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"I lost all I had to the flood…": A Post-Disaster Assessment of the 2018 Kogi State Flood in Nigeria

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Abstract

The heavy rains of August-September 2018 that resulted in excess run-off and overflow of reservoirs in Nigeria led to the unfortunate Kogi State flood event. The National Emergency Management Agency (NEMA) reported that 204,597 people were affected by the flood. Following this disaster, this study conducted a rapid post disaster assessment of the situation. With a mixed methods approach, the study explored the perceived causes of the flood, awareness of flood warnings, level of preparedness and government interventions. Our findings showed that that 55.6% of the respondents were not aware of early flood warning while 30.6 percent were well prepared for the flood. Nearly 13 percent failed to prepare because they believed God would protect them. Above 40 percent of respondents attributed the incidence to rainfall. Almost 75 percent reported evacuation efforts during the incidence while many flood victims were moved to IDP camps for safety (33%). Based on the study findings, it is evident that Nigeria's flood risk management efforts are largely reactive because they are often limited to the post disaster phase. The study therefore recommended that Kogi State needs a comprehensive flood risk reduction plan comprising early flood warning systems, flood risk mapping and community-based flood adaptation plans which would ultimately improve flood resilience.

Keywords: Flooding, Resilience, Climate Change, Post-disaster assessment, Nigeria

Introduction

Climate Change in recent decades has significantly increased the frequency, duration and variability of heavy precipitation across the globe. With increased global temperature and rising sea levels, extreme precipitation has increased the risk of flooding (Adelekan, 2011, Adelekan and Asiynabi, 2015; Rodrigues, 2019; Li et al., 2016; Tazen et al., 2018; Okafor 2020) particularly in the developing countries (Williams et al 2018, Tellman et al 2021) where it constitutes a major hydrometeorological hazard. Unfortunately, many of these developing

countries are under pressure to manage flood risks in the face of increasing flooding events in spite of their limited adaptive capacity to mitigate (Adelekan, 2016).

The severity, duration and frequency of floods are intensifying on account of not just the changing climate but also rapid land use changes and increasing population (Cirella, 2019, Tellman et al 2021). Nigeria is no exception, and it is one of the most flood prone countries in Africa (Li et al., 2016; Oladokun and Proverbs, 2016; Ntjali et al., 2017; Echendu 2020) Flooding is a perennial environmental hazard which very often lies at the intersection of anthropogenic, climatic and hydrological factors. In recent times, flooding is becoming increasingly severe and more frequent throughout the country (Cirella and Iyalomhe, 2018). The country's flooding hotspots according to Oladokun and Proverbs (2016) are mainly categorized into three: Coastal cities and settlements, Communities and settlements along the two major rivers namely Niger and Benue, and Communities downstream of dammed rivers. However, this classification overlooked an equally important category (that should also be included in the preceding list) which is major inland urban settlements such as Ibadan, Kano, Abuja, Osogbo, Maiduguri etc. Their vulnerability to flooding owes to poor or non-existent drainage network, poor waste disposal management, unplanned urban expansion, poor implementation of planning laws very often hampered by widespread corruption- all of which are symptomatic of a dysfunctional urban planning environment

The state of Kogi which lies along the flood prone Niger-Benue trough is often to great risk of flooding. Two major flood events attest to this fact. In September-October 2012, the release of water from the Ladgo dam in Cameroun into the Benue River flood plain coupled with the effect of excessive precipitation was largely responsible for the 2012 flooding in Nigeria. The 2012 flooding was probably the most prominent and destructive of all flood experiences submerging several settlements (Popoola et al 2022) According to Egbinola et al (2015), 33 out of the 36 states were affected in which an estimated seven million people were affected by the floods, about 363 people died and more than 618,000 houses were damaged or destroyed, resulting in internal displacement of 2,157,419 people.

Given previous flood disasters such as the 2012 catastrophe and the large number of casualties associated with them, in 2018, early flood warning was issued by the relevant government agencies about an imminent flood. People were advised to evacuate their belongings from flood plains and also take up flood preparedness measures at both household and community level so as to ameliorate the scale of destruction. The Nigerian Meteorological Agency (NIMET) in their seasonal rainfall prediction of 2018, warned Nigerians of widespread floods across the country (including Kogi State) due to heavy rainfall. Also, the Nigeria Hydrological Services Agency in its 2018 Annual Flood Outlook announced that there will be incidents of flooding across the country. Based on the forecast, the agency advised the federal and state governments to prepare for the rains by creating awareness for residents in the flood prone regions, and clearing of drainage channels. Later, there was further update on the flood warning on 6th September, 2018 via a press release (NIHSA official website www.nihsa.gov.ng, accessed on December 15th, 2018):

"The Nigeria Hydrological Services Agency (NIHSA) wishes to update the General Public, especially the riparian states & communities by the banks of Rivers Niger and Benue and their floodplains, that there has been systematic daily rise in the water levels on both rivers Niger and Benue. Records from our measuring stations in Lokoja (River Niger) & Makurdi (River Benue) clearly show this. This situation calls for watchfulness on the part of the riparian states as there is still likelihood of occurrence of River Flooding. Shiroro Dam has already joined Kainji & Jebba Dams in spilling water"

Like the 2012 event, heavy rains in August and September 2018 resulted in excess run-off and overflow of reservoirs in Nigeria so as to relieve pressure on the dams, spillways for the dams were opened which led to flooded river banks (NEMA, 2018). The water level recorded on September 24th, 2018 stood at 11.05 meters which was

above the normal level of 9.50 meters (NIHSA, 2018). Kogi State particularly the following local government areas (LGAs) Bassa, Lokoja, Kogi, Ofu, Idah, Ibaji, Omala and Ajaokuta were badly affected. According to the National Emergency Management Agency (NEMA) 2018 Flood Situation Report, about 204,597 people were affected by the flood in Kogi State. Most of the affected buildings were those built on/or close to the flood plains of the Rivers Niger and Benue.

Thus, this paper focuses on the assessment of flood victims' perception of the 2018 flood event in Kogi State. This study sought to examine the circumstances that led to the 2018 Kogi State Flood; the level of awareness and perceived causes of 2018 NIMET flood warning across households; identify determinants of household response to flood warning; level of preparedness and flood evacuation strategies adopted by government agencies. Local flood risk management strongly depends on provision of appropriate data and information to multiple stakeholders that need to tackle preventative and recovery actions (Lamond et al 2019) and how society responds and adopts risk mitigation practices, post disaster recovery and preparedness plans (Gotham et al 2018). An understanding of the risk perception of citizens in flood affected is important for both policy and decision making. The perception of flood risk by citizens is therefore central to understanding not only vulnerability to and potential impacts of floods (Adelekan and Asiyanbi, 2015). The information contained in this paper are critical to local flood risk management.

Study Context

Kogi State lies at the heart of the central region of Nigeria, located between latitude 6.53 N and 8.75 N of the equator and between longitude 5.32 E and 7.87 E of the Greenwich meridian (see Figure 1) with a total land area of 29,833km and has a population of 3,314,043 (NPC, 2006 Census). It is popularly called the Confluence State because of the country's two major Rivers Niger and Benue converge there. Created in 1991, the state comprises three main ethnic groups: Igala, Ebira, and Okun with minorities such as Bassa Nge, Bassa Komu, Nupe, Gwari, Kakanda, Owuro, Ogori-Mangogo and Eggan. The state has an annual rainfall of 1016 to 1524 mm (Olatunde and Adejoh, 2018). The rainy season last from April to October and dry season last from November to March (Olatunde and Ukoje, 2016).

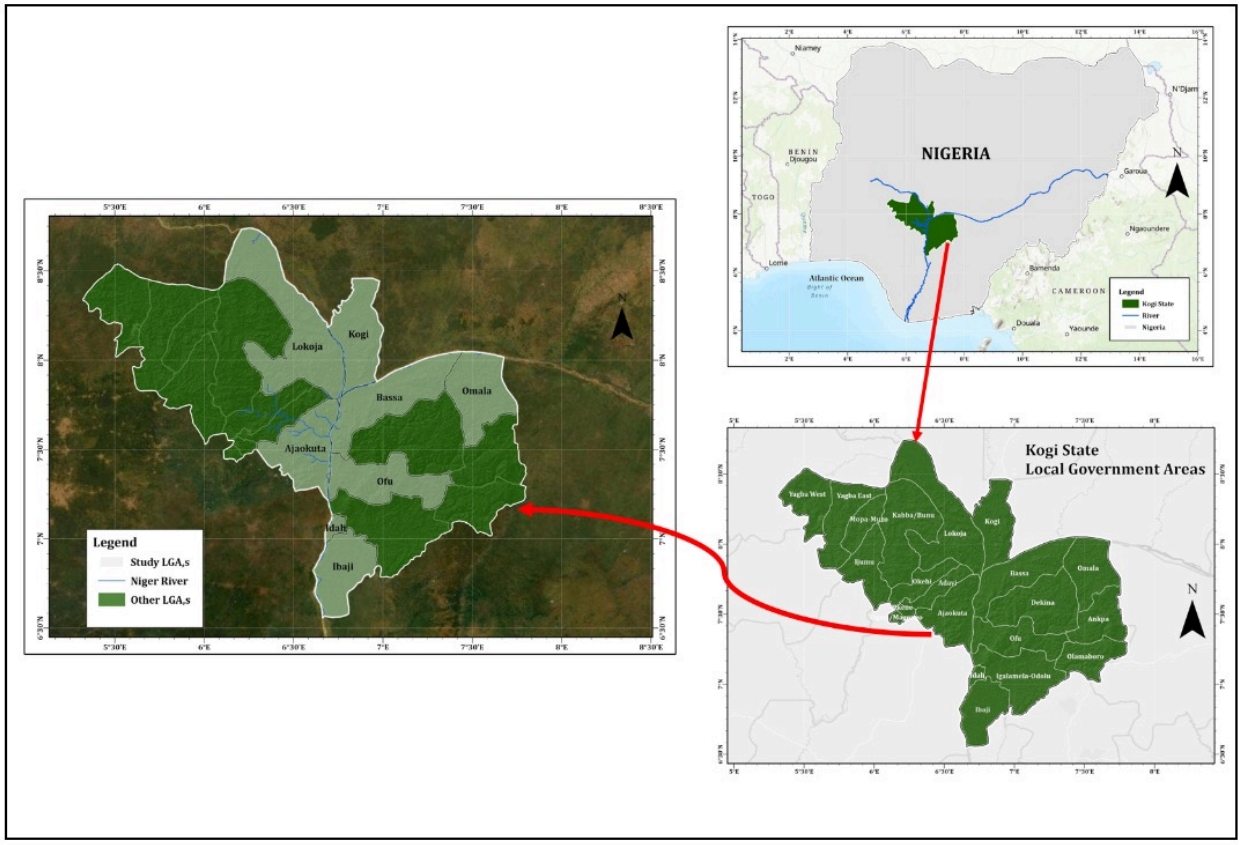

Figure 1: Study area (Source: Author)

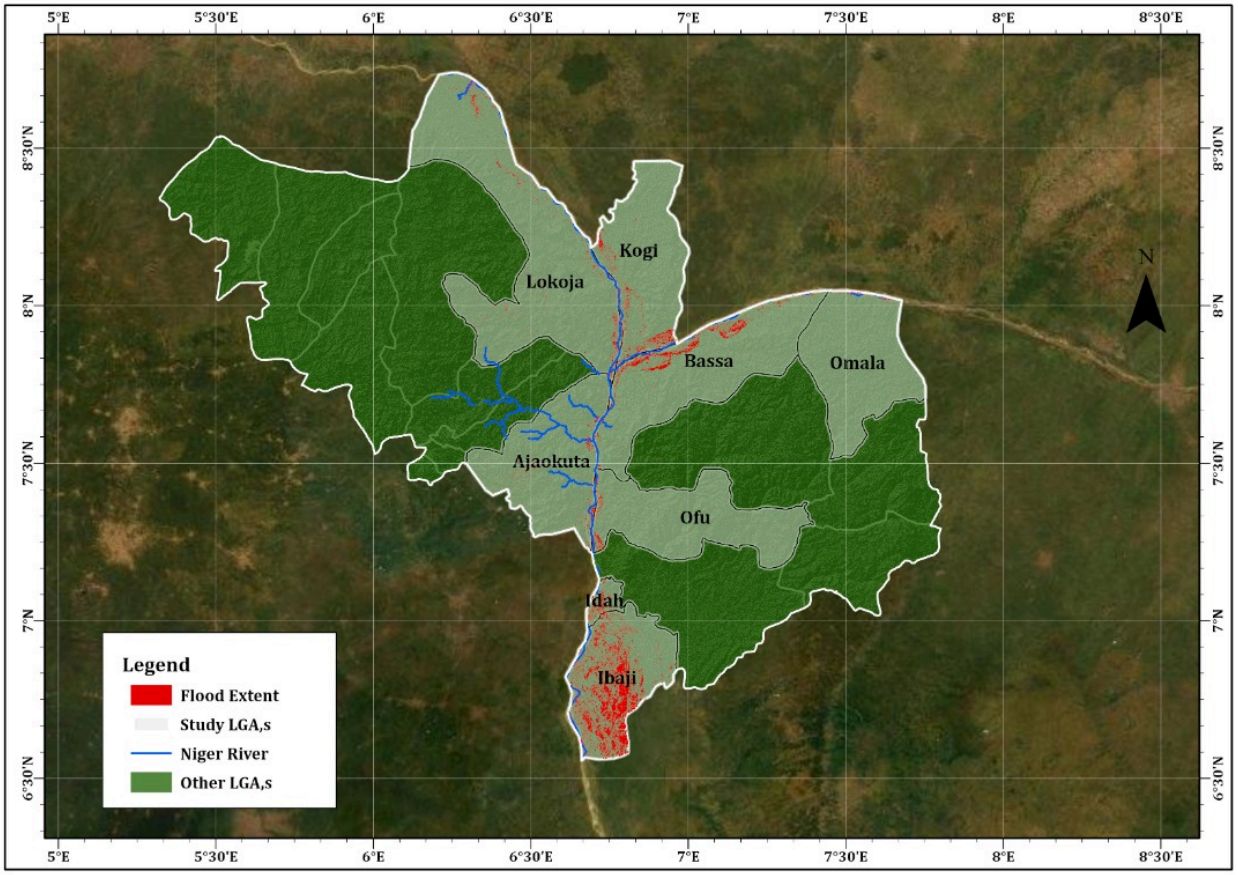

Figure 1: Kogi State showing flood affected communities in 2018 (Source: Sentinel)

Due to its location at the confluence, and dense pattern of settlements along the river banks, many communities and farmlands are often submerged annually during the rainy season when the water level rises and spills over the banks land. National Emergency Management Agency (NEMA) report of 2012 showed that 256 out of 774 local government areas in Nigeria were adversely affected by the 2012 floods. Kogi and Adamawa states had the largest casualty figures. Again, Kogi State was one of the worst hit states in the 2018 episode. (see Plates 1 and 2).

Plate 1: Buildings submerged in Lokoja during the 2018 flood event

Plate 2: Road damaged by flood at Ajaokuta

Methods

A mixed methods approach was adopted in this post disaster assessment. It comprised a variety of approaches: questionnaire survey, content analysis of newspapers, in-depth interviews, and field observations. Primary data were mainly obtained for the study with the aid of a questionnaire and in-depth interviews. The post flood assessment questionnaire was designed to obtain information on demographic characteristics of respondents, level of awareness of 2018 flood prediction, perceived causes of the flood preparedness, flood response level and evacuation methods. A total of 480 copies of the questionnaire were administered to selected households in the sixteen flood affected communities from eight local government areas (see Table 1). Also, an unstructured questionnaire was designed to interview flood victims. Only eight (8) informants from eight LGAs were readily accessible at the time of the research, and were interviewed on the awareness of early flood warning, perception of the causes of the flood, level of preparedness and perception of government intervention efforts in their respective areas of residence. The interviews were conducted in English and in some cases, the language of the immediate environment (for the benefit of those who could neither speak nor write the English language) and was further transcribed into text form. Content analysis was employed to analyse the transcripts. Lastly, the study analysed newspaper articles on the 2018 flood event so as to understand how both the state and non-state actors framed perceived underlying causes, and responded to the flood event.

Informed consent was obtained from all respondents before questionnaire forms were administered. In this study, respondents were guaranteed that information obtained will be kept confidential and were anonymized.

Table 1. Affected flood prone communities and their local government areas

Affected LGAs	Selected Communities
Ajaokuta	Geregu
	Oguro
Bassa	Mozum
	Shintaku
Idah	Ichekene
	Ega
Ibaji	Unale
	Adaigba
Kogi	Kotonkarfe
	Edeha
Lokoja	Gadumo
	Ajara
Ofu	Itobe
	Okokenyi
Omala	Bagana
	Amagede

Source: Compiled by authors

Result and Discussion

Sample Characteristics

Demographic attributes of the study sample are presented in Table 2. The majority of the sample were males (67.3%). About 35% were within the age group of 26-45. Nearly 60% were married. The distribution in Table 2 further shows that almost 40 % of the population had secondary education and that 45.8% earned ₦18,000 - 40,000 monthly, and 26 % were traders.

Table 2: Sample Characteristics

DEMOGRAPHIC ATTRIBUTES		FREQUENCY	PERCENTAGE
SEX	Male	323	67.3%
	Female	157	32.7%
AGE	18-25	101	21.0%
	26-45	167	34.8%
	46-65	146	30.4%
	66 and above	66	13.8%
MARITAL STATUS	Single	126	26.2%
	Married	282	58.8%
	Divorced/widowed	72	15.0%
EDUCATION	No formal Education	88	18.3%
	Primary	77	16.0%
	Secondary	186	38.8%
	Tertiary	129	26.9%
MONTHLY INCOME (₦)	Less than 18,000	180	37.5%
	18,000-40,000	220	45.8%
	40,001-80,000	59	12.3%
	Above 80,000	21	4.4%
OCCUPATION	Civil Servant	86	18.0%
	Trader	125	26.0%
	Farmer	111	23.1%
	Fishing	96	20.0%
	Artisan	43	9.0%
	Student	13	2.7%
	Taxi Driver	3	0.6%
	Hair Stylist	1	0.2%
	Unemployed	2	0.4%

Source: Fieldwork, 2019

Flood Experience

Citizens' experiences with flooding are related to levels of risk perception. It largely conditions the level of flood risk perception. However, flood experience, to a great extent influences flood preparedness levels (Osayomi & Oladosu, 2016) because past flood experience is most likely to spur people to take precautions against future floods. Past experience of flooding are underlying factors that affect the vulnerability of people to flooding in the communities. Therefore, respondents were asked the question "Have you ever experienced flooding in your area?" Most of the respondents (90.6%) claimed that they had experienced flooding. There was a marked variations across the sixteen communities. Flood experience level was quite high in Itobe, Okokenyi, Adaigba , Ichekene and Geregu

(100%) communities. Their low-lying nature and close proximity to the River Niger accounts for the high percentage of reported flood experience. For instance, Ibaji Local Government Area, of which Adaigba is part, records high annual numbers of floods, Joshua et al (2015) documented that in 2012, 80% of Ibaji LGA was submerged by flood. No doubt, these findings validate Ahile and Ityavyar (2016) study in which majority of the respondents (84.9%) in Makurdi town, Benue State, Nigeria have experienced flooding in the area before.

Awareness of 2018 NIMET flood warning

As earlier mentioned, NIMET had issued a flood warning before the incident. The respondents were asked if they were aware of the NIMET flood warning. Generally speaking, the level of awareness of NIMET 2018 flood warning was quite low (44.4%). The proportion of respondents who were aware of NIMET flood prediction was very high in some communities such as Geregu (93.3%), Oguro (83.3%), Adaigba (80.0%), Kotonkarfe (73.3%) and Gadumo (66.7%) and low in Okokenyi (0.0%) and Bagana (0.0%) communities. The high level of awareness of flood warning in these communities may be due to the fact that many of them are urban settlements relatively equipped with communication facilities which enabled information flow and prompt circulation of flood warning. On the other hand, the rural communities of Okokenyi and Bagana have limited access to communication facilities with relatively poor network coverage. Hence, their chances of being aware were very low. This low level of awareness of 2018 NIMET flood prediction conforms to previous studies. Osayomi and Oladosu (2016) in their study of the analysis of flood preparedness in the flood prone city of Ibadan indicated that 63.6% of respondents received no prior warning before the 2013 flood disaster. Ajita et al (2016), reported that only 2% of respondents had knowledge of early flood warning in Tabasco, Mexico. A survey of 1000 respondents across the city of Lagos, Nigeria indicated that only 29 percent had any knowledge of the possibility of the July 2011 flood happening (Adelekan, 2015)

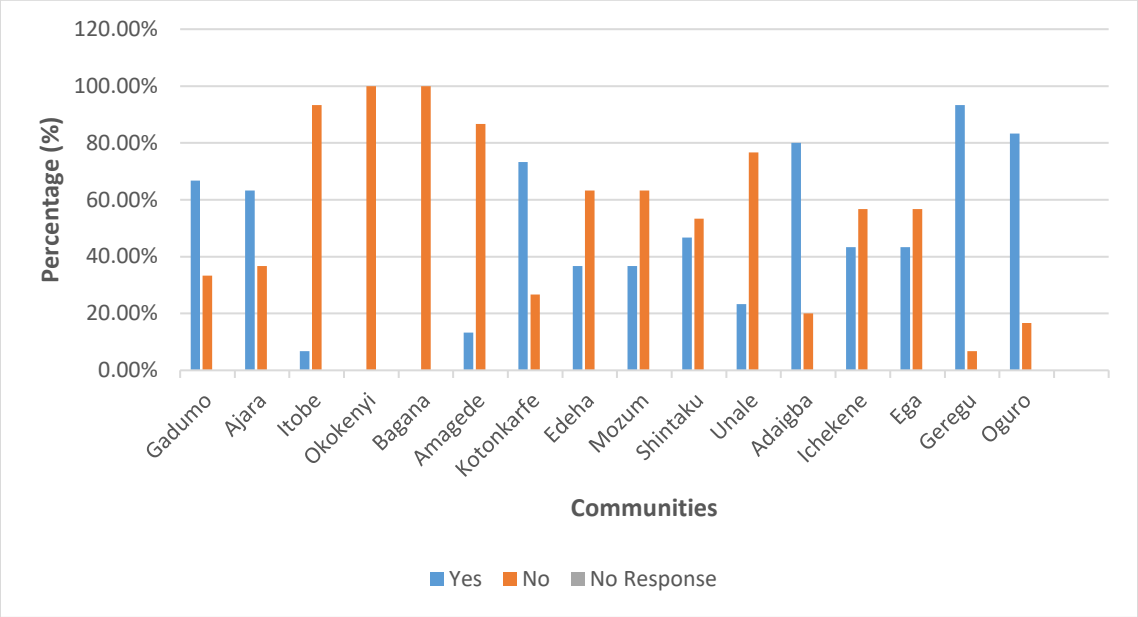

Figure 1: Awareness of 2018 flood warning

Response to Flood Warning

The response to early flood warning across the sixteen communities is quite low. About 34.0% of respondents in the study area indicated that they did not respond to the early flood warning issued by NIMET, while 25.2% of the respondents claimed to have responded. Edeha (70.0%) and Adaigba (60.0%) communities had the highest level of response to flood warning, while Shintaku community (70%) had the lowest level of response. The low level of response may be attributed to: lack of trust in the warning arising from previous false alarms, negligence on the part of the respondents, lack of precision in the warning given and the fact that most of the respondents do not have alternatives. The awareness of early flood warning did not necessarily result in adequate response and preparedness. They are not prompt to response because of the perceived scepticism in government. They felt government see flood events as an opportunity to embezzle public funds. Some excerpts had this to say this:

"…We understand that sometimes they give out false warning to embezzle" (Male/45yrs old/Farmer/Bagana/Omala)

Most times, the warnings are ignored. Ottah (2017) in a study in Ibaji area of Kogi State reported that 60% of the respondents defied flood warning they heard over the radio. Based on the findings, awareness of flood warning does not necessarily translate to response.

Flood Preparedness

Flood preparedness is one of the major pillars of flood risk management, because it reduces the likelihood of flood risk and the likely flood disaster effects (Osayomi & Oladosu, 2016). Respondents were asked if they were prepared for the 2018 flood event. A cursory look at flood preparedness across the sixteen communities reveals that 30.6% were prepared for the flood event. Itobe (6.7%), Ega (10.0%), Unale (13.3%), Shintaku (16.7%), Okokenyi (16.7%) and Bagana (16.7%) communities had the lowest levels of flood preparedness while Adaigba and Edeha had the highest levels of preparedness (60.0%). Generally, the level of flood preparedness was quite low across these communities.

This can be attributed to three major factors. Firstly, it is possible that some might have heard the warning and still defied it on the grounds of being unreliable or false. Secondly, it is likely that the low level of preparedness arose from similarly low level of awareness of the early flood warning, as previously reported in the preceding section as some respondents had these to say:

"There was no need to prepare for the flood because the last flood incidence didn't affect me. So, I thought that I won't be affected this time around. Usually, what we do on hearing a flood warning is to wait and see if the water will get to our house, if it doesn't, we will remain but if it does, we will move out" ***(Female/67 years old/Retired/Kotonkarfe /Kogi).***

"Prepare? this is where I have been staying for a long time and my only source of income is in this location, where do I move to? I don't have anywhere else to go. Even if they gave warning that there will be flood, I will stay put, there is no need to prepare until we see that the water is close to where we stay" ***(Male/27 years old/Trader/Ega /Idah).***

Thirdly, it can also be attributed to previous flood experiences, as Osayomi & Oladosu (2016; p.227) put it "the compliance of flood prediction is partly a function of previous flood experiences". Some respondents also see floods as normal occurrences, while others see flood predictions to be inaccurate. Hence, there is no need to prepare. One respondent narrated:

"When we heard the warning, we were prepared because flood is not a new thing to us. We are not scared of it because it is not the first experience. What we do is to wait and see the water level first and then start anticipating the month that the flood water will come, once we see that flood cannot occur in such month, even if they give warning, we ignore such warning. We know the months that flooding can occur and the months that it cannot occur..." ***(Male/45 years old/Farmer/Bagana/Omala).***

Essentially, it can be said that the low level of preparedness across these communities clearly indicates that there is a poor practice of flood preparedness as a measure of flood risk reduction. The low level of preparedness is not limited to

Kogi State alone. It is also seen in Makurdi, Benue State where Ahile and Ityavyar (2016) observed that only 25.1% of the respondents were prepared for the floods in 2016. Ashenefe et al. (2017) observed that household flood preparedness was very low (24.4%) in the flood prone district of Dembia in northwest Ethiopia. Its low level of preparedness was attributed to factors such as lack of warning information, knowledge of flood and prior exposure to flood among others. In addition, it conformed to Ajita et al. (2016) observations that only 46% of surveyed households in Tabasco, Mexico, had taken actions to protect their belongings. Lastly, a large number of residents (47.8%) were reported to have protected their property from flood damage whereas 38.6 % did nothing and stayed indoors during flood in Lagos, Nigeria (Adelekan, 2016)

A simple correlation analysis showed a fairly strong correlation between warning and flood preparedness. (r: 0.612; *p*: 0.000) in this study. The reason is evidently not far-fetched. Majority of the respondents who had experienced flooding, were more likely to be prepared. This seems to agree with Ashenefe et al (2017) results that knowledge of flood warning was positively correlated with household flood preparedness. Furthermore, Onwuemele (2018) showed that there was close but positive relationship between awareness of flood risks and level of preparedness in Lagos, Nigeria.

Reasons for failing to prepare

Like flood preparedness, the reasons for failing to prepare also varied across these communities. Figure 2 shows that majority of the respondents (16.9%) did not practice flood preparedness because they do not trust the early flood warning. A little over twelve percent (12.3%) believed that God would protect them while 12.3% stated that flood was a normal occurrence.

Most often than not, most people do not trust early flood warning again due to the fact that they cannot really decipher the authenticity of the warning. Hence, it is often dismissed. Ezemonye and Emeribe (2014) in their study discovered that the Benin City households' reasons for not practicing flood preparedness includes: religious beliefs (95%), lack of funds (86.4%). Ashenefe et al (2017) was also able to establish that households with better monthly income were found to be more prepared than those with lower monthly income in Dembia District, Northwest Ethiopia. The belief is that those with the financial means are in a better position to prepare for floods.

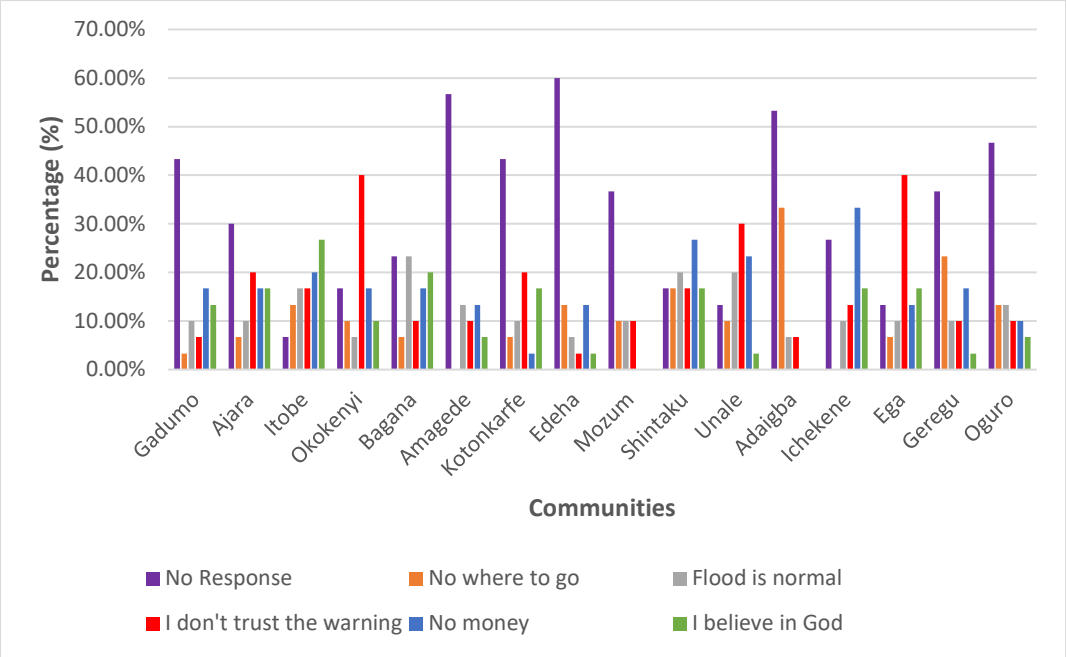

Figure 2: Reasons for failing to prepare

Perception of the causes of the 2018 flood event

Respondents were asked about what led to the 2018 flood event. More than two fifths of the respondents (45.0%) stated that rainfall was the major cause of the flood disaster in Kogi State. Only few of the respondents (3.1%) mentioned God/Divine factor to be the major cause of the 2018 flood event while 7.7% claimed that they didn't know.

Similarly, according to a report by NEMA, August 2018, heavy rains across Nigeria were said to have caused large scale flooding that has already impacted 441, 251 people (Punch Newspaper, 2018 https://punchng.com/osinbanjo-in-kogi-as-flood-kills-108-displaces-141369/ Accessed 18th August, 2019).

These earlier identified causes were re-echoed by some interviewees:

"It was heavy rainfall that caused the flooding. The rain lasted for several days and it was quite intense, the water level started rising and after some days, there was flooding. Although the magnitude of the flood cannot be compared to that of 2012 but the damages were severe" ***(Male/27 years Old/Trader/Ega/Idah).***

"The cause? God! Yea, is it humans that caused the flood? No! they said it was dam but who saw it? So it is God, we don't know where the water is coming from or where it is going, God is in control of water and land, so anything that happens is from God" ***(Male/45 years old/Boat Mechanic/Shintaku/Bassa).***

"It was due to overflow of the dam. We heard that they released excess water from Shiroro and Kainji dams which resulted into flooding in our community. If not for the dam waters, it is very unusual for River Niger to over flow its boundary" ***(Male/37 years/Civil Servant/Itobe/Ofu).***

Furthermore, these findings are corroborated by the Nigeria Hydrological Services Agency official statement on the perceived causes of the 2018 flood in Kogi state on its website:

"*The localized urban flooding incidents being witnessed in some cities and communities in the country are expected to continue due to high rainfall intensity of shorter duration, rainstorms, blockage of drainage system and poor urban planning, as well as coastal flooding resulting from sea rise and storm surges"(www.nihsa.gov.ng/2018/09/ Accessed 18th August, 2019).*

This conforms to previous studies such as Adelekan and Asiyanbi (2015). They found that respondents in Lagos identified heavy rainfall as a major cause of flooding. In Kosovo, heavy rains was perceived to be the main cause of flooding (Kastrati et al 2014). Heavy rainfall, blockage of drainage were perceived as major causes of flooding in Benin City, Nigeria (Cirella et al 2019). Rainfall was a major factor directly associated with flood hazard of Dire Dawa city. Duration, magnitude and intensity of rainfall determine the formation of flood. Nearly 93 percent agreed that heavy rainfall is the cause of Dawa city flooding. Like Kogi State, Dire Dawa city where different river meets is the lowest point with an altitude of 100m above sea level. The location of Dire Dawa at the foot of the mountain chains in concert with other predisposing factors has exacerbated the flood risk in the city. The construction of settlements has aggravated flooding problem by reducing width of the river banks. (Erena and Worku 2018). Similarly, heavy and prolonged rainfall was the principal cause of flooding in Ibadan (Egbinola, 2015). Urban flooding in Kabul city is due to excessive rainfall and inadequate drainage among other factors (Manawi, 2021). The literature is heavy laden with the fact that extreme weather events expressed as heavy precipitation largely account for flooding (Adelekan, 2011; Adelekan and Asiyanbi, 2015, Lie et al, 2016, Tazen 2018, Okafor, 2020). Besides excessive rainfall, rapid and unplanned urban growth and poor physical control have significantly increased flood risk (Yan, 2020). Many Nigerian urban areas unfortunately lack drainage network for waste and flood water, with many depending on rivers and tributary streams flowing through them, as outlets (Oladokun and Proverbs, 2016), and swampy, low lying flood prone areas which

are cheap to acquire but expensive to develop, are increasingly being inhabited (Oladokun and Proverbs, 2016). Heavy rainfall, blockage of drainage were perceived as major perceived causes of flooding. Nearly 60 percent claiming that the government had not worked or constructed anything with regard to flood control (Cirella et al 2019).

Table 6. Perceived causes of the 2018 flood disaster

Communities	No Response	Rainfall	River overflow	No drainage	Climate Change	God	I don't Know	Poor planning
Gadumo	0 (0.0%)	15 (50.0%)	9 (30.0%)	3 (10.0%)	0 (0.0%)	0 (0.0%)	2 (6.7%)	1 (3.3%)
Ajara	0 (0.0%)	14 (46.7%)	6 (20.0%)	8 (26.7%)	1 (3.3%)	0 (0.0%)	0 (0.0%)	1 (3.3%)
Itobe	1 (3.3%)	17 (56.7%)	3 (10.0%)	3 (10.0%)	0 (0.0%)	1 (3.3%)	4 (13.3%)	1 (3.3%)
Okokenyi	1 (3.3%)	8 (26.7%)	6 (20.0%)	4 (13.3%)	1 (3.3%)	2 (6.7%)	7 (23.7%)	1 (3.3%)
Bagana	0 (0.0%)	14 (46.7%)	7 (23.3%)	2 (6.7%)	0 (0.0%)	3 (10.0%)	4 (13.3%)	0 (0.0%)
Amagede	8 (26.7%)	11 (36.7%)	4 (13.3%)	1 (3.3%)	0 (0.0%)	2 (6.7%)	2 (6.7%)	2 (6.7%)
Kotonkarfe	0 (0.0%)	8 (26.7%)	5 (16.7%)	10 (33.3%)	1 (3.3%)	0 (0.0%)	2 (6.7%)	4 (13.3%)
Edeha	0 (0.0%)	21 (70.0%)	5 (16.7%)	1 (3.3%)	3 (10.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Mozum	0 (0.0%)	12 (40.0%)	12 (40.0%)	0 (0.0%)	6 (20.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Shintaku	0 (0.0%)	11 (36.7%)	7 (23.7%)	7 (23.7%)	2 (6.7%)	3 (10.0%)	0 (0.0%)	0 (0.0%)
Unale	0 (0.0%)	11 (36.7%)	5 (16.7%)	6 (20.0%)	0 (0.0%)	2 (6.7%)	6 (20.0%)	0 (0.0%)
Adaigba	1 (3.3%)	17 (56.7%)	6 (20.0%)	1 (3.3%)	4 (13.3%)	0 (0.0%)	1 (3.3%)	0 (0.0%)
Ichekene	3 (10.0%)	10 (33.3%)	8 (26.7%)	3 (10.0%)	0 (0.0%)	1 (3.3%)	3 (10.0%)	2 (6.7%)
Ega	0 (0.0%)	15 (50.0%)	3 (10.0%)	4 (13.3%)	0 (0.0%)	1 (3.3%)	5 (16.7%)	2 (6.7%)
Geregu	0 (0.0%)	15 (50.0%)	10 (33.3%)	1 (3.3%)	3 (10.0%)	0 (0.0%)	0 (0.0%)	1 (3.3%)
Oguro	0 (0.0%)	17 (56.7%)	8 (26.7%)	0 (0.0%)	3 (10.0%)	0 (0.0%)	1 (3.3%)	1 (3.3%)
TOTAL	**14 (2.9%)**	**216 (45.0%)**	**104 (21.7%)**	**54 (11.2%)**	**24 (5.0%)**	**15 (3.1%)**	**37 (7.7%)**	**16 (3.3%)**

Source: Fieldwork, 2019

Evacuation Effort

Respondents were asked the question "Was there any evacuation effort in your community?" A very high percentage (73.5%) of the respondents stated that there was evacuation effort in their community. Evacuation efforts was quite high in some communities such as Adaigba (93.3%), Itobe (83.3%), Oguro, Amagede and Kotonkarfe (80.0%). Generally, most of the respondents acknowledged that they were evacuated during the flood incident. In some cases, some respondents reported there was none from government but the community eventually came to their rescue:

"Government? No, none at all. It was the community association that mobilized people to help evacuate the flood victims to a safer location, they patrolled the flooded areas to search for flood victims who are trapped in the flood. We were camped in a primary school; we had no food or clothes, I lost all I had to the flood" ***(Male/27 years old/Trader/Ega/ Idah).***

While others reported evacuation was not far reaching and had to rescue themselves:

"There was evacuation but not everybody was evacuated, the government officials came when a lot of damages has (sic) already been done. Most of us were stranded, we had to look for a way out by ourselves" ***(Male/37 years old/Civil Servant/Itobe/Ofu).***

"*I only managed to escape with my family members using my own small wooden boat.. For now no help has come to us from either the state or FG" - Abdulmummu (NAN-Premium Times)*

Another flood drew their attention on the need to rescue trapped victims:

We want NEMA to come to our aid. Many of our people are finding it difficult to move out their communities because some are still trapped there. We lost one person three days ago….Yakubu Mohammed, Koton Karfee (NAN-Premium Times)

Table 7. Evacuation Efforts

LGAs	Communities	No response	Yes	No	Total
LOKOJA	Gadumo	0 (0.0%)	22 (73.3%)	8 (26.7%)	30 (100.0%)
	Ajara	0 (0.0%)	18 960.0%)	12 (40.0%)	30 (100.0%)
OFU	Itobe	0 (0.0%)	25 (83.3%)	5 (16.7%)	30 (100.0%)
	Okokenyi	0 (0.0%)	21 (70.0%)	9 (30.0%)	30 (100.0%)
OMALA	Bagana	0 (0.0%)	22 (73.3%)	8 (26.7%)	30 (100.0%)
	Amagede	0 (0.0%)	24 (80.0%)	6 (20.0%)	30 (100.0%)
KOGI	Kotonkarfe	0 (0.0%)	24 (80.0%)	6 (20.0%)	30 (100.0%)
	Edeha	0 (0.0%)	23 (76.7%)	7 (23.3%)	30 (100.0%)
BASSA	Mozum	0 (0.0%)	23 (76.7%)	7 (23.3%)	30 (100.0%)
	Shintaku	0 (0.0%)	18 (60.0%)	12 (40.0%)	30 (100.0%)
IBAJI	Unale	0 (0.0%)	17 (56.7%)	13 (43.3%)	30 (100.0%)
	Adaigba	1 (3.3%)	28 (93.3%)	1 (3.3%)	30 (100.0%)
IDAH	Ichekene	0 (0.0%)	19 (63.3%)	10 (33.3%)	30 (100.0%)
	Ega	0 (0.0%)	22 (73.3%)	8 (26.7%)	30 (100.0%)
AJAOKUTA	Geregu	0 (0.0%)	23 (76.7%)	7 (23.3%)	30 (100.0%)
	Oguro	2 (6.7%)	24 (80.0%)	4 (13.3%)	30 (100.0%)
	Total	**3 (0.6%)**	**353 (73.5%)**	**122 (25.4%)**	**480 (100.0%)**

Source: Fieldwork, 2019

Evacuation Before, During and After the Flood

Respondents were asked if they were evacuated from their homes before the 2018 flood event. Majority of the respondents (65.6%) were not evacuated before the flood. Generally, there was little or no evacuation prior to the flood event in the affected communities except in Edeha (76.7%) and Adaigba (63.3%) where the majority of the respondents were evacuated before the flood. During the flood, 48.0% were evacuated during the flood. Amagede (90.0%) and Bagana (83.3%) had the highest percentage of evacuees during the flood.

Only a small percentage of the respondents (8.8%) were evacuated after the flood event while 77.9% were not evacuated at all. A multiplicity of factors could have been responsible for the failure of evacuation in all the three phases of the flood event. One may be refusal to leave on account of strong place attachment. Prior to the flood, the Kogi State Governor had warned the public of the danger of ancestral home attachment: "Don't say it is your ancestral home. You need to be alive first before claiming ancestral homes" (Obijiesi, 2018). Other factors such as inaccessibility, limited rescue personnel may account for failure to evacuate.

Table 8. Evacuation Before, During and After the Flood

COMMUNITIES	BEFORE		DURING		AFTER	
	Yes	No	Yes	No	Yes	No
Gadumo	4 (13.3%)	25 (83.3%)	20 (66.7%)	8 (26.7%)	1 (3.3%)	26 (86.7%)
Ajara	3 (10.0%)	25 (83.3%)	20 (66.7%)	10 (33.3%)	3 (10.0%)	25 (83.3%)
Itobe	6 (20.0%)	24 (80.0%)	19 (63.3%)	11 (36.7%)	0 (0.0%)	30 (100.0%)
Okokenyi	2 (6.7%)	28 (93.3%)	19 (63.3%)	11 (36.7%)	1 (3.3%)	29 (96.7%)
Bagana	0 (0.0%)	8 (26.7%)	25 (83.3%)	5 (16.7%)	0 (0.0%)	8 (26.7%)
Amagede	1 (3.3%)	11 (36.7%)	27 (90.0%)	3 (10.0%)	0 (0.0%)	12 (40.0%)
Kotonkarfe	6 (20.0%)	24 (80.0%)	10 (33.3%)	20 (66.7%)	8 (26.7%)	22 (73.3%)
Edeha	23 (76.7%)	7 (23.3%)	3 (10.0%)	27 (90.0%)	2 (6.7%)	28 (93.3%)
Mozum	7 (23.3%)	14 (46.7%)	5 (16.7%)	14 (46.7%)	6 (20.0%)	11 (36.7%
Shintaku	4 (13.3%)	22 (73.3%)	10 (33.3%)	18 (60.0%)	4 (13.3%)	22 (73.3%)
Unale	3 (10.0%)	27 (90.0%)	12 (40.0%)	18 (60.0%)	2 (6.7%)	28 (93.5%)
Adaigba	19 (63.3%)	10 (33.3%)	6 (20.7%)	23 (75.9%)	3 (10.0%)	26 (87.7%)
Ichekene	3 (10.0%)	27 (93.1%)	19 (63.3%)	11 (36.7%	3 (10.0%)	27 (90.0%)
Ega	0 (0.0%)	30 (100.0%)	16 (53.3%)	14 (46.7%)	2 (6.7%)	28 (93.3%)
Geregu	15 (50.0%)	15 (50.0%)	7 (23.3%)	23 (76.7%)	4 (13.3%)	26 (86.7%)
Oguro	11 (36.7%)	17 (56.7%)	12 (40.0%	17 (56.7%)	3 (10.0%)	26 (86.7%)
TOTAL	**106 (22.1%)**	**314 (65.6%)**	**230 (48.0%)**	**232 (48.4%)**	**42 (8.8%)**	**374 (77.9%)**

Source: Fieldwork, 2019

Place of Evacuation

Most of the flood victims were evacuated to IDP camps; 33.3% were evacuated by government officials to IDP camps (33%) while the rest were moved to church/mosque (7.1%) or stayed with family relations and friends (29.8%).

One of the displaced persons during the 2018 flood event narrated her ordeal:

"…we always go out into open field to defecate, the available toilet provisions were not enough for all of us, it was always messed up" ***(Female/67 years/Retired/Kotonkarfe/Kogi).***

Apparently, many of the displaced persons were evacuated to IDP camps. The reason being that they lack alternatives or that they believe the government will provide adequate care at this critical period in their lives. However, this is not the case in most times. A 55-year-old fisherman recollected his experience thus:

"*…the compensation is not enough, the amount of food that will sustain myself and my family in a week maybe about 10 bowls of rice, the government will just come and give us a bowl of rice, can that sustain myself and my family? No!"* ***(Male/55 years/Fisherman/Unale Community/Ibaji).***

Another respondent, a 45-year-old farmer recounted that:

"*…my family and I were given a small size mattress to sleep on. Is it for me or my children to sleep on"? Isn't this wickedness?"* ***(Male/45 years/Farmer/Bagana Community/Ibaji).***

In September where the waters swept across the town with greater force, the guest house once again became a place for most residents of Adabode. But not only is space extremely insufficient, the government does not recognise the shelter as an IDP camp and there did not provide relief materials to the IDPS. He said the people have never received anything from the government since the last flooding." (Adebajo , 2018)

Table 9. Place of Evacuation

LGAs	Communities	Relatives/Friends	Church/Mosques	IDP camps	No response	TOTAL
LOKOJA	Gadumo	7 (23.3%)	2 (6.7%)	16 (53.3%)	5 (16.7%)	30 (100.0%)
	Ajara	11 (36.7%)	2 (6.7%)	11 (36.7%)	6 (20.0%)	30 (100.0%)
OFU	Itobe	17 (56.7%)	0 (0.0%)	7 (23.3%)	6 (20.0%)	30 (100.0%)
	Okokenyi	12 (40.0%)	0 (0.0%)	10 (33.3%)	8 (26.7%)	30 (100.0%)
OMALA	Bagana	10 (33.3%)	0 (0.0%)	11 (36.7%)	9 (30.0%)	30 (100.0%)
	Amagede	2 (6.7%)	0 (0.0%)	8 (26.7%)	20 (66.7%)	30 (100.0%)
KOGI	Kotonkarfe	7 (23.3%)	2 (6.7%)	14 (46.7%)	7 (23.3%)	30 (100.0%)
	Edeha	6 (20.0%)	8 (26.7%)	15 (50.0%)	1 (3.3%)	30 (100.0%)
BASSA	Mozum	12 (40.0%)	1 (3.3%)	0 (0.0%)	17 (56.7%)	30 (100.0%)
	Shintaku	5 (16.7%)	1 (3.3%)	12 (40.0%)	12 (40.0%)	30 (100.0%)
IBAJI	Unale	5 (16.7%)	1 (3.3%)	9 (30.0%)	15 (50.0%)	30 (100.0%)
	Adaigba	12 (40.0%)	4 (13.3%)	11 (36.7%)	3 (10.0%)	30 (100.0%)
IDAH	Ichekene	12 (40.0%)	0 (0.0%)	7 (23.3%)	11 (36.7%)	30 (100.0%)
	Ega	5 (16.7%)	0 (0.0%)	12 (40.0%)	13 (43.3%)	30 (100.0%)
AJAOKUTA	Geregu	10 (33.3%)	7 (23.3%)	7 (23.3%)	6 (20.0%)	30 (100.0%)
	Oguro	10 (33.3%)	6 (20.0%)	10 (33.3%)	4 (13.3%)	30 (100.0%)
	TOTAL	**143 (29.8%)**	**34 (7.1%)**	**160 (33.3%)**	**143 (29.8%)**	**480(100.0%)**

Source: Fieldwork, 2019

Assessment of Government Intervention

Majority of the respondents (37%) rated government intervention effort to be poor; 25% said it was very poor, 26% claimed it was good while about 11% were of the opinion that governments intervention efforts were very good as seen in Table 10. Generally, most of the respondents claimed that governments' intervention efforts during the 2018 flood event was not impressive. In fact, some of the interviewed respondents narrated their perception of government efforts as follows:

"Government helped but it was not up to the level that people expected. The assistance from government was quite minimal. Also, they waited till the flood water got to a high level before they came to help, at that point we have lost so much already to the flood. When we got to the IDP

camp, my family and I were given a small sized mattress to sleep on. Is it for me or my children to sleep on"? Isn't this wickedness?" ***(Male/45 years old/Farmer/Bagana Community/Omala).***

In another instance, there were suspicions of favouritism and ethnic discrimination in the rehabilitation and post emergency care services

"Government relocated some people but it was selective, some of us that are not indigenes of the state were ignored, if you don't have someone at the top, there is nothing for you. The relief materials were shared amongst themselves. Since the flood, nobody came to our rescue but I believe that even if nobody helps me, God will help me" ***(Male/47 years old/Fisherman/Geregu/Ajaokuta)***.

This further echoed Adelekan (2015) which documented that majority of the surveyed households (70%) in Lagos informed that they did not benefit from any form of external assistance during events of flooding.

A newspaper account reported some nasty experiences such as lack of access of drinking water such as the one below:

"We need government to help us with bags of sachet water. We are forced to be drinking water from the flooded river since there is no other source of potable water" You can imagine that solider are the ones showing us kindness wwith bag of water between 10-20 every day. This is what we have been managing. We are praying that God will touch the government and other philanthropic organisations to come to our aid"- Idris Abdulmumi, Akpaku village. (Akubo, 2018)

Another complaint was the access to sanitation facilities. "We don't have nets, mattresses and blankets and we also have challenges with place of convenience and where to take our baths. Our women cannot take their in the afternoon except in the nigh- Abubakar, Musa.

Since we were displaced and we came to this camp on Sept 7, we have been suffering. The local government is supposed to help us with some things bu they are not doing it- Idris Abdulmumi. (Akubo, 2018)

Response from the civil society sector:

"We decided to visit the IDP camps in Kotonkarfe to support and sympathize with the m and educate them on hygiene in order to maintain clean environment and avoid outbreak of communicable diseases in the camps. We have donated drugs such as Vitamin C, anti-malaria antibiotics to the camps clinics that will aid the management of the some common diseases that may likely to occur in this kind of situation" Dr. Kabiru Zubair, Chairman Kogi NMA (Jimoh, 2018)

"The NRCS with the support of the International Federation of the Red Cross and Red recent Society (IFRC) and their partners provided the relief material which included 100 bags of rice (50 kg), 100 bags of beans (24 kg), 100 bags of corn soya blend (24 kg), 100 gallons of vegetable oil (10 kg) and 100 bags of 0.5 salt.

"We had challenge of water supply yesterday (Saturday) because the borehole is not functioning but we have been able to resolve that by providing alternative water supply sources. Light and clinic are also other challenges because the camp has not connected to the grid but since it is an emergency, we will solve the problems as they are being identified"- Sanusi Yahaya Commissioner, Environment and Natural Resources (NAN, 2018).

" I am here to look at what has gone wrong and what has happened .. Land and properties (sic) are underwater and after this period, when the water recedes, that is really when the hard work begins because those who have lost farmlands needs to be restored somehow and need to be compensated including those who lost houses and property" – Yemi Osinbajo Vice President of Nigeria

Table 10. Assessment of Governments Intervention Efforts

LGAs	Communities	No response	Very good	Good	Poor	Very poor
LOKOJA	Gadumo	1 (3.3%)	5 (16.7%)	6 (20.0%)	9 (30.0%)	9 (30.0%)
	Ajara	1 (3.3%)	2 (6.7%)	10 (33.3%)	8 (26.7%)	9 (30.0%)
OFU	Itobe	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)
	Okokenyi	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (30.0%)	21 (70.0%)
OMALA	Bagana	0 (0.0%)	1 (3.3%)	3 (10.0%)	19 (63.3%)	7 (23.3%)
	Amagede	0 (0.0%)	0 (0.0%)	7 (23.3%)	15 (50.0%)	8 (26.7%)
KOGI	Kotonkarfe	0 (0.0%)	8 (26.7%)	15 (50.0%)	6 (20.0%)	1 (3.3%)
	Edeha	0 (0.0%)	3 (10.0%)	19 (63.3%)	7 (23.3%)	1 (3.3%)
BASSA	Mozum	1 (3.3%)	0 (0.0%)	7 (23.3%)	16 (53.3%)	6 (20.0%)
	Shintaku	0 (0.0%)	7 (23.3%)	9 (30.0%)	9 (30.0%)	5 (16.7%)
IBAJI	Unale	0 (0.0%)	2 (6.7%)	6 (20.0%)	15 (50.0%)	7 (23.3%)
	Adaigba	1 (3.3%)	10 (33.3%)	11 (36.7%)	5 (16.7%)	3 (10.0%)
IDAH	Ichekene	1 (3.3%)	1 (3.3%)	4 (13.3%)	15 (50.05)	9 (30.0%)
	Ega	0 (0.0%)	0 (0.0%)	9 (30.0%)	15 (50.0%	6 (20.0%)
AJAOKUTA	Geregu	0 (0.0%)	6 (20.0%)	11 (36.7%)	9 (30.0%)	4 (13.3%)
	Oguro	1 (3.3%)	9 (30.0%)	7 (23.3%)	10 (33.3%)	3 (10.0%)
	TOTAL	**6 (1.25%)**	**54 (11.3%)**	**124(25.8%)**	**177 (36.8%)**	**119(24.8%)**

Source: Fieldwork, 2019

Conclusion

This study investigated the 2018 flood event in Kogi State. The study analyzed the level of awareness as well as response to early flood warning, flood preparedness, perception of the cause of the flood and evacuation. The findings from the study indicates that 55.6% of the respondents were not aware of NIMET's early flood warning. On the level of response to the warning, only 25.2% responded to the warning. The study also indicated that majority of the respondents (69.4%) were not prepared for the flood event in 2018. Heavy rainfall was the main factor as 45.0% of the respondents blamed flood on heavy rainfall. This was followed by overflow of river, lack of or poor drainage system, God and poor physical planning. Also, on the evacuation strategies, 73.5% claimed that there were evacuation efforts in their community while majority to IDP camps. When asked to rate governments intervention efforts, majority of the respondents acknowledged that it was poor (36.8%).

Historically, Nigeria has been more focused on post disaster flood response than control (Cirella and Iyalomhe, 2018). Reducing and addressing exposure to flood risk is now a national priority in the Nigerian government's disaster risk management agenda (Echendu, 2020). Flood adaptation strategies recognise that whilst flood situations cannot be entirely prevented, steps can be taken to prevent or minimize injury and less and speed the recovery process (Adekola and Lammond, 2018). Kogi State is no doubt a major flood risk state in Nigeria. According to Obahopo, (2018), it has notoriously been described as the "headquarters of flood in Nigeria" because it lies at the confluence of the two major rivers. Given the state's high level of flood risk, the flood risk reduction strategy requires a four-pronged approach: flood risk mapping and vulnerability assessment of the state, and identification of locally developed mitigation strategies, development of community-based flood adaptation plans, and development of early flood warning systems. An effective combination of these four essential components would strengthen flood resilience

and minimize flood risk to the lowest possible degree. We certainly hope that findings from this post disaster assessment would foster a rethink in the future flood risk management interventions in Nigeria.

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