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URBAN FLOOD MANAGEMENT AND PLANNING USING LOKOJA AND KOGI L.G.A OF KOGI STATE, AS A CASE STUDY

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Abstract

Several cities and towns in Nigeria are faced with flooding problems emanating from the effects of climate change, urbanization and population growth. This challenge is more critical in some parts of Lokoja and Kogi local government area of Kogi state, given the recent flooding scenarios witnessed in parts of the two local government.. The floods that occurred during these periods were occasioned by high rainfall intensity coupled with inadequate drainage system. The study addresses the urban flood management and planning using Lokoja and Kogi L.G.A of kogi state, As a Case Study**.** A survey research method was adopted. Both qualitative and quantitative data collection methods were used. Collection of quantitative data was through oral interview and non-participant observation while quantitative data was collected using unstructured questionnaire and secondary sources such as books and journal articles. The urban flood management and planning shows that the low lying areas that border rivers in both Local Governments bed streams and their tributaries are highly affected by the hazardous flood events. Except for some parts of the areas in Lokoja and Kogi Local Government Area Most of the people living in Lokoja and Koton- Karfe are highly vulnerable to flood hazard. The assessment reveals that the municipality of the Lokoja/Kogi is more vulnerable than the municipality of Lokoja/Kogi inner town.

1 Introduction

The impact of flooding and erosion in some part of the Nigeria has been treated extensively by Umar, Ugwu, Joy, Eke & Ugwuoke (2022*).* These scholars observed that there has been destruction of beaches, infrastructure such as roads, electricity connections and drainage system, disruption of commercial activities. Umar (2020) noted that flooding, in particular, has led to the destruction of houses, prevention of free flow of traffic, salt water intrusion into the lagoon and sources of ground water and stress to the lagoon ecosystem including the surrounding wetlands.

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In Lokoja and Kogi local government area of Kogi state, flooding is rated as one of the most important environmental hazards because it has greater social effects. Flooding was particularly severe in 2000,2011, 2012, 2019, 2020,2021 and even in 2019 and 2023 forcing thousands of people to seek shelter at higher elevations, leaving crops and houses destroyed. Direct losses from flooding including large areas of valuable land which cannot be cultivated and the destruction of infrastructure and housing (NEMA) 2012)

The picture below show the present situation of kabawa road to old market in Lokoja Local area of Kogi state. Anguwan kura road is the only easy alternative road to Lokoja metropolis whenever there is water flooding but till date no measure has been taken yet another flood of the year is back (See below plates of two Local governments Lokoja and Kogi)

PLATE 1

Sources: Researcher's Field Survey 2023

PLATE 2

Sources: Researcher's Field Survey 2023

PLATE 3

Sources: Researcher's Field Survey 2023

PLATE 4

Sources: Researcher's Field Survey 2023

PLATE 5

Sources: Researcher's Field Survey 2023

The picture below show the present situation of kogi local government area of Kogi State

PLATE 6

Sources: Researcher's Field Survey 2023
PLATE 7

Sources: Researcher's Field Survey 2023
PLATE 8

Sources: Researcher's Field Survey 2022
PLATE 9

Sources: Researcher's field Survey 2023
PLATE 10

Sources: Researcher's Field Survey 2023

Several studies have reported on global warming and its possible impact on sea –level rise in West Africa and Nigeria (Umar, Ugwu, Joy, Eke & Ugwuoke 2022*).* , the conclusion is that Lokoja and Kogi local government area is particularly at risk from sea-level rise because of its low elevation over extensive areas. The risks are also high because erosion and flooding are widespread and severe in many areas of Lokoja and Kogi local government area of Kogi state.

Many economic activities in both Lokoja and Kogi Local government areas including Agriculture, Fisheries and Farming would be disrupted. Up to 80% of Lokoja and Kogi population would have to migrate to higher ground and property damage is estimated to total approximately USD 20 billion. Even most recent scientific scenario, a sea-level rise of only 0.2m would put an area over 2700km^2 at risk (Moffat and Linden, 1995; world Bank Report 1995)

In order to reduce large scale damaged and loose arising from flooding in Lokoja and Kogi local government area of Kogi state, the need for urban management and planning becomes imperative. The essence is to enable us map out the degree of vulnerability of the flood plain to the risk of flooding. The question that arises in the mind of individual or the researcher are: what are the causes of flooding in the two local government (Lokoja and Kogi) ⁉. ⁉ what methods can we use in managing and planning flood in the study area⁉ what are the management techniques that can be use for flood control in Lokoja and Kogi local government area of Kogi State and what are the beneficial and negative effect of flood in the study areas. All these will form the major research problem which the researcher seeks to address.

2 Flood Situation in Lokoja and kogi Local Government and the Poor Responses from all Levels of Government

Kogi state is one of the five (5) states that had been forcasted to experience floods this year (2022) by the Nigeria metrological Agency, including states such as Niger, Kebbi, Benue, Anambra etc. The federal agency had warmed

both governments and citizens in these states to take proactive measures and preventing the loss of property and lives during the rainy season when it was predicated that these floods would ravage the states. Some states and citizens heeded these warnings and began preparations for these situations. However the scope and scale of these floods have surpassed in levels of the 2012 episode, which was the worst experienced in recent memories. Those current situation has surpassed those level areas.. kogi state is now one of the worst hit states and towns such as Lokoja, Oyedega, Idaho, Ajaokuta, Koton Karfe. Etc are recording unprecedented levels of flooding with loss of lives and properties. It is unfortunate that the state and local Governments showed little or no strategic planning towards mitigating the impacts of the predictions. This has shown in the reaction of the government towards the disaster. Many areas of the capital have been submerged in water for over two(2) weeks with little or no response by the Government, Ganaja, Gadumo, Adankolo, Old Market and Sarkin Noma are now lakes and rivers where previously land and people existed. The rivers of the confluence has overshot it's banks and there is reports of massive loss of properties and lives. This is not mentioning the attendant economics losses to the area and the state, taking into consideration the position of Lokoja as a transit location and the state been bounded by nine (9) other states. The almost non existence of government response to the disaster is very alarming considering that there were early warnings about the disaster.

The Ministries of Women Affairs, Environment State Emergency Management Agency (SEMA) have failed to show any meaningful impact towards providing succour to victims of the disaster. This was not surprising considering that both state and local Government did not provide any meaningful budgetary allocation to disaster management in the 2022 budget despite having warnings about the issue. This is very unfortunate.

3 Objective of the study

The study sought to achieve the following objective:

1. To examine the activities Rendered by Local Communities (Lokoja /Kogi) during response and recovery operations

4 Research question

1. Which types of activities are required to provide quick relief, support and promote reconstruction or recovery efforts by Local Community (Lokoja
/Kogi)?

5 Study Area (A)

Lokoja is located between latitude 7º45′27.56′′ and 7º51′04.34′′N and longitude 6º41′55.64′′ and 6o45′36.58′′E, within the lower Niger-Benue trough. The map of Lokoja Urban is shown in fig 1. It has an estimated landmass of 63.82 sq. km. It shares boundaries with Niger, Kwara, Nassarawa states respectively and the Federal Capital Territory to the north; Benue state to the East; Adavi and Okehi Local Government Areas (LGAs) by the south and Kabba Bunu LGA. (Adeoye, 2012, Umar,. & Ihekwoaba, 2020, Umar 2017 & Umar & Oduwole, 2017)

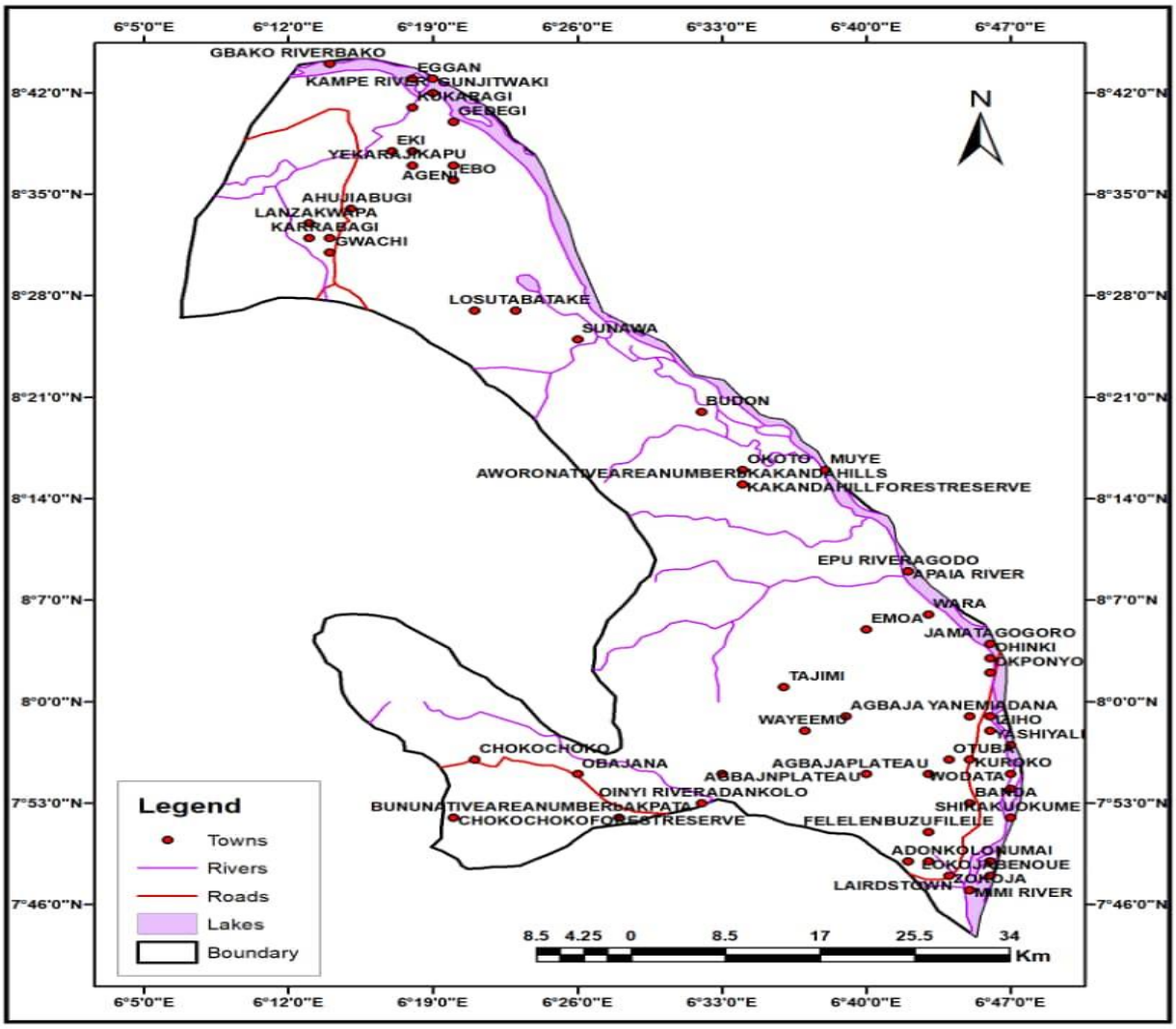

Figure1 : Geological Map of Lokoja Local Government Area showing the Location of Lokoja River, Road, Lakes and Boundary

Vegetation and climate Lokoja is located within the derived guinea savanna belt where the vegetation consists essentially of short to tall grasses. Trees of various sizes and height with shrubs, high forest and hill dominated by rubber trees Economic trees such as cashew, mango, mahogany and rubber trees, are prevalent in the area. (Umar & Onoh 2020) Degradation of the original forest by human activities such as farming and bush burning have transformed the area largely to a secondary forest with long re-growth of vegetation at various levels. Physical development in Lokoja over the years have altered the vegetation with the vacant land, cultivated land, water bodies such as rivers, streams etc Umar & Ugwu, .(2019)

Study Area (B)

Koton karfe is the headquarter of kogi local government area of kogi state, it is located partly within Benue-Niger confluence region, and partly on the fertile valley , north of the rivers Niger and Benue. It forms a long line of boundary which stretches from the area of Girinya on the Niger and Gurara down to Mozum Ete area on the river Benue. Thus, kogi local government area is bounded by both the Kogi local government Area and the Bassa Local Government Area whose natural boundaries are by the rivers. A gate way to the federal Capital Territory, Abuja, Koton –Karfe Local Government Area is bounded on the North by Abaji Local Government Council Area in Abuja, while on the North-East it is bounded by Toto Local Government Area of Plateau State. On the extreme North-West it is bounded by Lapai Local Government Area of Niger State.

Koton –Karfe is located within Latitude 8^{o}E and 7^{o}N, Koton –Karfe Local Government Area covers an estimated total land area of about 900.67sq. kilometres. Koton –Karfe is well watered, fertile and fairly heavily timbered, especially the swampy low lying strip of forest land, bordering the two main rivers Niger and Benue. The forest land has an average width of about five kilometre much of it being cleared to provide arable land for farming. The river belt is regularly is undated during the high wet season. The rest of the vegetation is savannah with economic trees here and there, such as palm trees, mahogany, locust bean trees, managioes etc. The local government has a favourable climate which permits large- scale production of cereals such s beans. Maize cassava, cocyams and potatoes are also cultivated. It also experience wet and dry seasons.

The topography of Koton-karfe can be said to br rugged with numerous valleys and hill. There are undulating land masses washed with small rivers and streams such as Orudu, Omu. Osere and Gurara. Some of the rivers and streams dry up and re-emerge with the coming of the rainy season. There is also network of roads in most of the local government area. Many of which are feeder roads of the main highway, stretching through Koton-kartefe town from Abaji town to Edeha village at the murtala Muihammed Bridge. Some of these roads are listed as follows

- Konton-karfe – okpareke-okofi- Adangere/Ugwo
- Konton-karfe – okpareke –Adingere- Umaisha in Plateau state
- Konton-karfe- Ozi-Ozugbe-Girinya which provides an outlet across the bridge linking to Niger State
- Gegu-Beki – Iraki- Girinya
- Gegu-Beki Tazenyi- Tawari
- Tawari-Kome
- Edeha-Adamogu-Akpaku-Panda-Girinya (dry Season only)
- Edeha-Iganuma-Edegakyi-Adabode-Ikumo-Odama-Odama-Iriku –Esikaku/Irenodu (Dry Season only)
- Gbarada-Okofi-Adangere-Mozum-Ete
- Chikara-Aseni –Nyaba-Aduho-Tanahu-Ahoko (Umar 2009)

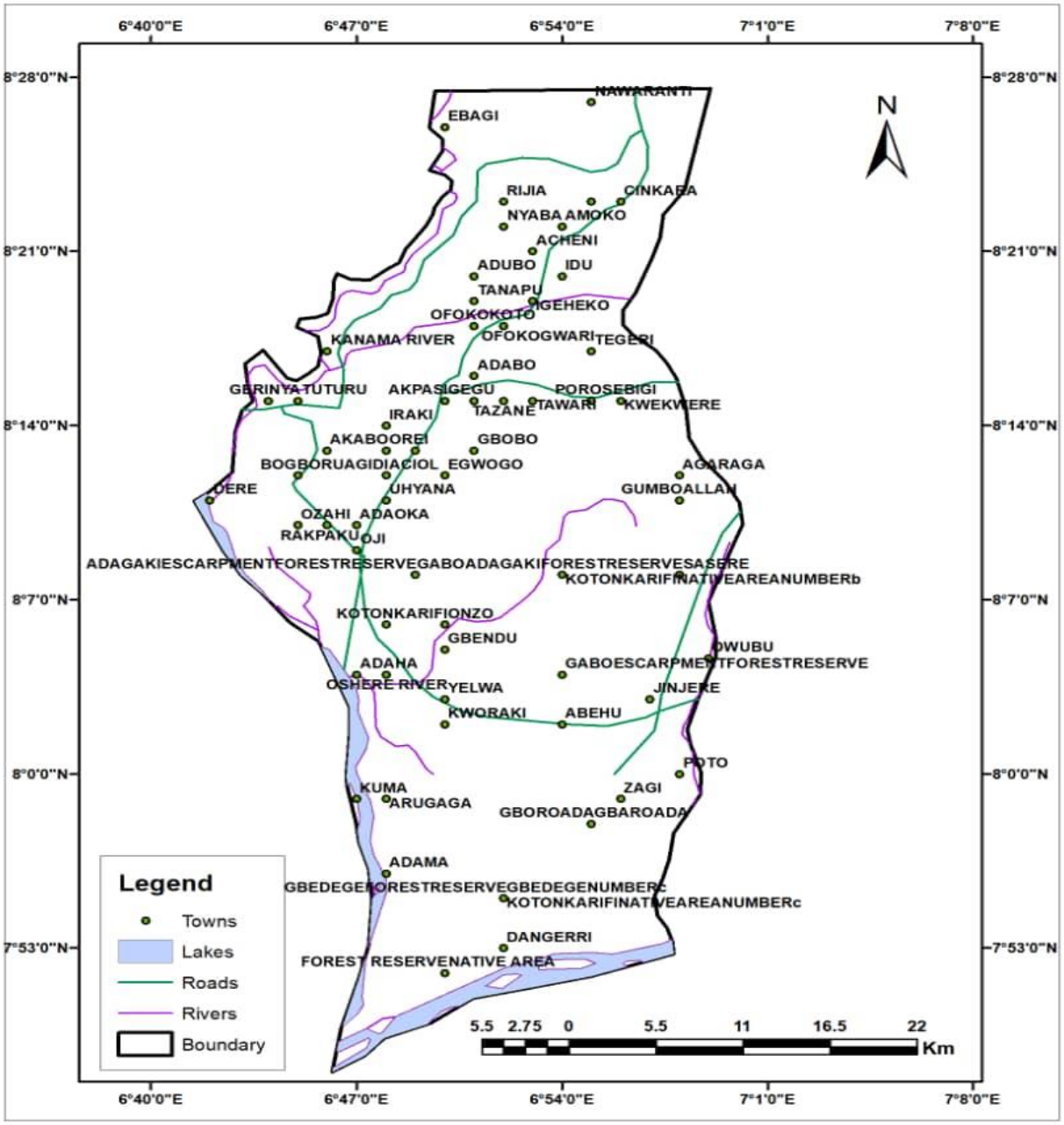

Figure 2: Geological Map of Kogi Local Government Area showing the Location of Koton Karfi, River,Road, Lakes and Boundary

CAUSES OF FLOODING

Flooding is caused by several factors and is invariably preceded by heavy rainfall. Flooding is inevitable, resulting from the natural rainfall-runoff process. Flooding is a natural phenomenon and the magnitude of floods is periodic. The periodicity of floods implies that every year some area surrounding the river (on both sides) is flooded. Every other period, (two, five, ten, fifty, one hundred and even a thousand years) is associated with increasing area around the river which gets inundated.. Areas inundated by floods adjacent to the river or stream are known as flood plains. Flood occurrences may be due to natural or anthropogenic (man-made) factors(NEMA 2012)

(NEMA 2012) indicated that climate change is not the culprit in flood problem but anthropogenic factors. The investigation revealed that, contrary to popular wisdom, climate change or unusually high rainfall is not the

primary cause of the flooding problems in Lagos. Rather, increase urbanisation, lax planning laws in relation the erection of building in flood plains and the inadequacy of storm drainage facilities in the cities are to blame.
Man does not have much control over the natural causes of floods, such as the magnitude and frequency of rainfall (and associated floods), except perhaps to avoid encroachment into the natural flood plains to prevent flood disaster. However man has total control over the anthropogenic causes of floods, such as control of solid waste disposal, clearing of drainage channels and drains to allow free passage of flood water and increasing the capacity of hydraulic conveyance structures through periodic dredging to conveniently carry flood flows.
Conventional wisdom dictates that man should stay away from flood plains or appreciate the RISKS associated with encroaching on the flood plain. Flood disasters are associated with the unnecessary risks people take when they encroach on the flood plains. There will be no flood disasters if human beings stay away from the flood plain. (Mohammed. 2012).
In this regard, (Umar and Oduwole. 2017), concluded that the major causes of flooding in Lokoja and Koton karfe local Government Area is uncontrolled urbanisation of the area, such that some of the houses were built during the dry season on what constitutes the river bed itself. They also observed large scale encroachment into the river floodplains throughout the area. According to them, most of the culverts, bridges and other hydraulic structures which were designed and constructed several years ago are no longer adequate to convey the present runoff arising from increased urbanisation of Minna Metropolis. The excessive siltation of the rivers and streams beds has tended to reduce the carrying capacity of these hydraulic conveyance structures.
(Nkwunonwo,,Malcolm,and Brian, 2015a)‘concluded that factors that influence the occurrence of floods are anthropogenic in nature. Thus, human can eliminate or reduce vulnerability to flooding. Resilience to floods may be enhanced if appropriate strategies and measures can be implemented. Effective strategies and measures can be implemented. plan require a suite of combination of mitigation, coping and adaptation measures. Response strategies must be developed at different levels of government, and must involve mitigation, preparedness program, response, and recovery. This requires-collective governmental plan of actions and concerted effort. (NEMA 2012)
The relationship between human activities, flood hazards and risks is an area of particular interest given the arguments surrounding climate change, and the increasing productivity of human populations and stresses on the physical environment that such developments initiate]. The impact of natural hazards is no longer considered a function of geological processes or climatic factors alone
Human activity is increasingly becoming a factor contributing to occurrence of disaster worldwide. There are numerous examples of human activities and modification of natural and physical environment that have increased the risks of natural hazards. As evident in the Asian Tsunami of 2004, the high levels of loss of life and livelihood, and damage to property were largely due to the population density and human development of the physical landscape of the sticker region. (Nkwunonwo, Malcolm,and Brian, 2015a)‘
Furthermore, the lack of governance structures, legislative compliance, and regulatory land use and planning coupled with the perception of risk of the general public, can all contribute to the magnitude of disasters. Other examples of how human activities have aggravated flood hazard and risks are through urbanization and agricultural activities.
Human activities such as land degradation, deforestation of catchment area, increased population density along riverbanks, inadequate land use planning, zoning, and control of flood plain development; and inadequate drainage, and management of discharges are determining factors that contribute to the increased incidence of flooding (Nkwunonwo, Malcolm,and Brian, 2015a)‘

Methods use in managing and planning flood in the study areas

For planning flood control, measures, it is necessary to have the following inputs which can be obtained by using remote sensing techniques

6 Flood Inundation Mapping

Surface water bodies can be mapped in Lokoja/Kogi Local Government area of Kogi State by adopting the unique recognition characteristics of near infrared spectral hands. Accordingly, the extent of the area inundated by flood can be obtained relatively easily from satellite- based observation. In this case one can adopt both digital and

optical data processing techniques as they are helpful in delineating the flooded areas. Based on the information the planning and decision- making authorities of flood control can take decisions with a fair degree of reliability on such aspects as (i) Extent of flood damage (ii) Structural measures, (iii) Area requiring post flood alleviative measures and (iv) Providing relief to the affected people.

Secondly Information Regarding Flood Plain Landuse

The Landuse information of the flood prone rivers is very important which is required for planning measures for flood alleviation. This also helps in the assessment of flood damage. On a long term basis such information is also of help in the development of (i) necessary measures to control man's encroachment on the flood plain, and (ii) flood hazard zoning giving due weight age on the varying degrees of flood hazard. Thirdly indication of flood susceptibility The natural flood susceptibility indicators are as below (i) characteristics of drainage basin i.e. drainage density, shape etc. (ii) channel configuration and geomorphologic characteristics (iii) soil moisture availability and differences in soil type (iv) Upland physiographic and agricultural development, (v) Landuse boundaries, and (vi) flood alleviation measures and degree of abandonment of levees. The flood plan indicators can be obtained through application of available air- photo interpretation techniques. Theses parameter is helpful for Urban Flood Management and Planning**,** flood hazard zoning and estimation of inundated areas. (Umar, Ugwu, Joy, Eke & Ugwuoke 2022*)*

7 The Beneficial Effects of flood

Of all the extreme events, none is more paradoxical than floods. This is because it is most frequently occurring natural hazard that causes the greatest damage as well as the most beneficial effects. It is probably safe to attribute the rise and growth of the early civilizations to the occurrence of floods. Civilization here under used loosely refers to the period when man settled and embarked on cultivation of agriculture. Naturally, these early settlements (later to be foci of civilization), thrived along the valley and flood plains of the Nile, Tigirs, Euphrates, Indus and Hwang (Temi 2006)

All these rivers have over the years built expensive and fertile floodplains that were ideally suited to tilling with the crude instruments possessed by the early man. Hence, has observed. 'Since the beginning of recorded history and probably predating that man has always had an affinity for floodplain and riversides'. This is because there is lack of road and rail networks. and hence greater affinity for rivers and ports affinity.

Perhaps, the best example 0f the benefit of floods and floodplains is presented by the river Nile and its valley. The river Nile fed on its upper course by heavy tropical rainfall and from the Blue and While Niles floods between June and September in its lower reaches. It covers and fertilises large area of land. This resulted in the early occupancy and subsequent rise of civilization, in the Nile Valley.

The Nile Valley indeed has been a human anthill since very ancient time (Temi 2006). Today, the Nile Valley with about 900 persons per square Kilometre is one of the most densely settled parts in the African continent. Farming is so completely reliant on flooding that to ensure that the River Floods, the river channel is artificially narrowed in some stretches by the construction of Levees. Theses hold back the excess flood-water after the flood has receded. This dependence has given rise to such popular saying like' Egypt is the Nile and the Nile is Egypt' No Nile No Egypt'' and the Nile give life to the Egyptian desert. (Umar 2020) also found that some farmers along the lower zones of floodplains have adopted their crop pattern to annual overflow and they would be disappointed if flooding were to fail. Here are examples where floods are not only beneficial but also desirably necessary for the sustenance of life. Other example of floodplain giving rise to civilizations are the early west African Empires of Ghana, Mail and Songhai whose most value possessions were the floodplain formed by the anatomization of the River around the Region of present day Bamako, the Nok cultures also developed on the floodplain of the Niger.

Flood may also have other beneficial uses if they can be properly controlled and managed. The excess floodwater, for instance, may be held in reservoirs and used to provide water for homes and industry in the dry season and generate hydro-electric power, for example, the Naser Dam in Egypt and the Hydro-Electric power works at the Kainji Dam in Nigeria rely on high floodwater to be efficient. The floodwater may also be used to reduce stream pollution and provide opportunity for fishing and recreation. (*Umar & Olatunde 2020)* and agricultural expansion schemes.

8 The Negative Effects of flood

Flood has been known to cause damage to lives landed property, household property, business, traffic, drains, and surface underground water (Umar 2020). for an in depth comprehension of flood effects, it is preferable to review a few catastrophia floods. The causes of floods are essentially the same differentiated only in magnitude and the diversity of victims (especially in their nature and response capability).

The river Ogunpa River flowing through the city of Ibadan on August 31st over flowed its banks and all features encroaching on its floodplains over 2000 person perished in that flood. another good example is the series of flood which hit the city of kano between August 6th and 13th, 1986 culminating in the collapse of the Baguda dam is estimated to have claimed at total of over 100 lives.

Nigeria has a fair rating of 1 out of every 7.7 million at risk of dying in any major weather disaster. Thus, of course does not represent the total picture, as report cannot be said to be completed due to lack of reliable network. For instance, the rate of fatalities in normally occurring severe weather events in Africa is amplified by the other rating for Egypt, Ethiopia and Malagasy. The flooding episodes and destruction in Nigeria are shown below.

S/N	Date	Town	Occurrence	Remarks
1	July,1999	Lagos,Lagos State	Widespread flooding	One life lost, property damaged worth billion of Naira
2	August,1999	Chachanga, Mariga, Magama, Rijau, Ebbo,kuchi	Many villiges flooded, farmlands washed away	Thousands of families rendered homeless, damage undetermined two lives lost in Minna
3	August,1999	Goronyo (Sokoto) in Sokoto State	Flooding of community by River Rima	Loss undetermined
4	August,1999	Part of Jigawa and Yobe	Floods	3,000 farmlands submerged (rice, maize, sorghum destroyed)
	August,1999	Banchi Municipality (Banchi State)	Floods	Hundred renders homeless #23m property destroyed in Railway Corporation Quaters (Maiduguri)
5	August, 2022	Kogi, Lokoja, Kogi (Koton Karfe)	Floods	3,000 farmlands submerged (rice, maize, sorghum destroyed)
6	August, 2022	Delta	Floods	Thousands of families rendered homeless, over 3,000 farmlands submerged (rice, maize, sorghum destroyed)
7	August, 2023	Ebbo, Kuchi, Muye, part of Kogi (Koton August, 2023Karfe)	floods	Thousands of families rendered homeless, over 3,000 farmlands submerged (rice, maize, sorghum destroyed)
8	August, 2023	Kaduna,	floods	Thousands of families rendered homeless, over 3,000 farmlands submerged

				(rice, maize, sorghum destroyed)
9	August, 2023	Part of Abuja	floods	Thousands of families rendered homeless, over 3,000 farmlands submerged (rice, maize, sorghum destroyed
10	August, 2023	Part of Kogi,	floods	Thousands of families rendered homeless, over 3,000 farmlands submerged (rice, maize, sorghum destroyed

Sources: Researcher's Field Survey 2023

9 Result

To examine the activities rendered by Local Communities (Lokoja /Kogi) during response and recovery operations

Table 1 KMO and Bartlett's Test

Kaiser-Meyer-OIkin Measure of Sampling Adequacy	.589
Approx chi-Square	303.097
Bartlett's Test of Sphericity Df	36
Sig.	.000

Table 2 Communalities

	Initial	Extraction
-Shelter	1.000	.542
Food	1.000	.725
Medicines	1.000	.639
Psycho social support	1.000	.559
Employment	1.000	.588
Financial	1.000	.593
Skill	1.000	.563
Transportation	1.000	.552
Resumption of normal life	1.000	.469

Extraction Method: Principal Component Analysis.

Table 3 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.818	20.205	20.205	1.818	20.205	20.205
2	1.269	14.106	34.310	1.269	14.106	34.310
3	1.123	12.480	46.791	1.123	12.480	46.791
4	1.018	11.315	58.105	1.018	11.315	58.105
5	.924	10.267	68.373			
6	.851	9.458	77.831			
7	.759	8.428	86.259			
8	.702	7.795	94.054			
9	.535	5.946	100.000			

Table 4 Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	1.566	17.403	17.403
2	1.351	15.015	32.418
3	1.179	13.096	45.515
4	1.133	12.591	58.105

Extraction Method: Principal Component Analysis.

Table 5 Component Matrixa

	Component			
	1	2	3	4
Shelter	-.153	-.392	-.023	.604
Food	.071	.032	.722	.445
Medicines	.396	.161	-.520	.432
Psychosocial support	.160	.589	.431	-.018
Employment	.624	.406	-.183	.011
Financial	.744	.129	.136	-.063
Skill	.267	-.479	.246	-.448
Transportation	-.542	.431	-.152	-.221
Resumption of normal life	.547	-.380	-.099	-.124

Extraction Method: Principal Component Analysis.[a]

a. 4 components extracted.

Table 6 Rotated Component Matrixa

	Component			
	1	2	3	4
Shelter	.005	.051	-.725	.118
Food	.061	-.106	-.188	.822
Medicines	.035	.770	-.172	-.125
Psycho	-.169	.106	.475	.541
Employment	.189	.626	.393	.071
Financial	.513	.378	.354	.247
Skill	.619	-.391	.141	-.086
Transportation	-.652	-.157	.250	-.198
Resumption	.652	.145	.000	-.151

10 Activities Involved By The Local Communities During Flood Disasters in Lokoja /Kogi Local Government Area of Kogi State

The KMO which measures the sampling adequacy (that is if the responses given with the sample are adequate or not) have a value of .589 which is higher than 0.5, it is therefore accepted as it indicates that the sampling is adequate for the component analysis. Also, the result showed the Bartlett's test which is another indication of the strength of the relationship among variables. The Bartlett's Test of Sphericity with the value of .000 is significant as it is less than 0.05. It implies that correlation matrix is not an identity matrix. The communalities which also shows how much of the variance (i.e. the communality value which should be more than 0.5 to be considered for further analysis, otherwise the variables are to be removed from further steps factor analysis) in the variables has been accounted for by the extracted factors which indicated that 54.2%, 72.5%, 63.9%, 55.9%, 58.8%, 59.3%, 56.3% and 55.2% of the variance in Shelter, Food, Medicine, Psycho, Employment, Financial Skill and Transportation were accounted for respectively. The Eigen value which reflects the number of extracted factors whose sum should be equal to number of items subjected to factor analysis indicated that four factors or components were extracted and the cumulative percentage was 58.1%. This implies that the four factors explained 58.1% of the variance.

The table 5 above shows the loadings (extracted values of each item under 4 variables) of the nine variables on the four factors extracted. The higher the absolute value of the loading, the more the factor contributes to the variable (Four variables were extracted wherein the 9 items are divided into 4 variables according to most important items which similar responses in component 1 and simultaneously in component 2, 3 and 4). The idea of rotation is to reduce the number factors on which the variables under investigation have high loadings. Looking at the table 5 above Shelter, Food, Psycho-social support, Employment, financial and Resumption of normal life are substantially loaded on Factor (Component). This indicates the activities that the local community (Lokoja/Kogi) were actively involved. All the remaining variables are substantially loaded on Factor. Therefore, it is concluded that local communities (Lokoja//Kogi) were actively involved in the provision of Shelter, Food, Psycho-social support, Employment, financial and Resumption of normal life in flood response and recovery measures during flood disasters in (Lokoja/Kogi) Local Government Area of Kogi state.

10 Recommendations

- There is need for the state Government to immediately declare a state of Emergency on the flooding to free up resources for managing the disaster and getting federal assistance.
- There is need for immediate audit of the preparedness of the states agencies responsible for disaster management

- Both Lokoja and Koton –Karfe Local Government must be assisted and capacitated to provide immediate assistance to citizens affected by the disaster.
- Chairmen and their Councils of both Local must be responsive to the specific needs of their citizens based on their peculiarities.
- Citizens must be assisted to relocate to government coordinated camps for displaced persons. These camps for displaced persons. Theses must been basic minimum human conditions for protection, safety and habitation.
- There is need for immediate mobilisation of resources by community based organization and citizen groups to assist displaced persons.

11 Conclusion

Urban Flood Management and Planning Using Lokoja and Kogi L.G.A Of Kogi State Came to the conclusion that since almost all of the area's populations settled in flood prone areas, they are likely to be exposed to flood. The flood assessment shows that the low lying areas that border river Lokoja/Kogi bed streams and their tributaries are highly affected by the hazardous flood events. Except for some parts of the areas in Lokoja/Kogi most of the people living in Lokoja/Kogi are highly vulnerable to flood hazard. The assessment reveals that the municipality of the Lokoja/Kogi is more vulnerable than the municipality of Lokoja/Kogi inner town.

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