

Flood Disasters in Nigeria: Farmers and Governments' Mitigation Efforts

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Abstract

The 2012 floods was one of the worst in Nigeria leading to loss of lives and property worth millions of naira. The floods were unprecedented and despite the fact that floods are a yearly occurrence in the country, the government lacked capacity to handle disaster of such magnitude. Individuals and several agencies joined hands with the government to assist flood victims by donating relief materials as well as providing temporary accommodation to alleviate plight of victims. Due to climate change, floods and natural disasters are expected to increase in coming years and there is need to ascertain flood management approaches employed by farmers and the government in the wake of the 2012 floods. Materials for this review were from newspapers, internet, books etc. The study revealed that farmers adopt practices such as planting of resistant trees/varieties, building of manual embankments and use of indigenous knowledge. The Nigerian government has also established the early warning systems to alert farmers on impending floods. There is the need to do more in the area of educating and encouraging farmers to heed to early warning systems, relocating farmers from flood prone areas and encouraging farmers to insure their crops.

Keywords: Flood disaster, Farmers, Government, Mitigation efforts

1. Introduction

Flooding can be caused by heavy rainfall or when rivers and oceans overflow their banks due to high tides, thereby submerging land areas. It takes place when lakes, ponds, river beds, soil and vegetation cannot absorb all the water, making excess water run off the land in volumes that cannot be carried within stream channels or retained in lakes, natural ponds or man-made reservoirs. Flooding can be exacerbated by increased amount of impervious surface or by natural hazards, wild fires or deforestation which reduces the supply of vegetation that can absorb rainfall (Ayooso, 2012). There are several causes and types of floods. There could be flash flood which occurs quickly by rapid rise of extremely dangerous water travelling at high speeds. There is also coastal flooding in oceans which is driven by storm surges, hurricanes and tsunamis. Failures of dams or other structures constructed to retain water may engender flooding. In recent times, climate change and global warming is another causative factor of flooding (Famous, 2012).

According to United Nations (UN) report of 1998 (as cited by Ayooso, 2012), 23 million people were affected as a result of flooding in Xian, China. Three thousand people lost their lives while about one million people lost their homes. In 1996, the monsoon floods in India affected more than five million people in the northern and eastern parts of the country. Severe floods also killed over two hundred people in India and Bangladesh and left millions homeless (Ayooso, 2012).

The 2012 floods which occurred in Nigeria between July 2012 to October, 2012 was one of the most devastating in the country. Some of the states affected were Kogi, Edo, Cross Rivers, Rivers, Benue, Delta and Bayelsa states. The Nigerian government was alerted by the Nigerian Meteorological Agency (NIMET) that there would be above normal rainfall in the country leading to flooding in 12 strategic states in the country but the government ignored the warning. This, coupled with the release of water from the Lagdo dam in cameroon led to the Rivers Benue and Niger overflowing their banks resulting in monumental floods (Odeh, 2014). The impact of the floods was disastrous. People were made homeless, farmlands were destroyed, drinking water was contaminated, and economic activities were totally grounded while death casualties increased to 95 percent. The only means of transportation in affected communities were speed boats and local canoes which increased the cost of ferrying people. The flood also brought invasion of reptiles such as crocodiles and snakes into many communities across the country (Odidi, 2012).

Farmers all over the country suffered huge economic losses. There were challenges of food storage, processing and marketing. Prices of commodities increased and schools were hurriedly shut down (Famous, 2012).

According to Anugwara & Emakpe (2013), the floods damaged over 1.9 million hectares of lands and reduced food production along flood plains. Rice production in the affected areas was reduced by 22.4%, maize was reduced by 14.6%, and soybean, cassava and cowpea were reduced by 11.2%, 9.3% and 6.3% respectively. A total of 12 million goats, 3 million poultry and 136 cattle were killed in the 2012 floods. The National Emergency Management Agency (NEMA) estimated that a total of N2.29 trillion which represents 2.83 percent of the rebased Gross Domestic Product of N81 million for 2013 was lost as a result of the floods (Okoruwa,

2014). The floods were described as the worst in recent times because thousands of farmers were not only displaced from their homes but food crops were wiped away threatening food security in the nation. Crops worst hit by the flood included cassava, plantain, yam, maize and pawpaw which are major staples in the region (IITA, 2012). The Minister of Agriculture and Rural Development reassured Nigerians that there will not be food crises because the Federal government had already secured seed stocks of fast maturing grains for farmers (Earth conservatory, 2012). Out of the 36 states in Nigeria, 32 were affected with six states namely Taraba, Benue, Kogi, Anambra, Rivers and Bayelsa being the worst hit (Odeh, 2014). The governors of the affected states directed the flood victims to evacuate their communities and provide makeshift relief for them though most of the relief materials were not adequate to cater for the people. Some flood victims refused to vacate their communities for fear of their homes being invaded by criminals (Odidi, 2012). The year 2013 also witnessed flood disasters though it was not as severe as the 2012 floods. Floods displaced about 600 people and caused one fatality in northern Kano. About 20 bodies were unearthed at a cemetery in Yan Kaba area of Kano state while in Katsina state, also in the north, 55 farms were inundated by heavy rains (The Guardian, 2013)

According to Gbemudu (2013), direct losses from disasters have been underestimated by at least 50 percent. The cost to the global economy in West Africa, which includes Nigeria, is 2.5 trillion US dollars. Since the start of this century, West Africa's urbanization and population growth trends indicate that more and more people are likely to be affected by floods in coming years. The 2015 Global Assessment report on Disaster Risk Reduction (GAR 15), prepared by United Nations office for Disaster Risk Reduction (UNISDR) states that economic losses from disasters are now reaching an average of US\$250 billion to US\$300 billion annually (UNISDR, 2015). Leadership (2015) reports that Nigeria will experience sea level rise this year and increased floods. The warning was given by the director general of the Nigeria hydrological Services Agency during the presentation of the annual flood outlook in Abuja, the nations' capital. Risk areas in the country were classified into three: high risk, medium risk and lowland flood areas. The river basins of Sokoto-Rima, Niger-Benue and Anambra were predicted to experience high flooding, local areas in Shinkafi, Biase, Chikum, Munya, Bonny, Etiosa among others might experience moderate flooding while states like Bayelsa, Rivers, Delta and Lagos states are expected to experience coastal flooding due to rise in sea level and tidal surge. He therefore urged Nigerians to put in place measures that would help in reducing flood hazards. At the peak of the 2012 floods there was public outcry that the Federal government lacked capacity to manage floods. In light of this recent warning, there is the need to look at the strategies currently used by farmers to adapt to flood, efforts made by institutions and government agencies to mitigate flood as well as the measures put in place by the government to manage flood disasters in order to ascertain the level of preparedness of farmers and government in the event of major flood disasters in the country.

1.1 Farmers and community efforts to mitigate floods

Flooding which is a yearly occurrence is becoming more severe and farmers are becoming more vulnerable due to adverse effects of climate change. In a study carried out in the states of Akwa Ibom, Ondo and Rivers states, it was observed that land management practice particularly the use of mounds was commonly used by farmers to mitigate effects of flooding. A total of 30% of male farmers and 39% of female farmers adopt this method (Umoh, 2013).

In the wetland regions of Ondo state, farmers plant flood resistant or flood tolerant varieties of crops. Farmers have also diversified their income earning activities to cope with environmental hazards. Fishing communities in Akwa Ibom, Ondo and Rivers state adapt to flooding and sea level rise by fishing farther away from the shore than they use to and carry deep freezers to preserve their catch during the long period they will be at sea (Umoh, 2013).

Another study conducted by Fabiyi & Oloukoi (2013) among the Ilajes, Itshekiris and ijaw tribes who live in coastal rural communities discovered that these communities have undocumented knowledge of local meteorologies which are based on observation and traditional practices and belief systems. This local knowledge helps them to predict flooding on seasonal and long term basis.

1.1.2 Efforts made by institutions and government agencies to mitigate flood

After the 2012 floods, institutions and government agencies saw the need to put in place adequate flood prevention measures. Some well-meaning agencies also contributed farming inputs to help farmers restart their lives after the devastating flood. In Bayelsa state of Nigeria, the International Institute of Tropical Agriculture (IITA) was called in to help farmers. A team of IITA experts visited the state to determine the extent of damage. The team held meeting with officials of the state and pledged to send improved cassava cuttings, plantains and maize to the state within one month. The maize varieties to be deployed are early maturing and will help farmers adjust quickly by offering them food on the table (IITA, 2012). The Delta state government of Nigeria assisted

internally displaced farmers by distributing high yielding cassava cuttings, yam seedlings and farming inputs to alleviate their sufferings.

Several workshops were organized in different parts of the country to brainstorm on flood management technique that would be at par with global best practices. The Flood Research Group of the Federal university, Otuoke Bayelsa state situated in the Niger Delta region which was among the states hit in the 2012 flood held a Post flood management workshop in collaboration with the Bayelsa state government of Nigeria. The Flood impact, control and mitigation approaches recommended include proper drainage systems, building of buffer dams in strategic areas, building of houses to avoid blockage of natural drainages and waterways, preventing siltation of creeks, rivers and other water bodies by dredging, setting up a well planned community flood preparedness, sensitization and management programme to be conducted across the state. This programme should include regular monitoring of soil saturation and water levels, effective grassroots awareness of weather reports, requisite evacuation drills, and emergency self-help and survival orientation for communities (Federal University, Otuoke, 2013).

In order to reduce the impact of flood disasters in the country, the federal government launched the early warning system after flood disasters in major cities like Lagos, Kano and Kaduna. This system was upgraded in 2014. The federal ministry of environment installed 307 web-based flood warning systems all over the nation. Community-based flood warning systems were also installed in Ondo, Niger, Cross River, Imo, Anambra, Lagos, Oyo, Osun, Ogun, Nassarawa, Rivers, Kwara, Akwa Ibom, Abia and Enugu states. The Ministry also acquired and installed four stand-alone automated functional flood early warning facilities along rivers Alamutu, Eruwa and Owena River basins (Okoruwa, 2014). In order to alert the public on the imminent dangers of flooding, the federal government equipped the Nigerian Meteorological Agency (NIMET) to enable it provide accurate weather forecast. Also, the sum of N17 billion was released to the affected states and other relevant stakeholders to cushion effects of the 2012 floods. There are plans to build Kashimbilla/gamovo multipurpose dam, Ose Dam and hydropower project in Taraba state to accommodate the excessive flow of water from Cameroun whenever it occurs. The dams will serve the purpose of mitigating flood, generate electricity, create employment, improve irrigation and boost agricultural production in Nigeria (Anugwara & Emakpe, 2013). The government has made efforts to relocate people in flood prone areas. Forty communities in South-eastern Benue were relocated by government authorities to safer places (The guardian, 2013). The Kogi state government advised residents of communities along the river banks to relocate sequel to a warning that water would be released from Kainji and Jebba Dams. The government also called on the people of the state to clear their drainages to allow for free flow of water and to avoid flooding (Anugwara & Emakpe, 2013). The lessons learnt from the 2012 flood helped Agencies like the Red cross to improve its emergency response. The Nigerian Red Cross trained 22,000 volunteers and stocked warehouses with relief materials. The National Environmental Management Agency urged dam management officials to lower water levels early enough and should not wait for water levels to breach the dams before releasing it in order to minimize flooding risks. Flood prone communities were trained and provided with basic equipment to aid quick evacuation (The guardian, 2013). The National Space Research and Development Agency (NASRDA), produced a floodplain and vulnerability map that was used by the National Emergency Management Agency (NEMA) to rehabilitate those affected by the 2012 flood (Odeh, 2012).

This year, the National Emergency Management Agency (NEMA) organised a pre-flood awareness campaign for relevant stakeholders in Illorin, Kwara state capital in North Central Nigeria. Participants were advised to heed early warning systems and desist from blocking waterways through illegal dumping of refuse while the state government was implored to clear all waste bins across the state for a cleaner and healthier environment (Akanbi, 2015).

1.1.3 Further mitigation approaches to adopt

Although the government responded to the flood disaster in some way or the other, some agencies and individuals still believe that the government needs to do more. In a report by Lasisi (2013), a group of researchers advised the federal government to move from temporary flood response to permanent methods and also suggested that the establishment of permanent relocation centres should be discouraged for the socio-political issues it often raises. Owie, (2012) also shared this view and wondered why the primary cause of the flood was not mentioned after the 2012 floods but a lot of time was spent by the government on procurement and disbursement of the 17.6 Billion naira bailout fund received by the government for the amelioration of ecological problems. He also lamented the absence of a concrete policy on environmental regulation in Nigeria. The Presidential committee for flood relief and rehabilitation organized a fundraising dinner in November 2012 to raise funds for flood victims. The sum of US\$ 70 million was realized in pledges but the impact of these funds in the lives of victims remains questionable (Odeh, 2014).

PM news Nigeria (2012) reports that while Lagdo dam was responsible for the 2012 floods, another disaster waiting to happen is from Lake Nyos in Cameroun. Lake Nyos which is not far from Cameroun's volcanic

region and covers a distance of 1,500km from the Gulf of Guinea through South Western Cameroun and into Northern Nigeria and Northern Cameroun would collapse in the next five to ten years. The 2012 flood disasters could have been avoided if Nigeria had kept to the initial agreement between Nigeria and Cameroun over 30 years ago .when Lagdo dam was built in 1980 in Northern Cameroun, along the course of the Benue River, water from it usually flooded communities in Benue, Adamawa and Taraba states. Nigeria agreed to build similar dams along the river to suck up excess water being released from Lagdo. In 1981, the Nigerian government designed a buffer dam which it called Dasin Hausa dam located in Dasin village in Adamawa state. The dam was intended to reduce the effect of flooding from Lagdo, generate 300mw of electricity and irrigate about 1,500 hectares of farmland. It was also meant to provide navigational route through the Benue River to the Niger Delta. The Nigerian government failed to fulfill the plan and paid the consequence with the 2012 floods. PM News (2012) suggests that the government should review the 1981 feasibility report that brought out the idea of dam on the Nigerian side, and build more dams because a single dam is not sufficient to control excess water from Lagdo dam. The experts need to take into cognizance the fact that there are more villages along the Benue River and excess rainfall due to climate change.

An interagency food security and agriculture assessment organized in 2013 found that the 2012 flood may have eroded the food security of many although the impact may not be felt immediately (Odeh, 2014). In a media lecture organized in Abuja the nations' capital, the president of the Nigerian Union of Journalist was of the view that Nigeria was yet to recover from the devastations caused by the 2012 floods. He blamed the government for poor coordination and handling of resolutions reached after international meetings as the resolutions and warnings that emanated from summits such as the summit on climate change that took place in South Africa in 2001 are never heeded (Odeh, 2014)

2. Conclusions

Flooding is a yearly occurrence in Nigeria and is expected to increase due to climate change. The Federal government of Nigeria failed to heed early warning s by relevant agencies and was unprepared to manage the 2012 flood which was one of the most devastating in the country. Efforts towards mitigating adverse effects of flood has mostly bordered on treating the symptoms rather than addressing the root causes Farmers across the country, on their part are planting early maturing varieties of crops and flood resistant varieties of staple crops in their regions. some also depend on indigenous meteorological knowledge These efforts, though laudable are not enough to protect farmers in the likelihood of severe flooding in the near future. The federal government has made some efforts to mitigate flood but there is the need to do more. Setting up the early warning system is a good development but there is need for more sensitization of farmers to heed to early warnings. Farmers should desist from blocking waterways and building on flood plains. They should also insure their crops. The government should be proactive and invest massively in flood mitigation methods such as building of dams, dredging of rivers, clearing of drainages and natural waterways etc. Finally, relevant flood prevention agencies should be well funded and the funds carefully monitored to avoid mismanagement,

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