EMERGING CRISES IMPACT OF NIGERIA COUNTRY-WIDE FLOODING: AN OVERVIEW OF NIGERIA'S EXPOSURE, VULNERABILITY AND RESILIENCE

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Abstract

Flooding has been one of the most frequent natural hazards that occur when there is an excessive flow of water that submerged land. In recent times, Nigeria has experience regular occurrence of flooding hence, this paper focused on examining the exposure, susceptibility, vulnerability and ways of up-scaling the resilience level of Nigerians. The paper relied on previous academic articles in achieving the aim. Some of the exposure factors identified are natural and anthropogenic in nature. These have led to crises like cholera outbreak, internal displacement, food scarcity and destruction of health facilities just to mention but few. The reasons for low resilience/high vulnerability of and susceptibility level of Nigerians include inadequate physical planning and preparedness and lack of full operationalization of disaster emergency management agency at the local government level. To this end, the paper suggested that investment in infrastructure that can withstand perennial flood and spatial planning of our cities. Equally, provision of early warning action campaign should be taken seriously. Finally, flood risk mapping to determine the area at risk should be the basis for all flood damage reduction programs.

Key Words: Flooding, susceptibility, vulnerability, resilience and Nigeria

Introduction

Flooding is the most frequent natural hazard that occur when there is an excessive flow of water that submerged land (World Health Organization-WHO, 2021). It is caused by related multifarious factor such as hydro-meteorological, anthropogenic and geomorphological (Emberga, 2020). Similarly, flooding though is an inevitable event occur naturally but sometimes may result from human activities which are preventable. It can cause a serious disruption of the function of a community in terms of human, material, economic and environmental losses (Nwakwuo, 2019). Globally, issue of flooding has become frequent and threatening (Aderogba, 2012). According to Jha, Blich and Lamond (2012), flood is the most common of all natural hazards and which affect most people than all types of natural disasters (EM-DAT, 2015). Similarly, floods have been proven to be responsible for over 50% of all casualties and more than 30% of global economic losses from natural disasters (Hallegatte, Green., Nicholas and Corfee-Morlot (2013). Furthermore, Sachs (2006) estimated that the average annual population

of people affected by flood is likely to increase from 1 million in 1990 to 25 million by 2050.in a related statistics, it is put that storms, heat waves or other weather related disasters caused 90% of all disaster worldwide. Specifically, flooding alone is estimated to have affected 2.3 billion (56%) people globally, and at least 20% of the Nigerian population was affected by flood disaster (Oyekale, 2013). In the year between 1998- 2017, the World Health Organization (WHO) reports that floods affected more than 2 billion people worldwide (WHO, 2021).In 2020 alone, flood occurrence affected more than 2.7 million people in 18 countries of West Africa and Central Africa (United Nations Office for the Coordination of Humanitarian Affair-UNOCHA, 2020).

Nigeria is quite fortunate with the occurrence of some natural disaster such as hurricane, earthquake, forest fires etc. compared with other countries (Ogunwumi, Njoku, Uzoezie and Benson, 2022). However, Nigeria is not immune from flooding as a natural disaster caused by excessive rains and the release of excess water from dams in Nigeria and the neighbouring countries which often caused overflow of river banks (Mogami, Yahaya and Muhammed, 2014, National Geographic, 2018 and Echendu, 2020). All parts of the country spanning from South western region, Niger Delta and communities situated downstream of river in the northern region are constantly affected by flooding. Nigeria experiences heavy rains across all states of the federation each year resulting in overflowing rivers and dams. It has been ranked as the highest environmental disaster in the country in recent years causing significant destruction (Ogunwumi, Njoku, Uzoezie and Benson, 2022). According to Ecological Conservation and Habitat Organization-ECHO (2022), heavy rainfall is expected to continue over the southern states of Nigeria. This accumulation of water is likely to cause further flooding along the Niger-Benue Trough. Similarly, riverine flooding is likely to worsen as water is further released from Lagdo dam in Cameroon (USAID, 2022).

The country-wide flooding situation raise concern on a number of crises-impact this flooding will have on a number of areas in the country which are already suffering from pre-existing problems. Fatality posed by flooding in Nigeria over the years needs an overview because of its increase in recent years. More so, flooding has been categorized as one of the top ten events of natural disasters in Nigeria from 1965 – 2015 according to Emergency Events Database-EMDAT (Nwakwuo, 2019). Furthermore, crises impact of flooding in Nigeria is of particular interest in this paper because of the reoccurrence of this flood, the low coping capacity, poor resilience despite various interventions to minimize the effect on the citizenry. In addition, it is highly important to focus on predictive measures rather than common focus on responding to the disaster. Given the importance of how the crises impact of flooding are spatially distributed in Nigeria, highlighting the crises impact of flooding in Nigeria and the reasons for the low resilience level. More importantly, this paper will provide better understanding of the reasons for resilience to flooding and ways of scaling up the vulnerability level of Nigerians. Hence, this paper through the use of retrospective approach to gather information about cases of flooding in Nigeria from relevant literature take an overview of the emerging crises-impact areas with the aim of creating the needed awareness on ways to up scale the resilience level of the citizen in order to reduce the consequences of the yearly situation.

Conceptual Clarifications

Exposure: According to the World Health Organization (WHO, 2018) it defined exposure as the contact between a person and one or more biological, chemical or physical agents. Exposure is

defined as the between an individual or population and a pollutant or other agents (National Institute of Environmental Health Sciences-NIEHS, 2020). In the context of this paper, exposure is referred to as the predisposition of a system to be disrupted by flood event due to its location. That is, the component that is present in a location that exposes that location to the flooding event. These are the values that are present at the location where flood occur. These values include flood prone location.

Susceptibility: It is the inherent characteristics of an individual or population that makes them more or less vulnerable to the adverse effects of exposure to a hazard (WHO, 2018). In other words, it is the degree to which an individual or population is sensitive to the adverse effects of exposure to a hazardous substance or environmental stressor (NIEHS, 2020, Environmental Protection Agency-EPA, 2020). This relates to system characteristics. That is the awareness and preparedness of affected community regarding the risk, the institutions that are involved in mitigating and reducing the effects of hazards and the existence of possible measures. Being susceptible is the probabilities of being harmed at times of flood disasters. Susceptibility of a community can either be before the occurrences of flood and during floods.

Resilience: Resilience according to Gunderson (2000) is the capacity of a system to undergo disturbance and then return to a state of equilibrium. Furthermore, The United Nations Office for Disaster Risk Reduction (2015) defines resilience as the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazards in a timely and efficient manner. This is the capacity of a community to withstand flood disaster. That is, the ability to maintain a significant levels of efficiency after the occurrence of flood.

Exposure factors that Cause Flooding in Nigeria

Flooding in Nigeria in recent times has been a most recurring climatic hazard. Flooding is commonly thought of as a manifestation of heavy and continuous rain. This is so deteriorating because of the increased heavy rainfall and upstream water flows from dams and reservoirs (OCHA, 2022). Reservoirs and dams are being routinely opened to release excess water from accumulated rainfall in those sites (Al Jazeera, 2022). For instance, the Lagdo dam in Cameroon and the Kanji and Jebba dams in Nigeria were opened on 30 September, 2022, thus increasing upstream water flows (OCHA, 2022; The Sun, 2022 and The Guardian, 2022).

Apart from this, floods can also manifest as a result of natural and anthropogenic factor. The natural causes can be associated with excessive rain (National Geographic, 2018), while anthropogenic causes can be linked with human-induced and aggravated by the interaction between man and nature (Aderogba, 2012). These interaction which has resulted to floods in Nigeria are poor waste management system, unregulated urbanization, bad, non-existing and inadequate drainage system, week and poor implementation of landscape planning regulation, bad governance (Ogundele and Jegede, 2011; Ojo and Adejugbagbe, 2017). Other causes of flooding in Nigeria are inadequate drainage system coupled with poor waste management system and poor community resilience (Nwakwuo, 2019).

Historical Occurrences of Flooding in Nigeria

Flooding has been an age-long occurrence in the Nigerian polity. It has caught across several parts of the country. In fact, no part of the country has been immune from the incidence of flooding on an annual basis. Historically, devastating flooding officially recorded in Nigeria include that which happened in Akure (1980); Ibadan, (1951, 1955, 1960, 1963, 1973, 1978, 1980, 1982, 1984, 1986, 1987, 1988, 1997, 2011 and 2021); Port Harcourt, (1984); Sokoto, (1987, 2003); Borno, (1987, 1995); Kaduna, (1988, 2003) and Kano, (1988). Others occurred inMinna, (1990, 2003); Jos, (1992); Bauchi, (1994); IkotEpene, (1994); Obe Ile, (2006); Benin, (2008) and Makurdi, (2008) (Agbola, Ajayi, Taiwo and Natals, 2012; Oguntala and Oguntoyinbo, 1982; Olaniran, 1983 and Tomori, 2008). These entire floods occurrence had led to the destruction of lives, properties including farmlands worth millions of naira. However, the 2021-2022 seasons in Nigeria has been season of overwhelming downpours in many parts of the country

Crises Impact of Flooding in Nigeria

The crises impact of flooding in Nigeria caught across all sectors such as health, agriculture, housing infrastructure, social life and energy of the economy. Few of this notable cascading crises impact in these sectors are discussed in this sub-section. Flooding has been reported to have triggered the outbreak of cholera in Borno, Adamawa and Yobe states. Specifically, as at 31st September, 7700 cases, including 324 deaths, were reported across these three states. Out of these, 5,400 of those cases were in Borno state alone (OCHA, 2022). In addition, as at 5 October, 50% (2,500) of the cholera cases reported in Borno state including 116 deaths were in Bawa, Dikwa, Jere and Konduga Local Government Areas (LGAs). The report also shows that floods hasdamage around 203,400 houses (ECHO,2022). Most especially in Borno, flood have destroyed six camps hosting over 15,000 Internally Displaced Persons (IDPs) leaving over 48,400 households in immediate needs of shelter.

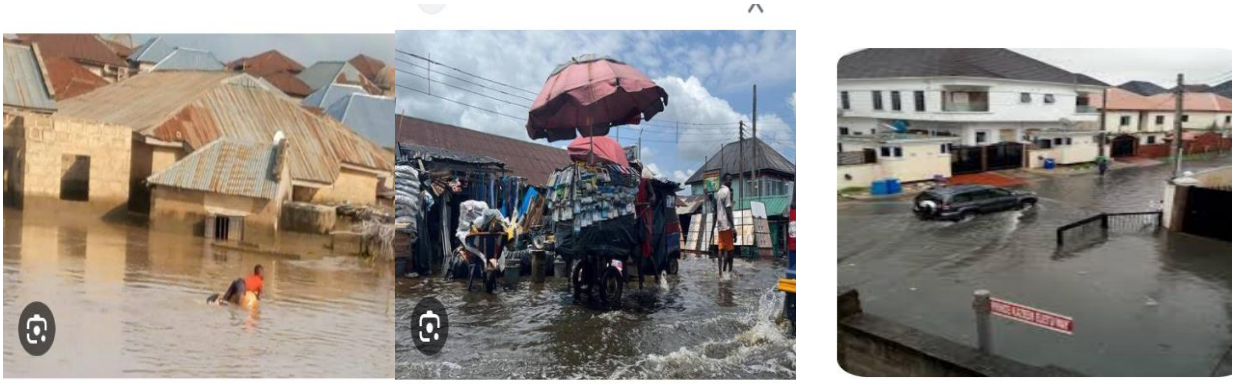

Plate 1:

Source: www.fij.nq>articles>photos-submerged buildings

On health facilities, flooding has affected more than 230 health facilities including 30 that are completely flooded and unusable (Premium Times, 17 October, 2022, Daily Post, 17 October,

2022). A satellite imagery from 13- 17 October suggest that flood water affect an estimated 738 health facilities (UNOSAT, 19-10-2022).

Plate 2:

Source: www.fij.nq>articles>photos-submerged buildings

The crises impact of flooding on agriculture cannot be under estimated. Floods have destroyed many crops especially in the northern region of Nigeria. According to WFP(2022), since June 2022, flooding has destroyed over 630,000 hectares of crop land across the country. In Benue state, more than 100,000 hectares of cropland was overflowed as at 5 October (Reuters, 6-10-2022). In Jigawa state, report show that floods have submerged essential crops such as cassava and yam. In the same vein, excess water from River Benue was reported to have submerged around 4,400 hectares of rice farmland owned by Olan Company in Nassarawa state (Mintel, 6-10-2022, Daily Trust, 4-10-2022).

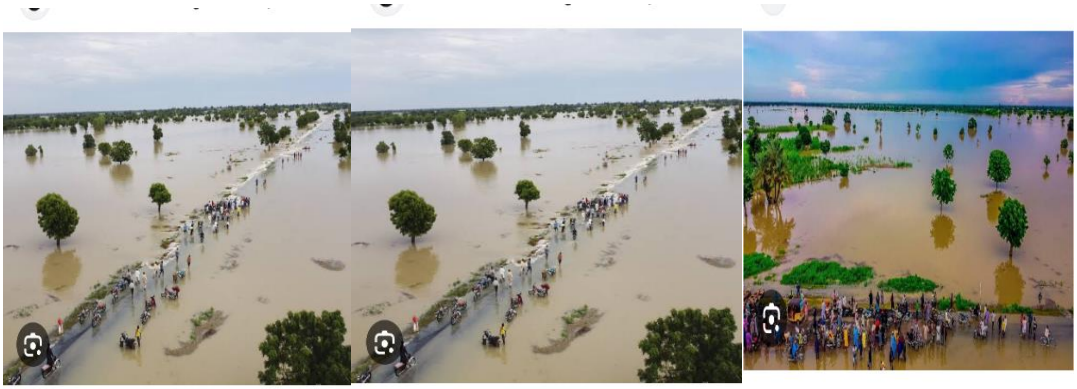

Plate 3:

Sources: www.voanews.com; www.reuters.com

Flood-induced Displacement has been reported to have affected about 104 million people in Nigeria (ECHO, 2022). From this total, Bayelsa state was reported to be worst affected with around 700,000 people (ECHO, 2022). On displacement, 150,000 people were reported to have been displaced and inaccessible as at 20 October in Rivers state (Reuters, 20-10-2022). In 2020,flooding had devastating impacts leading to 129,000 displaced,68 persons killed, properties and farmlands affected in 320 LGAs in 35 states including the Federal Capital Territory (Rederia, 2023.,Nashon, 2023).

Plate 4:

Source: www.humananglemedia.com

The energy and communication sectors have not been left out of this crises impact of flooding in the country. In Rivers state, gas production have been affected leading to shutting down and outright disruptions (Reuters, 2022). Flooding has also affected roads, bridges and some communication lines leaving some communities entirely inaccessible and completely cut off from services. A case in point is Rann and Damasak LGAs in Borno state which hitherto has been hosting displaced people were accessible via helicopter as at 30 September (OCHA, 2023). Similarly, reports has revealed that as at 4 October, in Lokoja, Kogi state, about 113.3 km of roads have been submerged by flood water (International Charter, 2022). In addition, in Anambra state, it was also reported that, as at 9 October, floods had destroyed a major road connecting eight communities to the rest of Anambra state. Furthermore, on 7 October, at least 76 deaths were recorded when a boat capside due to heavy flood in Anambra state (The Guardian, 9-10-2022). On fatality and injured, over 600 fatalities and more than 2400 injured people were reported across the country (Reuters, 2022). The recurring flooding at Ogbaru has severely damaged the Onitsha-Atani-Ossomala-Ogwuikpele-Ndoni road (The Vanguard, February 10, 2023). Unfortunately, this is the only road that connects the 15 communities in Ogbaru Local Government Area/Federal Constituency of Anambra state.

Plate 5:

Sources: www.fij.nq>articles>photos-submerged buildings

www.gettyimages.com

www.humananglemedia.com

Reasons for Low Resilience/High Vulnerability and Susceptibility Level of Nigerians to Flood Disaster

A number of reasons can be attributed to the low resilience level of Nigerians to the crises impact of flooding. One of the reasons for the low resilience level of Nigerian is the lack of physical plan, structure and logistics on the part of the government to make whatever yearly pronouncement realistic. The only visible remedial pronouncement by relevant government agencies, for the expected incident of flooding, is the warning that residents of flood-prone areas should move to uplands, with no physical plan, structure or logistics to make it realistic, in order to increase the level of resilience of the potential victims across the country.

Government at the Federal and state levels are often caught napping, with dismal preparedness. The persistent government‘s lackluster approach to addressing the impact on the people most

especially inaccessibility to numerous livelihood sources and financial constraints. Some of the failures of government include;

1. Non full operationalization of State Emergency Management Agency (SEMA) and Local Management Committee (LMCs). The non-activation of these bodies at the local levels creates ineffectiveness in disaster response at the state and local levels.
2. The non-judicious use of ecological funds by the state. Thus limiting their response to flood-related situations in towns.
3. The focus merely on reactive measures after disaster instead of effective adaptation policies to reduce disaster exposes the citizenry to being vulnerable to flood risk.

Ways of Up-scaling the Resilience Level of Nigerians

Building resilience to flooding in Nigeria is an important strategy in tackling floods in Nigeria. This falls in line with the global standards on disaster risk reduction. This will help individual and community to withstand and recover from crises impact on flood. Thereby helping them to cope, thus minimizing the impact.

One way to build resilience among the inhabitant of Nigeria is to invest in infrastructure that can withstand perennial flood. For instance, building of barriers, reinforced buildings and drainage system will help to save lives and prevent damage that might occur as a result of flood. Educating the populace on flood preparedness. This may include teaching people on how they can safely move, how to stockpile emergency supplies and how to communicate with each other during flood crises. This can be communicated through social media and community outreaches. Government should provide support such as improvement in income level. This will increase households' resilience against flood. The local authority must work together with federal and state authorities in flood prevention, mitigation and management. They must corroborate in identifying area at risk of flood, developing emergency response plans and coordination of recovery efforts. This will help to reduce the impact of flood on citizenry and ensure that they are prepared to respond effectively to any flood events.

Conclusion

This paper has provided an overview of crises impact of flooding in Nigeria, the reasons for vulnerability and the ways to scale up the level of resilience. This was achieved through the use of relevant literature on flooding. Nonetheless, with the progress made in the country on flood risks, the crises impacts are still enormous on virtually all sectors in the country. The crises impacts are felt in the areas of health, energy, transportation, communication, shelter and even livelihoods. As a result, it is necessary to ensure dedicated fund for flood control. This should be incorporated into policies, plans and programmes in disaster preparedness; response and recovery in order to address risk reduction and the building of resilience with a renewed sense of urgency within the context of sustainable development.

Recommendations

As a result of the crises impact and the low resilience level of Nigerians on flooding, the following recommendations were put forward;

1. Indiscriminate dumping of waste on waterways should be checked by the enforcement of already enacted laws and regulations prohibiting the dumping of waste on waterways. Also, government at all tiers should establish waste management infrastructure that will ensure the provision of adequate waste management facilities, including recycling centers, composting plants and landfills.
2. Disposal of waste properly by individuals to prevent clogging of drains and waterways. In addition, community clean-up initiatives should be embarked upon to clean drains and waterways.
3. Provision of early warning and early action campaign which is accompanied by multipurpose cash to save lives, prevent loss of and preserve livelihoods through advisories (such as relocation to a safer and more conducive environment).
4. Flood risk mapping to determine the area at risk and should be the basis for all flood damage reduction program.
5. Spatial planning of our cities should be carried out with utmost urgency to reduce buildings/construction on flood-prone areas.

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