Flooding in Northern Nigeria: A Historical Perspective

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Abstract

Flooding has significantly influenced the development of environmental history in Northern Nigeria and across the country. As a recurring environmental phenomenon, its impact dates back to antiquity, predating even the construction of the Ancient Kano City Walls in 1095 AD. The architectural features of the Wall—such as elevated foundations and integration with natural drainage systems—reflect a longstanding awareness of flooding risks. Drawing on historical and contemporary evidence, this paper examines the causes and consequences of flooding in Northern Nigeria, with a focus on its socio-economic and infrastructural impacts. The study identifies climate change, high-intensity rainfall, dam overspills, poor drainage, and deforestation as major contributing factors. While early records of fatalities are limited, analysis of 88 flood events between 1984 and 2017 reveals that 43 per cent occurred in the Northwest, 30 per cent in the Northeast, and 27 per cent in the North Central zones, with similar patterns in fatality distribution. The paper concludes that a holistic, integrated response—encompassing policy reforms, community involvement, and sustainable environmental practices—is essential to mitigating the growing threat of flooding in the region.

Keywords: *Flooding, Environment, Geography, History, Northern Nigeria*

Introduction

Human societies throughout history have encountered numerous threats, including disease, natural disasters, and security challenges. Flooding, among these challenges, has emerged as a significant theme within environmental history and historical geography due to its persistent nature. Flooding is not confined to Africa alone; it affect various regions globally—including the Americas, Asia, and Europe. However, responses to flooding and the degree of vulnerability are

influenced by socioeconomic factors, with poorer nations and communities bearing the brunt. In Nigeria, both northern and southern regions experience flooding, but this study focuses on Northern Nigeria—an area known for its agricultural productivity yet characterized by high poverty and underdevelopment. The paper is organized into the following sections: introduction, conceptual clarifications, historical and contemporary accounts of flooding, causes, coping mechanisms, and conclusion.

Conceptual Clarifications

This section attempts a clarification of flood/flooding as a concept in environmental geography and disaster risk studies and shows the essential connections history has with geography to buttress the raison d'etre of this review. Thereafter, it looks at the area defined as northern Nigeria. On the concept, the term flood is from the Old English Language, *flod*, and in German, *flut* , while in Latin , *fluctus* , *flumen* , which was first used in 1663.[i] The concept denotes excess supply of substance or something into a space, and one of the substances usually supply through rainfall is abundance of water. The phenomenon of flood or flooding therefore, occurs when there is an excess water supply beyond the capability of natural absorption, conduction and evaporative processes of hydrological cycle.[ii] In short, the cumulative or total quantum of water released into a space which cannot be momentary consumed, contained or controlled qualifies as flood or flooding. There are several cases of rivers or body of water overflowing their banks or channels and covering adjacent lands through excess water supply particularly through rainfall. There was the famous flood of Naoh's time in the Holy Book, the 1976 Ogunpa flood in Ibadan and the 2012 and 2022 flood which ravaged Benue State and Kogi State particularly Lokoja due to the release of Lagdo Dam in Cameroun mountain. In short, several factors such as, climate change, poor waste management, indiscriminate building along water channels, deforestation, blocked canals etc., contributes to flooding. This shall be expanded later.

Given that history is the summarized experience of people and societies, and flood or flooding has been part of that experience and, one of the fundamental fallouts of geographical changes. This underscores the tight relations that exist between geography and history. On the relationship and relevance of geography and

history to each other, scholars like Kant notes that, "geography lies at the basis of history ", while Herder, avers that "history is geography set in motion".[iii] As a study and process, History may be comprehended at two level- as a study, it is the study of the totality of all the changes that humanity have undergone, while as a process, it connotes the relationship between man and his environment, and the effect of environment on man and of man on his environment.[iv] This relationship made Aghalino, to have argued that, "one of history's eyes is geography and the other is chronology", adding that "the right view point of history is provided by time and space and that history must be placed in its proper geography setting".[v] In fact, historian must as a matter of fact know the location of the place and the people he is talking about as a prerequisite knowledge. Besides, geographical factors and features such as climate, soil, vegetation, rivers , mountains , seas , coastlines, mineral resources plays significant role in the historical development of society. How the interplay of these factors, contributed to the phenomenon of flooding in a place and people of northern Nigeria remained the fundamental touchstone of this paper.

The place called northern Nigerian contains nineteen States of the federation, which are structured into three geopolitical zones namely, the north central, northwest and the north east respectively. In the north central there is the Benue State, Plateau, Kogi, Kwara, Nasarawa and Niger (plus Abuja, the Federal Capital Territory-FCT, though not usually counted as one of the States in the zone); while Kaduna, Kano, Katsina, Kebbi, Sokoto, and Zamfara makes up the northwest and Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe State constitutes the north east geopolitical zone. These States have varying vegetation and climate, with the states of the northwest and northeast which straddles the Sahel region, having severe temperature and minimal rainfall due to climate change and desert encroachment. The major ethnic group in the region is the Hausa/Fulani, while others such as the Yoruba people of Kwara, Berom, Eggon and Doma, Tiv, Idoma, Igala, Kanuri, Nupe, Ebirra, among others, are the minority groups.

In Nigeria as in other part of the tropics, rainfall remained the most significant element of climate so long as agriculture is the mainstay of the people. It decreases from south to north. The absence, presence and excess of it affect farming calendar,

movement of Fulani herdsmen from their traditional home in the far north to the Niger-Benue valley and Lake Chad Basin, and more importantly determine the extent and the scale of flooding.

History of flooding in Northern Nigeria

The region straddles the Sahel, Sudan and Guinea Savanna of the Western Sahara. The Sahel region has scanty rainfall, while the Sudan/Guinea Savanna experiences moderate rain. However, this was not the narrative during the early, and up to the mid-Holocene (some 9000-6000 years ago), when most of the Western Sahara was strongly vegetated by xerophytic woods, but changes occurred centuries later resulting into what may be now called barren lands due to desertification, which the inhabitants of Sokoto area have been contending with since and even before the catastrophic drought of the 1970s and early 1980s.[vi]

In short, as noted, about 6000 years ago the entire Sahara was thickly populated by trees of the rain forest type as Paleoclimatologists would have us believe.[vii] The discovery of about 6000 years old wooden canoe in the present day North East by archaeologists, and other evidences such as pollen algae, insects and minerals found in Lake Yao in northern Lake Chad region diminishes possibilities of doubt.[viii] The period of the initial greening of the Sahara, put to about 10, 500 years ago, in which it stayed lush for several millennia appears consistent with the paleoclimatoglogist's claim and archaeological findings.[ix] However, due to human interference with the vegetative cover and climate change as noted, the region began to experience desertification and continues to loss quantum of its coverings annually. It may be interesting to note that the degree of desert encroachment in the far north composing of states of the north east and west, appears more severe than the north central's which has been more moderate. As matter of fact, the presence of rivers, the continued diminishing of Lake Chad and the way and manner humans in the region interferes and exploits the nature make the environment more porous to flooding.

A review of cases of flooding in Nigeria shows lack of adequate materials and incomplete data due to poor attitude towards its reportage and poor information management at local, state and federal level.[x] Thus, it becomes extremely difficult

to tie the history of flooding in northern Nigeria to a tree of date precision. On a general note, therefore, while some traces the history of floods in Nigeria to 1948 and 1963[xi], others limits it to 1984/85.[xii] This is to avoid what appears to be unnecessary academic rigor, task and stress.

However, history points to evidences of floods in northern Nigeria stretching into the dim past. For instance, a critical analysis of the historical context and construction of the ancient and epic Kano City Wall, which had its foundation laid in the 11th century and completed in the mid-14th century,[xiii] reveals that the Wall, although primarily built for defense and security purposes, exhibits inherent floods protection characteristics and coping mechanisms. It is composed of elevated foundations, water-resistant materials and strategic alignment with natural drainage systems. John Lavers captures the architectural design and the environmental toughened character of the Wall, thus:

> The impressive work of military engineering was then some 11 or 12 miles in length, 40 feet thick at the base and varying from 30 to 50 feet in height. A broad rampart walk ran behind the 4-foot thick loop-holed crest of the wall which was pieced by 13 gates, the whole further strengthened by a deep ditch.[xiv]

The above startled Sir. Frederick Lord Lugard, the then High Commissioner of the northern Nigerian protectorate. When the British forces attempted to attack and captured the ancient city of Kano in 1903, he observed:

> The extent and formidable nature of the fortifications surpassed the best informed anticipations of our officers. Needless to say, I have never seen or imagined anything like it in Africa.[xv]

Beyond the amazement, the point being raise is that, the very nature and character of the ancient Wall is indicative of the prevalent of floods in the region even before its erection. That is to say, the experience of flooding in the land now defined as northern Nigeria is as old as the land itself and, the architects of ancient Kano city Wall were conscious of that and prepared for it as one could see in its fortifications. Be that as it may, contemporary incidence of increases in flood heights in northern Nigeria was at the beginning of 1900 AD, when the Rima Valley overflowed due to

destruction of vegetation of the headwater and the sedimentation of the river bed.[xvi] This incidence might predates the development of water governance proper, which began in 1915 during the colonial period.[xvii] While evidences of flooding cases from 1900 to 1960s are scanty, the disastrous droughts of 1970s and early 1980s, makes northern Nigeria more vulnerable to flood than the south. Consequent upon the end of the prolonged drought in the mid-1990s, floods associated with intense rainfall became more pronounced in Nigeria.[xviii] Thus, the review of spatial distribution of floods across the nation's geopolitical zones between 1984 and 2017, reveals 131 cases, resulting in 1,491 fatalities with 29 per cent recorded in northwest of Nigeria.[xix] This implies that, from 2017 to the 2024 epic Maiduguri flood in which 40 per cent of the metropolis was submerged, might have given additional boost and surges to the fatalities. This is in short, the condescend history of flooding in northern Nigeria. In the subsequent part of the paper attempt shall be made to look at the causes and cases of flooding in the region under survey.

Causes and Cases of Contemporary flooding in Northern Nigeria

Plethora of factors account for flooding in northern region and Nigeria at large. Lancaster cited in Idoko, suggests wide range of features that may qualify a site for flood risk assessment, which include the following:

i. Areas defined as being at risk of flooding in local development plans;
ii. Areas known to have flooded in the past or are at a level which is close to previously recorded flood level;
iii. Areas in or around a water course , particularly where there is steeply rising ground on the opposite bank, or the land use is such that may be expected that previous development has not occurred due to flooding area on flat, low lying land, especially where development at similar levels/locations have experienced flooding or are protected by flood defences , and;
iv. Area adjacent to, near to, around or behind any flood control structure.[xx]

Most of the states in northern Nigeria possess these characteristics of flood prone risks. Survey of literature reveals combinations of factors such as; prolonged and

high density rainfall, settlement along water way/river and blocked carnal, poor management of environment by a way of deforestation and poor waste management, overspills from dams and rivers, low lying topography, lack of functional drainage system etc., are fundamental causes of flood in the region and Nigeria at large.[xxi] Related to deforestation and desertification, Nigeria and Zaire, are documented to be losing more than 88 km2 of their forests per annum, and the United Nations estimated that by 2025, two-third (2/3) of arable lands in Africa would have been lost to desertification, indicating the entire sub Saharan Africa and northern Nigeria would be at a higher risk.[xxii] These predictions were gradually becoming a reality given the environmental regime that came to stay Africa and Nigeria in the last two decade.

In the region under consideration, the following states are always strongly hit by flood; Kano and Jigawa (northwest); Adamawa, Gombe and Borno (northeast); and Plateau (north central). While Borno and Adamawa are vulnerable to discharge from the bordering Chad Basin; Katsina and Kano are vulnerable to River Kaduna, and Zamfara, vulnerable to River Zamfara.[xxiii] It has to be added that, recently, Benue State, part of Niger and Kwara, and Lokoja were vulnerable to water discharges from Lagdo Dam in the Cameroun Mountain.[xxiv] The reader may be interested in the distribution of flood cases and fatalities in the region.

Table 1: Flood cases and fatalities in Northern Nigeria, 1984-2017

S/No	Geopolitical Zones	Total Flood Events	%	Total Fatalities	%	Fatalities per flood event
1	Northwest	38	43	496	45	13
2	North east	26	30	329	30	13
3	North-central	24	27	275	25	11
4	**Overall**	**88**	**100**	**1,100**	**100**	

Source: This table was developed by the present author from, T E. Ologunorisa, A O. Eludoyin and B. Lateef, "An Evaluation of Flood Fatalities in Nigeria" in *American Metrological Society Journals*, https://journals.ametsoc.org. The original

table was for the entire Nigeria, while the present research constituency is northern Nigeria, consisting of three geopolitical zones represented in the above table.

From the table, the northwest appeared to be the worst hit probably because of the prevalent of desert encroachment which combined with other factors, while the north central with more vegetation and in Guinea savannah has a minimal desertification, just that high density rainfall and occasional discharges from Lagdo Dam in Cameroun has always been very destructive along the Niger-Benue trough. More so, recent floods particularly since 2012 or so has also proven more disastrous and destructive in the north central due to high density rainfall and frequent discharges from Lagdo Dam, which makes River Niger and River Benue to overflow their banks, with heavy explosions in Benue State, Lokoja, the confluence and its environs, affecting Niger State and part of Kwara.

In short, the northern geopolitical zones have witnessed cases of flooding over the years, which one cannot mention all, but few. To avoid clumsiness, some of the incidences and cases of flooding in the region are displayed in the table below.

Table 2: cases of flood in northern Nigeria

S/No	Flood events/cases	Damages	Year
1	Rima River overflow due to sedimentation	Not recorded	c.1900
2	Bauchi flood	750 houses washed away, farmlands destroyed	1988
3	Borno flood	Houses and farmlands destroyed	1988
4	Kano flood and windstorms	Schools , houses , farmlands and animals destroyed , 300,000 persons displaced	1988
5	Jigawa flood and windstorm	Houses and farmlands destroyed, 35,500 persons displaced,	1988
6	Shiroro Dam releases as a result of heavy down pour	8 persons died , 25 villages and 15 LGAs submerged	1999

7	Niger , flood and rain storm	Schools, houses , farmlands and animals were affected , 200,000 displaced	1999 & 2000
8	Sokoto flood and windstorm	Houses , farmlands destroyed , 16,000 persons affected	2001
9	Yobe flood	Houses and farmlands submerged 100,000 persons affected	2001
10	Zamfara flood	Buildings submerged and farmlands and properties destroyed , 12,398 persons displaced	2001
11	Jigawa flood and windstorm	Houses and farmlands destroyed , 450, 150 persons displaced	2001
12	Kano , flood and windstorm	Schools, houses , farmlands and animals destroyed , 20, 445 persons displaced	2001
13	Kogi, flood and rain storm	Schools , houses and farmlands destroyed, 1,500 persons displaced	2001
14	Shiroro Dam and River Kaduna flood	26 villages flooded, 23,500 displaced	2003
15	Kangimi Dam collapse Igabi LGA, Kaduna State	Properties worth over 500 Million Naira were destroyed and estates submerged	2003
16	Taraba flood	80 houses totally swept off, 410 houses extensively damaged , over 50,000 displaced	
17	Barrage Dam Gusau Zamfara releases due to heavy rain	Over 40 persons died , 500 houses washed away and 1000 persons displaced	2006
18	Mubi Adamawa , run of water	Washed away , destruction of houses and farm lands	2008 &2009
19	Kagara Dam, (Niger State) spill away failure	Entre village submerged , 130, 000 displaced and 49 deaths	2010

20	Sokoto Dam failure on Rima River due to heavy rain fall	About 50 villages submerged, 2000 houses destroyed , 100,000 across 11 LGAs displaced and thousands of lands and produces destroyed	2010
21	Katsina State , heavy rainfall	100 houses destroyed and 1,700 persons displaced in Dutsinma LGA	2010
22	Zamfara	Over 2000 acres of farm land washed away in Gummi LGA	2010
23	Jigawa and Kano, releases of water from Tiga and Challawa Dam	Over 2 Million person displaced , hundreds of hectares of land turned waterlogged and farm produce worth over 4.5 Billion Naira destroyed	2010
24	Kwara, flood in Shonga district of Edu LGA due to heavy rain and releases of water from Kainji Dam	Washing away of 500 hectares farm of Cassava , rice , guinea corn, and maize as well as livestock (sheep, goats and Cattle	2010 &2011
25	Kano city due to heavy rain	6 persons died, and other injured, 27 houses collapse in fragile LGA and 300 person rendered homeless	2011
26	River Benue overflow due to releases of water Lagdo Dam in Cameroun	Several Houses in Wrukum, part of High level and BSU, were flooded and house submerged , several people displaced	2012
27	Lokoja , confluence town , effect of releases of water from Lagdo Dam and excess rainfall	Roods and bridge overflowed, farms destroyed and houses submerged , people displaced	2012
28	Adamawa due to releases of excess water from Lagdo Dam in Cameroun	Thousands rendered homeless	2012

29	Warawa Dam, failure in Kano State	Several communities submerged , several hectares of land washed away, farm produces worth millions destroyed	2012
30	Jabba and Kainji Dam in Niger	Over 15 deaths, hundreds displaced and produce and properties destroyed	2012
31	Kano flooding due to heavy rainfall	About 19 deaths recorded, more than 15, 000 injured	2012
32	Kano city flooding due to heavy rainfall	Displaced over 500 person, one death	2013
33	Mubi, Adamawa , heavy rain	Land destroyed , no official record of death	2014 &2015
34	Jigawa State	21 death in road accident due to collapsed of bridge by the flood, hundreds of families displaced	2021
35	Trade More Estate in Abuja , run away water	Land Rover Model swept away by the flood	2021
36	Benue State , excess rainfall and releases of water from Lagdo Dam	Houses and roads covered with water, land washed way , people were displaced and properties worth millions were destroyed	2022
37	Lokoja, excess rainfall and releases of water from Lagdo Dam	Houses and roads covered with water, land washed way , people were displaced and properties worth millions were destroyed	2022
38	Alu Dam failure in Maiduguri	40 per cent of the metropolis submerged , about 37 death , 58 persons injured and 400, 000 persons displaced	2024

Source: This table is developed by the author from information from several sources, some of which are as follows: R K, Udo, "Environment and Peoples of Nigeria: A Geographical Introduction to the History of Nigeria" *Groundwork of Nigerian History*, Ibadan: Heinemann Educational Books (Nigeria), O.Ikime (ed.), 1980, p.13. T E. Ologunorisa, A O. Eludoyin and B. Lateef, "An Evaluation of Flood Fatalities in Nigeria" in *American Metrological Society Journals*,

https://journals.ametsoc.org. A A. Adamu and S. Dan'azumi, "Historical Review of Flood occurrences in Nigeria and Some Possible Solutions" in *ATB Journal of Science, Technology and Education* , (12)4, 2024. M I. Magami, S. Yahaya K. Mohammed, " Causes and Consequences of Flooding in Nigeria: A Review" in *Biological and Environmental Sciences Journal for the Tropics* (11)3, 2014. A K Etuonovbe, The Devastating Effect of Flooding in Nigeria. *Half of the City underwater, One Million affected by Northern Nigerian Flood*, 2024/9/12, https://www.aljazeera.com/news.

From the table it is glaring that loss of lives, properties and displacement of people are the fundamental and immediate consequences or effects of flood. Other visible changes after flood occurrences are, debris and sediment deposits, destruction of bridges and roads, dilapidated houses, pollution (turbidity), environmental degradation, destruction of vegetation and crops etc. These post flood immediate and visible changes can have a lasting impact on the communities, ecosystems, and economies. Equally observable in the table too, is the absence of flood in the area in 1970s and even after the Rima River case of early 1900 to 1980s. The explanation one may offers for the period from the late 1960s, up to early 1980s, is that, there was a protracted drought experience, a geographical experience and factor that is grossly inconsistent and diametrically opposed to flooding experience. However, better management of environment and minimal impact of human activities on the environment might have moderated the ecosystem. More so, poor attitude towards record keeping of environment related challenges may account for the lag of evidence for the period.

Be that as it may, after about five decades or so between July and October 2012 and 2022, the most disastrous floods in recent history occurred, and significantly impacted on almost the thirty six (36) states of the federation including the Federal Capacity Territory, Abuja. For instance, the released of water from Lagdo Dam and the heavy downpour in 2012 and 2022, affected about 7 million people in which over 2 million persons were displaced, 5000 people were physically injured, and 5,900 houses were destroyed.[xxv] The larger portion of these havocs were done in the northern cities and states of; Abuja, Benue, Lokoja, Sokoto, Kano, Kebbi, Kwara, Niger, Adamawa, Nasarawa, Plateau, Gombe, among others.

Despite the danger and negative human cost of flood or flooding as the case might be , the paper at this point make bold to say that the phenomenon too, has some positive effects in history. For instance, the major civilizations of the world developed around major rivers and sea; the flooding of the River Nile, which was the root of Egyptian civilization and was a source of joy to ancient Egyptians; the seasonal flooding of Tigris and Euphrates was fundamental in the growth and development of Mesopotamia; the Yellow River (Huang He) referred to as the cradle of Chinese civilization and Yangtze River, the longest river in Asia were significant in the development of China. Similarly, Indus valley (a region of modern day India and Pakistan) benefited from flood and in short, agricultural activities and productivity in India and Bangladesh, depend to large extent on the water brought by flooding from the major rivers for renewal of fertilities and above all, the famous Greek civilization was deeply connected to the sea, the Aegean Sea, while the Roman civilization was powered by Tiber River.[xxvi]

Back to northern Nigeria, flooding harbors positive effect too. The floods and sedimentation on river remain favorable to agricultural activities. The Rima River in Sokoto, Kaduna, upper and lower Benue and the adjoining States promises great deal to agriculture. The entire fadama project across almost the northern states usually supported by the World Bank are fundamental properties of some rivers and their degrees of flooding. Some Dams too are gradually becoming relevance like rivers in the area of food production in the zone. The point therefore is, agriculture, early civilizations and settlements in history, and modern urbanization in northern Nigeria has their histories traced to riverine areas or valley and hills and mountains. Hunters and fisher men and women catches more animals in a flooding years. Animals living in holes comes out of their holes and even those not living in the holes moves to where there is less waters, as a result, they are trapped and killed by hunters, while fishes are more available in the flood years. These have been the experience of the people along River Benue, Lokoja, Arngungu in Kebbi, Niger States, Kwara, Zamfara River, Lake Chad region of Borno, Rima River, River Kaduna etc.[xxvii] The implication of this is reduction in the prices of fishes and wild meat (bush meat) improving the health of the consumers. It remain to be added that flooding inspires creativity and innovation in military engineering and architectural designs as seen in the case of ancient Kano Wall, which is today a

historic tourist attraction. This is indicative of the fact that some kinds of innovative buildings the society have today derived their historic inspiration from engineering constructions that are essentially flood and environmental disaster resistant.

Notwithstanding the benefits, the toll of deaths, displacement and destruction of properties flooding engendered has been enormous. Arising from the recurring danger the perennial flood poses in the region, it behooves on individuals, and immediate communities, government and stakeholders to devise a constructive coping and defensive mechanisms to tame the torrents of flooding. This is what the remaining part of the paper shall be basically considering.

Coping Mechanisms

Coping and defensive mechanisms for effective flood engagement in northern Nigeria may be situated within the context of pre-disaster measure, during flooding and post-flood measures embodied in community based initiative and government efforts. Pre-flood measures entails, building flood resilient infrastructure (like construction of dams, flood, flood exits, and flood gates to prevent or minimize damages), elevated buildings above flood levels to reduce pressure and damage (, the elevation here is not necessarily the ancient Kano Wall type) and proper waste disposal and management through regular cleansing of drains and toxic gutters to prevent clogging is germane. These are clearly lacking in most northern states compared to south-south and south-east geopolitical zones of the country.

During actual flooding, the coping mechanisms are evacuation plans, temporal shelters, food and water supply. This appears to be what the National Emergency Management Agency (NEMA) has been doing, but need to step up its activities as most times, before arrival the worst had happened and even when on ground it hardly meet up the expectations of the victims, affected communities and the general public.

Then there is a post-flood disaster measures. Here, there is a recovery or rehabilitation efforts, funding support and redesigning of flood drainage. During recovery effort, the role of voluntary institutions is significant, because helping

peoples and communities in the wake of disaster requires a lot of humanitarian and philanthropic deal and gestures. Providing funds for impacted buildings and affected communities too, is a necessity and requires humanitarian attention too. In terms of redesigning of drainage networks, lessons learnt from the past flood events must be brought to bear. Understanding the trend, patterns of past floods is crucial to avoid repetition of disaster and havoc. With lessons learnt, direction, redirection and diversions of drainage networks and water channels become a fruitful mitigation mechanisms for future floods. The greatest challenge some core northern states like Sokoto, Zamfara, among others faces over the years has been the lack of adequate construction of water channels and gutters probably in the illusion that rainfall in the area is usually minimal.

Beyond the roles in the above three phases of coping measures, the place of community-based initiatives and government intervention cannot be overemphasized. Concerned communities should consciously construct dikes to protect agricultural farmlands to avoid washing away of fertility and crops. Other community strategies such as re-afforestation, construction of gutters and clearing of waterways are essential. On the government plank, early warning mechanisms, fund allocations and, relocation and demolition of some structures are essential. The relevance of early warning by government at all levels derives its current from the expression that, "prevention is better than cure". The role of the Nigerian Meteorological Agency (NIMET) and Urban Development Boards across the States in the region are commendable in this regard. The challenge has been that, sometimes even when warnings are given communities and people made just of them and refused to comply, saying and asking like, "is it flood of Noah's time"? The end results of this has been disaster upon disasters. Apart from the NIMET and NEMA, is the role private Disaster Managers and Professionals, such as the Institute of Disaster Management and Safety Science Nigeria, sited at Bwari Abuja is doing. It trains, induct, equipped and create awareness about disasters such as flooding, fire accidents and what to do when they occurred. Still on this plank, is the ecological funds disbursed to States by the federal government. This should timely and meticulously utilized to achieve objectives. Special monitoring team may be set up to monitor the utilization and stop unscrupulous State Governors and corrupt stakeholders from embezzling and or diverting it for personal use. On

the whole, a lot of structures are erected on waterways due to poverty. This is a common experience of the northern region and poor societies across nations. Such should be clearly relocated and demolished by the Urban Development Boards of each of the nineteen States in the zone including the FCT. On these measures therefore, hangs the survival of northern communities in the face of perennial flooding in the twenty first century.

Conclusion

The environment and people of northern Nigeria has come a long way in the development of environmental history. This study has shown the essential relationship that exists between geography and history and how the knowledge and the practitioners of both could aid the advancement of community. It notes that , flooding in northern Nigeria is a recurring issues , fundamentally triggered by combination of factors such as climate change , deforestation, poor waste management , rapid urbanization, blocked canals, building on waterways, internal Dams failures and releases of water from external dams e.g., Lagdo Dam in Cameroun , high density rainfall, among others. The consequences of flooding in the region as noted include, but not limited to the following: rising number of deaths, displacements, destruction of properties and infrastructure. Historical contextualization of flooding experience in the region reveals that the phenomenon dates to antiquity, and this informed the proposed coping mechanisms for the menace. The paper concludes that, despite the array of measures proposed, it is instructive to note that a comprehensive approach that combines policy intervention, community engagement, and sustainable practices remain crucial for building a lasting resilience and adapting to the growing threat of flooding in northern Nigeria in the twenty first century and beyond..

Endnotes

[i] M I. Magami, S. Yahaya K. Mohammed, "Causes and Consequences of Flooding in Nigeria: A Review" in *Biological and Environmental Sciences Journal for the Tropics* (11)3, 2014.

[ii] A I.Mozie, R U. Ayadiuno, Ogbanayya, E J. Okafor, U P. Ndichie, H C.Ezezim, C I. Nnoli and N E.Chiatula, " Characterization of Flood Causing Variables as

Perceived by Urban Dwellers in selected Urban Centers in South Eastern Nigeria" in *Nigerian Journal of Geography and Environment*,(Dept. of Geography UNN), (3)1&2, 2019, p.98.

[iii] B V.Rao, *World History*, New Delhi: Sterling Publishers, 2003, p.6.

[iv] P I. Ukase, "History and other Related Disciplines" in Benue Valley Journal of Humanities, (6)2, 2005, p.53.

[v]S O. Aghalino, "The Use of Interdisciplinary Approach in Historical Research *"Historical Research Method*, Abuja: Herodotus Publishers, 2023, p.58. For relationship between and Geography, see, G O.Odeh, "Ethnic Geography and the Dynamics of Intergroup Relations in Nigeria" in G O.Odeh, E J. Ighodalo, C N. Chibueze (eds), *Nigerian History and Development: Gedenkschrift in Honour of Paschal Francis Nwosu ,PhD*. Lagos and London: Bahiti & Dalila Publishers, 2024.

[vi] I. Ouedraogo, J. Runge, J. Eisenberg, J. Barron and S. Sawadogo-Kabore, "The Re-Greening of the Sahel: Natural Cyclicity or Human Induced Change".,MDPI, https://www.mdpi.com. Read also, G O.Odeh, "NYSC and the Enterprise of Re-Greening Sokoto, 2014-2023". Being the text of the paper presented at the 68th Annual Conference/Congress of the Historical Society of Nigeria (HSN) on the theme, *History and Nigerian Environment since the Precolonial Era*, held between 8th – 11h October, 2023 at the EKO FM Multipurpose Hall, Agidingbi, Ikeja, Lagos.

[vii] G O. Odeh, "National Security and Economic Development in Nigeria" in Evolving *Trends in Socio-Economic and Military History: Festschrift in Honour of Professor Ojong Echum Tangban, C* C C. Osakwe, A O. Ahmed, L O. Udeagbala, and P A. Nwamagyi, (eds), Kaduna: NDA Publishers, 2020, 247-265.

[viii] J A. Holmes, *How the Sahara Became Dry*, https://www.science.org., A Hadhazy, " From Bountiful to Barren: Rainfall Decrease Left the Sahara Out to Dry" in Scientific American, www.scientificamerican.com. G O. Odeh, "National Security and Economic Development in Nigeria" in Evolving *Trends in Socio-Economic and Military History: Festschrift in Honour of Professor Ojong Echum Tangban, C* C C. Osakwe, A O. Ahmed, L O. Udeagbala, and P A. Nwamagyi, (eds), Kaduna: NDA Publishers, 2020, 247-265.

[ix] A Hadhazy, "From Bountiful to Barren: Rainfall Decrease Left the Sahara Out to Dry"…

[x] Several works consulted while doing this study points to the fact that information are lagging on the history of incidences of flooding in northern Nigeria like other geopolitical zones due to poor attitude towards it though it has become an annual phenomenon. This poor attitude explains why flood always wreak havoc on the societies because people refused to learn from it.

[xi] B O. Abiwon, "Plant Genetic Resource in Nigeria and the Reality of Climate Change-A Review" in *Asian Journal of Environment and Ecology*, (2)2, 2017, retrieved from, https://www.researchgate.net/publication/317137563. See, M I. Magami, S. Yahaya K. Mohammed, " Causes and Consequences of Flooding in Nigeria: A Review" in *Biological and Environmental Sciences Journal for the Tropics* (11)3, 2014. These authors share similar view and agreed on almost the same period, A A Adamu and S. Dan'azumi, "Historical Review of Flood occurrences in Nigeria and Some Possible Solutions" in *ATB Journal of Science, Technology and Education* , (12)4, 2024.

[xii] T E. Ologunorisa, A O. Eludoyin and B. Lateef, "An Evaluation of Flood Fatalities in Nigeria" in *American Metrological Society Journals*, https://journals.ametsoc.org.

[xiii] "Ancient Kano City Walls and Associated Sites" UNESCO World Heritage Convention", https://whc.unesco.org.

[xiv] J. Lavers, "Monuments: The Walls of Kano City" in *History Today*, (30)3, 1980. https://www.historytoday.com.

[xv] J. Lavers, "Monuments: The Walls of Kano City" in *History Today*.

[xvi] R K, Udo, "Environment and Peoples of Nigeria: A Geographical Introduction to the History of Nigeria" Groundwork *of Nigerian History*, Ibadan: Heinemann Educational Books (Nigeria), O.Ikime (ed.), 1980, p.13.

[xvii] A .Adeniran, K A. Deniell and J. Pittock, "Water Infrastructure Development in Nigeria: Trend, Size and Purpose", (13)12, https://www.mdpi.com.

[xviii] J N. Okapara, A A. Terhule, and M. Perumal, *Study of Climate Change in Niger River Basin , West Africa : Reality Not a Myth*, https://www.intechopen.com.

[xix] T E. Ologunorisa, A O. Eludoyin and B. Lateef, "An Evaluation of Flood Fatalities in Nigeria" in *American Metrological Society Journals*…

[xx] O. Idoko, A.Ogidiolu and E O. Abubakar, "Spatial Distribution of the Severity of Flood Risk in Lokoja Town, Kogi State" in *UNIZIK Journal of Geography , Metrology and Environment* , (1)1, 2015, p.9.

[xxi] Opinions of scholars and works consulted are unanimous that combinations of the highlighted factors are responsible to flooding in northern Nigeria and Nigeria at large.

[xxii] B T. Bakut, "The Environment, Peace and Conflict in Africa" in S G. Best (ed.), Introduction to Peace and Conflict Studies in West Africa, Ibadan: Spectrum, 2006, Pp.247-248.

[xxiii] T E. Ologunorisa, A O. Eludoyin and B. Lateef, "An Evaluation of Flood Fatalities in Nigeria" in *American Metrological Society Journals*…

[xxiv] Personal observation and witness by the author in which he travelled to the areas mentioned and saw the level of the flood in 2012 and 2022 respectively.

[xxv] A A Adamu and S. Dan'azumi, "Historical Review of Flood occurrences in Nigeria and Some Possible Solutions" in *ATB Journal of Science, Technology and Education* , (12)4, 2024. See also, T E. Ologunorisa, A O. Eludoyin and B. Lateef, "An Evaluation of Flood Fatalities in Nigeria" in *American Metrological Society Journals*…

[xxvi] For selected test cases of world civilizations, read BV. Rao, World History, New Delhi: Sterling Publishers, 2003. D O. Ajao, *Outline History of the Ancient World, from the Creation to the Decline of Rome,* Ibadan: Peju International, 2003. A A.Bwala and E Z. Apagu, " An Assessment of Flood incidences and its Socio-Economic Implications in Mubi and Its Environs, Adamawa State Nigeria" in *Environmental Issues* (8),1 , 2018, p.32.

[xxvii] Read, R K, Udo, "Environment and Peoples of Nigeria: A Geographical Introduction to the History of Nigeria" Groundwork *of Nigerian History*, Ibadan: Heinemann Educational Books (Nigeria).See also, Environmental and Social Impact Assessment (ESIA) for Middle Rima Valley Irrigation Scheme with Goronyo Dam Sokoto State, Nigeria (Final Report), Federal Ministry of Water Resources , Federal Government of Nigeria, January , 2020; M Y.Umaru, Contribution of Sokoto Rima River Basin Development Authority to the Rural Development in Sokoto State Nigeria. PhD Dissertation submitted to the Postgraduate School, for the Award of Doctor of Philosophy in Public Administration, March, 2016; A K Etuonovbe, The Devastating Effect of Flooding in Nigeria.