Journal of Public Administration, Policy and Governance Research (JPAPGR), Vol. 4, No. 3, 2026. Available online at https://jpapgr.transglobalacademic.com/jpapgr/index. P-ISSN:2787-0464 E-ISSN: 1595-6776. Covered in google scholar, Europub, etc.
Emmanuel I. Okonmah, Adesoye I. Mustapha & Iboaya, B. Aigberadion, 2026*, JPAPGR, 4*(3):40-49

Multinational Cooperation in the Management of Flood Disasters in Southern Nigeria (2012-2023)

Emmanuel I. Okonmah & Adesoye Isiaka Mustapha
Department of Public Administration, University of Benin, Benin-City, Edo State, Nigeria
emmanuel.okonmah@uniben.edu; isiaka.mustapha@uniben.edu
+2348066647630

Iboaya, Benson Aigberadion
Department of Political Science and Public Administration,
Igbinedion University, Okada, Nigeria
E-mail: bensoniboaya25@gmail.com

Abstract

Natural and man-made disasters are common locally and at the international level. These disasters in form of flooding, earthquakes, volcanoes and soil erosion have caused monumental damage to lives and properties. This study focused on multinational cooperation in the management of flood disasters in Southern Nigeria (2012-2023). The study area comprised Anambra, Edo, Delta, Kogi, Rivers and Bayelsa States that are perennially flooded. A sample size of 1320 federal staff was chosen through the simple random sampling method. States and federal establishments were purposively selected. The theoretical framework was anchored on Structural-Functional theory and System theory. The study employed empirical survey as research design. Data was gathered through the use of questionnaire method which was complemented by in-depth interviews. Data was analysed using simple percentages to answer the research questions. The study found out that multinational cooperation with National Emergency Management Agency (NEMA) has impacted positively on the effective management of flood disasters in the study area. However, both the climate change and the non-completion of the Hausa-Fulani dam in Adamawa State in Nigeria have contributed to the flooding of the study area. The periodic release of flood water from Lagdo dam in Cameroon also lead to perennial flooding of this study area in Nigeria. The study recommended a quick completion of Hausa-Fulani dam by the Federal Government of Nigeria; and full cooperation of Nigeria with Cameroon on the release of water from Lagdo dam in Cameroon.

Keywords: *Earthquake, flooding, man-made disasters, perennial, volcanoes*

Introduction

Flood disasters are on an abnormal monumental increase in Nigeria and the global community. The Great Floods of 1927 in the USA was one of the worst flood disasters in the history of the country. In Nigeria, deadly flood reoccurrences are also on the increase, unabated. This has caused great loss to lives and properties. The National Emergency Management Agency (NEMA) set up by the Federal Government of Nigeria reported that Nigeria lost ₦2.29 trillion to the 2012 flood disasters which is said to be the worst incident in the history of floods in Nigeria. The study area made up of Anambra, Bayelsa, Edo, Delta, Kogi and Rivers States have experienced reoccurring bouts of flooding in 2012, 2018 and 2022, with colossal losses. Multinational collaborations appear to be weak in terms of effective management of flood disasters in the study area. There is a gap in literature as multinational cooperations in managing flood disasters are not well elucidated. This forms the basis of this empirical study.

Statement of Problem

Flood disasters are fast becoming ubiquitous phenomena in Nigeria and the international community. Unexpected flood hazards in Nigeria have caused huge losses in terms of lives, properties and infrastructure. The intensity of these floods is growing higher yearly, unabated. The Lagdo dam in Cameroom built 1982 has been releasing devastating floods into Nigeria through River Benue on a perennial basis. Despite the flood warning from Cameroon as they release water from the Lagdo dam, Nigeria is caught unprepared, hence the massive inundation of the study area. Existing literature did not sufficiently elucidate multinational cooperation with NEMA in the effective management of flood disasters in the study area that comprises Anambra, Edo, Delta, Kogi, Rivers and Bayelsa States of Nigeria. This calls for this study which focuses on the multinational collaborations in the effective management of flood disasters.

Objectives of the Study

The main objectives of this study are:

1. To examine how multinational cooperation with NEMA impact on the management of flood disasters in the study area comprising Anambra, Edo, Delta, Kogi, Rivers and Bayelsa States (2012-2023).
2. To find out if the non-completion of the Dasin-Hausa dam in Adamawa State in Nigeria is responsible for the massive flooding of the study area.
3. To ascertain whether the release of water from Lagdo dam in Cameroon is significantly responsible for flooding in the study area.
4. To interrogate the role of climate change in causing flooding of the study area.

Research Questions

The following research questions guided this study:

1. What is the impact of multinational cooperation with NEMA on the effective management of flood disasters in the study area?
2. Is the non-completion of the Dasin in Hausa dam in Adamawa State in Nigeria responsible for the flooding of the study area?
3. Is the release of water from Lagdo dam in Cameroon responsible for the flooding of the study area?
4. What is the role of climate change in causing flooding in the study area?

Theoretical Framework

This study is anchored on two theories in midst of several other theories. The two theories used in this study are: (i) Structural – Functional theory; and (ii) System theory. These are further explained below:

(i) Structural-Functional Theory

The entire units that constitute the sum of a system, according to Fred Riggs, are structures. These structures perform specific functions to ensure the smooth delivery of services to the public. Major proponents of Structural-Functional theory are Gabriel Almond and S. Genco (1977). Structural-Functionalism or simply called Functionalism comprises the relations among government institutions (such as NEMA) and subsystems such as intergovernmental relations, with the goal of achieving desired targets through an institutional arrangement that perform certain functions in order to operate efficiently. It tries to explain how structures

operate in a society, the various parts, and the institutions that combine to create a stable society over time. According to Hardgrave et al (1973), the premises of structural-functional are (i) emphasis on the whole system as the unit of analysis; (ii) postulation of particular functions as requisite for the maintenance of the whole system; and (iii) demonstration of the functional interdependence of diverse structures in the whole system.

(ii) System Theory

Easton (1953), cited in Paki et al, (2020), defined the political system as" that system of interaction in any society through which binding or authoritative allocation of value are made". A system is a whole which is made of many parts. The political system, according to Easton (1953), takes inputs from society (environment), which consists of demands and supports that are converted in the political system ("Black Box") as outputs in the form of policies such as the National Emergency Management Agency's Act No.12, (1999). The feedback mechanisms return outputs to the system as inputs. It is thus cyclical. An example of such policies is the flood policy in Nigeria meant to tackle flood disasters. Due to the flood disasters in Nigeria 2022, the Federal House of representatives mandated former President Muhammadu Buhari to release ₦100 billion to mitigate flood disasters nationwide and another N200 billion through Ecological Funds Office for 2023 for management of flood disasters (Silverbird FM News, 15th November, 2022).

In addition, the system theory was enunciated by David Easton, who believed that different people in different units or levels play complementary roles to form a system. Different units and their associated functions merge together to form a political system as a whole body.

Methodology

The study area is made up of the riparian states of Anambra, Bayelsa, Edo, Delta, Kogi and Rivers. They are usually flooded on perennial basis. The research design is empirical survey. The population for the study is 13,200 persons from federal establishments (NEMA, NESREA, Ministry of Environment and Ministry of Works) from six states of Nigeria. See Table I.

Table 1: Staff of Federal establishments

Federal establishment	Edo	Delta	Anambra	Kogi	Rivers	Bayelsa
NEMA	601	599	620	580	420	610
NESREA	520	505	672	551	491	602
Ministry of Environment	412	458	452	562	430	520
Ministry of Works	740	671	528	402	602	652
Total	**2273**	**2233**	**2272**	**2095**	**1943**	**2384**

Source: Fieldwork (2023) Grand Total = 13,200

Sample and Sampling Technique

A sample of 388 calculated using the Taro Yamani's formula was too small. A sample of 10% of the population was then used giving 1320 persons based on the following justification: (i) Law of statistical regularity, and (ii) Law of Large Numbers (Oaikhena, et al., 2004).

The sample of 1320 was selected based on simple random sampling method. The states and government establishments were purposively selected.

Data Collection

1320 questionnaires were used (see Table 2). In-depth interviews were also used to obtain responses from heads of Federal Government establishments. Data was also gathered from secondary sources (books, journals, bulletins, internet, newspapers, etc.). Heads of Federal Government establishments were purposively selected.

Data Analysis

The data was analysed using Likert scale, frequency tables and simple percentages.

Table 2: Questionnaire distribution in six states

S/N	State	No. of questionnaires
1.	Anambra	221
2.	Bayelsa	201
3.	Edo	232
4.	Delta	228
5.	Kogi	197
6.	Rivers	241
	Total	**1320**

Source: Fieldwork, 2023

National Emergency Management Agency (NEMA) in Focus

Madugu, et al (2015) outlined the main achievements of the National Emergency Management Agency (NEMA) as follows:

1. Development of the Geographic Information System (GIS) to detect and analyze flooded sites; and help in the search and rescue operations.
2. Establishment of the COSPAS-SARSAT, and international programme for search and rescue using satellite images and satellite-aided tracking devices. The COSPAS-SARSAT provides information for distress alert and location. The operational capability of the equipment has been upgraded to Initial Operational Capability (IOC) and Final Operational Capability (FOC). The Nigerian Mission Control Centre (NMCC) helps to detect alert radio beacon signals from distress aircrafts and ships for search and rescue of flood victims.
3. Development of multidisciplinary Early warning System on July 23, 2009.
4. Establishment of Grassroots Emergency Management Volunteer Corps (GEVC) in 2008 in 23 states with 6408 registered members. This GEVC is made up of trained volunteers who assist in disaster management at local government level.
5. Establishment of NEMA/NYSC Emergency Management Vanguard in 2006 to help raise awareness on flood disaster in schools and communities.
6. Regional Cooperation for disaster preparedness, mitigation and response. NEMA coordinates a multinational collaboration on disaster assessment, risk mitigation, forecasting, early warning generation, early warning communication and response.
7. Establishment of National Nuclear and Radiological Emergency plan to cope with emergencies from nuclear activities. Nuclear Research Reactor (NRR-I), Radiotherapy using Linear Accelerator (LINAC), co-60 and c5-137 brachy therapy were installed.
8. Establishment of Disaster Response Unit (DRUs) in the armed forces.
9. Establishment of seven NEMA Zonal Offices in 2006.
10. Provision of Relief and Rehabilitation materials.
11. Establishment of NEMA/World Bank Collaboration on disaster management.

Institutional Environment

The political environment appears to be militating against the implementation of the multinational collaboration with NEMA in the effective management of flood disasters. According to Hundeyin (2022), Nigeria had an agreement with Cameroon in 1977 to build a shock absorber dam called Dasin Hausa dam in Adamawa State but the construction was halted when Buhari's military regime overthrew the civilian regime of Shehu Shagari. Till date, this huge dam that could have helped to generate electricity and control floods on river Benue in Nigeria was never built which has led to frequent flooding of river Benue. The Federal Government, through the minister of Water Resources, promised to complete the Dasin Hausa dam on river Benue in Adamawa State by March 2023 (Vanguard, October 20th, 2022). The refusal of the Nigerian government to build the Dasin Hausa dam is partly responsible for the 1993, 2012, 2018 and 2022 flooding of river Benue in Nigeria (Tik Tok Lite@rabso4, 2022). The socio-political environment therefore, appears to impact on the implementation of flood policy in Nigeria.

Sequel to the above, Eromosele (2022) quoted the Federal Road Safety Corps (FRSC) as warning the motorists plying the Abuja-Lokoja road, owing to the flooding around Korton-Karfi in Lokoja, Kogi State. The massive floods from River Niger and River Benue inundated parts of Lokoja, particularly Korton Karfi, which impeded the flow of traffic on Lokoja-Abuja expressway for over three days. The massive floods from Lagdo dam in Cameroon which also affected other states such as Edo, Delta and Anambra, occurred between 5th-10th October, 2022.

Climate Change Act 2021 in Nigeria

The Climate Change Act was passed into law in 2021 in Nigeria. Notably, Nigeria has National Policy on Climate Change; and National Erosion and Flood Control Policies, among others. Nigeria has a fossil-fuel dependent economy with a large climate dependent and sensitive agricultural sector, hence the need for climate-change policy. Nigeria is a signatory to the international agreements on climate change. The National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) was established in 2011 and it acknowledged changes (variations from normal) in the climate of Nigeria. Adaptation was recommended as one of the keys to tackle climate change. The Nigerian Government and civil societies have been creating awareness on climate change, although the degree of success is very low. In 1992, Nigeria joined the League of Nations on Mitigation of Climate Change by becoming a signatory to UNFCCC as a Non-Annex 1 party. Although Nigeria was not required to curtail the emission of greenhouse gases, she was expected to give review summaries, progress report, National Adaptation Plan of action, and Global Climate Observing System Report. The Federal Ministry of Environment, Housing and Urban Development was mandated to implement the UNFCCC and the Kyoto Protocol in Nigeria. A Special Climate Change Unit (SCCU) was set in the Ministry. The Ministry was also to coordinate the Inter-Ministerial Committee on Climate Change (IMCCC).

In addition to the above, the New York meeting of 2015 adopted the Sustainable Development Goals (SDGs) as a development framework. The SDGs replaced Millennium Development Goals (MDGs) which started 2000 and ended in 2015. The MDGs did not record good results in Nigeria as many targets were not achieved. The Conference of Parties (COP21) recommended the reduction of global average temperature to well below 2^0C. Perception of climate change by citizens varies according to economic status, level of education and location. In the same vein, educated people with high income who live in urban centres are better informed about climate change, and vice versa. Nigeria's economy is directly vulnerable to the negative effects of global warming and climate change. Climate change is causing environmental degradation, flooding, health problems, and unchecked

mitigation, as well as poverty and insecurities. Climate change is also causing environmental pollution. Pollution is seen by Kadiri (2002) as "undesirable change in the physical, chemical or biological characteristics of an environment that will harmfully affect man". Flooding of 2022 in Nigeria caused huge pollution of the environment and health problems for the residents. Heavy flooding in Nigeria in 2022 is partly due to climate change vagaries.

The Role of Dams in Flood Management

Nimi (2022) stated that the release of excess water from Lagdo dam in neighbouring Cameroon was bound to "complicate" Nigeria's already disastrous flood crisis. According to him, the Lagdo dam operators in Cameroon commenced the release of water from the reservoir on September 13, 2022, which cascaded down Nigeria through R. Benue and tributaries, thereby inundating communities that have already been impacted by heavy precipitation. This is corroborated by NEMA (2022) cited in Nimi (2022), who stated that the released water complicated the situation further downstream in Nigeria as land reservoirs were also expected to overflow. NEMA maintained that this will have serious consequences on frontline states and communities along the courses of rivers Niger and Benue. Kogi and Anambra were among 13 states predicted to be overrun by the trans-boundary waters which empty into the region. Many communities, according to NEMA are now under water.

Similarly, Orizu (2022) has called for the building of more dams in Nigeria to control floods. According to him, in 2022, Kogi, Anambra, Gombe, Bayelsa and many other states have been submerged by floods, hence the need for more dams in Nigeria. He said that dams can provide multiple benefits such as generating clean electricity, storing water for release in dry season to help farmers, and helping to hold back and control floods.

Data Analysis

Question 1: The multinational cooperation with NEMA has a positive impact on the effective management of flood disasters in the study area.

Table 3:

Response	Frequency	Percentage (%)
Strongly Agree	1021	77.3
Agree	194	14.7
Disagree	60	4.6
Strongly disagree	45	3.4
Total	**1320**	**100**

Source: Fieldwork, 2023.

Table 3 shows that 1021 (77.3%) of respondents strongly agree that multinational cooperation with NEMA has a positive impact on the effective management of flood disasters in the study area; 194(14.7%) agree, 60(4.6%) disagree, while 45(3.4%) strongly disagree.

Question 2: The non-completion of the Dasin Hausa dam in Adamawa State is contributing significantly to the flooding in the study area.

Table 4:

Response	Frequency	Percentage (%)
Strongly Agree	1151	87.2
Agree	101	7.7
Disagree	60	4.5
Strongly disagree	8	0.6
Total	**1320**	**100**

Source: Fieldwork, 2023.

Table 4 shows that 1151 (87.2%) of the respondents strongly agree that the non-completion of the Dasin Hausa dam in Adamawa State is contributing significantly to the

flooding in the study area; 101 (7.7%) agree, 60(4.5%) disagree; and 8(0.6%) strongly disagree.

Question 3: The release of water from Lagdo dam in Cameroon is significantly responsible for the flooding of the study area.

Table 5:

Response	Frequency	Percentage (%)
Strongly Agree	1112	84.2
Agree	147	11.2
Disagree	54	4.1
Strongly disagree	7	0.5
Total	**1320**	**100**

Source: Fieldwork, 2023.

Table 5 shows that 1112 (84.2%) of the respondents strongly agree that the Lagdo dam in Cameroon is significantly responsible for the flooding of the study area; 147(11.2%) agree; 54(4.1%) disagree; while 7(0.5%) strongly disagree.

Question 4: The climate change is contributing heavily to the flooding in the study area.

Table 6:

Response	Frequency	Percentage (%)
Strongly Agree	1100	83.3
Agree	170	12.9
Disagree	50	3.8
Strongly disagree	0	0
Total	**1320**	**100**

Source: Fieldwork, 2023.

Table 6 shows that climate change contributes significantly to the flooding of the study area. This is supported by 1100 respondents (83.3%) who strongly agree to this. Nobody strongly disagreed. Only 50(3.8%) disagreed.

Discussion of Findings

1. Table 3 revealed that there is significant relationship between multi-national collaborations with NEMA and effective management of flood disasters in the study area. 1021 respondents (77.3%) of the respondents strongly agreed that multinational cooperation with NEMA has a positive impact on the effective management of floods in the study area. According to Akpofabe (2023), NEMA partners with Cameroon, Red Cross, World Safety Organisation, World Health Organisation, among others, to manage flood disasters in Nigeria. He said many countries at the global level donated billions of naira and relief materials to flood victims in Nigeria through NEMA in the 2023 flooding. Example of such international donors is USA, he concluded. The American government donated one million dollars to assist the 2022 flood victims in Nigeria (Bishop Tv, January 30, 2023).
2. The flood from Lagdo dam in Cameroon leads to massive flooding of R. Benue which contributes excess floods to River Niger thereby flooding the downstream parts of R. Niger. This is corroborated by directors of agencies such as Agbama (2023) – Director, Relief and Rehabilitation, Edo State SEMA; Akpofabe (2023) of NEMA, Edo State; Akpakpan (2023) of NEMA, Rivers State; and Igwagbor (2023) and Egbeobanwaye (2023), both of Ministry of Environment and Sustainability, Edo State.
3. The non-completion of the Dasin Hausa dam in Adamawa State in Nigeria to serve as buffer dam to curtail floods from Cameroon is cited as a major reason by interviewed directors and 1151 respondents (87.2%) of respondents (who strongly agreed) for the

massive flooding of the study area by water from Lagdo dam in Cameroon (See Table 4). The directors also mentioned that Nigeria does not take seriously, the flood alerts and warnings given to Nigeria by authorities of Cameroon whenever they release water from Lagdo dam.

4. Climate change contributes significantly to the flooding in the study area. 1100 (83.3%) of the respondents strongly agreed to this finding (see Table 6). Similarly, 170 (12.9%) agreed while none strongly disagreed. Global warming and climate change were repeatedly mentioned by the interviewed directors as causative agents of flooding in the study area.
5. Finally, the flooding of R. Benue by water from Lagdo dam in Cameroon has become a disturbing issue in the management of flood disasters in Nigeria. During an indepth interview, Agbama (2023) sums it up this way:

> Until the flood water from Lagdo dam in Cameroon into Nigeria is curtailed, the perennial flooding of R. Benue in Nigeria will remain a recurring decimal. There should be a speedy construction of the Dasin Hausa dam in Adamawa State to serve as a buffer dam. This will be the main solution to this regular flooding.

Summary of Findings

1. There is a significant positive relationship between the multinational cooperation with NEMA and the effective management of flood disasters in the study area. 1021(77.3%) is interviewed respondents strongly agreed to this (See Table 3).
2. The non-completion of the Hausa-Fulani dam in Adamawa State in Nigeria is contributing significantly to the flooding of the study area (See Table 4). 1151 (87.2%) interviewed respondents strongly agreed to this.
3. The release of water from Lagdo dam in Cameroon is significantly responsible for the flooding of the study area. This is corroborated by 1112 respondents (84.2%) who strongly agreed to this (See Table 5).
4. Climate change contributes significantly to the flooding of the study area. This is confirmed by 1100 respondents (83.3%) who strongly agreed (See Table 6).

Conclusion

Flood disasters are on the increase locally and globally, causing calamitous disasters. This has resulted in heavy loss of lives and properties. The main aim of this study was to examine how multinational cooperation impacts on the effective management of flood disasters in Southern Nigeria (2012-2023). A sample size of 1320 federal staff selected through simple random sampling method was used. The research design is empirical survey backed by in depth interview. The System theory and Structural-Functional theory formed the theoretical framework. The study found out that (i) multinational cooperation has positive impact on the effective management of flood disasters in the study area; (ii) non-completion of the Hausa-Fulani dam in Adamawa State in Cameroon as well as climate change cause flooding of the study area; and (iii) the periodic release of water from Lagdo dam in Cameroon contributes maximally to the inundation of the study area. The study makes recommendations to solve the identified problems.

Recommendations

This study recommends as follows:

1. There should be better and more efficient multinational collaborations in the management of floods and flood disasters in Nigeria. Although some countries at the global level donated relief materials and cash to help flood victims in 2022 in Nigeria, Nigeria needs to synergize with the Cameroonian authorities over the release of water from the Lagdo dam in Cameroon. Flood warnings from Cameroon should be taken more seriously by Nigerian government. Nigeria should collaborate with Cameroon to make Cameroonian authorities release water gradually from the Lagdo dam into Nigeria through river Benue.
2. Nigerian government should speedily complete the Dasin Hausa dam in Adamawa State to serve as a buffer dam to control excess water on R. Benue coming from Lagdo dam in Cameroon.
3. More importantly, due to the trans-boundary nature of floods, the Nigerian government should enforce legal frameworks banning unlawful environmental practices like bush burning and gas flaring that lead to depletion of the ozone layer. These illegal activities generate greenhouse gases that destroy the ozone layer. They lead to hazardous global warming and climate change featuring heavy rainfall and associated flooding.
4. There is urgent need between a synergy for the Federal Governments of Nigeria and Cameroonian government to dredge R. Niger and R. Benue; and construct reservoirs to hold water. The excess water from reservoirs can help farmers in farming.
5. More dams should be built by Nigeria and Cameroon on R. Benue to prevent flooding.

References

Agbama, D. (2023). In-depth Interview with Director, Relief and Rehabilitation, Edo State SEMA on March 3, 2023, by the Researcher.

Akpakpan, V (2023). In-depth Online Interview with the Director of NEMA, Rivers State, by the Researcher on March 9, 2023.

Akpofabe, J. (2023). In-depth Interview with Principal Relief Officer of NEMA, Edo State by the Researcher in NEMA office, Benin City, March 8, 2023.

Almond, G and Genco, S (1997). "Clouds, Clocks And The Study Of Politics". *World Politics.*

Easton, D. (1953). "The Political System'. An Inquiry into the State of Political Science". *Political Science Quarterly,* 68 (3).

Egbeobanwaye, A (2023). Indepth Interview with Director, Flood Control, Ministry of Environment and Sustainability, Edo State on February 7, 2023, by the Researcher.

Eromosele, E. (2022). "Making the Circular Economy Work". *Vanguard,* November 18, 2022.

Hardgrave Jr. R.L. and Bill, J.A. (1973). "Functionalism and Systems Analysis". *In Comparative Politics-The Quest for Theory.* Columbus Ohio: Charles E. Merrili Publishing Company.

Hundeyin, D. (2022). "The Real Causes of the Floods". Uniben Social Sciences 1984, October 20, 2022.

Igwagbor, G (2023). Indepth Interview with Director, Flood and Erosion Control, Ministry of Environment and Sustainability, Edo State on March 10, 2023, by the Researcher.

Kadiri, M.O. (2002). "Environmental Sanitation and National Development". In Nzemeke, A.D. and Erhagbe, E.O. (Eds.), *Nigerian Peoples and Culture.* Benin City: Department of History, University of Benin and Mindex Publishing Co. Ltd.

Karter, R.M, Stein, B.A and Jick, T.D. (1992). *The Challenges of Organizational Change.* New York: Free Press

Madugu, U and Ushama, A.A (2015).” National Emergency Management Agency (NEMA) and Disaster Management in Nigeria: An Appraisal”. In *Global Journal of Applied, Management and Social Sciences,* Vol. 9 pp. 57-66.

Nimi, P. (2022). “Floods are sub-merging whole houses in Nigeria. At least 80 have died trying to escape”. In CNN, October 11th, 2022 (https://www.cnnphilippines.com/ world /2022/ 10/11/80-have-died-Nigeria-floods-html).

Oaikhenan, H.E. and Udegbunam, R.I. (2004). *Modern Statistics for Economics and Business.* Benin City: H. Henans Publishers.

Opejobi, S. (2022). “How flood on Lokoja-Abuja highway caused renewed fuel scarcity, queue”. *Daily Post,* October 6th, 2022.

Orizu, U. (2022). “Flooding and Need for More Dams in Nigeria”. *ThisDay,* October 29th, 2022.