AN OVERVIEW OF 1989 LOKO FLOOD DISASTER AND ITS MITIGATION MEASURES IN ADAMAWA STATE OF NIGERIA

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Abstract

This study has to do with the aftermath of the 1989 Loko Flood disaster in Song Local Government Area of Adamawa State. The study examined the socio-economic problems of the flood victims of Loko town. Standardized interview schedule was used to source data from 268 respondents, 134 each from old and New Loko settlers. The study also looked at the various measures adopted by governments, individuals and some NGO s and corporate organizations in dealing with the flood issue. The data was analyzed using Chi-Squared test and descriptive statistics. The result obtained showed that the flood disaster caused serious socio-economic problems and hardships to the victims. Though the nature and gravity of the problems differ but the economic problems were found to be more daunting to the victims. It further revealed that the people most affected by the flood disaster were the relocates. The problems of the relocates included inadequate water supply, poor drainage systems, small residential plots for building and inadequate housing facilities. The study recommends the provision of basic social amenities such as water, schools and health care centers and good drainage system for the relocates. Also the State and Local Governments should provide mitigation measures to forestall future occurrence. Measures such as massive afforestation programme, minimal indiscriminate bush burning and felling of trees.

Flood has been universally described as a physical situation when water resulting from runoff or river overflow cover an area already known to be dry. Chow (1964) captured it all by saying that river flood result when concentrated runoff and stream flows make a river channel to fill to capacity and spill over its banks and beyond. It further stated that flooding in general result from a combined effect of climate, soil characteristics, topographic and human behavior.

Flooding is regarded as a natural hazard but man-made cases are quite few. A pilot survey of global natural hazards by Ominu (1988) showed that most part of the world excluding the defunct Union Soviet Socialist Republic (USSR) experienced loss of lives through floods to the tune of about 173,170 people between the years 1947 and 1969. Tsunami induced flood of 2011 in Japan, Pakistan and Thailand. In Nigeria, there have been serious cases of flood hazards like the Ogunpa flood of 1978, 1980 and 2011 in Ibadan, Asa flood in Ilorin of 1976, Ondo flood of 1995, 1994 Maiduguri flood disaster, Laddo Dam flood of 1989 in Adamawa State that hit Loko settlement. There are many types of floods ranging from flash floods, single event floods, multiple event floods, seasonal floods, coastal floods and estuarine floods.

The effect of flood to human life and properties and ecology are quite devastating. Uyanga and Ilesanmi (2003) captured the effect and impact of flooding to life and properties. Since the Loko flood of 1989 which left the settlers of Loko in disarray, the Song Local Government Council (SLGC) and the Adamawa State Government including some public-spirited individuals made frantic efforts to resettle the victims and provide relief materials among others. The extent to which these efforts reached in bringing the desired succor to the victims was yet to be determined hence the study.
**Area of Study**

Loko village is a settlement on the southern bank of Loko River of Song Local Government Area (LGA) of Adamawa State. It lies on latitude 9° 45’ N and Longitude 12° 36’E. This settlement is along the Yola – Gombi highway. It is about 8km south of Song town and about 58km north of Yola, the capital of Adamawa State. The inhabitants of Loko are predominantly Hausas who first came as migrant peasant farmers and labourers.

The Loko settlement occupies an area of about 55,000 hectares. The basin is characterized by broken relief of alternating hills and valleys (Tukur and Ray, 1994). Loko lies on relatively low elevation which made it to be vulnerable to seasonal flooding, see figures 2 and 3 below. The Loko village has the tropical climate with two seasons namely the rainy and fry seasons. The area was liable to seasonal floods caused by rain. This often caused untold hardship as farmlands were submerged and crops and soil nutrients washed away.

The maximum temperature is 43° C as reported in Adebayo (1999) and the coldest month is January with an annual average temperature of 17° C. The soil of Loko area is mostly the alluvial type which is suitable for irrigation farming due to the high fertility nature of the soil particularly when the flood recedes. The vegetation is predominantly of the Guinea savanna type which is characterized by tall grasses called elephant grasses coupled with scattered trees of which Bao-bab trees are the most common. The vegetation is commonly of secondary succession (UBRBDA, 1999).

The term flood or flooding has been described as when a place that is covered with water overflows. Ward (1988) defined flood as a body of water that inundate land that is infrequently submerged and in so doing cause or threaten to cause damage. Moreover, the definition comprises the idea of inundation as well as damage to lives and properties. Flood has also been identified as a natural climatic hazard that cut across all countries of the world (Charley, 1969 Babatolu, 1977; Ayoade, 1988; Musa, 1994; and 2004). Flooding has been reported in many states of Nigeria and other countries of the world with their attendant devastating effects. These range from Laddo dam flood in Adamawa and Taraba States of 1989 (Musa, 1994); Benin flood (Musa, 2001); Daggin China flood of 1989 (Chow, 1956); Ebonyi river floods, Anambra river flood at Otuocha, River Niger flood at Jebba and Lokoja (Adinna, 2001); Ogunpa river flood disaster (Adinna, 2001); Pakistani Flood of
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2010 (Sun Newspaper, 5th August, 2010, Thisday Newspaper, 5th September 2010 and Wikipedia, 2010); Yokohshima Flood of Japan 2011 and Thailand Flood of 2011 to mention but a few.

Figures 2 and 3 which depict the Digital Elevation Mode (DEM) and Slope map of the area of study respectively and adapted from Aminu (2012) showed that Loko lies on relatively low elevation which made it liable to flooding.

According to Wikipedia (2010), the Pakistani flood of 2010 which was caused by a monsoon rain caused about $43$ Billion in damages and death toll of over 2000 people with over a million homes destroyed. Over 20 million people were injured and rendered homeless and about one-fifth of the total land mass washed away.

Fig.3: Slope map of Loko Area (Aminu, 2012) It may be noted that in all cases, flood had caused devastating effects as damage to lives and properties, arable lands washed away, crops destroyed, oil wells submerged, transmission lines cut, populace rendered homeless and helpless etc. Virtually in all cases some governments have responded after hues and cries with varying degrees of mitigating
measures with some reliefs in terms of emergency shelters, foods, clothing, medicines and sometimes cash to affected victims. Uyang and Ilesanmi (2003) identified and analyzed the various impacts of flooding and suggested an integrated approach in dealing with issues of flooding. This is in other words means that the control and mitigation of flood and erosion requires multi-disciplinary approach which will involve all environmental scientists and engineers such as Surveyors, Geographers, Geologists, Planners, Civil and Environmental Engineers, Foresters, Soil Scientists, Farmers, Governmental agencies and other stake holders.

The researchers hold this view together with views and suggestions made by Beyke (2003) in this respect. In this study, the researchers brought to fore, examined, evaluated and analyzed the various measures put in place by the Adamawa State Government primarily after the Loko Flood disaster of 1989 and to what extent these efforts went to solve the problems intended and brought succor to the affected victims.

Materials and Methods

The study relied on the materials such as analogue maps of the area, Files from concerned Ministries and Agencies of Adamawa State Government (ASG), questionnaires and personal interviews as input data. The methods adopted include digitalization, updating, mapping and georeferencing of the plan of the study area. Study and extraction of data from files regarding ASG’s measures and the amount spent and the spread and distribution of relief and other materials including resettlement measures and programmes embarked upon. Visit to the site was conducted to familiarize and interact with the people in the area. 268 Questionnaires were shared among the affected population. The target population consisted of about 800 households that were affected by the disaster which was categorized into two namely:

1. Those who accepted the resettlement scheme of ASG and moved into the New Loko.
2. Those who refused to move and stayed in the Old Loko.

The method also include the computations, analysis and presentation of data and results involved. A sample size of 268 households were used out of 800 households involved. This met the condition of Nwana (2005) which determined the sampling size from the population of study according to sampling parameter.

The 268 households were divided into two of 134 for old settlement while the other 134 was for new settlement. Old settlement comprised of five wards namely: Jauro Umaru, Jauro Hali, Loko Arewa, Sarkin Hausawa and Loko central, while the new settlement comprised of two wards namely: Dumbu and Loko Gari.

A structured interview schedule was used to gather information used. The period of interview was between the months December and March. This period was chosen because it was the resting period for most of the respondents because farm products’ harvesting was usually over and only a few farmers were busy with irrigation farming.

Regarding the social effects of the flood disaster and resettlement on the people of Loko showed that prior to the resettlement, two types houses existed in the area (Aliyu 2006). The compound type with rectangular and round structures with a variety of facilities such as bathrooms/toilets, bedrooms, sitting rooms, stores/granaries, tree shades, animal sheds and open courtyard. The other type of buildings occupied by the victims were rectangular houses and the Shagari-type low cost houses at the temporary resettlement site. It was further reported that over 80% of the entire houses were of rectangular and round structures. Musa (1994) reported that at the resettlement site the victims modified their houses with thatched and corrugated roofing sheets. This further showed the extent the victims accepted government resettlement efforts.
Table 1: Age Distribution of the Loko Settlers

<table>
<thead>
<tr>
<th>S/N</th>
<th>AGE (YEARS)</th>
<th>NEW LOKO</th>
<th>OLD LOKO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N = 134</td>
<td>N = 134</td>
</tr>
<tr>
<td>1</td>
<td>15 – 19</td>
<td>0</td>
<td>0.7%</td>
</tr>
<tr>
<td>2</td>
<td>20 – 29</td>
<td>32.1%</td>
<td>28.4%</td>
</tr>
<tr>
<td>4</td>
<td>30 – 39</td>
<td>32.0%</td>
<td>24.6%</td>
</tr>
<tr>
<td>5</td>
<td>40 – 49</td>
<td>18.6%</td>
<td>21.7%</td>
</tr>
<tr>
<td>6</td>
<td>50 – 59</td>
<td>9.7%</td>
<td>13.4%</td>
</tr>
<tr>
<td>7</td>
<td>60 – Above</td>
<td>7.6%</td>
<td>11.2%</td>
</tr>
<tr>
<td>8</td>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Aliyu (2006)

The Adamawa State Government resettled the victims to new Loko. Emergency mud and brick houses were provided including relief materials for the settlers. The table 1 above showed that many youths opted for relocation than the older victims.

Table 2: Distribution of Respondents by the type of Buildings

<table>
<thead>
<tr>
<th>TYPE OF BUILDINGS</th>
<th>REJECTORS OF THE RESETTLEMENT</th>
<th>RELOCATEES</th>
<th>DIFFERENCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUD</td>
<td>64.2%</td>
<td>84.3%</td>
<td>+20.1%</td>
</tr>
<tr>
<td>BRICK</td>
<td>28.6%</td>
<td>6.7%</td>
<td>-21.9%</td>
</tr>
<tr>
<td>MUD/BRICK</td>
<td>3.6%</td>
<td>6.0%</td>
<td>+2.4%</td>
</tr>
<tr>
<td>THACH</td>
<td>3.6%</td>
<td>3.0%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Aliyu (2006)

The table 2 above shows the respondents’ distribution of the types of building in the area of study. The sample size (N) was 134 and the degree of freedom (df) is n – 1 = 4 - 1 = 3. The $X^2$ table value at 5% level of significance = 7.82. The $X^2$ value of 16.96 comparing house types between old and the new settlement showed a significant difference at 5% level. The table further showed that greater number of the people rejected the brick houses provided by government.

Results and Discussion

After the Loko flood, the Government of Adamawa State (GAS) made series of effort to cushion the effects of the flood by providing relief materials including cash, food and household items. Emergency accommodation was also provided for the displaced settlers. One of such prominent efforts by the Adamawa State Government was to set up a resettlement task force headed by a Soldier.

Tukur and Ray (1995) further observed that the resettlement scheme conceptualized and implemented by the Adamawa State Government was not only a panicky measure but devoid of scientific data and reasoning and community interest. No specialist in either flood or resettlement management and planning was involved. The Upper Benue River Basin Development Authority (UBRDA) was not consulted nor involved in the resettlement scheme. It was further observed by Tukur and Ray (1995) that the Loko Community suggested the dredging of the river at the cost of Twenty million Naira (N20m). The victims turned down the government resettlement scheme. The relocation of the victims from their former settlement made them lose some of their vital farm facilities such as granaries and animals. Hill (1972) as observed in Bawa (1994) that the loss of
granaries was more serious to them than others because of its peculiar feature in the society. Animal sheds were lost including grain stores which the Adamawa State government relief programme was inadequate to address. It may be noted here also that the condition of living of the people of Loko deteriorated. The concept of condition of living or scale of living as observed by Aliyu (2006) refers to the actual conditions of the population, it actually differs from the concept of standard of living which relates to the living conditions aspired to and which are regarded as proper. A study by Aliyu (1989) revealed that the level of living concept refers to material resources which individuals can have for their living conditions.

Hence, the different perception of the condition of living was sought on how the settlement and subsequent rejection of the resettlement has affected their condition of living. The perception defined as the capacity to interpret and create meaning to an event or objects based on the dictates of prior experience. In the survey, the respondents were asked about their general comments as regards government effort on their plight. About 98.6% of the respondents believed that their condition deteriorated after the flood disaster and that government intervention did no help matters. Only paltry 1.4% of the respondents agreed that their living condition improved after the government intervention and resettlement.

References


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