



THE CHALLENGES OF URBAN FLOOD DISASTER MANAGEMENT IN NIGERIA: A CASE STUDY OF JALINGO LGA, TARABA STATE NIGERIA

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ABSTRACT

Flood hazards are the most common and destructive of all natural disasters. This study examines some of the challenges of urban flood disaster management in Nigerian cities using the case of Jalingo metropolis in Taraba State, Nigeria. Data for this study was generated through participant observation, interview with relevant stakeholders and information from Nigerian Newspapers and internet. The result of this study shows that the amount of damages to properties and number of people affected are enormous. The result also shows that disaster management response by government agencies, voluntary organizations and civil societies was very poor in the 2011 flood disaster compared to the 2005 flood disaster. Some of the challenges to disaster management response in the study area include poor logistics and inadequate trained personnel. This study recommends the training of SEMA personnel and provision of adequate logistics such as communication gadgets, vehicles etc.

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INTRODUCTION

Flood hazards are the most common and destructive of all natural disasters. Each year, flood disasters cause tremendous losses and social disruption worldwide (Vanneville *et al.*, 2011). The concept of flooding has been described by many scholars from different disciplines such as Geography, Hydrology and Geology among others. Flood has been described as the oldest and most devastating catastrophe throughout the history of man-environment relationship. Floods remain one of the major causes of natural disasters affecting society. Altogether floods accounted for about 30 percent of all natural disasters and 40 percent of the fatalities (Ologunorisa, 2006). It is well recognized that the majority of all deaths and damage from tropical storms is the result of flooding (DHA, 1994).

Ologunorisa (2006) observed that since man is unable to control the basic atmospheric processes which produce most floods, he has attempted to adjust to the hazard by means of flood alleviation projects concerned with land based phase of hydrologic cycle. Through the application of high technology and the massive investment of capital, the flood threat to human life has decreased appreciably in most developed countries within recent decades (Smith and Tobin, 1979). This improvement has been achieved largely as a result of better flood and hurricane warning measures which have permitted the temporary evacuation of hazard areas. Despite considerable investment in schemes designed to reduce the flood problem, mean annual losses have continued to rise (Ologunorisa, 2006),

especially in developing countries and Nigeria in particular. Flood disaster affects people's live and livelihoods in many ways; this include lost of lives, injury, illness or stress (physically and psychologically), destruction of houses and disruption of social networks. In August 2011, flood devastated three north eastern states of Borno, Bauchi and Taraba, washing away over 4000 farms and destroying over 5000 houses (Timothy, 2011). In Taraba State alone, the flood destroyed over 2,068 farms, 363 houses and partially affected 1,562 houses. Over 6,213 persons were internally displaced and 1,420 families affected by the flood in 4 LGAs, Jalingo, Lau, Ardo Kola and Yorro (Timothy, 2011).

Many scholars have studied the problems of flooding in most parts of Nigeria, especially the urban areas. The causes of flooding according to their reports ranges from hydrological changes associated with urban centers (Akintola, 1978,1982; Enendu,1981; Gobo, 1988, 1991), topographical conditions, rainfall characteristics and land uses. Human factors responsible for flooding include increase in paved area, refuse disposal habit and occupation of the flood plain (Oriola, 1994 and Babatolu, 1996, 1998). NEST (1991) have extensively studied the effects of urban flooding in Nigeria while Ayoade and Akintola (1980), Oriola (1994), Ologunorisa (1999), Bekwe (1998) and Ologunorisa and Adeyemo (2005) have studied extensively on the perception and adjustment to flooding in Nigeria cities. However, no study has been carried out on the challenges of urban flood disaster management in the study area, particularly potential

intervention tools and actions taken by different agencies involved in disaster management. This study therefore examines some of the challenges of urban flood disaster management in Nigerian cities using the case of Jalingo metropolis in Taraba State Nigeria. The specific objectives include;

- i. To examine disaster management response to urban flooding in the study area.
- ii. To examine the challenges of urban flood disaster management in the study area.
- iii. To recommend measures of overcoming this challenges in the study area.

Significance of the Study

In view of the ongoing global warming and the increasing frequency of extreme weather events, it is evident that we have to live with natural hazards such as floods. This study is therefore significant because it will help in strengthening capacities to reduce damages associated with natural hazards such as flood in the study area. It will equally help policy makers and all stakeholders in disaster management in the planning and design as well as implementation of disaster management response in the study area. The study will also provide a baseline data for future studies on flood disaster management in Jalingo Metropolis.

MATERIALS AND METHODS

Both primary and secondary data were used in this study. The primary data include participant observation and interview with relevant stake holders such as the Nigerian Red Cross Society and Taraba State Emergency Management Agency (SEMA). The secondary data include information on flood events recorded in Nigerian Newspapers and internet, date of flood events, affected communities, number of people affected, associated hazards, relief materials distributed to victims, cost of relief materials, government response and challenges of disaster management among others. The information is meant to help us understand the magnitude of flood disaster in Nigeria over time and evaluate disaster management response strategy and challenges in the study area.

Definition of operational concept

Disaster Management

The definition of a disaster is sometimes vague. In the glossary of the United Nation's International Strategy for Disaster Reduction (UN-ISDR, s.d.) 'a disaster' is defined as "a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources" (Vanneuville *et al.*, 2011). According to Waeckerle, (1991), disasters are tragedies that overwhelm our communities, destroy our property and harm our population. Disaster management can be regarded as the reaction on an event, which is indicated by the response and recovery phase in the scheme of

Lumbroso (2007). Disaster management is the process of addressing an event that has the potential to seriously disrupt the social fabric of the community. Disaster management is similar to disaster mitigation, however it implies a whole of government approach to using community resources to fight the effects of an event and assumes the community will be self-sufficient for periods of time until the situation can be stabilized. Disaster management can help minimize the risks of flood disaster through early warning, provide developmental plans for recuperation from the disaster, generate communication and medical resources, and aid in rehabilitation and post-disaster reconstruction.

According to the United Nations Development Programme, Disaster management is the body of policy, administrative decisions and operational activities required to prepare for, mitigate, respond to, and repair the effects of natural or man-made disasters. Disaster Management has to do with a full range of activities that are done in security and natural hazard events. The role of any disaster management authority all over the world is to regulate, coordinate, develop systems and train technical manpower for disaster management. It is as a result of this that the federal government of Nigeria established National Emergency Management Agency (NEMA) to respond to emergency cases in terms of response, relief and mitigation to victims of disaster such as, fire, flooding, storm, accident, among others. The National Emergency Management Agency (NEMA) was established through Decree 12 of 1999. By this decree, the Federal Government vested the authority for managing disasters in Nigeria in NEMA (Adeoye *et al.*, 2009). According to the provisions of this law, the Agency shall;

- i. Formulate policy on all activities relating to disaster management in Nigeria and coordinate the plans and programmes for efficient and effective response to disasters at national level.
- ii. Monitor the state of preparedness of all organizations or agencies which may contribute to disaster management in Nigeria.
- iii. Collate data from relevant agencies so as to enhance forecasting, planning and field operations of disaster management.
- iv. Educate and inform the public on disaster prevention and control measures.
- v. Coordinate and facilitate the provision of necessary resources for Search and Rescue and other types of disaster curtailment activities in response to distress calls.
- vi. Coordinate the activities of all voluntary organizations engaged in emergency relief operations in any part of the Federation.
- vii. Receive financial and technical aid from international organizations and non-governmental agencies for the purpose of disaster management in the country.
- viii. Collect emergency relief supply from local and foreign sources and from international and nongovernmental agencies.

- ix. Distribute emergency relief materials to victims of natural or other disasters and assist in the rehabilitation of the victims, where necessary.
- x. Liaise with State Emergency Management Committees to assess and monitor, where necessary, the distribution of relief materials to disaster victims.

It is obvious that the success of NEMA will be judged by the efforts it puts in place to reduce loss of life and property, minimize suffering and disruption caused by disasters; prepare the nation to address the consequences of disasters; serve as the Nation's portal for emergency management information and expertise (Adeoye *et al*, 2009).

Description of Study area

Jalingo LGA is roughly located between latitudes 8°47' to 9°01'N and longitudes 11°09' to 11°30'E. It is bounded to the north by Lau Local Government Area, to the east by Yorro Local Government Area, to the south and west by Ardo Kola Local Government Area (Fig. 1). It has a total land area of about 195km². Jalingo LGA has a population of 139,845 people according to the 2006 population census, with a projected growth rate of 3% (Shuwabolo *et al*, 2009). Presently, it has a projected population (2011) of 170,483 based on the 2006 population census. The relief of Jalingo LGA consists of undulating plain interspersed with mountain ranges. This compact massif of rock outcrops (mountains) extends from Kona area through the border between Jalingo and Lau LGAs down to Yorro and Ardo Kola LGAs in a circular form to Gongon area, thus given a periscopic semi-circle shape that is almost like a shield to Jalingo town.

- iv. Jalingo metropolis is drained by two major rivers Mayogwoi and Lamurde (Fig. 1), which took their source from the mountain ranges in Yorro LGA and emptied there content into the Benue river system at Tau village. The valleys of these rivers are dotted with ox-bow lakes which are as a result of depositional activities. Jalingo LGA has tropical continental type of climate characterised by well marked wet and dry season. The wet season usually begins around April and ends in October. The dry season begins in November and ends in March

The LGA has a mean annual rainfall of about 1,200mm and annual mean temperature of about 29°C. Relative humidity ranges between 60 – 70 per cent during the wet season to about 35 – 45 per cent in the dry season. Vegetationally, Jalingo is located within the northern guinea savanna zone characterized by grasses interspersed with tall trees and shrubs. Some of the trees include locust bean, sheabutter, eucalyptus, baobab and silk cotton tree. The major ethnic groups of Jalingo LGA are the Fulani, Jibu Kona and Mumuye, while other ethnic groups such as Hausa, Jenjo, Wurkum and Nyandang are also found. Hausa language is widely spoken as a medium of communication for social and economic interactions.

RESULTS AND DISCUSSION

Government and Stakeholders Response to Flood Disaster in the study area

The findings of this study shows that in the 2005 flood disaster in Jalingo metropolis, government agencies and stakeholders responded promptly and made concerted effort to disperse the crowds from the Nukkai Bridge because of their perceived danger of the bridge collapse. Unfortunately, many of them lost their lives when the Nukkai Bridge suddenly collapsed including an Assistant Police Commissioner (IFRCRCS, 2005). However, during the 2011 flood disaster in Jalingo metropolis, the disaster management response was very poor. Many people gathered on the over flooded Jalingo – Wukari road and the Jalingo bye pass road at the edge of the bridge as seen in plates 1 and 2 to catch a view of the flood extent. The people forgot that this was exactly how over 100 persons were drawn in the last flood disaster when the Nukkai bridge suddenly collapsed. SEMA/NEMA personnel went round on situation assessment of the level of damages caused by the flood. No effort was made to disperse the crowds from the over flooded Jalingo – Wukari road which was a potential disaster scene during the flood.



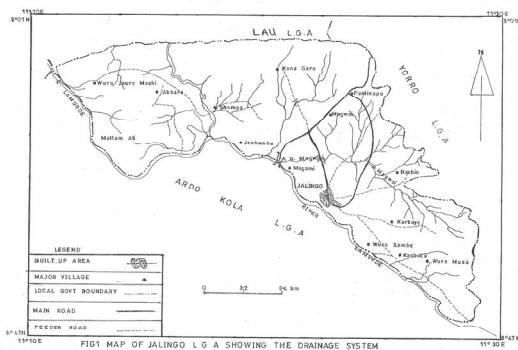
Plate 1 Helpless crowds on the over flooded Jalingo – Wukari road

The situation reveals the weakness of the State Emergency Management Agency (SEMA) and various stakeholders in responding to emergency disaster situations in the study area. Even NGOs and members of the Nigerian Red Cross Society were not seen at the scenes of the incidence through out the period of the flood.



Plate 2 The over flooded Jalingo – Wukari road

SEMA in responding to the flood disaster, set up committees in the affected parts of Jalingo town to register names of affected persons and level of damages and losses. SEMA equally set up camps for internally displaced persons. These IDPs were manned by members of the Nigerian Red Cross Society. International organizations such as the United Nation International Children's Education Fund (UNICEF), World Health Organization (WHO) and non governmental organizations (NGOs) such as Theophilus Danjuma (T.Y.) Foundations donated relief materials to the flood victims. More than fifty (50) volunteers were mobilized before and during the relief food distribution (ReliefWeb report, 2005). The state government also purchased relief materials, including food items such as rice, beans, gari, vegetable oil, salt, and sugar which were distributed to the most affected families in the three internally displaced persons (IDPs) camps of Nukkai Primary School, Mafindi Primary School and Lamurde Primary School, Lamurde. The British Red Cross Small Scale Disaster Relief Fund supported the flood victims with non food relief materials and funds. The fund was used to support some 200 of the most affected families in the 2005 flood disaster. The IDPs were fed for about 30 days in the camps. The Taraba State Government gave the affected people in the three camps N10,000 each to rent an apartment anywhere in the State pending the allocation of land to the IDPs for rehabilitation and resettlement. This was because schools were about to resume normal academic session on 26th September, 2005 (Barde, 2005; IFRCRCS, 2005).



The State government also allocated land, some building materials and a token amount to the flood plain inhabitants to enable them relocate to other places. Unfortunately, many people refuse to relocate after collecting the compensation money, while others collected the compensation money and relocated after selling their plots to unsuspecting members of the public. This group bought the land and developed structures on them, leading to a vicious cycle of environmental degradation. Other beneficiaries of the land allocation sold their allocated plots and remained in their former houses (on the flood plain)(Field survey, 2011).

In the 2011 flood disaster, the state government also distributed relief materials such as wrappers, blankets, mats, foodstuffs and drugs worth millions of naira to the affected people in the various IDPs camps. The affected

people were asked to leave the IDPs camps after the second week of the flood disaster because of the resumption of schools. Government promised to contact them when the need arises. The government also spent 8.3million naira to flush out the 10 boreholes used for municipal water supply in the metropolis which were polluted by the flood. The pollution of the borehole by the flood forced the general public to depend on well and open surface water for their domestic uses. This made the State Ministry of Health to place communities along the riverine areas under health surveillance for any possible outbreak of epidemics. About 42 cases of cholera outbreak were reported in one of the IDPs camp at Mallam Gabdo.

Since the promulgation of the decree, NEMA has been very active in its activities and has proposed a National Contingency Plan for Disaster Response in order to put national response to disasters on a sound footing (Adeoye *et al*, 2009). The range of activities of the Agency includes search and rescue; property protection; securing law and order; mass care response; restoring the disaster affected area (recovery); and reducing vulnerability to future disasters. (Adeoye *et al*, 2009). It has been observed that the activities of NEMA so far especially to flood victims and to the urban slum dwellers in terms of relief and mitigation are sparse in literature. Disaster management cycle includes the following stages/ phases

1. Disaster phase
2. Response phase
3. Recovery/ Rehabilitation phase
4. Risk Reduction/ Mitigation phase
5. Preparedness phase

The disaster response phase is the period that immediately follows the occurrence of the disaster. In a way, all individuals respond to the disaster, but in their own ways. The ambulances and medical personnel arrive, remove the injured for transportation to medical camps or hospitals and provide first aid and life support. The public also take part in relief work. One can even find injured victims help other injured ones. Almost everyone is willing to help. The needs of the population during this phase are immediate medical help, food, clothing and shelter. Unfortunately, this was not the case in the 2011 flood disaster in the study area. The flood was very sudden that the people could not help rescuing their properties. Many became helpless when assistance was not forthcoming.

Disaster preparedness includes all of the activities that are carried out prior to the advance notice of a catastrophe in order to facilitate the use of available resources, relief, and rehabilitation in the best possible fashion. The Nigerian Meteorological Agency, NIMET, had earlier in February, 2011 predicted that the rains will be heavier this year (2011), between 300 and 1100mm³ in the North and 1200 to 2700 mm³ in the South (Anayochukwu *et al*, 2011). The forecast which was given by the chief meteorologist, Central Forecast Office, NIMET, also indicates that the intensity of the rains will be higher and that it will last longer. This, the report added, would have two-pronged impact on agriculture, that is affecting crops

negatively or positively, with negative effect on health, hydrology and infrastructure, and likely overflow or collapse of dams and bridges, and displacement of people (Anayochukwu *et al*, 2011). Experts warned that what was witnessed was a tip of the iceberg, as much heavier downpour is expected throughout the month of August and beyond. Like other things in Nigeria, this warning was not heeded to.

Challenges of Disaster management

- i. Taraba State SEMA, is a new agency established in 2009. The agency is still battling with a number of problems in an effort to establish itself properly.
- ii. Lack of skilled personnel in the various aspects of disaster management especially in project management and first aids services among others. Most staffs of SEMA were pooled staff from other Ministries and parastatals. There is thus a wide gap in terms of capacity building. This is further exacerbated by the lack of opportunity for training and re-training. This made it difficult for most government officials to adapt to code of conduct of humanitarian organizations in emergency disaster response.
- iii. Inadequate coordination among the various stakeholders, leading to disagreement on major issues and the taking of decisions that will impact positively on the affected persons. This is further worsened by poor funding of the agency by the government. The budgetary allocation to the agency often ends up as paper work.
- iv. Lack of vehicles and ambulances to facilitate the movement of disaster management personnel and volunteers greatly hampered coordination of efforts among various stakeholders. This led to delay in the distribution of relief materials to the affected persons in various locations and IDPs camps and quick response to emergency situations.
- v. Inadequate dissemination and sharing of information among state holders and donor agencies immediately and after a needs assessment or emergency response. For example, the report on the 2005 flood disaster in the study area indicates that the affected persons were allocated land to relocate and assisted with some building materials and token amount of money. Records of these were never published, neither will it ever be disclosed because government officials sees it as classified information. This also includes delay in sending in update reports from the field and donations received from various donor agencies.
- vi. One of the greatest challenges of disaster management in the study area is the politicization of the disaster management system. Most of the staff and members of the State Emergency Management and Relief Committees engage in discriminatory distribution of relief

materials instead of dealing directly with the Red Cross Society or groups that have the data on all IDPs. Several times, they collected names of beneficiaries from political office holders (ReliefWeb report, 2005). They starved donated relief items remained in government stores instead of distributing them immediately alongside with other relief items. Government officials also gave more to affected people outside the camps than those within the camps (ReliefWeb report, 2005).

Emergency response does not end with the event, but continues through cleanup and resettlement stages. People will want to know what assistance will be made available, who is responsible, and how to go about seeking that assistance. Government should develop clearly defined response policies and programmes in advance. In the absence of such policies, the response is often ad hoc, politically and emotionally motivated, and sets precedents that are not wise in the longer run.

CONCLUSION

This study has examined the various responses of stakeholders to flood disaster incidence in the study area. The findings of this study show that the state emergency management agency (SEMA) and the various disaster management stakeholders in the state have a weak capacity to respond adequately to emergency disaster situations in the study area. Some of the disaster management challenges include poor coordination, inadequate trained personnel and poor logistics. To minimize flood damage in the study area, the development of policies, strategies and plans to combat the risks associated with natural disasters such as flood should be based on a comprehensive risk assessment. This requires an integrated approach whereby a wide range of mitigation measures should be considered. A flood alert is issued well in advance of the actual arrival of floods to enable people to take appropriate measures and shift to safer places. Unfortunately, NIMET do not have all the sophisticated equipment that it needs to monitor the weather.

Recommendations

From the findings of the study, it can be seen that the state needs a better and effective disaster management response system to ensure the safety of its people and economy. The following recommendations are hereby presented.

The Nigerian Meteorological Agency should be well equipped with the necessary facilities to enable it meet up with the challenges of weather forecasts. This will also include increase in the number of weather observatory stations and network so as to be able to issue a flood early warning system with the capability to deliver reliable, timely and effective flood information at an appropriate response time.

The study also recommends effective and efficient coordination of activities between SEMA/NEMA and all the stakeholders in disaster management issues. This will

enhance prompt response to emergency disaster situation in any part of the country. This study further recommends the provision of the necessary logistics such as communication gadgets, vehicles and ambulances and capacity building through the training of personnel to enhance efficiency in disaster management response. There is need for adequate funding of the agency to enable them cope with challenges of emergency disaster management. This could be achieved through direct budgetary allocation to the agency. The activities of the agency could be improved by the establishment of local emergency management committee to cater for emergency disaster situation in study area.

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