

Assessment of the Role of Kogi State Government in Flood Mitigation in Lokoja, Kogi State, Nigeria

Peter EDOKA

Department of Environmental Resource Management, Federal University Dutsin-Ma, Katsina State, Nigeria

pedoka@fudutsinma.edu.ng

Abstract

Flooding due to overwater flow of both natural and human-made causes is a perennial environmental problem in the world and in Nigeria. Kogi State is especially prone to Lokoja, the state capital, which is characterised by the confluence of both the Niger and Benue rivers, the rapid urbanisation process, the insufficient drainage facilities, and climate diversity. Although repetitive floods have led to massive destruction of homes, farmland, infrastructures, and livelihoods, few studies have been done to measure mitigation measures at the state level. This paper tries to fill this gap by evaluating the contribution of the Kogi State Government to curbing floods in Lokoja. The objectives included finding key causes of flooding, studying socio-economic effects, assessing structural and non-structural mitigation strategies, and developing strategies to better manage floods. The descriptive survey design was taken up, and both primary and secondary data were utilised. Formed questionnaires were distributed to 400 residents of flood-prone communities, and field observations and examination of governmental documents were also utilised. The analyses of data were performed with the help of descriptive statistics, frequency counts, percentages, and the Relative Importance Index. The results show that flooding is mainly caused by heavy rain, lack of drainage and overflow of rivers, which is aggravated by the blocked drains and uncontrolled construction. Although structural interventions like drainage systems and embankments are available, and non-structural measures, including awareness campaigns and early warning systems, are partially in place, such measures are only slightly effective. The research paper has concluded that more infrastructure, better control implementation, more efficient warning systems, and better inter-agency coordination are required to mitigate the risk of floods and safeguard exposed communities at Lokoja.

Keywords: Flood mitigation, Kogi State Government, Lokoja, flood vulnerability, disaster management.

1.0 Introduction

Flood is an overflow of excess water into the environment, which is usually caused by natural and anthropogenic factors. In 2023, a total of more than 40 per cent of natural disasters occurred worldwide, with floods being the most frequently occurring phenomenon. Floods are recurrent disasters on all continents, but certain areas are more likely to be affected [1]. In 2024, countries which were most affected by the risk of floods included Vietnam, Bangladesh, and Thailand. Actually, except Egypt, nine out of the 10 leading countries in terms of exposure to flood risk were in Asia, mainly the south and eastern parts of the continent [1]. Flooding is an issue that is recurrent and growing in magnitude in Nigeria due to Climate change, urbanisation, underdeveloped infrastructure, poor drainage systems, and poor enforcement of urban planning laws [2]. Economic losses were inflicted by the flood disasters, which mainly involved damage to infrastructure, loss of income, and agricultural output, which was disproportionately experienced by vulnerable communities [3].

The similarity lies in the fact that climate change is contributing to the severity of floods. As temperatures keep rising all over the world, more moisture is being trapped by the atmosphere: With every 1-degree Celsius temperature increase, air is capable of holding 7% more moisture [4]. Flash floods are the most hazardous forms of floods as they occur in minutes or hours after the rainfall begins [5]. They arise when rainfall cannot be absorbed by the ground anymore due to circumstances like drought or the existence of non-absorbent surfaces like concrete roads, or a river dam breaking [6]. The average level of sea levels in the world has been 8 to 9 inches higher than in 1880, and this is increasing at an accelerating rate with the melting of ice floes and the warmer temperatures of the water in the form of thermal expansion because of global warming [7].

Although seasonal flooding is a common experience in Nigeria, the floods caused the destruction of more than 200 000 homes since the floods of 2012 in the country. On 7 October 2022, a boat full of people escaping the floods capsized on the Niger River, leading to the death of 76 people. This flood was due to the heavy rainfall and climate change, not to mention the water that was released by the Lagdo Dam in neighbouring Cameroon, which started on 13 September, 2022 [8]. In 2022, the National Emergency Management Agency announced that the effect of flooding was also experienced in farmland where crops like rice, maize and cassava were submerged and consequently increased food costs. NEMA mentioned that families in Yobe are still residing

under temporary housing and children in Kebbi are still learning in makeshift classrooms as schools were destroyed by floodwaters [9]. Nigeria started a sequence of floods in April 2025 [10] that led to property destruction, deaths and injuries, and displacement. The most recent was the 2025 Mokwa flood in May that claimed the lives of at least 500 people; this was the deadliest flood so far [11]. The floods hit more than 5,000 dry-season farmers in Niger State and Kwara State, which hit above 10,000 ha (25,000 acres) of paddy farms in Mokwa alone, with an estimated economic loss in the billions of naira [12].

The study area focuses on Lokoja Metropolis, the capital city of Kogi state, Nigeria. It is at the meeting point of the Niger and the Benue rivers and the capital city of Kogi State [13]. Research has revealed that, besides the trend of extreme events that are characterised by intense rainfalls and a rise in temperature, it is the peculiar position of Lokoja directly at the confluence between the perennial Niger and Benue rivers that contributes most to the occurrence of floods [14, 15]. In the last ten years, the intensity of these floods has increased, causing the death of over 250 individuals and the displacement of at least 18,500 people [16]. In September 2019, over 150 communities in the state were hit by floods [17]. The latest flood in 2022 has affected nine local governments along the river Niger and Benue (Lokoja, Kogi-Koto, Ajaokuta, Ofu, Igalamela-Odolu, Bassa, Idah, Ibaji and Omala) [18].

Lokoja metropolis has been impacted by flooding ecologically, socially, economically and health-wise. The effects of the floods, as revealed by [19, 20], have led to colossal damage to sources of livelihood such as homes, businesses, important papers, water sources, roads and healthcare centres worth millions of USD. The floods also destroyed farm produce, and the remaining crop could not be collected [21], leading to food shortages, the prices of food increased, and farmers and the state were making significant revenue loss [22]. The economic impacts of such floods are dramatic and impact the businesses and agriculture in the region [23], as well as leave a great number of families languishing in poverty [24].

Flood mitigation and adaptation are paramount in disaster management. Government has roles to play in combating the issue of flooding. The government can also play its part in overcoming the problem of flooding. The reaction of the government to disasters in nature is also initiated long before the disaster strikes. To enhance responsiveness and results, government agencies are regularly prepared for adverse incidents [25]. The initial point of defence in the case of a natural disaster is the local government agencies. The local police, firefighters, emergency medical personnel, and others are mobilised very fast and sent to the scene, rushing to rescue and stabilize the situation, organize rescue and recovery, and secure the safety and well-being of the affected people [25]. In many cases, disasters are not confined to a single town, county, or tribal territory, or are so devastating as to require even more help than local governments can offer. Municipalities in such instances might need help of the state governments in matters of response and recovery [25]. As an illustration, a state may help define the evacuation routes, regulate the traffic in-out and in the sphere of influence, suspend state laws and ordinances that might hinder the rescue operation, etc. The state can also call on the assistance of the neighbouring states [25].

International bodies like the World Health Organisation (WHO), UNDRR, assist the Nigerian Government in fighting flooding. WHO, in close liaison with FMOH, NCDC and NEMA, is assisting the Nigeria in its response to the flooding and providing lifesaving health emergency services to the affected persons [26]. To prevent and control the spread of communicable diseases as a result of the flooding, WHO already deployed experts to enhance surveillance and early warning response capacity in the newly established camps that host the displaced population. The Organisation is also helping the government in ensuring the availability of necessary drugs and commodities to the affected population and offering logistical support to the Federal Ministry of Health to deliver medicines and equipment [26]. The enhancement of capacity building is important in disaster risk reduction for the effectiveness of NGOs. The UNDRR provides varied training programs that are used to provide NGOs with the required skills and knowledge needed to undertake DRR strategies effectively. The programs also address different aspects of disaster management, such as risk assessment, emergency response planning and community engagement methods [27]. In addition, the United Nations has allocated \$5 million of its Central Emergency Response Fund (CERF) to Nigeria to alleviate the effects of floods expected in the country [28].

Kogi state is undertaking a significant amount of preventive measures to put a check on the problem of flooding. The Deputy Governor of Kogi state recommended that relief items in the Federal Government should be directed through NEMA, with the co-operation of SEMA and the emergency operation centres, which were to be formed in all the 21 local government areas to inhibit diversion of palliative to benefit a few individuals by the selected few people [29]. Structural and non-structural measures that have been put in place by the Kogi state government to curb flooding include (1) Establishment of Kogi State Emergency Management Agency (KOSEMA) (2) installed flood monitoring equipments which organize an early warning system to alert communities before floods occur (3) extensive floodplain mapping to identify vulnerable areas, and (4) proactive collaboration with other stakeholders, NGOs, and partners in the business sector to leverage resources and expertise [30]. The state governor is presently implementing steps like Comprehensive Drainage Evacuation,

Tree Planting Programs, Paying courtesy visits to all stakeholders, including community leaders, traditional rulers, and emergency responders, Traditional Rulers Mobilisation, 42 IDP (Internally Displaced Persons) camps, and resettlement of vulnerable communities [30].

Echendu [31] studied the impact of flooding on Nigeria's Sustainable Development Goals (SDGs). The study described man-made factors as the main cause of the flooding problem in Nigeria, which included lack of proper drainage system, unregulated urbanisation, poor waste management, poor enforcement of law and corruption. Idoko [32] assessed the impact of flooding on food security among rural farmers in Dagiri Community, Abuja, Nigeria. The study discovered that floods result in the demolition of farmhouses, frozen goods, and homes, loss of properties, crop and farmland, leading to food insecurity. Oyedele *et al.* [33] explored flood vulnerability in Kogi State, Nigeria. The study findings indicated that the risk of flooding in the chosen communities was different. It was revealed that four of the communities, such as the Onyedega, the Ogba Ojubo, the Odogwu and the Ichala Edeke communities, were very vulnerable to flooding, as opposed to others. This was attributed to a number of reasons, including poor building designs, absence of evacuation and other flood control strategies, over-reliance of the household on agricultural practices, absence of economic activity diversification and poor economic strength of the household. Onimisi and colleagues [34] examined the impacts of flooding on artisanal fishers in Korton Karfe, Kogi state. This paper concluded that the income of artisanal fishers decreased whenever there was flooding, and migration to other fishing grounds was the primary response. Okosun *et al.* [35] in their study revealed that the menace of floods resulted in damage to the household properties, building collapses, vehicle breakdown, loss of quality water and destruction of farm lands. The others included drainage facilities, drainage pattern, and buildings over a narrow floodplain.

Danjibo, Ojo, and Adeoye [36] analysed the response mechanisms of stakeholders during flood disasters in Kogi state. The findings revealed that the response mechanism implemented was not time sensitive because the disaster management agencies and policies developed were not effectively implemented. Ogunwumi & Ihinegbu's [37] paper analysed household preparedness against future floods in Kogi State's Last-Mile Communities (LMCs). Findings indicate that the preparedness for future floods in the study area is gender-dependent among the LMCs in the region. Although access to flood sensitisation materials of the responsible agencies is not good, household heads are an important source of flood education to LMCs

Past research about flooding in Nigeria and Kogi state has predominantly focused on the causes, effects, and susceptibility of populations to flood disasters. The factors that made a contribution to flooding discussed under these studies included poor drainage systems, urban development rate and climate variability, among other factors and the social and economic impacts of the floods on households and livelihoods. Nevertheless, minimal focus has been laid on assessing the role and effectiveness of the government mitigation activities, especially at the state level in Lokoja. This paper thus aims to evaluate the Kogi State Government's contribution to flood control in the research location.

In Lokoja, flooding is still posing a threat to lives, property and economic activities. It is also valuable to look at the mitigation strategies by the government to determine the role that the existing strategies can play in curbing the risks of floods. The results of this research will offer valuable data that would enable the enhancement of disaster preparedness, the improvement of flood control measures, and the assistance with the process of urban planning in the flood-prone regions.

The main objective of this study is to assess the role of the Kogi State Government in flood mitigation in Lokoja, Kogi State. The specific objectives are to identify the major causes of flooding in Lokoja, examine the impacts of flooding on residents and infrastructure, assess the structural mitigation measures implemented by the Kogi State Government, evaluate the non-structural mitigation strategies adopted by the government, and suggest measures for improving flood mitigation and management in the study area.

2.0 Methodology

This paper utilised a descriptive survey design in order to research the role of the Kogi State Government in mitigating floods in Lokoja. Primary and secondary data were involved. Primary data were collected using the structured questionnaires, which were given to the residents within flood-prone regions and also by direct field observations. The secondary data were obtained in the form of journals, textbooks, government reports, theses, newspapers, and other materials of the Ministry of Land, Housing and Urban Development and other related resources.

The floodplain neighbourhoods in Lokoja, with a population of about 3,512 housing units, were the target of the study and formed both the population and the sampling frame of the study. The sample size of 400 respondents was determined using the Taro Yamane sample size formula.

A multistage sampling technique was adopted. Purposive sampling was first used to identify households within flood-prone areas, after which simple random sampling was used to select households for participation. Systematic sampling was then applied by selecting every tenth household to ensure adequate coverage of the study area.

The statistical tools that were used to analyse the collected data included tables, frequency counts, simple percentages, and charts. The respondents were evaluated based on their perception of the causes of floods and the government's mitigation efforts using a Likert scale. The Relative Importance Index was also utilised to identify the most important causes of flooding in the study area, and the answers given regarding the mitigation measures taken by the government were summarised in tables and percentages.

The Kogi State Government's role in structural and non-structural mitigation of flood risks was evaluated based on the responses of the household heads and field visit observations. The findings were displayed in tables, frequency counts and percentages in order to enable easy interpretation of the findings.

3.0 Results and Discussion

This section presents and interprets the findings from 400 respondents in Lokoja, Kogi State, aimed at assessing the role of the Kogi State Government in flood mitigation.

3.1 Socio-Economic Characteristics of Respondents

Table 1: Demographics of respondents

Variable	Category	Frequency	Percentage (%)
Sex	Male	256	64.0
	Female	144	36.0
Age (Years)	15–24	92	23.0
	25–34	168	42.0
	35–44	91	22.8
	45–54	25	6.3
	55+	24	6.0
Marital Status	Single	104	26.0
	Married	214	53.5
	Divorced	36	9.0
	Widow/Widower	40	10.0
	Separated	6	1.5
Occupation	Fishermen	143	35.8
	Business	64	16.0
	Farmers	56	14.0
	Civil Servants	63	15.8
	Social Workers	49	12.3
	Others	25	6.3
Education Level	No Formal	64	16.0
	Primary	108	27.0
	Secondary	203	50.8
	Tertiary	25	6.3
Household Size	1–5	218	54.5
	6–10	146	36.5
	11–15	25	6.3
	16+	11	2.8
Monthly Income (₦)	<30,000	159	39.8
	31,000–60,000	131	32.8
	61,000–90,000	83	20.8
	91,000–120,000	27	6.8

Source: Edoka (2026)

The socio-economic data in Table 1 above reveal that male respondents dominate (64.0%), reflecting the main activity of men as fishing and trading on the rivers. The majority of respondents are young adults aged 25–34 years (42.0%), which constitutes the most economically active group in the flood-prone communities. This age group is likely expected to experience the floods directly in the form of disruption of livelihood and destruction of property, and that is in line with Onimisi *et al.* [34], who noted that the younger adult population, in fishing communities, is highly vulnerable.

Occupational data show that fishermen (35.8%) represent the largest group, which is a significant indication of how the community relies on rivers and their vulnerability to riverine flooding. Exposure of farmers (14.0%)

and other informal workers is due to the fact that livelihoods are largely reliant on land and water.

Education levels reveal that over half (50.8%) have secondary education, indicating a moderate level of literacy that can affect awareness and uptake of flood mitigation practices.

Low monthly income for the majority (<₦60,000; 72.6%) means that they lack the money to put flood-proofing measures in place, which is why Echendu [31] and Idoko [32] supported economic vulnerability as a predisposing factor in the severity of flood impacts.

Household sizes are mostly 1–5 members (54.5%), which implies that the nuclear families might lack labour to respond to the flood, whereas the medium-to-large families might have issues distributing the resources during the floods.

3.2 Causes of Flooding

Table 2: Natural and Anthropogenic causes of flooding

Cause	Frequency	Percentage (%)	RII
Heavy rainfall	342	85.5	0.86
Overflow of the Niger/Benue Rivers	298	74.5	0.75
Poor drainage systems	320	80.0	0.80
Blocked drains due to waste	260	65.0	0.65
Construction on floodplains	216	54.0	0.54
Deforestation	150	37.5	0.38
Others	41	10.3	0.10

Source: Edoka (2026)

The respondents indicate that heavy rainfall (85.5%), poor drainage (80.0%), and river overflow (74.5%) were the major causes of flooding, which shows how both natural and anthropogenic factors interact with each other. The frequency of blocked drains (65.0%) shows the effect of improper waste disposal, while unregulated construction on floodplains (54.0%) enhances the runoff and eliminates the absorption of natural water. Deforestation (37.5%) also contributes to the intensity of floods, and this is in support of Echendu [31], who observed that the intensity of floods and their frequency are aggravated by man-made environmental degradation. The other localised reason (10.3%) is based on activities like sand mining or small changes in river channels, which demonstrates that there are certain practices of the community that also affect the occurrence of floods.

RII ranking shows the most important contributors to be the heavy rainfall and inadequate drainage, where the government can be of the most benefit, like providing better drainage infrastructure and management of riverbanks.

3.3. Impacts of Flooding

Floods in Lokoja have both social and economic impacts, as seen in Figure 2. Damage to homes and property (71.3%) and agricultural land (70.0%) has a direct negative impact on livelihoods, food security and economic stability. Infrastructure damage, such as roads and bridges (53.5%), interferes with the mobility, market access, medical care, and emergency service, which is aligned with Oyedele *et al.* [33] who confirmed infrastructure vulnerability to flood-prone communities in Kogi. Impacts on schools and hospitals (36.8%) highlight threats to education and health services, while loss of income (59.0%) indicates that agriculture or fishing-dependent low-income households face the greatest impact due to flooding disproportionately. These results signify that there is a cycle of vulnerability in which floods make poorer people poorer and also reduce their ability to recover.

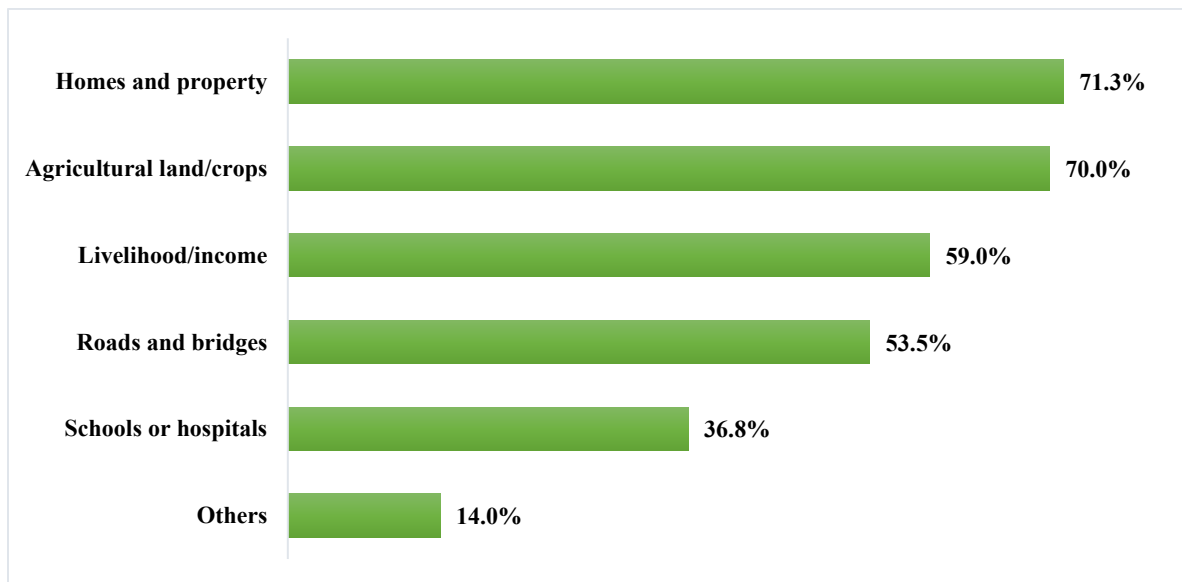


Figure 1: Impacts of Flooding

Source: Edoka (2026)

The findings in Figure 3 depict mixed perceptions on the efficacy of structural flood mitigation in Lokoja. Regarding drainage infrastructure, 28.0% of respondents strongly agreed, and 44.5% agreed that drainage systems in their areas help control flooding. This indicates that 72.5% of respondents the people surveyed tend to think that drainage systems are only partially functional, indicating that there are some attempts by the government to construct drains. However, 27.5% of respondents disagreed or strongly disagreed, which means that drainage systems are not sufficient or well-maintained in some areas. Inadequate drainage has been cited as one of the major causes of urban flooding in most cities within Nigeria, especially where drainages are clogged or inadequate [35].

Weaknesses are more evident in responses about the communication of evacuation routes and safety procedures. While 24.5% strongly agreed and 31.3% agreed that flood barriers protect their communities, a combined 44.3% disagreed or strongly disagreed.

This means that even though there are certain protective measures that are there along the dangerous riverbanks, they are minimal or not necessarily protective against the floods that affect the homes. Lokoja is a susceptible city to floods, and occasionally, when the rivers have burst their banks, insufficiency or improperly maintained embankments may be a tremendous revealer [35].

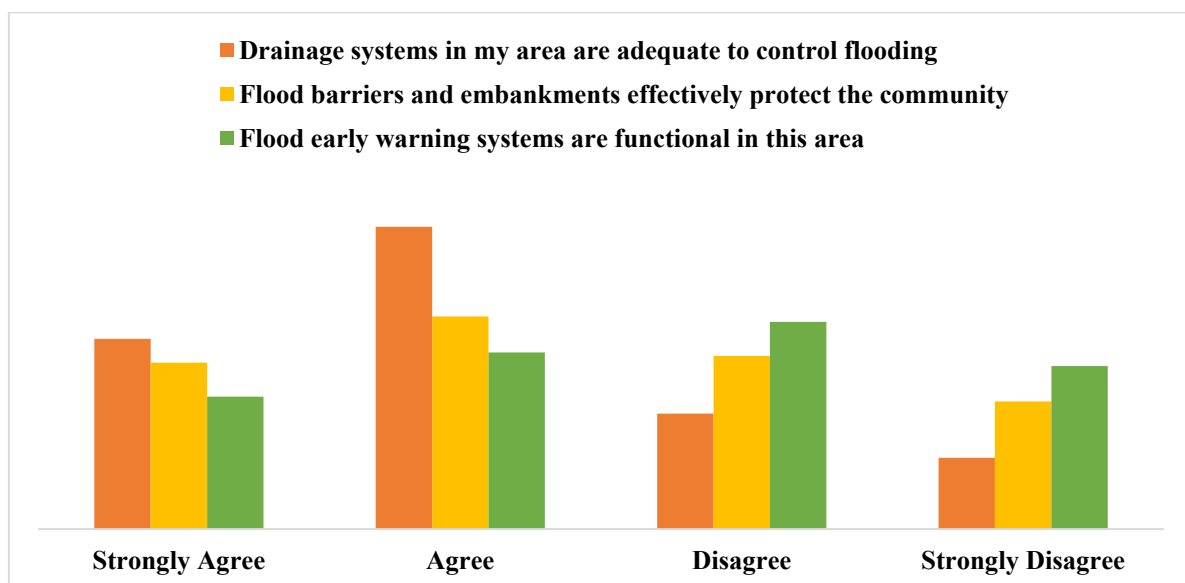


Figure 2: Respondents' Assessment of Structural Flood Mitigation Measures in Lokoja

Source: Edoka (2026)

Perception of early warning systems shows even greater concern. Only 19.5% strongly agreed, and 26.0% agreed that early warning mechanisms are functional in their communities, while 54.5% disagreed or strongly

disagreed. This demonstrates that the majority of the residents believe that the flood alerts and communication systems are not functional or even absent. This could delay the preparedness and evacuation process, which could cause additional damage to the damage that can be caused in case of floods because there might not be effective early warning systems. It has been further reported before that ineffective disaster preparedness institutions and inadequate communication are among the factors that reduce the effectiveness of the early warning systems in the case of floods in communities that are prone to communication [36].

3.4 Nonstructural mitigation measures

The results in Figure 4 have revealed that the non-structural mitigation actions of floods in Lokoja are not properly applied and implemented adequately to increase the preparedness of the community. Concerning government awareness programs, 29.5% of respondents strongly agreed, and 23.5% agreed, indicating that 53.0% acknowledge the presence of awareness initiatives in their communities. This means that the Kogi State Government has made attempts to sensitise individuals about the hazards of floods and precautions. However, 47.0% of respondents disagreed or strongly disagreed, consistent with the fact that they are not reaching a substantial number of communities at risk of floods. The specified observation supports the empirical study offered by Echendu, who observed that the awareness campaigns within the communities in Nigeria, where the floods took place, are not regular, but not regular enough to produce a substantial difference in the preparedness levels [31].

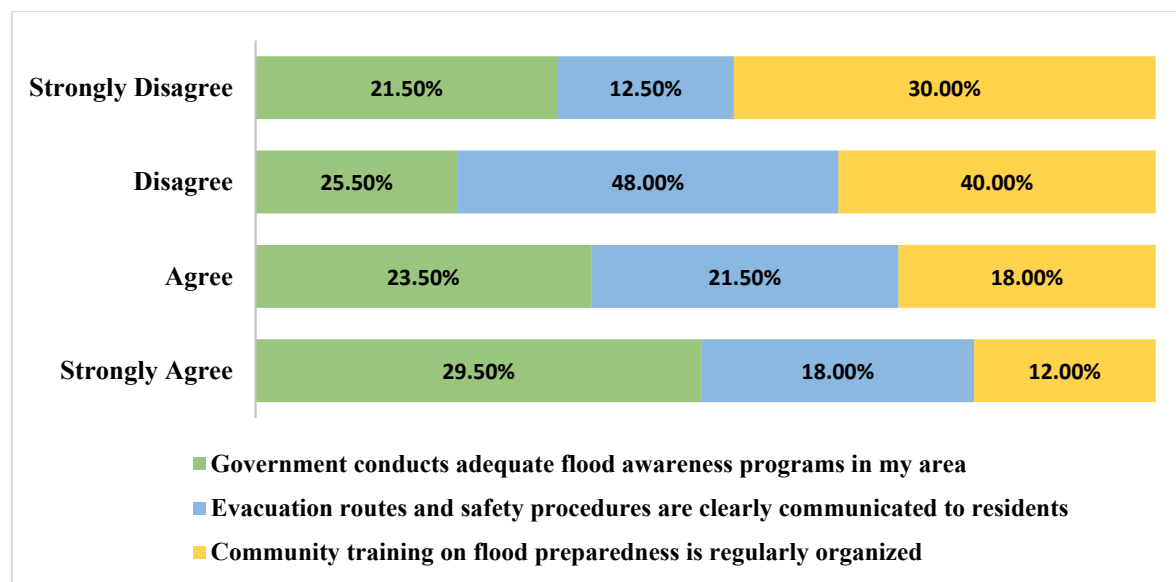


Figure 3: Respondents' Assessment of Non-Structural Flood Mitigation Measures in Lokoja

Source: Edoka (2026)

Responses to communication of evacuation routes and safety procedures show more weaknesses. Only 39.5% of respondents agreed or strongly agreed that evacuation routes are communicated, while 60.5% disagreed or strongly disagreed. This shows that a large proportion of people living in the area lack sufficient knowledge and understanding of the safe evacuation routes or the emergency response in the event of a flood. Lack of proper evacuation planning may cause panic, slow reaction, and predisposition in the face of floods. The same results were also obtained by Idoko, who reported that poor communication of the evacuation strategies in the Kogi State lowers the efficiency of the disaster management responses during the large-scale floods [32].

The results concerning community training on flood preparedness and community education on preparedness to floods indicate the greatest gap in non-structural mitigation. Only 30.0% of respondents agreed or strongly agreed that community training programs exist, while a large majority (70.0%) disagreed or strongly disagreed. This implies that the majority of the residents have not been trained formally on flood preparedness, including evacuation measures, emergency responses and household preparedness measures. Lack of such training lowers the ability of communities to react effectively in case of disaster. This observation is in line with the study of Ogunwumi and Ihinegbu, who reported that the poor effectiveness of the disaster preparedness strategies in flood-prone Nigerian communities is due to inadequate community training and poor public participation [37].

3.5 Agencies Assisting Residents During Flood Events

The results in Figure 5 indicate that various institutions offer their help to the residents whenever floods occur at Lokoja, albeit the degree of participation differs among the agencies. The National Emergency Management

Agency (NEMA) was identified by 49.5% of respondents as a key organisation providing support during flooding. This implies that NEMA is highly involved in emergency response operations like the distribution of relief, support to evacuation operations, and coordination of the disaster in the study region. The fact that NEMA is the most recognised among the respondents is because of its statutory mandate, in that it is the main federal agency charged with managing disasters in Nigeria. The research conducted in the past has also indicated that NEMA plays a key role in organising the emergency response and delivering relief supplies to victims of floods throughout the nation [26].

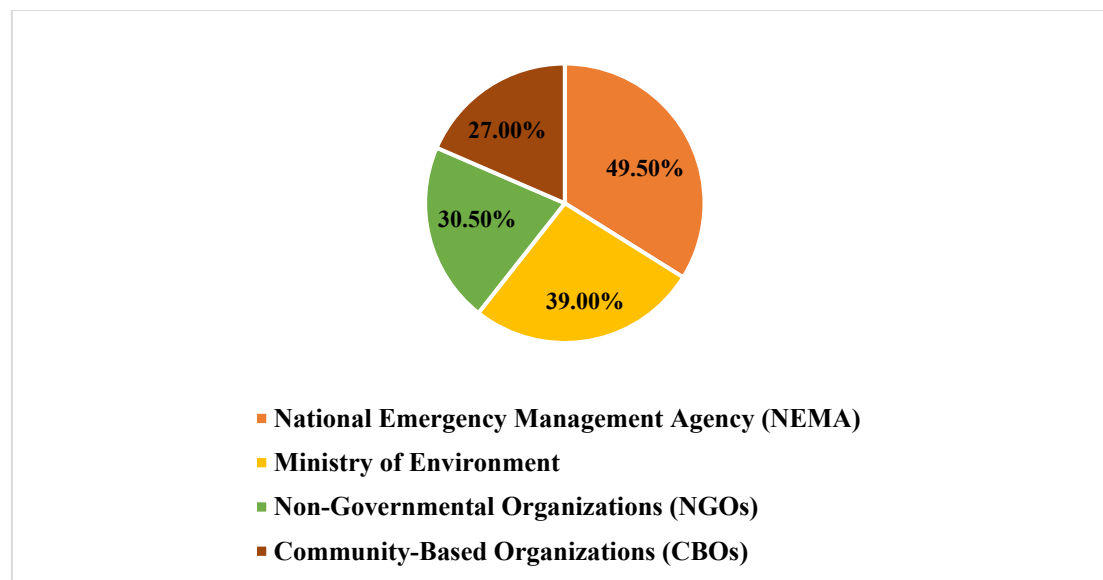


Figure 4: Agencies Assisting Residents During Flood Events

Source: Edoka (2026)

As seen in Figure 5, the Kogi State Ministry of Environment was identified by 39.0% of respondents as providing assistance during flood events. This implies that the ministry plays a role in environmental management activities like draining of the environment, environmental monitoring, and sensitising the populace about the risk of floods. The percentage, however, shows that it is not as deeply engaged as NEMA is perceived to be. Research on flood control in Nigerian Urban areas has highlighted the fact that state environmental organisations are frequently restricted in resources and coordination, and thus their intervention in case of disaster may undermine their effectiveness [27].

The role of Non-Governmental Organisations (NGOs) appears to be more limited, with 30.5% of respondents indicating that NGOs provide assistance during flooding. NGOs normally assist communities in the form of humanitarian assistance, sensitisation, and training at the community level. Nevertheless, the percentage is relatively lower, indicating that they might not be prevalent or always conspicuous among flood-prone communities in Lokoja. It has been revealed that NGOs have a complementary role to play in managing disasters, although their effectiveness in this scenario is usually determined by the relationship they have with the government agencies and local institutions [27].

Similarly, Community-Based Organisations (CBOs) were identified by 27.0% of respondents as helpful during flood events and, thus, are the least familiar group of the mentioned agencies. Even though CBOs are valuable, as they work directly at the community level and are familiar with the specifics of the community, their insufficient participation could represent the insufficient institutional support or their form of non-formal coordination with the governmental agencies. The effectiveness of local disaster response systems is mentioned, as empirical studies have found that a weak collaboration between community groups and government institutions can decrease the effectiveness of local disaster response systems [37].

3.6 Respondents' Perception of Government Effectiveness in Flood Mitigation

The results in Table 3 present respondents' perceptions of the effectiveness of government efforts in reducing flood risks in Lokoja. Concerning the statement that government actions reduce flood risks, 112 respondents strongly agreed, and 145 agreed, indicating that 257 respondents (64.3%) generally tend to believe that government actions help to mitigate flood hazards. However, 143 respondents (35.7%) disagreed or strongly disagreed, indicating that a significant number of residents continue to believe that the government's efforts are inadequate to resolve the ongoing problem of flooding in the region. This impression agrees with previous research that has pointed out that despite the government interventions in place, their effect is mostly ineffective since there is a

lack of proper infrastructure and implementation of mitigation measures is poor [30], [31].

Table 3: Respondents' Perception of Government Effectiveness

Statement	SA	A	D	SD
Government reduces flood risks	112	145	90	53
Structural measures minimise flooding	98	154	103	45
Non-structural measures are effective	86	132	120	62
Government response during floods is quick and efficient	78	145	122	55
Overall preparedness for floods has improved	102	138	110	50

Source: Edoka (2026)

Regarding the effectiveness of structural measures such as drainage systems, embankments, and flood barriers, 98 respondents strongly agreed, and 154 agreed, representing 252 respondents (63.0%) who believe that such measures help in minimising flooding. Nevertheless, 148 respondents (37.0%) disagreed or strongly disagreed, meaning that structural measures have not been sufficient to tackle flood risks in Lokoja. The observation can be attributed to the deterioration problems observed in the literature, where the inadequate maintenance of drainage systems and insufficient flood control facilities tend to undermine the efficacy of the government interventions in flood-prone neighbourhoods [31], [32].

Perceptions of non-structural mitigation measures, including awareness programs, early warning systems, and evacuation planning, indicate a relatively low level of confidence among the respondents. Only 86 respondents strongly agreed, and 132 agreed, totalling 218 respondents (54.5%) who perceive these measures as effective. Meanwhile, 182 respondents (45.5%) disagreed or strongly disagreed, indicating that many residents believe non-structural interventions are not adequately implemented. This implies the absence of social education, media and community participation in disaster preparedness. The same has been observed in empirical studies that have discovered weak dissemination of early warning information and lack of community involvement reduces the effectiveness of the flood mitigation strategies in Nigeria [30], [31].

Timely and efficient response to emergencies is another issue raised by the perception of the government's action during floods. Only 223 respondents (55.8%) agreed or strongly agreed that the government response is quick and efficient, while 177 respondents (44.2%) disagreed or strongly disagreed. It means that many residents are of the opinion that emergency response mechanisms are not fast and coordinated enough in cases of flooding. Disaster management studies in Nigeria have also indicated the same issue that the effectiveness of response and rescue in flood incidents is minimised by delayed response and insufficient institutional coordination [36].

4.0 Conclusion

The research reveals that flooding in Lokoja is primarily occasioned by intense rainfall, inadequate drainage systems and overflow of the Niger and Benue rivers, with human activities like clogged drainages and construction in the flood plains aggravating the situation. The effects of flooding among the residents are enormous, including the destruction of property, agricultural land, infrastructure, and livelihoods.

Despite the fact that the Kogi State Government has put in place some structural and non-structural mitigation measures, the activities are moderately successful. There are drainage systems, flood barriers, awareness programs and early warning systems that are not sufficient and properly coordinated in most communities. The support during floods is given by agencies like NEMA and the Ministry of Environment, but there are not many collaborations with other agencies.

Overall, the findings indicate that stronger infrastructure, improved preparedness, and better coordination among institutions are necessary to effectively reduce flood risks in Lokoja.

4.1 Recommendations

Based on the findings of the study, the following practical recommendations are proposed:

- 1. Improvement and regular maintenance of drainage systems:** A massive expansion and maintenance of the urban drainage systems in the flood-prone areas in Lokoja should be done by the Kogi State Government. Frequent clearing of clogged pipes and creation of new drainage systems will allow for minimising the amount of water during rainy seasons.
- 2. Strict enforcement of land-use and building regulations:** Government bodies are supposed to implement environmental and urban planning laws to avoid building on floodplains and along rivers. Residential buildings and infrastructure will be less exposed to floods due to proper zoning policies.
- 3. Strengthening flood control infrastructure:** Structural solutions should be used to strengthen the existing flood control measures by building and maintaining more resilient structures like river embankments, levees, and flood barriers, along the vulnerable parts of the Niger and Benue rivers to minimise the overflow of rivers

into the residential premises.

4. **Enhancement of early warning and public awareness systems:** The government must put in place efficient early warning mechanisms on floods and improve communication networks to monitor timely flood alerts to the people. People should also be sensitised through continuous public awareness campaigns that will make them know how to respond to floods and how to be prepared.
5. **Improved coordination among disaster management agencies and community organisations:** Collaboration between the National Emergency Management Agency (NEMA), Kogi State Ministry of Environment, non-governmental organisations, and community-based organisations should be strengthened to ensure faster emergency response, better relief distribution, and more effective community training on flood preparedness.

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