



RESEARCH PAPER

The Impact of Flood on Socio-Economic Livelihood of Akare Community, Wushishi Local Government Area, Niger State, Nigeria

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ABSTRACT

The study assesses impact of flood on the socio-economic livelihood of Akare Community, Wushishi local government area of Niger state, Nigeria. A hundred questionnaires were administered and the data obtained were analyzed using simple percentages and charts. The results from the analysis revealed that about 84% of the respondents in Akare community said that flood occurred mostly at the event of rainfall intensity and amount. The heavy rainfall caused an overflow of river Mariga where there is a confluence near the village which over flown the inner based (river Akare and submerged the entire community). Other factors that substantially influenced flooding in the study area were identified. These had caused enormous damages to lives, properties, public utilities, farmlands and houses. From the analysis about 62% of the respondents said that less than 5 people had lost their lives and the percentage of farm land impacted by flood was over 75%. Flood mitigation measures such as use of sand bags bridges, river channelization, enlightenment and necessary legislation and enforcement are recommended to checkmate activities aiding flooding.

Keywords: flood, socio- economic livelihood; community; rainfall; damages

INTRODUCTION

Across the globe, floods have posed tremendous danger to people's lives and properties. Floods cause about one third of all deaths, one third of all injuries and one third of all damage from natural disasters (Askew, 1999 cited in Angela, 2011). In Nigeria, the pattern is similar with the rest of world. Flooding in various parts of Nigeria have forced millions of people from their homes, destroyed businesses, polluted water sources and increased the risk of diseases. Whereas flooding itself is a situation that results when land that is usually dry is covered with water of a river overflowing or heavy rain, flooding occurs naturally on the flood plains which are prone to disaster. It occurs when water in the river overflows its banks, or sometimes results from a constructed dam. Akare community is undergoing a terrible battle for survival over an unprecedented massive flood. The most recent 2012 flooding season has been described by the community as the worst in terms of the amount of rainfall received and level of impact. The floods caused displacement of people from their usual dwelling places resulting into varying impacts on infrastructure, crops, health, education, environment as well as

damage to property (NSEMA, Assessment of Floods Report, 2012).

Flooding mostly exacts adverse socio-economic impact on the wellbeing of flood prone communities. It does cause displacement of people, collapse of buildings, loss of lives, damage to valuable documents, unplanned migration, among others. Hence, significant information for people living in these flood prone areas is how often and how severe the flooding may be. Floods have benefits but also cause multiple problems. Floods occur worldwide, often after heavy rains in an area. Once the flood waters clear away, it leaves behind a variety of different effects on the land, animals and people. While many people view flooding as having a solely negative effect, positive things can also result in aftermath of a flood. Flooding causes structural and environmental damage to landscape (Akoroda,

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2004; Akinmade, 2005; Kirkby 2006; Douglas, 2011) Floods erode soil, often on a large scale bases. This displacement of soil leads to the weakening of structures like houses and bridges. Ebisemiju, 2008; Obatola, 2005 opines that the most significant impact of flooding arises from urbanization, because it involves deforestation, land use changes, precipitation, temperature modification of soil physical properties and structures and the exposure of bare soil surfaces especially of construction sites all of which bring about changes in the morphological and hydrological state of water. The negative consequences are numerous and transcend mere physical destruction of properties, farmlands and also the social and economic life of the victims Gordon, 2004; Messner and Meyer,

2005. The economic cost of flooding in Scotland 2004 is estimated to average £31.5 million per year from inland flooding and £19.1 million from coastal flooding (Werritty and Chatterton, 2004). These broad-brush estimates focus on direct costs and say little about the social impacts of flooding in Scotland (JBA, 2005). Media coverage, while often dramatic, is usually short lived and limited to 'rescue' situations and anecdotes of hardship. The people featured then disappear into the background and have to pick up the pieces out of the public view. (JBA, 2005).

METHODOLOGY

Study Area

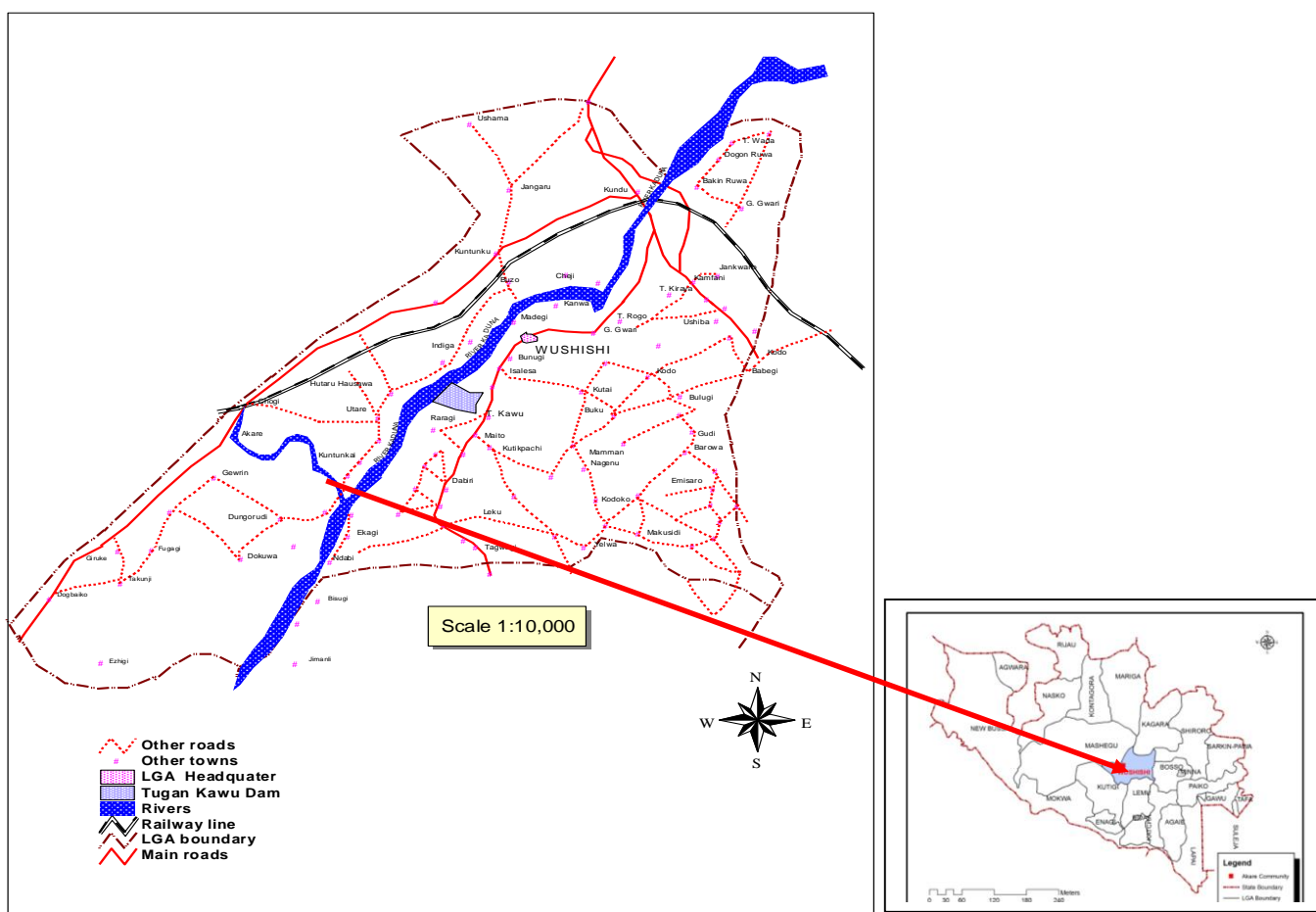


Fig 1: Map of the study Area
Source: Niger State Ministry of Lands and Housing, Minna (2014)

The study area fig. 1 is in a low-lying, severely flood prone wetlands of the communities targeted along the River Kaduna which flows into Zungeru.

The settlement lies between latitude 9°54'N to 9°72'N and longitude 6°51'E to 6°53'E of the equator. The area is highly traversed and well opened with a *fadama* land in the flood plain of rivers Ubandawaki (Gabuko) and Bankogi. The irrigation water used by the community is supplied to the field by gravity flow from the reservoir of Tungankawo reservoir located in the upstream position of the study area. The climate of the study area is hot tropical climate characterized by high temperature, heavy rainfall and excessive humidity during the greater part of the year. Rainfall however generally exceeds evaporation and commences between late April and early may and terminates in October. The area receives maximum annual rainfall of 194.8mm. The maximum temperature is about 38°C and minimum average temperature is 26°C. The area is a mixture of sandy soil, which are loosely packed, the moisture content of most soil depends largely on the amount of rainfall received and how long it lasted. The land is used mainly for agriculture.

Data Collection

The primary sources of data were generated from the impact of flood on the socio-economic livelihood of Akare Community through field work, personal interviews and questionnaire administration. The secondary sources of data obtained include the topographic imagery map of Akare along the river bank, existing literatures from internet and libraries. Materials used was also obtained from relevant Ministries and Government Agencies. A Field work was carried out with the objective of identifying the first hand information in the study area. These include the photograph part of River Akare drainage and a post office and also a photograph of one of the houses that were destroyed by flood. Personal interview inform of interactive forum was carried out in order to find out more relevant information about the causes of flood in Akare Community.

A structured questionnaire was distributed randomly with a fixed responsive technique used in order to serve as a guide to respondents. Options were provided for the respondents to choose from 100 questionnaires that were

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structured in order to find out the extent of flood impact on its victims and the measure that can be put in place for effective mitigation of flood risk. The reconnaissance survey presented an opportunity to physically examine and determine the nature and extent of the flood impact and its effects in Akare Community.

Statistical Analysis

Simple descriptive statistics was used for the analysis of the data collected which resulted into the use of simple percentages.

RESULTS

This study describes the data collected from the field, it was carefully analyzed by using percentage distribution and charts. However, attempts are made to assess flood impact on the socio-economic livelihood of the people of Akare community, Wushishi local government area of Niger State.

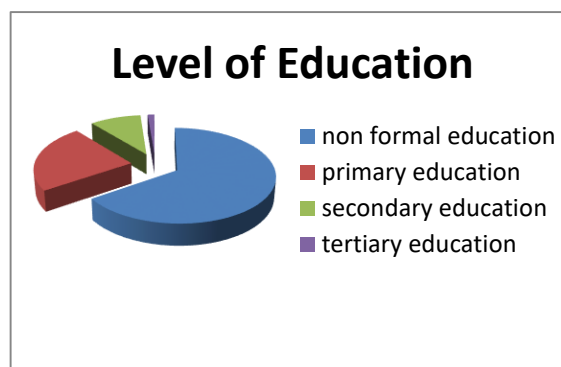


Fig 2: Level of education of respondents

Fig. 2 shows that (61%) of the respondents are said to attain non-formal education which is part of customs and traditions of the inhabitants of the community, 22% of the respondents attended primary schools, 9% of the respondents attended Secondary Schools and 8% of the respondents attended tertiary education.

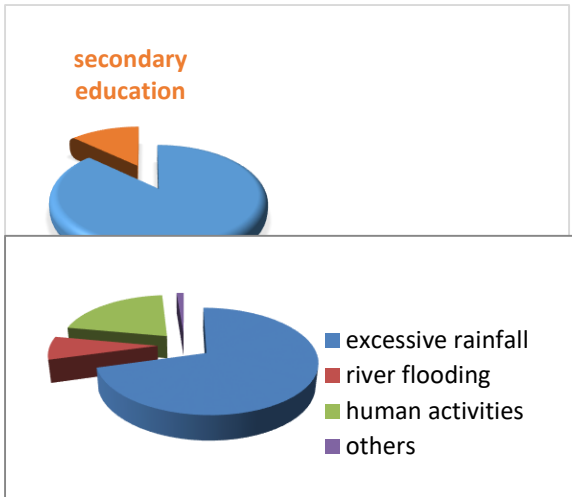


Fig 3: Occupation

Fig. 3 indicated that majority of the respondents with 87% are farmers and fishermen (Primary Occupation) while 13% of the respondents are into secondary occupation which comprises of different category of works, such as civil service, trading, and artisans.

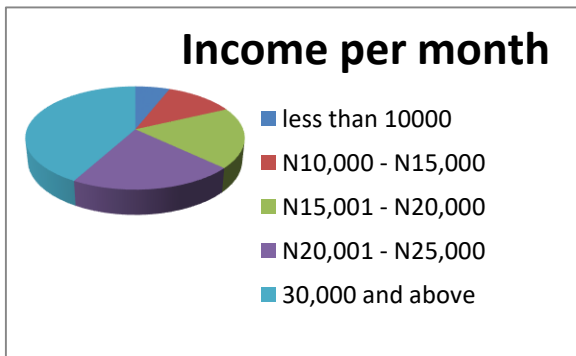


Fig 4: The monthly income of respondents

Fig. 4 shows that (6%) of the respondents earn less than N10,000 per month, (12%) of the residents of Akare community earn N10,001 – N15,000, (19%) earn N15,001 – N20,000, those that earn N20,001 – N25,000 are (21%), while (42%) of the respondents earn above N30,000.

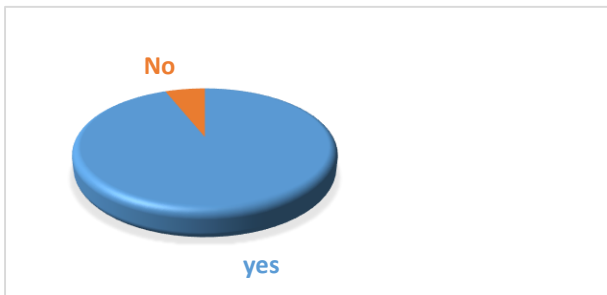


Fig 5: Flood Experience in the Area

Analysis on Fig.5 shows that (94%) of the respondents have experience flood, which indicate that majority of the residents of Akare community are flood victims. While (6%) of the respondents have not experience flood due to age or just arriving in the community.

Fig 6: Sources of Water which Causes the flood

Analysis from Fig. 6 shows that excessive rainfall and human activities along the river bank contributed mostly to the flooding in the study area. (68%) of the respondents agreed that flooding in the area is caused by excessive rainfall, (7%) agreed that flooding in the area is caused by river flooding, (20%) agreed that flooding in the area is due to human activities such building and farming along the flood plains, dumping of refuse along the river and drainage channel are the causes of flooding in the community, while (5%) of the respondents has no idea of the causes of flooding in the community.

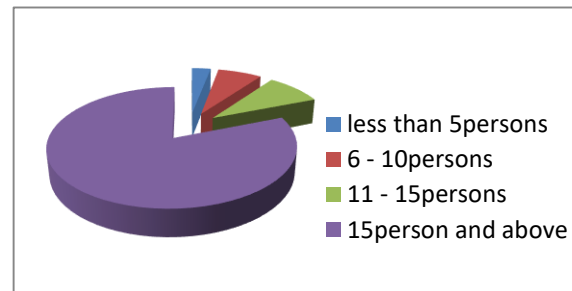


Fig 7: Number of people forced to relocate

Fig. 7 above indicates that less than 5person were (3%), 6 – 10persons were (7%), 11 – 15persons were (9%), and above 15persons were (81%) respectively. Note; the table shows that quite a number of people have been forced to relocate from their residence as a result of the flood. Some residents had to squat with families, friends and sympathizers elsewhere before a better place of residence.

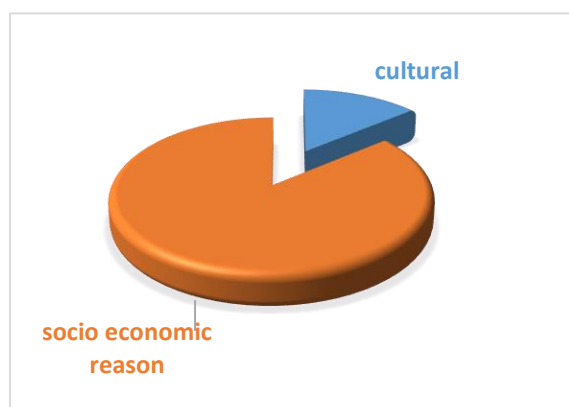


Fig 8: Reasons for wanting to be resettled

Fig. 8 above indicates that (14%) of the respondent noted that the reasons for not resettling is due to cultural activities while the majority of the respondents which is (86%) some said it is due to social economic activities (farming and fishing).

DISCUSSION

This study attempted to assess flood impact on the socio-economic livelihood of the people of Akare community, Wushishi local government area of Niger State. The resultant effect is that river Kaduna is characterized with high average monthly flow of 122.0296/sec recorded in 2013. About 44% of the total annual discharge was received at TuganKawo during the flood season of July to October and the remainder is distributed over the rest of the year. The average annual yield of the river Kaduna was being measured at TuganKawo over a period of 8 years, approximately 9.5 billion Cubic metres of water with annual historical maximum of 9.3 billion Cubic metres of water.

The study identified that there is need for constant sensitization and education for positive change. The Socio-economic characteristics of the people of Akare community gave an insight to the nature and types of activities done to improve the living standard. There is need for further education opportunities and empowerment based on available resources in Akare community.

There is also the need for more sensitization on flooding through radio, television, workshops for awareness and management in Akare the study area. Efforts on resettlement program designed by the state government to resettle the

people thereby moving the people of the old Akare to new Akare is commendable.

Natural hazards and their relationship to natural environment are aspects of environmental problems and to development which can be aggravated by it. The factors that influence susceptibility to vulnerability reduction, the nature of the hazard, the nature of the study area, and institutional factors-are discussed. The core of the study explains how to incorporate natural hazard management into the process of integrated development planning in flood risk reduction. From the satellite map and field survey carried out in the study area; it was discovered that, Akare community is around the downstream of River Kaduna which passes through Zungeru-Wushishi axis in Niger state. Due to the distinctive demarcation between wet and dry seasons in the region as indicated by the rainfall period, river Kaduna flows throughout the year. The resultant effect is that the river is characterized with high average monthly flows of 122.0296/sec recorded in 2013. About 44% of the total annual discharge is received at Tugan Kawo during the flood season of July to October and the remaining is distributed over the rest of the year. The average annual discharge of River Kaduna was measured at Tugan Kawo over a period of 8 years was approximately 9.5 billion Cubic metres of water with annual historical maximum of 9.3 billion Cubic metres of water. Analysis from the data shows that excessive rainfall and human activities along the river bank contributed mostly to flooding in the study area. In 2009, it affected agricultural produce with an estimate loss of about N9,000,000.00, in 2010, about N58,000,000.00 was lost, in 2011 about N32,000,000.00 was lost, in 2012 about N3,000,000.00 lost and in 2013 about N6,000,000.00 of agricultural produce was lost. The estimated lost between 2009 and 2013 was put at about 108,000,000. From these analyses it was discovered that the study area lost agricultural produce on a yearly basis, and the lost were aligned with the level of rainfall, flooding and lost. The higher the intensity of rainfall, the higher the flood and the higher the lost on agricultural farmland and produce. The people of Akare community are seriously ready for government intervention in the study area. These led to government resettlement of the people of old Akare community to the new Akare community.

The challenge of reducing flood risk for the rapidly increasing population of Nigerians in the face of great environmental changes and low per capita income has attracted enormous attention on the international and national community in recent times with the most attention going to the climate regime as the result of the repeated cycles of flood. Remote sensing can now be used as an operational mechanism for flood disaster warnings, monitoring and mitigations. Though remote Sensing and GIS applications have not been fully operational in flood risk reduction in this part of the world, incorporating it into environmental planning would reduce post disaster expenses.

Conclusion

From the preceding information the following conclusion can be drawn;

- i. Floods are not subject to complete control but their damaging effects can be reduced.
- ii. The upward flood cost trend can be moderated through comprehensive floodplain, storm water, and environmental management measures that are economically, environmentally, and socially cost effective.
- iii. Potential benefits from flood control measures are often lost through subsequent, unwise development in supposedly protected areas thus making such places flood prone.

Recommendation

The dangers of flood waters are associated with a number of different criteria, not necessarily independent on each other but creating different types of clearly recognizable hazards. Understanding all of these criteria makes the following flood risk reduction recommendations efficient. Appropriate public awareness programmes should be implemented for the following purposes:

- i. To make floodable area occupants and/or owners aware of identified flood hazards.
- ii. To encourage individuals to take actions such as flood proofing and developing escape plans, to mitigate the flood potential.
- iii. To make individuals aware of the existence and operation of flood warning plans.

- iv. To encourage individuals to keep drainage ways clean and to report potential maintenance problems.
- v. To encourage flood proofing of existing buildings. Flood proofing could either be active or passive. Active flood roofing requires some type of flood detection and warning system to give time for the personnel to install the flood roofing device, while passive flood proofing is permanently in place. This is best for places where flash flood is experienced.
- vi. Construction of raised areas or buildings specified as refuge areas if evacuation is impossible.
- vii. Reduction of activities that alter the morphology of the natural surface, because this increases rate of runoff, which in turn leads to flood.
- viii. All levels of governments should persuasively support the designation of flood-prone areas for open space use.
- ix. Planting of trees, range management and animal grazing controls to reduce rapid runoff.

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