international concern. This situation is even worsened by the raising wave of terrorism, ethno-religious conflicts/crises and industrial emissions as well as rapid urbanization /population expansion. This is because the threat of human activities and actions increases the possibility of man-made environment collapse due to the environmental stress arising from over population. Markarfi (2004) opined that the financial resources available for disaster management are increasingly becoming limited in the face of competing demands from the other sectors of the economy. For a long time now much of the effort utilized in the management of disaster have been more of reacting to or in form of relief through provision of basic amenities that were destroyed after a disaster (UNICEF, 1986) or humanitarian commitment (Black, 1992), disaster prevention (Kaplan, 1996) and most recently, managing the risk caused by disaster (Kaji, 2012). Project that have direct bearing on people have often times increased vulnerability and have only succeeded in enlarging risks in short-term way, generating strategies. Most of the factors arising from disaster risk are generated by unfavorable development practices, and the difficulties in reducing risk especially in some Africa countries have posed a developmental question. Therefore, for the livelihood and sustainable development concept to be attained, there must be

knowledge of risk in disaster in view of reduction in vulnerability and enhancing resilience. According to Olayinka (2013), flooding have been categorized as a severe hazard naturally all over the world, damaging the environment and killing people than any other phenomena that occurs naturally.

The response of the Nigeria government to flooding has been prompt. The Nigerian meteorological agency Abuja (NIMET) in 2012 predicted flooding before they came. Research shows that floods are characteristic components of the hydrologic cycle and are associated with utmost frequencies of precipitation and an assortment of ubiquitous factors that influence flood processes, these calls for a more timely approach than the present fire-brigade approach by NEMA, which lacks the desired capability in managing disaster. This equally calls to question the level of disaster response in the country.

1.3 Aim and Objectives of the Study

The Overall study aim was to look at the weakness to flood catastrophe in Ahoada west LGAs of Rivers state.

The Specific-objectives of the study are to:

(i) Identify the reasons for flood disaster in AWELGA

(ii) Determine its frequency of occurrence in AWELGA.

(iii) Examine the constraints on efficient management and reduction to Vulnerability to flood disaster in AWELGA.

(iv) Identify the area most vulnerable to flood disaster in AWELGA.

(v) Assess the impact of disaster caused by flooding and the adaptive strategies in AWELGA.

1.3 Research Questions

The following is the questions would to guide this research**:**

(i) What are the causes of flood disaster in AWELGA?

(ii) How often do flood outbreaks occur in AWELGA?

(iii) What factors militate against efficient management of flood disaster and how can vulnerability of residents to flood disaster is minimized?

(iv) What areas are most vulnerable to flood disaster?

(v) What are the adaptive strategies adopted by the people?

1.4 Research Hypotheses

(1) HO: There is no significant effect of flood disaster on socio-economic lives of the people of Ahoada west LGA.

(2) HO: The people of Ahoada west LGA have no significant adaptive measures to flood disaster.

1.5 Justification of the study

The study shall entail the assessment of Vulnerability to flood disaster in Ahoada west Local Government area, in order to build resilience in the area of flood disaster. Every household, is vulnerable to flood disaster but the way and manner each household handle one's vulnerable situation exposes one to disaster or resilient to flood disaster. Research shows awareness is the first point to mitigate the incidence of flood disaster; therefore this study shall stands to create proper awareness or educate residence in the study area.

Vulnerability to flood disaster shall be exposed in this study, this shall further enable the residence/traders build coping strategies and capacities that shall eventually reduce the impact or effect of flood disaster when it occurs. This study shall be beneficiary to all traders, community members and the entire society. It shall enlighten the government that necessary laws be put in place in the state for trader and landlords to prepare for flood disaster. It shall also add to knowledge, hence the knowledge from this study when applied by the appropriate authorities would help in development planning with respect to increasing the capacities of flood disaster and other relevant agencies that are into rescue mission or operation.

1.6 Scope of the Study

The Research is restricted to the variables, like awareness, vulnerability assessment, etc. Every research endeavor has scope that determines the coverage of the study area. The study is limited to Ahoada west local government Area.

1.7 Study Area

1.7.1 Location and Delimitation

With reference to Fig 1Ahoada west LGA of Rivers State occupies an area of 1,621 square kilometers. It is located between latitude $4^0$40`38" North and longitude $6^0$ 25`42` East and is located North-West of Rivers State (Rivers State ministry of information, 2006)

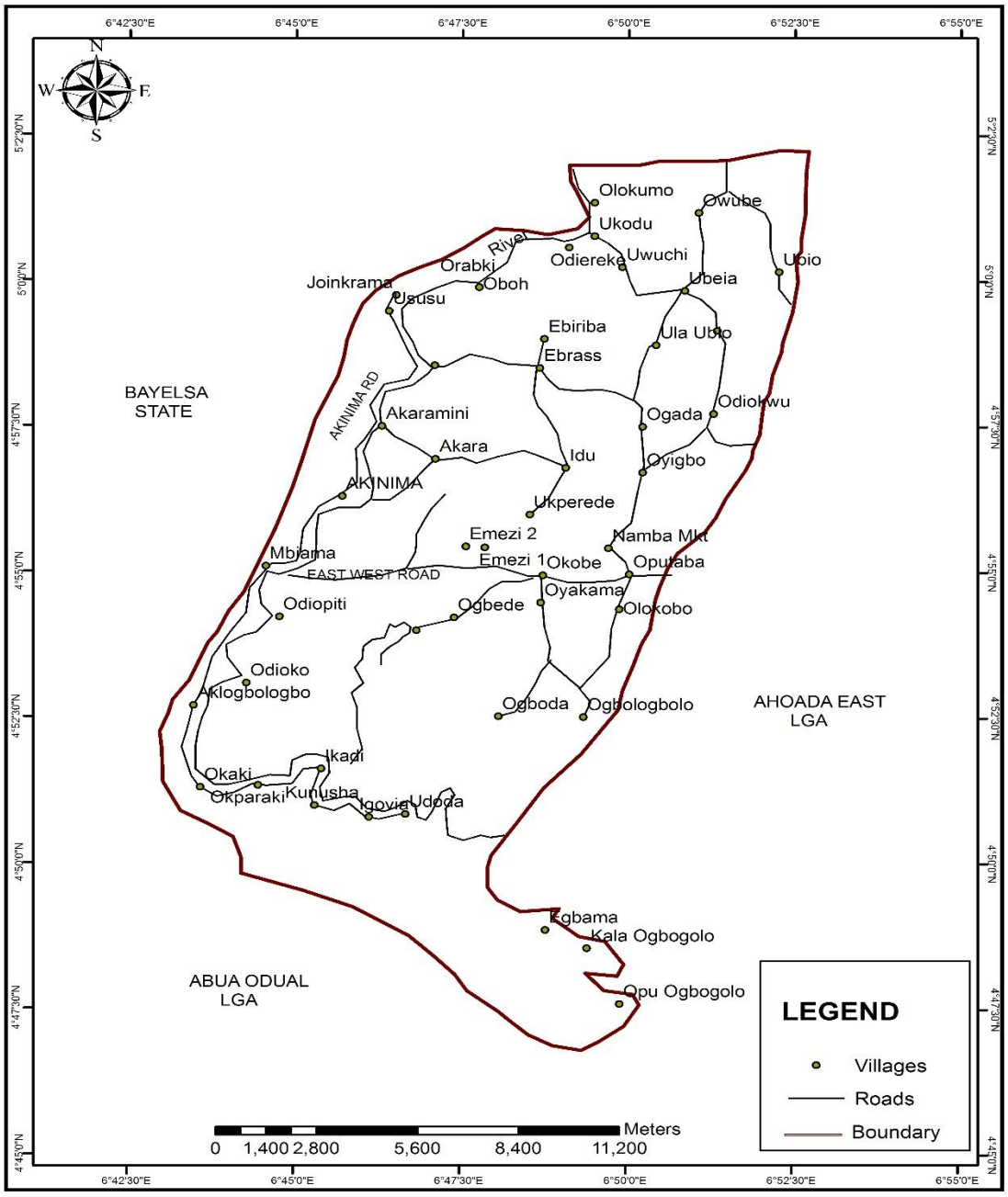

Fig 1; AWELGA showing the different communities

1.7.2 Climate

In terms of climate of the study area is located on the tropics with long rainy season and short dry seasons. December and January are the only dry season months. The harmatan is less felt

with precipitation being heavy occurring in the month of September at a rate of 370mm averagely, Research shows that December experiences dryness in each year, with a rainfall of 20mm averagely .(Rivers State ministry of information 2006)

The Maximum monthly temperature ranges within 28^0C to 33^0C, while the minimum monthly temperatures within the limit of 17^0C to 24 C (Rivers State ministry of information 2006).The mean month to month temperature is 260mm .The relative distinction of the harmattan season and temperature in blustery period is just barely 20mm. Relative Humidity is with a value of 20mm high consistently and goes down marginally amid the dry season (Rivers State Ministry of Information 2006)

1.7.3 Topography and Drainage

The area is located on the eastern axis of the River Niger and at the axis of the south -south region .The topography of this area is flat plain netted in a web of rivers.(Rivers State Ministry of Information 2006)

The topography of this area in Rivers State is located towards the freshwater axis of which the plain focuses North ward from the swamps that are mangrove in nature. The surface of the land is 20m above sea level. Most drainage linkage in the fresh water area are surrounded by leaves naturally, these are of critical geographical interest and of noteworthy financial advantages to the occupant for settlement and yield development. (Rivers State Ministry of Information 2006)

1.7.4 Soil and Vegetation

The major soil types are brown loams and sandy loams, sedimentary in nature. The vegetation type recognizable within AWELGA is the rainforest because it is located in both wetland and upland area of Rivers state. The area is characterized by economic trees particularly the bushes, lianas, plants and skimming grasses and reeds are the run of the mill vegetation. It likewise underpins the development of nourishment and money crops. These include: oil palm, elastic, cocoa, rice, plantain, banana, yam, cocoyam, cassava, sugarcane and pineapples (Rivers State Ministry of Information 2006)

1.7.5 Human Geographical Setting

Ahoada West local council area of Rivers State as seen in Fig 1, Nigeria, is located northwest of Port Harcourt; the capital is in the town of Akinma (Rivers State Ministry of Information, 2006). Ahoada west have an estimated population of 249,322(NPC, 2006 projected population). It is pertinent to add that Ahoada LGA have a total of one hundred communities (National Bureau of Statistics, 2010).

The presence of good climate, topography, vast arable land and vegetation and fertile soil make the people predominantly farmers, fisherman and few traders to balance her economy. (Rivers State Ministry of Information, 2006)

There is reliable transportation and telecommunication network, power supply, efficient banking, hotel facilities and guaranteed security in the area. (Rivers State Ministry of Information, 2006)

CHAPTER TWO
LITERATURE REVEIW

2.1 CONCEPTUAL THEORY: CONCEPT OF DISASTER VULNERABILITY AND PREPAREDNESS

The issue of Vulnerability to a disaster is seen as the extent in which a socio-economic system which comprises of infrastructures are prone on the other hand strong to the dangers sway that naturally occur (UNDRO (1991).Blaikie (1994) in this perspective clarified that helplessness as the element of an individual or gathering of persons in accordance with their capacity to expect, direct, restrict and recover from a risk sway", while UNDP (2004 Pg 25) expounded on it that it is "human condition or process coming about because of physical, social, financial and ecological elements, which decide the probability and size of harm from the effect of a given peril".

Lack of protection is a result made by correspondence of a couple of criteria, including data of hazards, condition of human living course of action and structures, association of open technique, the advantage of an available group and dealt with limits in all threat and disaster organization outcome .Current Research in bleeding edge countries have raised the noteworthiness of people's level of prologue to risk, instead of holding an unassuming focus on the dangers (Mitchell (ed.), 1999; Twigg and Bhatt, 1998). Of most imperative is to operationalized the idea of weakness. Besides, realize that powerlessness is seen by individual's abilities and quality, and that relies on upon the remote possibility that they are seen routinely times as misfortune of circumstances then the test of what makes defenselessness might be gotten away (Cannon, 2000). Examination to Vulnerability is gotten from an extent of budgetary point of view to risk much of the time times the customary life sudden circumstances' (Blaikie et al, 1994; Cannon, 2000). Elucidated that Social shortcoming as the component of a get-together or individual to the extent their open advantages for anticipate, adjust to, restrict and recover

from regular danger influence It is the strategy of blend of variables that pick the degree to which lives and social requests occupation is at hazard by a discrete and identifiable occasion in nature or society (Blaikie et al, 1994).

Helplessness, as indicated by Cannon (2000) was classified in view of five segments:

Starting prosperity: Focuses on the general dietary and wellbeing status (both physically and rationally) of individual; in ordinary life. It is a determinant of their resources to cope with sickness and injury arising from a flood hazard and others.

Livelihood resilience: This is the rate of the available resources person has/or their household to develop coping capacity to the impact of a named hazard. This includes sustaining their employment status , saved income, welfare benefits loses , injury or loss of rich family members, disruption to their normal routine source livelihood activities(for instance surge harm may incorporate interruption to agrarian area by molecule of rock stores, seawater attack, noxious or sewage).

Self-protection: This alludes to the capacity or ability (preparation) of an individual/or family (with evident dangers mindfulness) to have an information about sufficient assurance in a situation that is risky. This is regularly time combined by the rate of consciousness of physical measures,

Societal assurance: This is the farthest point of social and government structures at political or social levels over the individual or family and the overall public capacity to catch up on them, to give adequate security (particularly auxiliary and specialized arrangements) from specific dangers.

This may incorporate government at the state, neighborhood and elected nearby government, applicable offices (e.g. fire division, common resistance, NEMA, NGOs), or group activities

Social capital: This comprises group security and the abilities to advance (or point of confinement) the versatility of individuals. Elements, for example, level of attachment or competition that may influence pursuit and salvage. Different types of social capital that has a tendency to advance or ruin recuperation, for example, system bolster some of which may give satisfactory shared guide in times of hardship. Of pivotal significance is that it is connected to the imaginable force of a given peril sway, principally yet they are all dictated by political, financial procedures. It has been seen that both capacities and vulnerabilities, with these changing after some time (as individuals and gatherings subsist and contend inside given vocation potential outcomes), and they are being influenced as to various sorts of peril that happen actually. Defenselessness idea is focused on towards the view of calamity hazard and has an alternate point of view to its importance. A few definitions and changing reasonable structures of weakness have been seen on the grounds that few unmistakable gatherings have diverse supposition on defenselessness (Birkmann, 2006).

Powerlessness is known not the probability of people bite the dust, harmed or generally influenced by the immediate or circuitous effects of a calamity. World Bank Development Report shows that, 'disregarding the way that no nation on the planet is totally protected, absence

of ability to confine the effect of perils remains a noteworthy weight for creating nations (World Bank, 2004). Joined Nations (2009) reports shows that poor countries are prone to natural hazards. United Nations (2009) indicates that the perception to vulnerability to hazards that occur naturally arise from large lacuna in availability to resources and the capacities for reduction in risk. risk that is linked with destitution and socio-cultural stratification. Individuals that are most powerless are the ladies, matured and youngsters, who have been unfavorably affected more than the guys (Hannan, 2002). The Vulnerable gatherings among those found in the urban environment and possesses the delicate biological systems are regularly confronted with serious natural difficulties, for example, flooding (Gurenko, 2004). The rampaging harm brought about by the surges is as a consequence of the absence of fiasco readiness in the nation. Danger of urban populaces is connected with the failure of state governments to guarantee advancement of framework and level of consistence in decreasing calamity danger and readiness in catastrophe and general absence of appropriate arranging in the created territories. The negative effect of lack of common sense in most urban focuses of creating nations like Nigeria are of distinct fascination to various partners incorporating those included in examination considers and policy makers in line with the concept sustainable development.

This makes urban populace everywhere very presented to any ascent in the event of tempests, surges or warmth waves, and to expanded danger of sickness, requirements on water supplies or ascends in sustenance costs – which in wealthier, better-represented urban communities are generally effortlessly adjusted to (UN-Habitat, 2003, 2010).

Researchers have the sentiment that the procedure of urbanization as found in creating nations will continue in the future (Torrey, 1998), although the negative environmental and social-money related results are caught off guard for because of an absence of connected examination on the urban framework, and in view of the characteristic multifaceted nature of the framework as such (Barredo and Demicheli, 2003). Satisfactory Preparation for surge event and it outcomes is critical in building ability to point of confinement debacles effects and its orderly risks. A substantial number of individuals and even the legislature are not completely arranged for the level of decimation that for the most part takes after such surge occasions. Catastrophe readiness idea have been acknowledged by numerous specialists and rehearsing professionals from the biophysical and sociologies in different yet in fact exact ways (Suda, 2000; Chauhan, 2008). It is essential in preventive advancement; furthermore the importance is determined by the peoples idea about the potential danger. Empowerment of people must be in focus in order to respond well and to play their part in community development on a sustained basis. Disaster preparedness level is focused on the prevailing capabilities at individual or agencies levels. Receiving or change of checking and early cautioning frameworks at the organization level that can advance brief and convenient readiness and reaction to calamities is seen as a major aspect of an improvement aversion methodology. Systems that are preventive as indicated by UNDP (1997) can be made more viable if prepared experts are accessible and political will accessible, objectives are correct, legitimate and institutional structures are started, arrangements and exercises are executed and are very much organized. Mindfulness creation for individuals living

in a fiasco inclined groups on the risks they may experience and reaction methodologies to be embraced should be possible through an extensive variety of boulevards which might be consolidated with nearby specialized learning to upgrade neighborhood individuals' certainty and fortify the limit of the general population to act when confronted with misfortune. In this manner this fosters fast interest among the rustic group to address the impacts of the catastrophe. Vital is that the idea of readiness is grounded on the limit of a country all in all to adequately manage regular and man-made catastrophe. The Global Facility for Recovery and disaster in Disaster (GFDRR, 2009), has an arrangement which is conferred in helping creating nations shorten their powerlessness to characteristic risks and adjust to environmental change, unfortunately just couple of African nations are as of now include (this prohibits Nigeria).They are issues with The National Ecological resource which was set up in 1981 through the Federation Account. Governments have frequently bent or abused the benefit in this way adapting to these basic disasters amidst tries to settle the augmenting high unemployment and money related and balance of portion deficiencies. The status level and the advantages for lessening level of prologue to fiasco, as it were, is on the country or a gathering headway stage and the congruity between the qualities and deficiency in the working of its parts, structures and establishments (Etkin et al., 2003; International Council for Science, 2008)..

2.1.2 Disasters in Nigeria

The issue of artificial and normal calamity is germane in Nigeria, much the same as whatever is left of different nations on the planet. Few of these debacles are quick, others are ordered in view of moderate onset, bringing about basic harm coming about to death, properties and ecological corruption. Drought, desertification, flooding, pandemics erupt, shoreline front deterioration, dam dissatisfaction, building breakdown, oil spillage, ocean effect or setback, bomb impact, aggregate clash, fire, air accidents and barge episode, et cetera are structures in which this calamity happens.

For a couple of years now, Disaster that are dark in Nigeria fuse the progressive scourges scene eg are cholera, measles and cerebra-spinal meningitis.

In addition, occasion of mechanical calamities beginning from, the 2002 Ikeja bomb impact (Lagos State), the twin bomb effects of the 2011 October first Independence day (Abuja), 8 bomb sways in the Northern bit of Nigeria in the midst of the pre and post-choice of the 2011 general races. In addition imaginative catastrophes consolidate the progressive pipeline impacts realized by vandalism in the Niger Delta and occasion of road auto collision et cetera.

Past these issues, perpetual occasion of oil spills threats and pivotal damage to the earth, defilements rising up out of business undertakings, waste and wonderful climatic changes, and its negative effect make the nation to be high at danger to a wide number of new and making perils. Nigerians frailty to dangers is a part of two or three segments. Which are poverty level; advancement in masses and stream; and human settlements condition and their base. Diverse components join biological debasement level, level of open care, open methodology movement and disaster organization on the earth (NEMA, 2007).

2.1.3 Vulnerability to Disasters in Nigeria

Shortly after Nigeria became independent in 1960, the country was plunged into a nation-wide political crisis that led to the civil war in 1967 which lasted for three years. That was a major man-made disaster. There have also been disastrous communal and religious riots in several communities of the country as well as natural disasters that include flood, drought and epidemics. Disasters that occur naturally had tripled since the occurrence of the 1960s killing where hundreds of people died destroying properties worth millions of naira. There have also been dramatic rise in the frequency and trend of disasters in recent years, this have threatened large populations living in diverse environments. It has been observed that the fact that Nigeria's economy is relatively weak and its expansive environment is under-protected makes the nation especially vulnerable to disasters, (Siyanbade, 2006).

Weakness can be seen as the degree to which a populace may endure hurt as an aftereffect of presentation to change. We can discuss basic powerlessness and human defenselessness. Assistant powerlessness can be seen as the extent to which a structure is inclined to be pummeled or annoyed with a hazard event" while human lack of protection "is the relative nonattendance of breaking point of a man or gathering to predict, adjust to, contradict and recover from the impact of a danger" Siyanbade, (2006). Human weakness to cataclysm is extended by specific segments that join .snappy urbanization, people advancement, and nonattendance of care about how to effectively contradict the results of disasters and vile poverty.

2.1.4 Vulnerability and Sustainable Development

Documents which related to International declarations, which comprise of the Framework for Action of the Hyogo declarations 2005-2015, the UN/ISDR report

'Living with danger" (UN/ISDR, 2004) and the UNDP report "Lessening debacle hazard", (UNDP, 2004), accentuated the significance to completely coordinate danger and decrease of powerlessness into practical improvement. Besides, it is of most extreme essential to know the association furthermore to recognize danger and lessening to defenselessness, from one viewpoint, and practical improvement on the other.

Endeavors made global to point of confinement danger in a debacle that are progressively being seen inside the fringe of advancement which is feasible. Hence, thought of coordinating diminishment to catastrophe danger and lessening to helplessness into reasonable advancement can't be found in such essential records as AGENDA 21

However the MDGs, particularly MDG 1 ("annihilating great neediness and craving"), MDG 3 ("advancing sexual orientation uniformity and MDG 7 ("guaranteeing natural maintainability") are interconnected to certain range of catastrophe danger and lessening in powerlessness; for instance, decreasing destitution most times diminishes weakness. Above all the primary purpose of the MDGs is on advancement socio-financially and there is no reference to hazard or weakness diminishment as a major aspect of these formative procedures. Concentrate on issues of financial improvement tends to stray from the point that at once where they are change in the earth universally (disabling natural debasement forms), embracing a customary financial advancement systems are demonstrating deficient to accomplish a harmony between financial

requests from one perspective and the ecological limits of different environments on the other. The Millennium Development objectives is inadequate in the zone to the new requests and difficulties that worldwide ecological change will make on the financial advancement approaches that attempt to address practical improvement .

Despite the fact that the MDGs can be connected to diminishment in a fiasco hazard and their destinations, worldwide ecological change, financial advancement and supportable improvement stay theoretical in accordance with current connections. The UN/ISDR report "Living with danger" laid accentuation on the need to associate reasonable improvement and diminishment to hazard specifically:

Empowering manageability in lessening in a fiasco infers recognizing and using essential utilization of associations among financial and ecological objectives to diminish high peril hazard. Nations on the planet require a positive and differing biological framework that is gainful and life managing, a sound and enhancement in a financial framework that adjusts to change and see social and environmental points of confinement. This may appear to be outlandish without fusing methodologies in diminishing debacle, which is among the six cardinal standards of maintainability upheld by solid political duty. (UN/ISDR, 2004). Advancement at a Sustainable level is improvement that gives the requirements of the present without trading off future eras to accommodate their own particular needs. (WCED, 1987)

2.1.5 Factors Affecting Human Vulnerability

Information from the International Federation of Red Cross and Red Crescent Societies (2009)identified major factors that can propel the population of an area to be vulnerable they are thus expatiated further

Research demonstrates that most catastrophe rate the wealthiest individuals from a populace either survive a fiasco unharmed or can recoup rapidly. Amazing Poverty most times makes individuals powerless against danger related to risks. Individuals in urban ranges are compelled to live on slopes that are inclined to avalanches because of destitution or why some settle close volcanoes or streams that constantly surge their banks and why individuals use combustible materials without appropriate security measures.

Clearly there is a connection between the number and extent of gathered misfortunes from a calamity and populace size. On the off chance that catastrophe happens where they are more individuals and structures, and then it is likely there will be a greater amount of an effect. Ascend in populace implies that more individuals will be constrained to live and work in perilous regions and predetermined number of assets will be aggressive by more individuals.

Populace increment and development to different towns are connected to basic idea of quick urbanization. Its real element is that the country poor or regular folks in a range of contention

moves to city looking for better life which incorporate monetary open doors and security**.** Urbanization is closely associated with economic and social development, scientific and industrial progress and modernization. Thus, improvements in science and technology (with accompanying application in agriculture, communication, production, and building techniques), have made it possible for more and more people to be concentrated in cities and in highly density conditions that were previously impossible.

Rapid urbanization trend that has led to the emergence of mega-cities with population of over 20 million people in some places has also made such cities to become prone to various hazards and failures. Among these are the depletion of available resources to the extent that they become inadequate to sustain life; production of harmful wastes in such amount that cannot be absorbed in the given space; increasing potential for hunger and disease; danger of accidents such as explosions of fuels stocks located for convenience near the population that needs them, leakages of chemical and other toxic wastes used in industrial production, and fire systems failures and breakdowns (for example, of telecommunications systems on which people depend for their work, health, and information) (Siyanbade, 2006).
Thus, the processes of urbanization that have made urban dwelling attractive have also introduced a whole new set of hazards. Vulnerability to such hazards seems to increase in correlation with the number of people accommodated within a fixed geographical space.

Social orders are always developing and in a consistent condition of move. These changes are frequently extremely troublesome and uneven and may leave lacuna in social methods for dealing with stress.

Lion's share of synthetic catastrophes is either impacted by natural debasement. Felling of trees prompts fast rain keep running off which add to flooding.

Catastrophe can likewise happen when individuals who are powerless against them need information on the most proficient method to receive in return or what defensive measures to take some individuals may not think about safe departure courses and strategies though individuals may not know where to swing to for help with times of debacle. Here the state of mind of the general population to flame risk is essential, in light of the fact that most fire flare-ups are because of absence of wellbeing precautionary measures.

2.1.6 Planning for Disaster

Disaster preparedness emphases on planning, a noteworthy point is to have settled upon, arrangements that are implementable set up, for which commitment and limit are generally guaranteed. Preparation towards Planning incorporates working out assertions between people or company's to notice who will give administrations in a crisis to guarantee a viable, facilitated reaction. The proposed assertions may take after different structures: reminder of seeing, transient arrangement common guide understandings, or private organization and ground breaking strategies. A definitive objective is not to put an arrangement on paper but rather to fortify on-going associations between companies' which may give result in printed, usable assertions. The archive is an item, however not the primary objective, of the arranging procedure. There are four evident focuses to be considered in any arranging exertion (Kent, 1994).

An unmistakably expressed objective or point must be found in an arrangement furthermore should mirror a grouping that is deliberately involves exercises in a legitimate and clear way, relegate particular undertakings and obligations, join its exercises, assignments and obligations to empower the general objective or set of objectives to be proficient.

Emergency courses of action in a fiasco typically concentrate on intends to handle a named dangers. However a decent alternate course of action overlooks the requirement for relief and recuperation measures, yet most times is not worried with the whole debacle continuum, such 'as recovery and advancement linkages. The fundamental center is on approaches to address a named hazard (eg flooding), inside a period that is limited, starting from early cautioning and reaction to speedy recuperation stages. A vital national system will dependably produce different emergency courses of action to meet calamities that are particular (Kent, 1994).

2.1.7 Exposure of Community to Hazard

Joining hazard and level of presentation is another option of danger and fiasco. Here, presentation is seemingly as the quantity of persons or different components at danger that can be influenced by a specific occasion. Despite the repeat of tempests impact on a uninhabited island, the human presentation, and subsequently the peril of human mishap, stays zero. Hence lack of protection chooses the reality of the impact an event may accept the segments at risk, it is the level of presentation that drives the last number of mischief or harm.

The quantity of families that will be influenced and lose 50 for each penny of their benefits is identified with the presentation. E.g., a poor group will decide the extent to which it will be affected by an occasion of a specific size (helplessness) and the quantity of people in the group speaks to the presentation. Thickly populated zone is at a higher danger than an inadequately populated one from a more prominent point of view.

2.1.8 Coping Capacity and Resilience

ISDR expatiated that all capacity available that are combined within a community or organization which can lead to the reduction of risk, (UN/ISDR, 2002). Helplessness and

adapting limit can be seen when a group that is defenseless is presented to an occasion that is unsafe. In this setting peril is can be characterized as: A physical occasion that is harming possibly, wonder and/or human action, which may bring about the passing or harm, property harm, social and monetary interruption or corruption of the earth. (UN/ISDR, 2002)

Emerged from the terms risk and shortcoming, the term danger can be portrayed as the entire of the correspondence amongst threat and weakness. In hazard sciences the term threat melds the likelihood and the measure of poisonous effect or expected occurrences in this way from relationship between human or ordinary incited perils and conditions that are weak (UN/ISDR, 2002).furthermore, the term versatility snatched conspicuousness in the Hyogo Framework. The composed work uncovers arranged brightening of the term, particularly concerning the considered whether versatility is seen as the ability to retain unsettling effects or stupors, and is thusly more connected with the information of resistance, or whether the term infers the regenerative furthest reaches of a social or a natural system, including the capacity to learn and adjust to incremental changes and sudden stuns while keeping up its bona fide limits. In this way this, relates more to the changing and alteration stage (Allenby and Frank, 2005). Changing situation considers adaptability to be the reverse of shortcoming (Adger et al., 2005).While (Bagardi and Brauch, 2005) comprehended powerlessness as the inverse and poor security.

By and large, a typical attributes can be recognized in the understanding that strength depicts the capacity of a framework to keep up its fundamental capacities and structures in a period of stun.

Moreso, the "probability of damage" is stretched out by the center of a dualistic structure of powerlessness, which can be found in the definitions by (Wisner, 2002) Wisner distinguishes the "probability of harm' and "surprising difficulties in recuperating" from such occasions as the key components of powerlessness. Powerlessness idea is wide by survey weakness as suggesting a double nature methodology of vulnerability from one viewpoint and the bizarre challenges in adapting and recuperating on the other. Moreover, Bohle's twofold structure of weakness is not simply "introduction" and "adapting": rather, it is the powerlessness highlights which are outside to an uncovered forgiving or unit at danger and those components that are inside. The special component between these two Spheres "outer introduction" and "inward adapting" accentuates that powerlessness bargains from one perspective with elements and qualities connected to abilities to expect and deal with the effect of a peril, and on the other, with the presentation to dangers and stuns (Bohle, 2001).

Reality demonstrates that, the mischief created depends on danger, weakness and introduction, as well as on the ability to adapt and the versatility of the danger of component. In this survey most explanations demonstrate a vast cover between adapting limit and strength, which are regularly utilized as synonymously. From the two measurements it's demonstrate that unsafe occasion are not effortlessly isolated from each other. Here, ability to adapt incorporates those techniques and measures that straightforwardly follow up on harm amid the occasion by decreasing or containing the effect or by realizing proficient alleviation and in addition those versatile procedures that alter conduct or exercise so as to go around or abstain from harming impacts.

Strength includes all, in addition to the capacity to utilitarian stay amid a stage and to totally recoup from it. Flexibility involves Capacity to adapt however in the meantime goes past it. The questionable thing about this definition is: can weakness as of now record ability to adapt and versatility or would they say they are distinctive and balancing parameters? The arrangement relies on upon how we characterize the harm or mischief brought on. In the event that the degree of the harm or mischief is characterized likewise by the term of the unfavorable impacts and by its repercussions on individuals' neediness, economy or mindfulness, then defenselessness needs to incorporate ability to adapt and flexibility. The run down that powerlessness portrays vulnerability to harm or damage Cannon (1994).

2.2 The Concept of Flood.

Surge is when water is much and found in the wrong place, whether it is an immersed city or a solitary channel. Surge is the nearness of water curiously ashore at a high force which affects ordinary exercises. Flooding happen essentially because rains that falls intensely over a brief span. An irregular inflow of ocean water on the area is called sea flooding. Tempests, for example, sea tempests (storm surge), high tides (tide flooding), seismic occasions or substantial avalanches (once in a while likewise called tidal wave) cause sea flooding.

Several definitions of floods by various writers such as (Olujimi, 2007) explained that surge as a flood of water ashore In the feeling of "water streaming", the word may likewise be connected to tide streaming.

Flooding may come to fruition as a result of water volume inside a conduit, for instance, a stream or lake, which surges or breaks levees, with the effect that a segment of the water makes tracks in an opposite direction from its standard cutoff points, or may be a result of storing up of water on drenched ground in a district (Olujimi, 2007).

While the lake size or other waterway will shift as season changes in precipitation and snow melt, it is not a vital surge with the exception of such escapes of water jeopardize territory utilized by man like a town, city or other occupied range.

2.3 Flood Disaster

In march 2003 The Third World Forum: Poverty and Flood was held, discussions revealed that in recent years, flood occurrence is high and of increasing rate resulting into death, injury, destroyed homes, environmental damage and damage to infrastructure as well as impacting on other critical sectors of the economy such as education and agriculture. Nigeria has always been a victim of floods which have had severe impacts on lives. In June, 2012, the most devastating floods disaster ever witnesses in Nigeria struck, affecting many communities, killing about three hundred and sixty three (363) persons with over two million, one hundred thousand(2,100,00) people displaced and almost six hundred thousand (600,00) houses destroyed (OCHA,2012). This is on account of the blustery period of 2012 was more regrettable than before years. As per IFRC (2012) the impressive storms toward the end of August and the onset of September affected serous surges in various parts of the nation. Despite the way that the Nigeria government contained the crucial keep running off through believability approaches,

amidst the most recent week of September water stores surge and powers were obliged to open dams to remember weight in both Nigeria and neighboring Cameroon and Niger. This conveyed to the 2012 surge fiasco that destroyed stream banks and foundation, property incident and tamed animals and burst surges in different zones.

Famous (2014) in his investigation of the occasion, found that the states for the most part influenced by the calamity were states like Adamawa, Taraba, Plateau, Benue, Bayelsa, Kogi, Niger, Lagos, Rivers, Imo and so forth. He advance set that in push to address the threat; a few states initiated boards of trustees on surge restoration that cooperated with the private division and global organizations to decrease the effect. A few monies were gathered and connected for this reason. Sadly, casualties experience demonstrates that life had never been the same again after the surge catastrophe. The Federal Government on Nigeria and outstanding humanitarian people additionally added much cash to mollify the effect and guarantee appropriate recovery and reintegration process.

As Nigerians are recovering from the shock and trauma of this disaster impact, professionals have again cautioned of an impending major deluge. Recent revelations reveals that prediction of the Nigeria Meteorological Agency (NIMET) and the National Emergency Management Agency (NEMA) during the 2014 World Environment Day Celebration, that several state and communities in the country could be submerge in 2014 on a large scale as a result of rain falling heavily.

In any case, one of the groups influenced by the surge debacle is Ahoada west LGA. As per Eric (2013), surge in Ahoada West LGA happens generally at the occasion of overwhelming precipitation and sum and particularly amid blustery season. Yet, this specific surge happened in October, 2012 after the primary blustery season (August-September). He noticed that in spite of the flooding, inhabitants in surge inclined regions have stayed on premise of no alterative as schools, family homes, places where understudies stay endured the hazard

. He further alluded that public infrastructures as well as farmlands suffered all forms of flood damage in their communities.

2.3 . 1 Causes and the Impacts of Flood Disasters

Nott (2006), in his examination recognized surge causes which can be requested into physical, which fuse climatologically qualities, and human effect, for instance, vegetation clearing and urban change. Ordinary explanation behind surges recognized is environment related, most importantly precipitation. Deferred precipitation events are the most generally perceived explanation behind flooding everywhere on the planet. These events are normally related with days, weeks or months of general precipitation. Impacts of individuals on conduits catchments sway surge conduct. Basic to note is that Land use changes straightforwardly influence the degree and behavior of surges essentially as deforestation results in extended continue running off and routinely a decrease in channel limit as a result of extended sedimentation rates. Nott (2006) as referred to by Yande (2009) called attention to that a surge occasion is not seen to be a trademark danger unless there is a danger to human life and/or property. Particularly uncovered

scenes for surges are low-laying parts of surge fields, low-lying coats and deltas, little bowls subjects to blast surges. Streams gives transportation relationship with human people groups, a water source, recreational redesigns, and prepared fields are an enchanting spot of settlements. Precisely when high human individuals densities hinder a spot surge finds the opportunity to be common danger.

Alongside the approaching dangers cause by surges, eject of pandemic is regular particularly in making nations with Malaria and Typhoid being standard in nations that are tropical turn. It has been predicted that in India and Bangladesh, three hundred million individuals live in districts that are inclined to flooding. (Nott 2006). Harm to physical property is one of the enormous foundations for unmistakable setback in surge disaster. This unites expense of wickedness to things and having a spot, loss of pay or associations in the surge fallout and tidy up expenses. Some effects of surges are unobtrusive and are difficult to put a money related figure on elusive misfortunes also join levels of physical lively and mental flourishing issues persisted by surge influenced individuals. According to Ajazeera news on 22nd May, 2014 officials in Bosnia and Serbia said that the devastating effect of the floods in both countries which killed scores and displaced half a million of people will cost billions of dollars for recovery operations. Deutsch (2014), noted that apart from the infrastructures that were destroyed, there were still risks of landslides in the affected areas.

Know Risk (2005) recognized that examination did exhibit the impact of fiasco on the economy which implies an upward example over the span of the latest an extended period of time. Packs in making nations are inclined to risk particularly the scarcest made nations, developing their inadequacy and setting back their cash related and social change, now and again by decades. Surges have prompted passing, social and money related foundation being devastated and environment contamination. Research displays that social effect unite changes in models, their way of life, cluster, political frameworks, environment, success and flourishing , their own specific and property rights and their fears and goals. Past studies in Scotland proposes that social effects are connected with the level of flourishing of people, get-togethers and society. It incorporates several perspective identified with the level of direction, the closeness of peace and security, access to key human rights, frameworks of good association, social worth, positive standard qualities, information structure, traditions and ideological sentiments and general aggregate authoritative frameworks. Most get-togethers are more uncovered than others by and large those less upheld in individuals all in all open air theater (Living with Risk 2002).

Further study revealed that masses with different parts can be displayed to more genuine risk that are relative because of conditions that are socio financially defenseless. The aftereffects of this are, diminishment in setback has ended up being continuously associated with practice that unveils tries to perform change that are sensible. The relationship amongst peril and the monetary system, another down to earth progression segment are central for diminishment in a disaster.

Yearly Report by Mumich Re (2007), expressed that the expenses monetarily connected with normal dangers effects are expanding each year. Populace that are thick are regularly found close or are a piece of range that are dangerous. Place for International Earth Science Information Network (CIESIN, 2011) report at Columbia University, 40% of populace in the World who live in beach front regions, characterized as the territory inside coast with a length of 100km. The Heinz Center (2002) and Perez-Maquoe et al (2007) examine the significance of seaside environments for beach front groups. Ponders by the International surge activity (2003) demonstrates that surges are the most difficult of all water related debacles that are characteristic to human, material resources and also assets that are refined and environmental influencing individuals and their vocations and guaranteeing a large number of lives every year comprehensively.

Australian experience appears, the state of mind of casualty of surge was stunning. Expense of flooding was being lived inwardly. Ensuing studies found that around one fourth of people haven't recouped traumatic from this occasion. Variables that credit to the non-recovery joined the genuine method for flooding, the level of the consequent cash related hardship, age and money related level. Developed people on poor wages whose properties were significantly influenced by surge were the most not very much impacted (Flood Management in Australia, 1998).

The study ensured that surge that is great can achieve game plan of cost on loss of surge, a noteworthy number of them altogether genuine. Additionally, the strain genuinely may continue going for an extensive time allotment after the event. Bunches that think about Flood can be depended upon to persevere through less social and unsettling influence financially than low level flooded gatherings

Nipon and Pitson (2012) in their study on Thailand flood of 2011 attributed the causes of the flood disaster to event that are natural, unregulated lead use patterns and management to flood. According to Thailand Ministry of Agriculture (2012), the flood affected 1.28 million people, caused 728 deaths and 16,688.55 square km of Agriculture area and affected 9,859 factories leading to loss of about 660,000 jobs as at November, 2011. The World Bank estimates for the recovery and reconstruction of the damage and loss items would cost USD 50 billion and would take more than 6 months to complete.

The study demonstrated that family consumption to is decreased by 5.7% to 14%. The finding was predictable with national Gross Domestic Product (GDP) development of 8.9% in the final quarter of 2011 that was negative when surge overpowered Thailand. The exploration likewise uncovered that the flooding had a gigantic negative effect on the wages and costs of center and high pay families, yet that its effect on family unit that were poor was not factually noteworthy. There was negative surge sway on the cash and wages of some center wage family's living in the regions that are overflowed.

The researchers posited the situation would not have worsened if appropriate steps were taken by both the people and the government. This is true as Suppaisan (2011), grouped the factors which precipitated the flood disaster into four (4) categories. World Bank (2012), noted that the Thailand flood of 2011 was a slow onset disaster as water levels rose at a slow pace, with steady rate. The flood water persisted in some areas for almost 70 days before receding. The development worsened the situation of the vulnerable people, plunging many into poverty level.

Ariyabandu and Wickramasinghe (2005) watched that some class of individuals are more presented to surge fiascos than others are They battled that shortcoming is nonappearance of advantages, and also the poor tend to be the most displayed on account of their nonattendance of choices. The effect of both destitution and headway process on people's defenselessness to disaster are as of now all agrounded. Some variable socio-monetarily, for example, class, ethnicity, sex, inability, pay, training capability and age are some different components influencing individual's powerlessness. They saw that since weakness has an imperative influence in why risks that are regular gotten to be human fiascos, it is essential to looking at the qualities of defenselessness. Feebleness conditions are a mix of variables that join poor living conditions, nonappearance of power, presentation to risk and the nonattendance of capacity to adjust to staggers and unfavorable circumstances.

Despite the way that, destitution isn't feebleness yet people that are poor are defenseless against the impact of fiasco since penniless people don't have the acceptable resource (physical, social and data based) to get prepared for and respond to such perils and stocks as normal dangers. Both communicated the path that regardless of the way that females are consistently feebler against disasters than male (inferable from conventional sexual introduction commitments and relations), they are not just defenseless losses as much of the time addressed. Female have data that are beneficial and adjusting learning to disasters. In any case this qualities and limits of women are frequently not looked in course of action decisions and in alleviation, thusly allowing these benefits that are critical to waste and as a less than dependable rule making situation of dependence

2.4 Review of Tragedies of Floods

Surge is finding the opportunity to be dead serious and all the more unending issue in nations in African. Deplorably, the effect is more felt by those poor in the urban zones in a route that there is endless recouping without outer associate (Blaikie, 1994). What's more, Poor individuals in the urban degree are the most powerless against Flood impact since they are found on the floodplains for settlements (agreeable). Joined with poor information to family waste storing up, headway and upkeep of seepage channels, disaster to surge is winding up being more standard (Satterthwaite et al., 2007; Douglas et al., 2008; Potschin, 2009). It ought to however be seen that, surge is a marvels that happen truly and has surmounting influences on human occupations. Surge was seen by Nelson (2001) as a trademark eventual outcome of stream in a dependably creating environment. Sada (1988) depicts flooding as high rates of releasing; reliably inciting

submersion of locale neighboring streams, and it is made if all else fails by awesome or precipitation that are put off.

Surge event speaks to a noteworthy danger to populace that are found on the riversides and on the floodplains, notwithstanding creating high demolition on the earth, including oceanic fauna and verdure, and disintegration on the bank. Human exercises frequently exacerbated flooding (Olanrewaju and Fadairo, 2003) which incorporate the nearness of foundation on the riverside (dams, docks, and lands

In Urban Cities in Nigeria, flooding is an imperative biological test or huge peril that is consistently affecting capable working of urban environment, most importantly in the districts of oversaw establishment and organizations, which are vital to viable occupation. It routinely develops as an outcome of the growth of reaches that are urban

In Nigeria, particularly urban groups; flooding is an essential common issue or huge hazard that is continually affecting convincing working of urban environment, especially in the scopes of upheld structure and organizations, which are fitting to reasonable occupation. It regularly emerges as a consequence of the expansion of urban ranges unaccompanied by advancement of solid waste frameworks, sufficient arranging and fiasco administration systems. In fact, flooding is a standout amongst the most pulverizing dangers that are liable to increment in numerous districts of the world incompletely because of worldwide environmental change and poor administration. As indicated by ActionAid (2006) four sorts of urban flooding can be perceived:

(i) Localized flooding-happening commonly in a year because of few and blocked channels

(iv) Wet season flooding in swamp and waterfront urban areas

In Nigeria, flooding happens in three standard shapes; stream flooding, urban flooding and coastline flooding (Gwary, 2008; Adeoti, 2010). The extensive precipitation united with horrifying human exercises in relationship with the earth and nonattendance of waste base in most Nigerian urban gatherings has left a couple people steamed and frantic. It ought to be resolved that flooding in urban reaches can degenerate water supplies and elevate the spread of ailments infirmities, separation of the inner parts, typhoid, scabies, cholera, wild fever, detachment of the insides and other water-borne ailments .Regular event of surges can be credited to the shortcomings made by urban locales some cases, trademark characteristic gatherings are frequently walloped inferable from excitement for renewable assets, for example, water, fossil enables, land and building materials (progress). Besides, human impacts in urban ranges have basically adjusted the hydrological structure and nature of the ground surface bringing on hurting surge disaster and its lord physical and fiscal results (e.g. unsettling impact of money related exercises, loss of properties, distance and diminishing of the in vogue nature of the earth.

2.5 The relationship damage caused by flood, and perception of vulnerability and risk

The connection between harm cause by surge, powerlessness and impression of danger has been found in a little academic group. Moreover, neither its part in regards to the methodology of surge harm examination, nor its centrality for the level of open insurance of surge and administration of surge danger has been generally acknowledged.

2.6 Flood Damage

Surge harm level brought on by a particular occasion is over and over an impetus that empowers those in government to fortify surge arrangement procedures – more often than not after a surge occasions. Hurt conveyed on by surge suggests all combinations of loses made by flooding. It incorporates a wide range affect that are perilous results for individuals, their prosperity and their benefits, on open establishment, social legacy, ecological systems, present day creation and the forceful nature of the impacted economy. The vast majority of these harms can be surveyed in real money related terms; others – the accepted intangibles – are routinely recorded by non-cash related measures like what number of individual kicked the compartment or square meters of normal structures affected by natural contamination. Influence from Flood wickedness can be further depicted into fast and anomalous impacts. Direct surge hurt covers an extensive variety of damage which relationship with the brief physical contact of surge water to people, property and the earth. This wires, for event, structures obliteration , money related things and dykes, loss of standing harvests and tamed animals in agribusiness, loss of human life, brief flourishing effects, and beating of consistent frameworks. Circuitous or broad impacts contain hurt, which happens as a further consequence of the surge and the aggravations of cash related and social exercises. This damage covers extends altogether greater than those truly drenched. Essential case is the loss of money related era in light of workplaces being pulverized, nonappearance of power and telecom supplies, and supply interruption with center individual stock. cases are time hardship and advantages due to intrusion in development, irritation of business divisions after surges (e.g. climb in expenses at food or reduced expenses for area close floodplains), decreased productivity with the result of lessened power of picked money related regions or areas and the obstacles connected with diminished business division and open organizations (Smith/Ward 1998, 34ff.; Green et al.1994, 39ff.).

2.7. Issues on flood Disasters in Africa

Critical surges in mid 2008 made nations like Southern Africa into an expanding compassionate emergency executing handfuls and uprooting thousands. Du Plessis (1988) expressed that in South Africa, the cultivating Sector had been especially hit by the progressive surges of 1983, 1984 and 1985. Different cultivating items must be foreign to supply the household market. Further, ability to touching had been minimized that some stock must be diminished until just the studs are cleared out. The outcome had been that in certain circle, ranchers got no salary and relentlessly developed obligation. The contracting wage of ranchers had implied that they had

put less in cultivating actualizes, decreased their sowing and bought less manure. This thusly had prompted the over Production of certain fanning requirements and chemicals which had required justification in those commercial ventures.

There was an event of surge In 1986/87 that had an unfriendly direct effect on both the rancher and the customer and had additionally truly harmed the framework of riverside towns. Farmers faced hardships in stock and watering framework land while developing executes, homes and sheds near to streams had been hurt furthermore houses, traverses wads railways lines, telephone affiliations and dams. In various recognizes the supply of drinking water had been impacted and isolated from the uncommon measures that must be taken in such way, it was furthermore essential to present preventive prosperity measures (Du Messis, 1988). Nxumalo (1984) similarly communicated that the South Africa did not simply encounter the evil impacts of the effects of the world money related subsidence moreover monetary stagnation as a result of the effects of ordinary perils, for instance, surges since government expected to involve advantages for deal with the impact of surges.. In Morocco, for case, the shoreline front zone shapes one of the standard money related scopes of the country with more than 60% of the masses having the ocean side urban groups and likewise merging 90% of the business, making them more helpless against flooding: Parker (2000) watched that in numerous African nations, surges make extraordinary common dangers to life, wellbeing and populace. The presentation and defenselessness of human settlements and exercises to surges is incompletely clarified by the vital part which surge fields play in African Societies and financial matters, and somewhat by the state of social orders and the flexibility they can introduce even with catastrophe. What's more, there is an imperative input impact between environment debasements brought about by African social orders and expanded weakness to surge perils and typhoons. Floodplains bend imperative areas for settlements all around on the planet and Africa is no special case. Parker (2000) further calls attention to that while territorial settlements may have maintained a strategic distance from the surge inclined regions; ensuing settlement development has prompted floodplain advancement. For instance, nations like Egypt the River Nile floodplain is the most thickly populated district of' the nation and by examination the rest of Egypt is for all intents and purposes uninhabited.

2.8 Gap in Existing Literature

A critical review of the various literatures reveals that the concept of adaptive measure to flood disaster is yet to be covered in the study area under review and also constraints on efficient management and reduction to flood disaster is yet to be dealt with as well as the areas vulnerable to flood disaster. The salient aspect of urban flooding has not received the needed attention from researchers especially from the area of the present study.

.However this work will fill in this gap that has been identified in previous study under review as expressed above.

CHAPTER THREE
RESEARCH METHODS

3.1 Research Design

The research design used was an analytic descriptive survey. It involved a study which was aimed at assessing the vulnerability of flood disaster in Ahoada west council Area of Rivers State. The researcher's choice of analytic descriptive survey method was borne out of the fact that the survey shall focus on vital facts, people and other attributes. This design was appropriate as Nwafor (2010), pointed out that analytic descriptive design is concerned with gathering data for the purpose of describing, interpreting and analyzing existing state of affairs, prevailing trends, practices, attitudes and on-going process. The study involved the collection of data from sampled respondents for the purpose of exposing factors militating against efficient management and reduction of citizens' vulnerability to flood disaster. Furthermore, the purpose of survey research was to describe systematically the relative incidence, distribution and interrelation of sociological psychological variables of the target population.

3.2 Sources of Data

The study made used of Primary and secondary source of data. Primary data was obtained through administration of questionnaires by the researcher with the help of some research assistants. The questionnaires were distributed to the selected settlement randomly to obtain information. While the secondary data was from-textbooks, journal articles, website and all other secondary sources.

3.3 The Study Population

The study population includes respondents from selected communities in Ahoada West which is grouped politically into two zones; representing 30% of the total communities in the Local Government Areas, and carried out in a randomly selected manner. They are about Fifty (50) communities in Ahoada west Local Government Areas of which ten (10) communities was randomly selected base on the vulnerability of these communities to flood disaster.

3.4 Sampling Procedure

The study area is made up of Ahoada West LGA with a population of 283,294 (NPC census data 2006). Consequently; stratified testing strategy was connected to empower representation that will be fair of the study region while arbitrary likelihood inspecting was utilized to choose groups spoke to in the choice procedure. And 180 samples size were drawn from the total population using Taro Yamen method of sample selection as presented below.

$$n = \frac{N}{1+N(e)^2}$$

Where:

n = sample population
N = total population
e = level of precision (0.05), Yamane (1967:886)

3.6 Validation of the Instrument

To confirm the interview schedule used in data collection was valid, an initial confirmation was made by the supervisor and another specialist in the area of the
Research.

3.7 Methods of Data Analysis

The data collected were subjected to descriptive statistics, using simple statically tools such as mean, median, mode, percentage and frequency in analyzing the research questions. Dichotonomy scale was used to get the perception of the respondents.
Inferential statistics of simple regression, ANOVA and the Z- test analysis was used to test the hypothesis in an SPSS package 20.0 version.

3.7 Justification of Statistical techniques

The sampling technique was justified based on the fact that it will enable unbiased representation of the study area in addition, the hypothesis was tested using the analysis of variance and was analyzed using the statistical package for social science (SPSS) version 20. Also Z- test analysis and Degrees of Freedom (df) were used since it has to do with testing statistically significant difference.

CHAPTER FOUR
RESULTS AND DISCUSSION

This section manages the presentation, investigation and elucidation of information coming about because of the field study showed with the guide of proper tables, figures, diagrams, charts.

4.1Administration and Retrieval of Questionnaire;

In order to effectively cover the scope for this study, 172 copies of questionnaires were properly completed and retuned and analysis from the 180 copies of questionnaires that were administered as indicated in table 4.1

Table 4.1.Administration and Retrieval of Questionnaire from the 10 Communities;

LGA	Zones	Names of Selected Communities	No of estimated households	Respondents	No. of Question naire retrieved
Ahoada-West	Ekpeye	1. Idu	300	30	28
		2. Oyigbo	200	24	24
		3. Ubeta	281	28	27
		4. Ulo	122	12	12
		5. Odieke	100	10	10
		6.Ogbologbolo	187	19	19
	Engenni	1, Oshi	57	7	6
		2. Betterland	42	4	4
		3. UsusuJK	354	35	35
		4. Kanusha	109	11	9
TOTAL			1,709	180	172

Source: Author's field work, 2016

Analysis from the 2 political zones in the local Government Area of the study shows retrieval of 172questionnaire from respondents out of the 180copies of questionnaire served.

Table 4.2 Administration and Retrieval of Questionnaire in Percentage

Zones	Quantity Served	Percentage Served	Quantity Retrieved	Percentage Retrieved
Epkeye	115	63.88	112	65.11
Engenni	65	36.11	60	34.88
Total	180	100	172	80.27

Source;Author's field work, 2016

Table 4.2 shows the number of questionnaire shared in the local government area. The distribution of questionnaire was carried out based on the political zones in the local government. The distribution in the study area which comprises of 2 political zones is as follows In Ekpeye 115 copies of questionnaires were served and only 112 copies was retrieved, in Eugenni 65copies of questionnaires were served and only 60 was retrieved.

4.2: Socio-Economic Indicator of Respondents;

The table in the next page shows the age, and sex structure, marital status, occupation and major income of the respondent

a) Age and sex structure of respondents

Table 4.3 Age and Sex Structure of respondents

Age	Sex					
	Male	%	Female	%	Total	% Total
<18	17	17.89	13	16.88	30	17.44
18-30	22	23.15	14	18.18	36	20.93
31-45	32	33.68	16	20.77	48	27.90
46-60	15	15.78	18	23.37	33	19.18
60 above	9	9.47	16	20.77	25	14.53
Total	95	100	77	100	172	100

Source: Author's fieldwork, 2016

Table 4.3 above shows that 95 respondents representing 55.23% are male while 77 respondents are female representing 44.76%. It further shows that the age bracket 31-45 has the highest respondent of 27.90%. This is indicative of the reliability of the data collected because the age group is matured and responsible.

The youths which fall under the age bracket of 18-30years is next with 20.93%. This is followed by the age bracket of 46- 60years, less than 18 and above 60years with the frequencies of 19.18%, 17.44% and 14.53% respectively.

b) Marital Status of respondents

Table 4.4 Marital Status of respondents

Marital Status	Frequency	Percentage
Single	30	17.44
Married	86	50
Separated	20	11.62
Widowed	36	20.93
Total	172	100

Source: Author's fieldwork, 2016

Table 4.4 depicts that 50% of the respondents are married, 17.44% are single, while those that are separated and widowed constitute 11.62% and 20.93% respectively

c)Occupation of Respondents

Table 4.5: Occupation of Respondents

Marital Status	Frequency	Percentage
Student	25	14.53
Agriculture	20	11.62
Metalwork/Blacksmith	3	1.74
Woodwork/Carpentry	12	6.97
Petty Trading	42	24.41
Transportation	15	8.72
Tailoring	3	1.74
Civil Service	40	23.25
Other	12	6.97
Total	172	100

Source: Author's fieldwork, 2016

Table 4.5 reveals that petty trading constitutes the highest percentage of the respondents with 24.41%, followed by civil service with 23.25% and students with 14.53%. It further depicts transportation, woodwork/carpentry and Metal work/blacksmithing had lowest percentage of respondent of 8.72% 1.74%, 6.97% and other skills had 6.97% respectively.

(d) Major Income and Education of Respondents

Table 4.6 Major Income and Education of Respondents

Monthly Income (=N=)	Frequency	%	Education Tertiary	Frequency	%
<10,000	35	20.34	No education	35	20.34
10,001 - 20,000	20	11.62	Non Formal	40	23.25
20,001 - 30,000	13	7.55	Primary	7	4.0
30,001- 40,000	45	20.16	Secondary	23	13.37
40,001- 50,000	20	11.62	Tertiary (ND, NCE & IIND)	56	32.55
>50,000	42	24.41	11(PGD BSc, MSc & PhD)	11	6.39
Total	172	100		172	100

Source: Author's fieldwork, 2016

In terms of income of respondents in the study area, table 4.6 clearly indicates that about 32% of the respondent are living below the poverty line as well as theFederal Government minimum wage of N18,000.00 (Eighteen Thousand Naira Only) per month. It is shown that about 42 of the respondents earn above N50, 000.00 (Fifty Thousand Naira Only). The implication of those living below poverty level is that they will be prone to disaster and development might be minimal.

In terms of education, the table 4.6 reveals that holders of tertiary education certificate form bulk of the educational level of the respondent with about 32.3%. The frequency is as a result of the urban nature and presence of multinationals installations in the area. The implication of these is that the people will be aware of disaster.

4.3 Cause of Flood Disaster;

The table below highlights the causes of disaster in Ahoada west local government areas.

Table 4.7; Causes of Flood Disaster in AWELGA

Communities	Factors							
	Blocked Drains	Houses On Flood Plain	Heavy Rainfall	Absence Of Drainage	Poor Heading To Prediction	Type Of Soil	Others	Total
Idu	10	2	10	5	-	1	-	28
Oyigbo	3	-	9	5	-	4	3	24
Ubeta	7	-	10	7	-	3	-	27
Ulo	3	-	7	2	-	-	-	12
Odieke	2	-	6	2	-	-	-	10
Ogbologbolo	4	-	10	5	-	-	-	19
Oshi	2	-	3	1	-	-	-	6
Betterland	3	-	1	-	-	-	-	4
Ususu	19	-	10	3	-	-	3	35
Kanusha	3	-	4	2	-	-	-	9
Total	56	2	70	32	-	8	6	172

Source: Author's fieldwork, 2016

Table 4.7 above show individuals residing in the various communities that make up the study area on the causes of flooding disaster, out of the 172 people under study in about 10 communities, opinions were based as follows, heavy rainfall (70 persons), blocked drains, (56 persons), absence of drainage (32 persons), type of soil (8 person), houses on flood plain (2 persons) and others (6 persons).

Thus with the analyzed result it implies that heavy rainfall is the major cause of flood disaster in AWELGA since most respondents opinion was based on that.

4.4How often do flood outbreak occurs

The tables show respondents opinion on the frequency on flood outbreak in AWELGA:

Table 4.8; Respondent response on how often do flood outbreak occur

No.	Zones	Total Respondent	VERY OFTEN	NOT OFTEN
1	Ekpeye	115	10	105
2	Engenni	57	12	45
	TOTAl	172	22	145

Source;Author's Field work, 2016

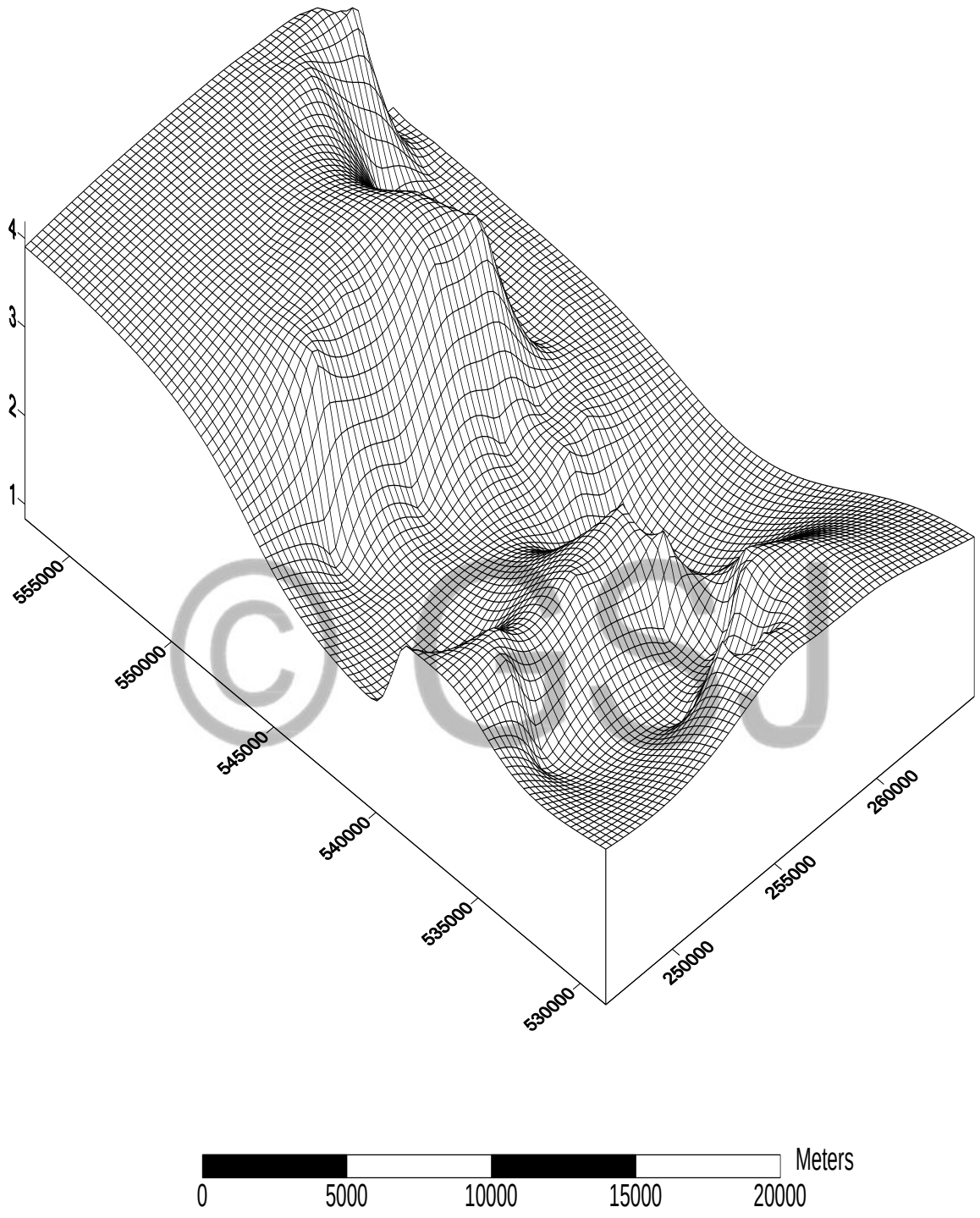

Fig 4.1; 3 Dimension Plane of the flood plain in AWELGA

Fig 4.1 reveals that Ahoada LGA has a land mass of 403km^2, out of this, 17.3km^2 (4.3%) is very low in flooding, 193.4km^2 (48%) is low in flooding, 70.12km^2 (17.4%) is moderate in flooding,

while 122.1km^2 (30.3%) is high in flooding. The classes of were reclassified into four classes using equal interval functionality in Arcmap. Idu, Akara, Akaramini, Ususu, Oboh, Odiereke, Ukodu, Uwuchi, Olokumo, Owube, Akinima, Ebiriba and Ebrass are high in flooding. Ukperebe, Okaki, Okadi, Kunusha, Okparaki, Igovia, Udoda, Egbama, Kala Ogbogolo and Opu Ogbogolo are moderate in flooding. Aklogbologbo, Odioko, Mbiama, Odiopiti, Ogbede, Emezi 1, Emezi 2, Okobe, Oyakama, Namba Market, Oputaba, Olokobo, Ogada, Oyigbo, Odiokwu, Ula Ubia, Ubeta, Anwunugboko and Ubio are low in flooding, while Ogboda and Ogbologbolo are very low in flooding.

While From the Table4.8 above, the entries reveal in Ekpeye zone majority of the respondents (105 persons) had the opinion that flood outbreakisn't that frequent.That is its not frequent and only happen during the rainy season while in Engenni zone majority also had the opinion that (45 persons) had the opinion that flood outbreak isn't that frequent.

Thus with the analyzed result it implies that majority of the residents in the different political zones that make up the LGA had the opinion that flood outbreak does not occur frequently but when it occurs it is severe.

4.5; Factors militating against the efficient management of flood disaster and how vulnerability of flood disaster is managed

The table 4.9 showed respondents opinion on the factors militating against the efficient management of flood disaster while table 4.10 showed how vulnerability to flood disaster can be manage

Table 4.9 Factors militating against efficient management of flood disasters.

Communities	Factors				
	Weak governance	Poor town planning	Rising population and increased density	others	Total
Idu	10	10	4	4	28
Oyigbo	10	12	-	2	24
Ubeta	7	10	10	2	27
Ulo	4	6	-	2	12
Odieke	5	4	-	1	10

Ogbologbolo	4	10	-	5	19
Oshi	3	-	-	3	6
Betterland	2	2	-	-	4
Ususu	15	10	5	10	35
Kanusha	5	2	-	2	9
Total	65	66	14	31	172

Source;Author's Field work, 2016

Table 4.9 above show individuals residing in the various communities that make up the study area response on factors militating against efficient management of flood disaster, out of the 172 people under study in the 10 communities, opinions were based as follows, Poor Town planning (66 persons), weak governance (65 persons), rising population density (14 persons), and other factors (31 persons).

Thus with the analyzed result it implies that poor town planning is a major factor militating against efficient management of flood disaster in AWELGA since most respondents opinion was based on that.

Table 4.10;Opinion on how vulnerability to flood disaster can be minimized

Communities	Factors				
	Insurance	Training status	Community resources	Status of current plan	Total
Idu	3	15	10	-	28
Oyigbo	10	4	10	-	24
Ubeta	7	14	5	1	27
Ulo	-	10	2	-	12
Odieke	5	5	-	-	10
Ogbologbolo	3	5	6	5	19
Oshi	3	-	3	-	6
Betterland	2	2	-	-	4
Ususu	1	9	25	-	35
Kanusha	-	4	5	-	9
Total	34	68	66	6	172

Source;Author's Field work, 2016

Table 4.10 above show individuals residing in the various communities that make up the study area response on how vulnerability to flood disaster can be minimized out of the 172 people under study in the 10 communities, opinions were based as follows, Community

Resources (66 persons), Training status (68 persons), Insurance (34 persons), and status of current plan (6 persons).
Thus with the analyzed result it implies that Training Status of major stakeholders involved in Disaster Management is a major criteria on how vulnerability to flood disaster can be minimized

4.6 Areas that are Vulnerable to flooding;

The table 4.11 showed respondents opinion on areas that are vulnerable to flooding in the study area.

4.11; Areas that will be most vulnerable to flooding

ITEMS	**4 SA**	**3 A**	**2 SD**	**1 DISAGREE**	**TOTAL**	**MEAN**	**DECISION**	**Rank**
High density markets/residential areas	**100(400)**	**99(297)**	**46(92)**	**5(5)**	**794**	**3.07**	**Accept**	**2nd**
Poor residential/office building structure	**109(436)**	**57(171)**	**75(150)**	**9(9)**	**766**	**3.06**	**Accept**	**3rd**
Unplanned communities/town	**150(600)**	**75(225)**	**16(32)**	**9(9)**	**866**	**3.46**	**Accept**	**1st**
Communities experiencing to flooding activities	**100(400)**	**40(120)**	**100(200)**	**10(10)**	**730**	**2.92**	**Accept**	**4th**

Source;Field Survey Data 2016

The figures in parenthesis are response frequencies

SA=STRONGLY AGREE, A=AGREE, D=DISAGREE, SD=STRONGLY DISAGREE
Likert mean score=2.5

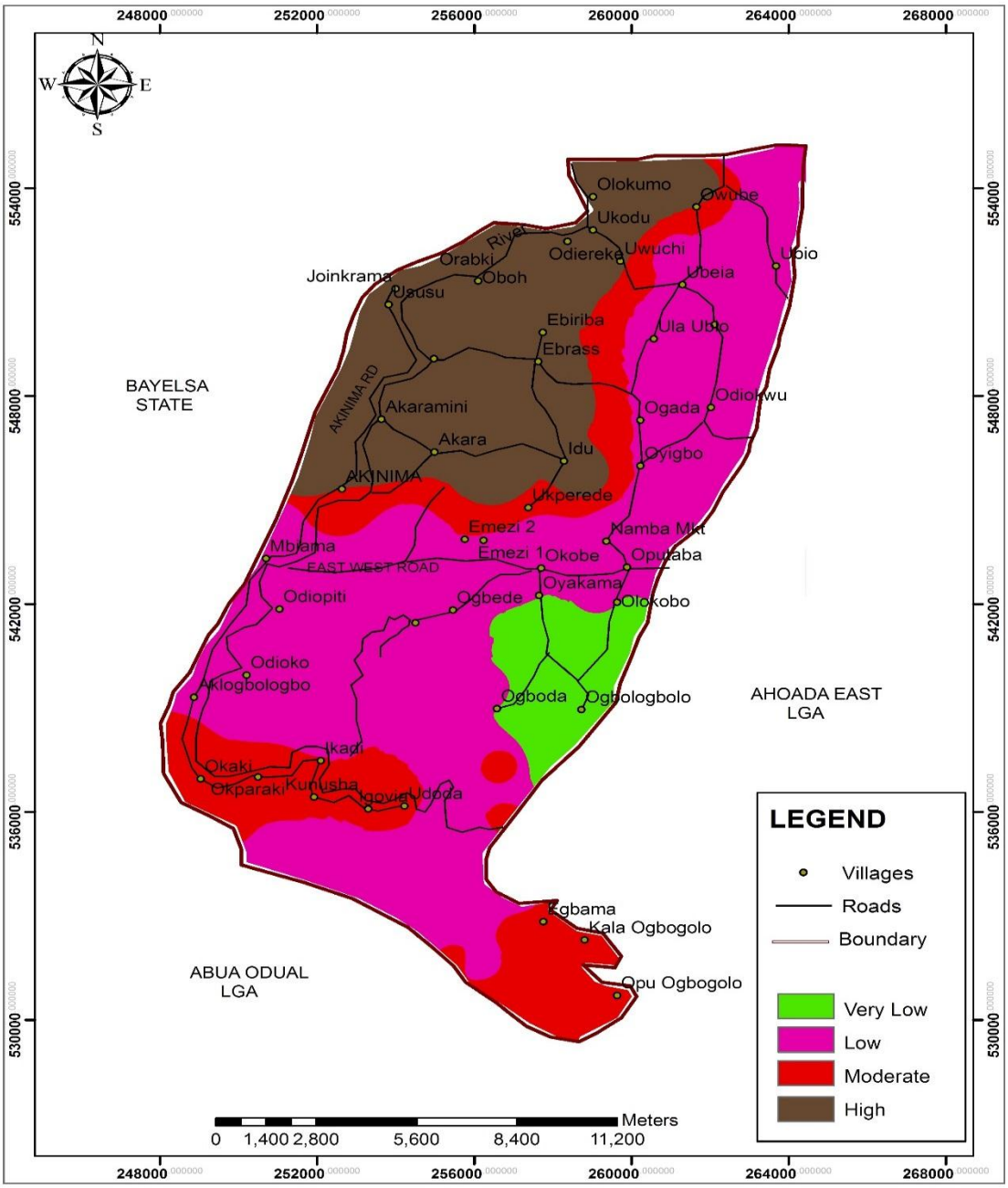

Fig 4.2; vulnerable areas in the study communities

Table 4.3 and Fig 4.2shows result of the area that is vulnerable to flooding. The result shows that unplanned communities and town ranked 1st with a mean Likert score of 3.46. The table also revealed that, High density markets/residential areas, poor residential/office building structure and community experiencing oil bunker activities 2nd, 3rd, and 4threspectively. From the findings it can be seen that the areas that are unplanned are the places pruned to flood disasters.

4.7 Adaptive strategies adopted by the people

The table 4.12 showed respondents' opinion on the adaptive strategies adopted towards the flood disaster.

4.12What are the adaptive strategy adopted by the people?

Communities	Adaptive strategies						
	Environmental policy reforms	Appropriate infrastructural investment	Change in water and land use mangement	Capacity building to integrate climate change	Developing state backed insurance scheme	Development of flood control and monitoring mechanism	Total
Idu	1	10	-	4	-	13	28
Oyigbo	5	9	-	5	-	5	24
Ubeta	7	10	-	-	5	5	27
Ulo	3	-	-	-	-	9	12
Odieke	2	2			-	6	10
Ogbologbolo	3	4	-	-	2	10	19
Oshi	2	2	-	-	-	2	6
Betterland	2	-	-	-	-	2	4
Ususu	10	5	-	-		20	35

Kanusha	4	5	-	-	-	-	9
Total	39	47	-	9		72	172

Source: Author's fieldwork, 2016

Table 4.11 above show individuals residing in the various communities that make up the study area response on adaptive strategy adopted by the people to the flooding, out of the 172 people under study in the 10 communities, opinions were based as follows, Development of flood control and monitoring mechanism (72 persons), Appropriate infrastructure Investment (47 persons), Environmental Policy reforms (39 persons), and Capacity building to integrate climate change (9 persons).

Thus with the analyzed result it implies development of flood control and monitoring mechanism is the adaptive strategy adopted by the people to flooding in AWELGA.

4.8 Discussions of Findings

Discussion arising from the analysis of the study based on research question one which covered about 10 communities in AWELGA show individuals residing in the various communities that make up the study area response on the causes of flooding disaster, The analysis was done in which is been reflected in Plates 1, 2, and 3order to know the major causes of flood disaster in the study area if it was the act of nature or act of man. Result revealed from responses that it is the act of nature as response attributed it to heavy rainfall as the major cause

Further discussion on research question 2 reveals that flood outbreak does not occur frequently in the study area this indicates that it only occur during the rainy season

Analysis of research question 3 shows that majority of the respondents had the opinion that poor town planning was a major factor militating against efficient management of flood disaster in AWELGA . This should serve as a case study for those who are in charge and appropriate measure should be taken to stop haphazard planning style.

Discussion on research question 4 by respondents living in communities where flood occurs indicates that unplanned communities/towns are area vulnerable to flooding activities

While Development of flood control and monitoring mechanism was the major adaptive and mitigation strategy adopted by the people to flood disasters

Plate 1.A typical flooded community in Ubeta community

Plate 2; A flooded community in ogbologbolo community

Plate 3;A school affected by flood

Hypotheses:

Flood disaster does not affect lives and properties in the study area

Summary of regression analysis between flood disaster variables and Lives and properties in the study area

Variable	Beta Estimate	Std. Error	T	Sig	Remark
(Constant)	-	.297	7.716	.000	
Flood disaster	**.148**	**.026**	**2.716**	**.007**	**Reject Ho**
R	.164				
R^2	.027				
Adjusted. R^2	.023				
Standard Error	0.82683				
D-Watson	1.545				
F Value	7.346				

Source: Field Survey, 2016.
Dependent variable (lives and properties)

Decision:

The overall fit of the regression model is good given the ANOVA F-value of 7.346 and significant at 0.05 critical level.

The Durbin Watson statistic which measure the serial correlation of the variables shows 1.545

Since the value is greater than one, it is an indication that there is autocorrelation among the successive values of the variables in the model. Hence, linear relationship exists between the dependent and independent variable of the model.

In addition, each independent variable is evaluated to determine their contribution to the overall model and thus decide whether to accept or reject the earlier stated hypotheses. The absolute value of Beta estimate (β) is used in order to compare and determine the influence of the independent variables on the dependent variable. Table shows that flood disaster is a good predictor of lives and properties under study. Specifically, at 0.05 probability level, flood disaster (β= 0.148; t=2.716; p< 0.01) is significant towards lives and properties. It can be observed that flood disaster positively correlated toward predicting changes in lives and properties since their probability level was greater than 0.01. Thus, the null hypothesis was rejected and alternate hypothesis was accepted.

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.164[a]	.027	.023	.82683	.027	7.342	1	265

a. Predictors: (Constant), flood_disaster

b. Dependent Variable: lives_and_properties

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.020	1	5.020	7.342	.007[b]
	Residual	181.168	265	.684		
	Total	186.187	266			

a. Dependent Variable: lives_and_properties

b. Predictors: (Constant), flood_disaster

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.290	.297		7.716	.000
	Flood_disaster	.070	.026	.164	2.710	.007

a. Dependent Variable: lives _and _Properties

ANALYSIS OF THE VULNERABILITY AND ADAPTIVE MEASURES TO FLOOD DISASTER IN AHOADA WEST L.G.A

Hypotheses:

There is no significant effect of the adaptive measures to flood disaster in the study area.

Summary of regression analysis between adaptive measures variables and Flood disaster in the study area

Variable	Beta Estimate	Std. Error	T	Sig	Remark
(Constant)	-	.047	.097	.000	
Adaptive measures	**.148**	**.017**	**28.610**	**.923**	**Reject Ho**
R	.869				
R^2	.755				
Adjusted. R^2	.755				
Standard Error	.22574				
D-Watson	2.326				
F Value	818.526				

Source: Field Survey, 2016.
Dependent variable (flood disaster management)

Decision:

The overall fit of the regression model is good given the ANOVA F-value of 818.526 and significant at 0.05 critical level.

The Durbin Watson statistic which measure the serial correlation of the variables shows 2.326 Since the value is greater than one, it is an indication that there is autocorrelation among the successive values of the variables in the model. Hence, linear relationship exists between the dependent and independent variable of the model.

In addition, each independent variable is evaluated to determine their contribution to the overall model and thus decide whether to accept or reject the earlier stated hypotheses. The absolute value of Beta estimate (β) is used in order to compare and determine the influence of the independent variables on the dependent variable. Table shows that crude oil exploration is a good predictor of quality of life the under study. Specifically, at 0.05 probability level, adaptive measures (β= 0.148; t=28.610; p< 0.01) is significant towards flood disaster management. It can be observed that adaptive measures positively correlated toward predicting changes in flood disaster management since their probability level was greater than 0.01. Thus, the null hypothesis was rejected and alternate hypothesis was accepted.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.869[a]	.755	.755	.22574	.755	818.526	1	265	.000	2.323

a. Predictors: (Constant), adaptive_measures

b. Dependent Variable: flood_disaster

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.710	1	41.710	818.526	.000[b]
	Residual	13.504	265	.051		
	Total	55.213	266			

a. Dependent Variable: flood_disaster

b. Predictors: (Constant), adaptive_measures

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.005	.047		.097	.923
	adaptive_measures	.472	.017	.869	28.610	.000

a. Dependent Variable: flood_disaster

CHAPTER FIVE
SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 Summary

The summary of major findings shows that:

- The most common cause of flood disaster is Heavy Rainfall
- Majority of the respondents had their opinion that Flood outbreak isn't that frequent
- Majority of the respondents in both political zones had the opinion that poor town planning is a major factor militating against efficient management of flood disaster.
- Majority of the respondents strongly agreed that Unplanned communities and towns ranked 1st in the Likert scale and it is concluded that these are areas that are most vulnerable to flood outbreak
- Majority of the respondents in the area had the opinion that the appropriate adaptation and mitigation strategy to flood disaster that has been adopted by the people is Development of flood control and monitoring mechanism.

5.2 Conclusion

The study was carried out to analyze the vulnerability and adaptive measures to flood disaster in Rivers State focusing on Ahoada west local government area.

Structured questionnaire was used in collecting data from a total of number of one hundred and eighty (180) respondents in Ahoada west local government area out of which one hundred and seventy two (172)were retrieved. Data for this study were collected from primary and secondary sources. The primary source was from structured questionnaire as mentioned above while the secondary data was collected from books, journals, past student project newspaper etc. The data for this study were analyzed with simple descriptive statistical tools like frequency and percentage.

The study analyzed the socio-economic characteristics of recipient in the study area, identified the causes of flood outbreak, ascertained how often flood outbreak occurred in the study area, identified factors militating against the efficient management of flood disaster and how

vulnerability of flood disaster can be minimized and identified in areas most vulnerable to flood disaster and adaptive strategies adopted by the people.

5.2 RECOMMENDATIONS

Based on the findings, the following recommendations were made.

Firstly, those officials of government and non-government agencies involved in Disaster Risk Reduction activities should be well trained in line with global standard. In addition, the administration of Disaster Risk Reduction policies should be better supported financially and otherwise for effective monitoring and enforcement of DRR laws this is based on the results that shows that majority of the respondent agreed that poor town planning was a major factor militating against efficient management of flood disaster

Secondly, DRR policies should embrace inputs from indigenous people in terms of participation and or consultation to help in the implementation process especially in the area of monitoring for compliance. Policies must also take account the real indigenous socio economic, and cultural characteristics of the people. Community or public awareness should be highly encouraged; the people should be educated or enlightened through journals, workshops, community town hall meetings and enlightenment campaign as a means to of information of information by the government and non-governmental agencies to disaster prone communities

At last there ought to be association and coordinated effort with different partners required in DRR exercises over the globe so as to guarantee consistence with worldwide best practices.

REFERENCES

Abdul-akeem., and Van der Veen, A. (2007): Flooding and Consequent Structural Economic Effects; A Methodology. In S. Begum, M. J. F. Stive, 2001.

Adger et al,(2005): Ecological Studies of Aquatic Organisms in the Mackenze and Procupine River Drainage, in Relation to Sedimentation. Canadian Fisheries and Marine Serv.Tech. Report No.547, pp:86

Alleby, E.and Frank,T. (2005): Human Adjustment to Flood Hazard. Topic in Applied Geography, longman, London.

Ariyabandu and Wick. (2005) :Hydrology and Water Resources. In Tukur AL, Adebayo AA.,Galtima A, editors; The land and people of the Mambilla Plateau. Yola, HeinemannEducational Books (Nig.) Limited; 2005

Askew, H. (1999) (Eds.): *Flood Risk Management in Europe: Innovation in Policy and Practice,* Springer.

Barrendo and Demicheli .(2003) : Implementing Disaster policy, Washington DC; congressional Quaterly Press, Tokyo, United Nations University Press: 9-54.

Bagardi, N. and Brauch, C. (2005): Catastrophic Floods and their Risk in the Rivers of Albania. IAHS publication, 239:83-85.

Birkmann, J.(Ed) (2006): . *Measuring vulnerability to natural hazards.* Towards Disaster resilient societies. Tokyo, New York, Paris, UNU Press.

Black , P.D. (1992): Practical Research Planning and Design. New jersey Prentice Hall.

Blaikie, P., Cannon, T., Davis, I., & Wisner, B. (1994). At risk: natural hazards, people's vulnerability and disasters. London: Routledge

Bohle, H.G.(2001): *Vulnerability and Criticality*: in plate , E J. end. Environment and Human Security contribution to a workshop bonn. 23-25. October 2001. Bonn pp3/1-36.

Bola, A. (2005): Vulnerability assessment of urban flooding in Nigeria: Abeokuta Flood of 2005. Natural Hazards. 2010;56(1):215-31.

Cannon, T. (2000). Disasters. In: Parker, D. J. (Ed.) *Floods.* Routledge.

CIESIN, (2011): Centre for International Earth Science Information Network. The Earth Institute at Columbia University. October 2011.

Christopherson, R. W. (1997): Goesystems: An Introduction to Physical Geography. London:Prentice – Hall. (Third Edition). pp. 423

Chambers & Conway (1989) ;Environmental issues in Europe, incidence and Relationship to economic development,234-244

Deutsch, P. (2014*): Flood Plain Analysis And Risk Assessment of Lothar Khola,* M.Sc, Thesis , Tribhuvan University,Institute of Forestry, Pokhara , Nepal.

Dow, K., and Dowing, T. (2006): The Atlas of Climate Change: Mapping the World's GreatestChange. Brighton: Earthscan; pp. 64 – 77.

Etkin et al (2003); valuing wetlandGuidance for valuing the benefit Derived from wetland Ecosystem Ramsor Technical report, No 3,CBD Technical Series No.27

Famous, D. (2014): *The Need for Rethinking the Concepts of Vulnerability and Risk from a Holistic Perspective:* A Necessary Review and Criticism for Effective Risk Management, in Bankoff. G.F et al(2013) Mapping Vulnerability Development and People, Earthscan,London.

Gurenko, E (2004): Introduction, In: E. Gurenko. (Ed). *Catastrophe Risk and Reinsurance: A Country Risk Management Perspective),* Risk Books, Haymarket.

Global facility .(2009): Article on development and strategy in Africa.Vol 2 page 3

Gwary, D. (2010): Climate change, food security and Nigeria Agriculture. *Paper presented at the Workshop on the challenges of climate change for Nigeria*. NISER 19th-20th May, 2008.

Hannan, T. (2002): Climate Change and Nigeria. A guide for Policy Makers. The publication of the Nigerian Environmental study Action Team. (NEST).

Hualou, A.(2011)*: Flooding and influence of urban planning*. Urban Design and planning(ICD). 164(3):Lagos, Nigeria.

Kaji ,R. (2012): An Assessment of the effects of the 2012 Floods in Taraba State, Nigeria. Paper delivered at the Annual National Conference, organized by the Association Hydrological Science at University of Agriculture, Abeokuta, Ogun, state, Nigeria.

Kaplan, D. (1996): "*The risk triangle''.*in J.Ingleton,end, National Disaster Management, London: Tudor Rose, pp.102-103.

Kent,A. (1994): *The ends of the earth: A journey at the dawn of the 21st century*. New York: Random House.

Lindsel and Poter (1998): Institute of Cultural affairs (1998), article on sustainable development In the tropics Nkala et al (2011), Proposing a development road map for developing countries, Vanguard newspaper

Markarfi, J. Sangodoyin, A.Y.,Adamowski,J. (2010): Flood routing in the Ogunpa River in Nigeria. Journals of Environmental Hydrology. (18): 25-32.

Munich Re .(2002): Flood routing in the Ogunpa river in Nigeria. Journals of Environmental Hydrology.

NPC ,(2006) : National Population Commission Census Data,2006 Nigeria census.

Nipon ,A and Pitson J, (2012) : Geospatial techniques for the assessment and analysis of flood risk along the Niger-Benue Basin in Nigeria. Journal of Geographic Information Systems. 2012 ;5:123-135.

Nott,E.(2006): "*Multicriteria analysis for flood vulnerable areas in Hadejia-Jama'are River Basin,* Nigeria", European Journal of Scientific Research, 42(1), pages 71-83.

Olayinka, C. (2013): Extreme river flood events in Nigeria: A geographical perspective Nigerian Journal of Geography and the Environment.1:170-179.

Olujimi, P. (2007) :Remote sensing satellite missions for disaster management: Benefits to Nigeria Nigeria Journal of Space Research. (4):32-38

Olanrewaju, D., & Fadairo, G. (2003). Flooding as an induced environmental problem: A case study of Ala River in Akure, *Nigeria. Journal of Nigerian Institute of Town Planners*, *XVI*, 85-96.

Ologunorisa TE, Adejumo A .(2005): Public perception of flood Hazard in the Niger Delta, Nigeria. Environmental Science Journal. Vol,25(1):39-45.

Parker, L. (2000): Flooding and Flood Management in H.I. Jimoh and I.P. Ifabiyi(ED) Contemporary Issues in Environmental Studies Ilorin, Haytee Press and Pub.Co.Ltd.Pp. 100-109.

Rivers State Ministry of Information,(2006): Archives on the history of Ahoada West LGA.

Satterthwaite, D., Huq, S., Pelling, M., Reid, H., & Romero Lankao, P. (2007): *Human Settlements Discussion Paper Series Theme: Climate Change and Cities - 1: Adapting to Climate Change in Urban Areas. The possibilities and constraints in low- and middle-income nations.* Retrieved fromhttp://www.rockfound.org/initiatives/climate/climate_change.html

Siyanbade, T.(2006): Impact and risk assessment management of flood disasters in Lokoja. Paper delivered at the 5th Annual National Conference of the NigerianAssociation of Hydrological Sciences (NAHS) at the University of Nigeria, Nsukka,2006;31-37

Suda,D and Chauhal(2008): Disaster Risk Management system Analysis. A guide Book

Torrey, P. (1998): *Urban vulnerability and technological hazards in developing societies*. Article 236. Newark, DE, University of Delaware.Disaster Research Centre.

UN/ISDR, (2004):Living With Risk, A Global Review of Disaster Reduction Initiatives. Geneva , United Nations.

UN-HABITAT. (2003): State of the World's Cities Report 2010/2011. *Press Kit.* Retrieved October, 20, 2011

UN/ISDR (2002): Words into action; a guide for implementing the hyogo framework. Geneva.

WCED. (1987): Our *Common Future*. Oxford: Oxford University Press

Wisner, B. (2002): "Flood prevention and mitigation in the people's republic of Mozambique", Disasters. 3(3), P. 293-306.

World Bank (2004): *Natural Disasters: Eluding Nature's Wrath*, mimeo.

Yande, F.(2009): The surface of vulnerability: An analytical framework for examining environmental change. in : *Global Environmental Change*. vol.15, pp. 214-278..

APPENDIX I

Center of Disaster Risk Management
and Developmental Studies
University of Port Harcourt,
Rivers State.
17th March.2016

TO WHOM IT MAY CONCERN

I am a Post graduate student of University of Port Harcourt carrying out a research on **ANALYSIS OF VULNERABILITY AND ADAPTIVE MEASURES TO FLOOD DISASTER IN AHOADA WEST LOCAL CITY LOCAL GOVERNMENT AREA OF RIVERS STATE in** partial fulfillment of my Master's Degree in Disaster Risk Management and Development studies.

I hereby solicit your cooperation in providing information. This questionnaire is purely for academic purpose

Thank you

Yours Sincerely
VIVIAN ADAKU NWOKE

QUESTIONNAIRE ON ANALYSIS OF VULNERABILITY AND ADAPTIVE MEASURES TO FLOOD DISASTER IN AHOADA WEST LOCAL GOVERNMENT AREA OF RIVERS STATE

Please Complete The Following Questions By Marking The Spaces Provided With A Tick (√) Or Filling Up The Short Answers To Questions As Required Below.

PART I - SOCIO ECONOMIC INDICATOR

1 Name of Community;
(a) Idu (b) Oyigbo (c) Ubeta (d) Ulo (e) Odieke
(f) Ogbologbolo (g) Oshi (h) Betterland (i) Ususu (j) Kanusha

2. Gender: (a) Male (b) Female

3. Age:

(a) Less than 18yrs (b) 18-30 (c) 31-45 (d) 46- 60 (e) Above 60yrs

4. Marital Status:

(a) Single (b) Married (c) Widowed (d) Separated

5. Educational Background:

(a)No education (b) Non Formal (c) Primary (d) Secondary

(e) Tertiary I - ND, NCE, HND (f) Tertiary 2- B.Sc, PGD, M.Sc, PhD

6. Estimated Monthly Income:

(a)Less than N10,000 (b) N10,000 — N20,000 (c) N20,000- N30,000

(d) N30, 000— N40, 000 (e) N40,000 — N50,000 (f) Above N50,000

SECTION B
INTRUCTIONS: PLEASE READ THE FOLLOWING STATEMENTS AND RATE THEM BY TICKING (√) THE COLUMN THAT BEST CORRESPONDS WITH YOUR RESPONSE.

7. What are the possible causes of flooding?

A. Blocked Drainage Channel
B. Houses on flood plains
C. Absence of drainage
D. Poor heading to prediction
E Heavy rainfall
F. other mention……
…….

8. Which areas do you think are most vulnerable to flood outbreak

	Vulnerable Areas	SA	A	D	SD
1	High density markets/residential areas				
2	Poor residential/ office building structure				
3	Unplanned communities/towns				
4	Communities experiencing flooding activities				

The figures in parenthesis are response frequencies

SA=STRONGLY AGREE, A=AGREE, D=DISAGREE, SD=STRONGLY DISAGREE

9) Kindly TICK the appropriate adaptation and mitigation strategies to flood disaster risk adopted by the people
a) Environmental policy reforms
b) Appropriate Infrastructure Investment
c) Change in water and land use management
d) Capacity building to integrate climate change
e) Developing state backed insurance scheme
f) Development of flood control and monitoring mechanism

10)How frequent does flood occur?
a) Very Often
b) Not Very Often

11) What are the factors militating against efficient management of flood disaster?

a) Weak governance
b) Poor town planning
c) Rising Population and increased density
d) Others mention……
……

12) Flood disaster gives rise to economic hardship as daily/monthly income drops.
a).Strongly Agree
b) Agree
c).Disagree
d) Strongly Disagree

13) From your observation what are the perception of the people towards flood disaster preparedness and reduction strategies?
a) high
b) Medium
c) Low

14) In your view how do you think the vulnerability to flood disaster can be minimized?
a) Insurance
b) Training status
c) Community resources
d) Status of current plan

THANK YOU VERY MUCH FOR YOUR TIME AND RELEVANT RESPONSES.