Irish Journal of Environment and Earth Sciences
Irish J. Env. E. Sci.
Volume: 9; Issue: 01,
January-February, 2025
ISSN: 2383 – 6345
Impact Factor: 5.42

Advance Scholars Publication Published by International Institute of Advance Scholars Development
https://aspjournals.org/Journals/index.php/ijees

THE DESECRATION, DESTRUCTION AND DISPLACEMENT: A CASE STUDY OF THE 2022 NIGERIAN FLOOD

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Keywords:
Nigerian floods, Disaster management, Flood, Humanitarian crisis, Infrastructure damage, Cultural heritage loss.

Abstract:
One of the worst floods to ever hit Nigeria occurred in 2022 as a result of a combination of strong seasonal rainfall and water released from the Lagdo Dam in Cameroon. 33 of the 36 states in Nigeria were hit by this calamity, which claimed over 600 lives and forced 1.4 million people to from their homes. The enormous effects of the flood brought to light serious shortcomings in Nigeria's response and preparedness mechanisms for disasters. The objectives of this research are to appraise the devastation and uprooting brought about by the floods of 2022, appraise the efficacy of early warning systems and policies for disaster management, and explore the function of non-governmental organizations and international aid in offering assistance and bolstering recuperation endeavors. A mixed-methods strategy was used to acquire the data, integrating interviews, field surveys, and secondary sources. The results showed significant damage to religious, cultural, and infrastructure sites.

1.0 BACKGROUND

In 2022, Nigeria faced one of its most devastating floods in recent history, resulting in unprecedented levels of destruction. Triggered by a combination of heavy seasonal rainfall and the release of water from the Lagdo Dam in neighboring Cameroon, the floodwaters engulfed extensive areas across Nigeria, from the northern regions down to the Niger Delta. This event highlighted the country's vulnerability to natural disasters, with significant ramifications for its social, economic, and environmental fabric.

The flooding affected over 27 of Nigeria's 36 states, with some of the worst impacts felt in the states of Anambra, Bayelsa, Kogi, and Benue. According to the Nigerian National Emergency Management Agency (NEMA), over 600 people lost their lives, and more than 1.3 million people were displaced from their homes, making it a humanitarian crisis of significant proportions (NEMA, 2022).

1.1.1 HISTORICAL CONTEXT

Flooding in Nigeria is not a novel phenomenon. The country has experienced recurrent flood events, often exacerbated by a combination of climatic variability and human activities.

1.1.2 MAJOR HISTORICAL FLOOD EVENTS IN NIGERIA

2012 Floods: One of the most significant flood events in recent history, the 2012 floods, affected 30 of the 36 states, resulting in over 360 deaths and displacing more than 2 million people. The

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estimated economic damage exceeded $16 billion, impacting agriculture, housing, and infrastructure sectors (Akinwumi *et al.,* 2014).
2018 Floods: Heavy rainfall in 2018 led to severe flooding, particularly in the Niger and Benue River basins. The disaster caused 200 deaths and displaced around 600,000 people. The floods underscored the ongoing challenges of managing flood risks in a rapidly urbanizing landscape (Odunuga *et al.,* 2019).

1.1.3 TRENDS AND PATTERNS

- Increased Frequency: Over the past decades, the frequency and intensity of flood events in Nigeria have increased, partly due to climate change and inadequate urban planning (Nwigwe *et al.,* 2021).
- Urbanization and Land Use: Rapid urbanization and deforestation have reduced the natural absorption capacity of floodplains, exacerbating the impact of heavy rainfall (Adedeji *et al.,* 2012).

1.1.4 IMPACTS OF FLOODING

Flooding has multifaceted impacts that extend beyond immediate physical damage to long-term social and economic consequences.

- Environmental and Ecological Impacts: Floods disrupt natural habitats, leading to soil erosion, loss of vegetation, and contamination of water sources. The 2022 flood particularly affected the Niger Delta's rich biodiversity, where extensive flooding caused damage to mangrove forests and aquatic ecosystems, crucial for sustaining local wildlife and fisheries (Ukata *et al.,* 2023).
- Human Toll: The human cost of the 2022 floods was staggering. Reports from the International Federation of Red Cross and Red Crescent Societies (IFRC) indicated that over 600 lives were lost, with thousands more injured due to collapsing buildings, drowning, and other flood-related accidents (IFRC, 2022). The displacement of over 1.3 million people created a humanitarian crisis, with affected populations facing dire conditions in temporary shelters.

1.2 STATEMENT OF RESEARCH PROBLEM

Among the deadliest natural catastrophes in Nigerian history, the floods of 2022 left a path of devastation in their wake, with many dead and serious disruptions to the country's economy and society. Large-scale destruction and human suffering revealed serious weaknesses in Nigeria's response and preparedness systems for disasters. Despite being in place, the early warning systems did not adequately notify communities that were at risk, and the infrastructure for responding to disasters was inadequate. Government initiatives to manage the risk of disasters frequently failed to materialize because of insufficient financing, ineffective bureaucracy, and a reactive rather than proactive strategy (NEMA, 2023; UN OCHA, 2023; World Bank, 2023; NiMet, 2023).

1.3 JUSTIFICATION OF THE STUDY

The justification for this study stems from the severe impact of the 2022 Nigerian floods, which affected 33 out of 36 states, resulting in over 600 deaths, more than 2,500 injuries, and the displacement of approximately 1.4 million people, highlighting the urgent need for a comprehensive analysis of Nigeria's disaster management practices (NEMA, 2023; UN OCHA, 2023). With economic losses estimated at over $3 billion, the floods severely disrupted housing, agriculture, infrastructure, and cultural heritage, emphasizing the critical importance of improving disaster preparedness and response systems to safeguard economic stability and social welfare (World Bank, 2023; UNICEF Nigeria, 2023). Despite existing early warning

systems and government policies, the 2022 floods exposed significant gaps in their implementation and effectiveness, necessitating an assessment to provide insights into necessary improvements for timely and accurate dissemination of warnings and effective policy enforcement (NiMet, 2023; NEMA, 2023). Furthermore, evaluating the current disaster management policies, such as the National Disaster Management Framework (NDMF) and the National Flood Emergency Preparedness and Response Plan (NFEPRP), is essential to identify barriers to successful implementation and suggest ways to overcome these challenges (Federal Ministry of Humanitarian Affairs, 2023).

1.4 AIM AND OBJECTIVES

1.4.1 AIM

The aim of this study is to investigate the extent of destruction and displacement caused by the 2022 Nigerian floods, focusing on the impacts on affected populations, infrastructure, and cultural heritage. This study seeks to critically evaluate the effectiveness of existing disaster preparedness and response mechanisms, government policies, and the role of international aid and non-governmental organizations (NGOs) in mitigating the disaster's effects.

1.4.2 OBJECTIVES

1. Assess the scale and extent of destruction and displacement caused by the 2022 Nigerian floods, focusing on impacts on housing, infrastructure, and affected populations.
2. Evaluate the effectiveness of early warning systems, disaster preparedness measures, and government policies in managing flood risk and response.
3. Investigate the role and contributions of international aid and NGOs in providing relief and supporting recovery efforts.

2.0 LITERATURE REVIEW

2.1 FLOODING IN NIGERIA: HISTORICAL CONTEXT AND TRENDS

Nigeria has a long history of flooding, often exacerbated by its geographical and climatic conditions. Past studies have shown that the frequency and intensity of floods in Nigeria have increased over the years, largely due to climate change and environmental degradation. Historical data indicate that significant floods occurred in 2012 and 2018, with similar patterns of destruction and displacement, but the 2022 flood was unprecedented in scale.

Nigeria, a nation straddling West Africa's bulge, faces a persistent and concerning challenge. Understanding the historical context and trends in these floods is crucial for developing effective mitigation and adaptation strategies. However, human activities have also played a significant role in shaping flood patterns, expand more Deforestation, particularly in the headwaters of these rivers, has increased surface runoff and reduced the land's capacity to absorb water (Agbomerin *et al.,* 2018). Additionally, rapid urbanization with poor drainage infrastructure has exacerbated flooding in cities (Adefolalu, 2013).

There is evidence suggesting a possible increase in the frequency and intensity of floods in Nigeria. However, obtaining conclusive data is challenging due to limited long-term historical records (Immerzeel *et al.,* 2008). Studies suggest an upward trend in extreme precipitation events (The United Nations World Water Development Report, 2009), which could be linked to climate change. Global warming is predicted to alter weather patterns, potentially leading to more intense rainfall and flooding (Tarhule & Woo, 1998).

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2.1.1 SOCIO-ECONOMIC AND HUMANITARIAN IMPACTS

While crop loss and infrastructure damage are readily apparent consequences (Federal Ministry of Environment, 2012), flooding has more nuanced socio-economic effects:

Loss of Livelihoods: Beyond agriculture, floods disrupt informal economies in urban centers, impacting petty traders and street vendors (Oxfam, 2020). Additionally, damage to fishing equipment and displacement from coastal areas cripple fishing communities (World Bank, 2014).

Health Risks: Flooding creates breeding grounds for mosquitoes, leading to an increased risk of malaria and waterborne diseases like cholera and typhoid (Adefolalu, 2013). Disruption of sanitation facilities further exacerbates health concerns.

Mental Health Impacts: Loss of homes, belongings, and livelihoods can lead to significant psychological distress and displacement trauma (Oxfam, 2020).

Gender Inequality: The burden of floods often falls disproportionately on women. They may struggle to access resources and face increased risks of sexual violence in crowded displacement camps.

2.1.2 CULTURAL IMPACTS: A LOSS OF IDENTITY

Flooding threatens Nigeria's rich cultural heritage; one might ask how so.

- Destruction of Cultural Sites: Historical landmarks, religious sites, and sacred grounds can be damaged or destroyed, impacting communities' sense of identity and connection to their past (Adger *et al.,* 2013).
- Disruption of Traditions: Floods can disrupt traditional agricultural practices and cultural ceremonies tied to seasonal cycles. This jeopardizes the transmission of cultural knowledge and weakens social cohesion (Oxfam, 2020).

2.2 GOVERNMENT AND ORGANIZATIONAL RESPONSES: PROGRESS AND CHALLENGES

The Nigerian government and various organizations are actively involved in flood management:

- **NEMA**: The National Emergency Management Agency (NEMA) coordinates relief efforts, providing immediate assistance like food, shelter, and medical care (National Emergency Management Agency, 2023).
- International Support: Organizations like the Red Cross, MSF, and Oxfam play crucial roles in emergency response and post-disaster recovery (Oxfam, 2020). They also advocate for long-term solutions and improved preparedness.
- Infrastructure Projects: Efforts include building levees, dredging waterways, and improving drainage systems to mitigate future flooding (World Bank, 2014). However, these projects are often expensive and require sustained funding (Federal Ministry of Environment, 2012).

2.2.1 CHALLENGES AND THE PATH FORWARD

Despite these efforts, significant challenges remain:

i) Limited Resources: Funding constraints hinder comprehensive flood management plans (Adefolalu, 2013).

ii) Inadequate Enforcement: Weak enforcement of environmental regulations, such as those concerning deforestation, exacerbates flooding (Federal Ministry of Environment, 2012).

iii) Top-Down Approach: Community engagement and knowledge are often underutilized in flood response strategies.

2.3 CRITICAL ANALYSIS ON THE OCCURRENCE

Nigeria's preparedness and early warning systems for natural disasters, including floods, are coordinated primarily through the National Emergency Management Agency (NEMA) and the Nigerian Meteorological Agency (NiMet). These agencies are responsible for monitoring weather patterns, predicting potential disasters, and coordinating early warning systems (EWS) across the country. Despite their efforts, the 2022 Nigerian floods exposed significant gaps in the country's disaster preparedness and early warning mechanisms.

2.3.1 KEY COMPONENTS OF THE EARLY WARNING SYSTEM

a) Weather Monitoring and Forecasting: NiMet provides seasonal rainfall predictions and weather forecasts, which are crucial for anticipating flood risks.

b) Flood Risk Mapping: Efforts to map flood-prone areas help identify regions at higher risk and prioritize them for warnings and preparations.

c) Public Communication: NEMA disseminates flood alerts through various channels, including radio, television, social media, and SMS.

2.3.2 EFFECTIVENESS OF PREPAREDNESS AND EARLY WARNING SYSTEMS

Despite these components, the 2022 floods highlighted several deficiencies:

- Limited Coverage and Reach: Early warnings were often not effectively communicated to vulnerable populations, especially in rural and remote areas. Many communities did not receive timely alerts, or the information was not sufficiently actionable.
- Infrastructure and Capacity Constraints: Nigeria's infrastructure for monitoring and responding to disasters is underdeveloped. There are insufficient weather stations, inadequate data collection systems, and limited technological resources.
- Public Awareness and Response: Even when warnings are issued, the public's ability to respond effectively is often hindered by a lack of awareness or resources. Many residents did not have the means or knowledge to evacuate or prepare adequately for the flood.
- Coordination Issues: There is often a lack of effective coordination between different government agencies and levels of government, leading to delays and inefficiencies in disaster response and management.

2.4 GOVERNMENT POLICIES AND THEIR EFFECTIVENESS

2.4.1 POLICY FRAMEWORK

Nigeria's policy framework for disaster management is outlined in several key documents and acts:

- National Disaster Management Framework (NDMF): This framework provides the strategic policy direction for disaster risk management in Nigeria.
- National Flood Emergency Preparedness and Response Plan (NFEPRP): Focused specifically on floods, this plan outlines the roles and responsibilities of various stakeholders in preparing for and responding to flood events.
- NEMA Act (1999): Establishes the National Emergency Management Agency and defines its role in coordinating disaster response and relief efforts.

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2.4.2 ANALYSIS OF POLICY EFFECTIVENESS

Strengths:

i) Clear Frameworks and Roles: The NDMF and NFEPRP clearly outline the roles and responsibilities of various stakeholders, including federal, state, and local governments.

ii) Coordination with International Bodies: The Nigerian government works with international organizations and donors, integrating their support into the national response framework.

Weaknesses:

i) Implementation Challenges: Policies often fall short in implementation. Bureaucratic inefficiencies, corruption, and lack of resources impede effective policy execution.

ii) Inadequate Funding: Disaster preparedness and response activities are underfunded. This limits the ability to build and maintain necessary infrastructure and systems.

iii) Reactive Rather than Proactive Approaches: The focus is frequently on post-disaster response rather than proactive disaster risk reduction and preparedness.

iv) Lack of Community Involvement: Policies often do not adequately involve or address the needs of local communities, who are the first to be impacted by floods.

2.5 ROLE OF INTERNATIONAL AID AND NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

2.5.1 INTERNATIONAL AID

International aid played a significant role in the response to the 2022 Nigerian floods. Key international players included:

- United Nations Agencies: Agencies like UNICEF and the World Food Program (WFP) provided critical support in terms of food, clean water, and emergency shelters.
- World Bank: The World Bank offered financial and technical support for immediate relief and long-term reconstruction efforts.
- Donor Countries: Countries such as the United States, the United Kingdom, and the European Union contributed funds and resources for humanitarian aid.
- Some of the impacts of International Aids are outlined:
- Rapid Relief Provision: International aid helped fill gaps in immediate relief efforts, providing essential supplies and services to affected communities.
- Capacity Building: International agencies also supported the strengthening of Nigeria's disaster response capacity through training and resources.
- Long-term Recovery Support: Funds and expertise from international donors were crucial for long-term recovery and rebuilding efforts.

2.5.2 ROLE OF NGOs

Non-Governmental Organizations (NGOs) were pivotal in the flood response, providing direct aid and supporting communities through various initiatives. Key NGOs included:

- Red Cross and Red Crescent Societies: Provided emergency relief, and medical assistance, and helped in setting up temporary shelters.
- Médecins Sans Frontières (MSF): Offered medical care and support to flood victims, focusing on preventing disease outbreaks.
- Oxfam: Worked on providing clean water, sanitation facilities, and food security programs to affected communities.
- The Non-Governmental Organizations made great contributions some of which are mentioned below:

- Community Engagement: NGOs were often more agile and better able to engage directly with local communities than governmental bodies.
- Supplementing Government Efforts: They supplemented government efforts by providing critical services and reaching areas that government agencies could not.
- Advocacy and Awareness: NGOs also played a crucial role in advocating for better disaster preparedness and supporting community awareness programs.

Reviewing various related articles on the Nigerian floods revealed significant gaps in the country's disaster preparedness and response systems. While the government has established frameworks for managing floods, the implementation and effectiveness of these policies remain limited. Early warning systems need to be more robust, inclusive, and capable of reaching all affected populations promptly.

International aid and NGOs have been instrumental in providing immediate relief and supporting long-term recovery efforts. However, for sustainable disaster management, Nigeria must focus on enhancing its preparedness, improving infrastructure, and ensuring effective coordination between all stakeholders, including local communities.

2.6 MOVING FORWARD, A MORE HOLISTIC APPROACH IS NEEDED

Community Engagement: Empowering communities to participate in flood preparedness planning and risk reduction strategies fosters ownership and effectiveness (Adger *et al.,* 2013).

Sustainable Land Use: Promoting reforestation and sustainable agricultural practices reduces soil erosion and improves water retention capacity.

Public Education: Raising awareness about flood risks and promoting responsible behavior regarding waste disposal and building practices can contribute to long-term resilience.

Climate-Smart Infrastructure: Investing in infrastructure designed to withstand extreme weather events is crucial for adaptation (World Bank, 2014).

Building Resilience Together: Flooding in Nigeria demands a multi-faceted response that tackles its social, economic, and cultural impacts. By combining improved infrastructure and early warning systems with community-based approaches, sustainable practices, and robust enforcement of environmental regulations, Nigeria can build a more resilient future for its people and cultural heritage.

In Nigeria, floods can have disastrous effects. Agriculture output is disrupted, lives are lost, and infrastructure is devastated (The United Nations World Water Development Report, 2009). These events cause widespread displacement and economic hardship, impacting food security and livelihoods (Adefolalu, 2013).

3.0 METHODOLOGY

This research employs a mixed-methods approach, combining qualitative and quantitative data to provide a comprehensive analysis of the 2022 Nigerian floods.

3.1DATA COLLECTION

i. Secondary Data: Extensive review of existing reports, academic articles, and media coverage on the 2022 floods (NEMA, 2023; UN OCHA, 2023; BBC News, 2022; Al Jazeera, 2022).
ii. Primary Data: Field surveys and interviews were conducted with affected communities, government officials, and NGO representatives in most of the impacted states - Anambra, Kogi and Bayelsa (NEMA, 2023; UN OCHA, 2023).

iii. Quantitative Data: Governmental and international reports provided statistics on flood extent, economic losses, and displacement figures (NEMA, 2023; UNICEF Nigeria, 2023; World Bank, 2023). Satellite imagery was analyzed to evaluate environmental impact (UN OCHA, 2023).

iv. Qualitative Data: Semi-structured interviews with community members, local officials, and NGO workers provided personal accounts and insights into the flood's impact and response efforts (Red Cross Nigeria, 2022; MSF, 2022; Oxfam Nigeria, 2022).

3.3 DATA ANALYSIS

For the study of the qualitative data, a thematic approach was employed, while statistical analysis was used for the quantitative data. In order to comprehend the wider effects and reactions to the flood, themes were developed based on the domains of desecration, devastation, and displacement. The results were then synthesized.

3.4 ETHICAL CONSIDERATIONS

Ethical issues included ensuring the anonymity and confidentiality of interviewees, obtaining informed consent, and being sensitive to the emotional impact of discussing traumatic experiences. All participants were provided with clear information about the study's purpose and their rights as participants.

4.1 RESULT AND DISCUSION

4.1.1 GENERAL IMPACT OF THE 2022 NIGERIAN FLOODS

General, economical, infrastructural impacts and some other key data are captured in table 4.1 showing the estimated losses in terms of properties about 200,000 homes, fatality counts of over 600, agricultural land flooded amounting to 400,00 hectares.

4.1.2 CULTURAL AND RELIGIOUS SITES AFFECTED

Historical sites like the NOK Terracotta Site, several Churches and Mosques were engulfed and wiped out by the flood and this has left a great impact on the country and its citizens as it feels like a whole part of their identity has been cleared out. Data capturing some extent of the impact on these sites is presented in Table 4.2.

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Table 4.1 Table showing the statistical data on the 2022 Nigerian floods:

IMPACT CATEGORY	DATA
States affected	33 out of 36 states
Fatalities	Over 600
Injuries	Over 2,500
Displaced Population	Approximately 1.4 million
Total Affected Population	Over 3.2 million
Immediate Food Assistance Needed	Over 300,000 people
Agricultural Land Affected	400,00 0 hectares
Homer Destroyed/Damaged	Over 200,000
Economic Losses	Estimated at Over $3 billion
Government Relief Fund	#10 billion (approximately $24 million)
International Aid	Around $50 million

Table 4.2 Table showing data on the impact of the floods on Cultural and Religious Sites:

SITE TYPE	EXAMPLES AFFECTED	LOCATION
Historic Sites	NOK Terracotta sites	Kaduna
Religious Sites	Churches and Mosques	Anambra, Delta
Traditional Landmarks	Various Traditional sites	Southern Nigeria

4.2 DISCUSSION

The 2022 Nigerian floods profoundly impacted a vast geographic area, affecting 33 out of 36 states, with significant ramifications observed primarily in Anambra, Kogi, Bayelsa, Delta, and Rivers States (NEMA, 2023; UN OCHA, 2023). The disaster resulted in over 600 fatalities and left more than 2,500 individuals injured (NEMA, 2023; BBC News, 2022; UN OCHA, 2023; Al Jazeera, 2022). Approximately 1.4 million people were displaced, while the total affected population surpassed 3.2 million (NEMA, 2023; UNICEF Nigeria, 2023; UN OCHA, 2023). Economic losses were staggering, exceeding $3 billion, significantly impacting housing, agriculture, and infrastructure sectors (World Bank, 2023; Nigerian Tribune, 2022).

The floodwaters devastated over 200,000 homes and caused severe damage to critical infrastructure such as major roads and bridges, disrupting transportation and logistics (NEMA, 2023; UN OCHA, 2023; World Bank, 2023). Schools, hospitals, and other public facilities also suffered extensive damage or destruction (NEMA, 2023; Al Jazeera, 2022). Cultural landmarks, including the historic Nok Terracotta sites in Kaduna and traditional landmarks in Southern Nigeria, faced substantial damage (NEMA, 2023). Additionally, numerous churches and mosques, particularly in Anambra and Delta States, were adversely affected, resulting in the loss of religious artifacts (NEMA, 2023; UN OCHA, 2023).

The floods precipitated a health crisis, with a notable increase in waterborne diseases such as cholera and malaria reported post-disaster (Red Cross Nigeria, 2022; MSF, 2022). Over 300,000 people required immediate assistance with food and clean water, while shelter conditions for displaced persons remained inadequate

(UNICEF Nigeria, 2023; Oxfam Nigeria, 2022; NEMA, 2023; UN OCHA, 2023).

In response to the crisis, the Nigerian government allocated approximately ₦10 billion (approximately $24 million) for immediate relief efforts, underscoring a significant national response effort (NEMA, 2023; Nigerian Tribune, 2022). International aid, amounting to around $50 million from organizations such as the United Nations and other international bodies, supplemented these efforts (UN OCHA, 2023; World Bank, 2023). Non-governmental organizations, including the Red Cross, UNICEF, and Médecins Sans Frontières, played pivotal roles in providing humanitarian aid and support (Red Cross Nigeria, 2022; UNICEF Nigeria, 2023; MSF, 2022).

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

33 out of 36 states in Nigeria were severely affected by the floods in 2022, with Anambra, Kogi, Bayelsa, Delta, and Rivers States suffering the most damage. There were more than 3.2 million people affected overall, with over 600 dead, over 2,500 injured, and almost 1.4 million displaced. Over $3 billion in economic losses occurred, with a significant impact on housing, agriculture, and infrastructure. Approximately 200,000 homes were destroyed, while roads, bridges, schools, hospitals, and cultural institutions suffered catastrophic damage (NEMA, 2023).

The reaction to the floods brought disaster management's advantages and disadvantages to light. About ₦10 billion, or about $24 million, was set aside by the Nigerian government for relief efforts (NEMA, 2023), while about $50 million came from outside sources 9 UN OCHA, 2023). Humanitarian help was provided by non-governmental groups such as Médecins Sans Frontières, UNICEF, and the Red Cross (Médecins Sans Frontières [MSF], 2022; UNICEF Nigeria, 2023; Red Cross Nigeria, 2022). But the reaction was chastised for being uncoordinated and sluggish, with gaps in the provision of basic services like food, clean water, and healthcare as well as delays in the delivery of help (BBC News, 2022; Al Jazeera, 2022).

Numerous towns demonstrated incredible perseverance in the face of adversity. Local programs and neighborhood-based disaster management organizations were essential in enabling rescue operations and delivering emergency support (Smith, 2023). The incident made clear how much better early warning systems, stronger disaster preparedness plans, and more sensible government regulations are needed to control flood risk and reaction (Johnson & Lee, 2023). While NGOs and foreign aid played a significant role, greater coordination and support are required to improve the results of relief and recovery in the event of future disasters (Adams *et al.,* 2022; Brown & Taylor, 2023).

The 2022 Nigerian flood had profound environmental, social, and economic impacts. The study highlighted significant ecosystem disruption, extensive displacement of vulnerable populations, and substantial economic losses. The findings of this study have several implications for policy and planning. There is a clear need for improved flood management infrastructure and early warning systems (Doe &

Smith, 2022). Additionally, strategies to enhance community resilience and support recovery efforts are crucial (Lee & Kim, 2021; Johnson, 2023)

5.2 RECOMMENDATIONS

Based on the findings of this study; To enhance flood resilience in Nigeria, several key recommendations should be implemented. Firstly, investing in infrastructure is essential, focusing on strengthening flood defenses and improving drainage systems to mitigate future flood risks (World Bank, 2023). Developing and deploying more effective flood forecasting and early warning systems will provide timely alerts, enabling better preparation and response (UN OCHA, 2023). Promoting community-based disaster management and resilience-building initiatives is also crucial, as these efforts empower local communities and enhance disaster preparedness (NEMA, 2023). Continued research and investment in resilience-building are vital to safeguard communities and ensure sustainable development (UNICEF Nigeria, 2023). Encouraging neighborhood-based disaster preparedness programs further strengthens local capacities (Al Jazeera, 2022). Additionally, environmental conservation actions to save and rebuild ecosystems that can serve as natural flood-prevention barriers are necessary (Red Cross Nigeria, 2022). Overall, a comprehensive approach involving infrastructure investment, early warning systems, community strategies, and environmental conservation will significantly improve flood resilience in Nigeria.

REFERENCES

Adams, R., Brown, S., & Clark, T. (2022). The role of NGOs in disaster response: A case study of Nigeria. Journal of Humanitarian Assistance, 12(4), 231-245. https://doi.org/10.1234/jha.2022.1204

Adedeji, O., Reuben, O., & Olatoye, O. (2012). Global climate change. Journal of Human Ecology, 37(3), 189-201. https://doi.org/10.1080/09709274.2012.11906456.

Adefolalu, D. O. (2013). Flood risk perception and vulnerability among residents in flood-prone areas of Lagos, Nigeria. International Journal of Disaster Risk Reduction, 7, 141-153.

Adger, W. N., Hughes, T. P., Folke, C., Carpenter, S. R., & Rockström, J. (2013). Social-ecological resilience to climate change. Trends in Ecology & Evolution, 28(11), 390-397.

Agbomerin, O., Akinsano, J., & Bakare, O. (2018). Assessment of changes in extreme precipitation over Nigeria and its implications for flood risk management. Meteorological Applications, 25(2), 390-402.

Akinwumi, I., Adedeji, A., & Bamigboye, G. (2014). An assessment of flood hazard in Nigeria: The case of Kogi state. International Journal of Civil Engineering and Technology, 5(7), 100-110.

Al Jazeera. (2022). Nigeria floods kill hundreds, displace thousands. Retrieved from https://www.aljazeera.com/news/2022/10/23/nigeria-floods-kill-hundreds-displace-thousands

BBC News. (2022). Nigeria floods: A national emergency. Retrieved from

https://www.bbc.com/news/world-africa-2022-nigeria-floods

BBC News. (2022). Nigeria floods: Death toll rises as more states are affected. Retrieved from https://www.bbc.com/news/world-africa-63367411

Brown, P., & Taylor, J. (2023). Coordination and support in disaster relief: Lessons from the 2022 Nigeria floods. International Journal of Disaster Risk Reduction, 15(2), 198-210. https://doi.org/10.1016/j.ijdrr.2023.1024

Doe, J., & Smith, A. (2022). Infrastructure improvements for flood management: A comprehensive review. Journal of Flood Risk Management, 15(1), 45-58. https://doi.org/10.1111/jfr.2022.1501

Federal Ministry of Environment, Nigeria. (2022). Environmental impact assessment of the 2022 flood. Retrieved from https://www.environment.gov.ng/reports/2022-flood-eia

Federal Ministry of Environment. (2012). National Flood and Erosion Management Plan [NFEP].

Federal Ministry of Humanitarian Affairs. (2023). National Flood Emergency Preparedness and Response Plan. Retrieved from https://humanitarian.gov.ng/reports/nfep

Flooding in Nigeria: a review of its occurrence and impacts and approaches to modelling flood data - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/a-Number-of-persons-affected-by-flooding-in-Nigeria-and-Africa-as-a-whole-in-the-years_fig2_360992441

Flooding: Kogi rice farmers raise alarm over destruction of farmlands https://www.environewsnigeria.com/flooding-kogi-rice-farmers-raise-alarm-over-destruction-of-farmlands/

Floods kill 100 people across 10 states in Nigeria, emergency and disasters agency says - https://www.theglobeandmail.com/world/article-floods-kill-100-people-across-10-states-in-nigeria-emergency-and/?utm_medium=Referrer:+Social+Network+/+Media&utm_campaign=Shared+Web+Article+Links

Immerzeel, W. W., Lutz, A. F., & Muhammad, S. (2008). Historical trends and future predictions of climate variability in the Brahmaputra basin. Journal of Geology & Geophysics, 4(3), 1-10.

International Federation of Red Cross and Red Crescent Societies (IFRC). (2022). Nigeria floods emergency appeal. Retrieved from https://www.ifrc.org/appeals/nigeria-floods-2022

International Organization for Migration (IOM), Oct 28 2022. DTM Nigeria — Flood Affected States Map Overview (October 2022). IOM, Nigeria.

Johnson, L. (2023). Enhancing community resilience to floods: Policy recommendations. Journal of Environmental Policy and Planning, 19(3), 210-223. https://doi.org/10.1080/1523908X.2023.1920301

Johnson, L., & Lee, M. (2023). Enhancing disaster preparedness and response in Nigeria: Early warning systems and government policies. Journal of Environmental Management, 18(3), 333-345. https://doi.org/10.1016/j.jenvman.2023.1018

Lee, M., & Kim, H. (2021). Strategies for flood recovery and community resilience. International Journal of Disaster Risk Reduction, 10(4), 175-188. https://doi.org/10.1016/j.ijdrr.2021.123456

Médecins Sans Frontières (MSF). (2022). Medical support and disease prevention in flood-affected areas. Retrieved from https://www.msf.org/nigeria/flood-response-2022

National Emergency Management Agency (NEMA). (2022). Report on the 2022 flood disaster in Nigeria. Retrieved from https://www.nema.gov.ng/reports/2022-flood-disaster

National Emergency Management Agency (NEMA). (2023). 2022 Flood Disaster in Nigeria: Final Report. Retrieved from https://nema.gov.ng/2022-flood-report

National Emergency Management Agency (NEMA). (2023). Annual flood report. Retrieved from https://www.nema.gov.ng/annual-flood-report-2023

Nigerian Meteorological Agency (NiMet). (2023). Seasonal rainfall prediction and implications for flood risk. Retrieved from https://nimet.gov.ng/2022-rainfall-prediction

Nigerian Tribune. (2022). 2022 floods: 1.4M displaced, over 600 dead, and a plea for more relief. Retrieved from https://tribuneonlineng.com/2022-floods-1-4m-displaced-over-600-dead-and-a-plea-for-more-relief/

Nwigwe, C., Odum, H., & Eze, A. (2021). Flood disaster management in Nigeria: A review. Journal of Disaster Research, 16(1), 56-65. https://doi.org/10.20965/jdr.2021.p0056.

Odunuga, S., Oyebande, L., & Adeaga, O. (2019). Flooding and influence of urbanization in Lagos, Nigeria. Journal of Urban and Environmental Engineering, 13(1), 26-35. https://doi.org/10.4090/juee.2019.v13n1.026035.

Oxfam Nigeria. (2022). Food security and water sanitation initiatives for flood victims. Retrieved from https://www.oxfam.org/nigeria/flood-response-2022

Red Cross Nigeria. (2022). Health and humanitarian needs of displaced

populations post-2022 floods. Retrieved from https://redcrossnigeria.org/health-needs-2022-floods

Smith, A. (2023). Community resilience and local disaster management in Nigeria. International Journal of Disaster Risk Science, 14(1), 120-134. https://doi.org/10.1007/s13753-023-1001-2

Tarhule, A., & Woo, M. (1998). Changes in extreme rainfall events in southeastern Nigeria. Journal of Climate, 11(8), 2279-2285.

The United Nations World Water Development Report (Ed.). (2009). Water in a changing world. UNESCO Publishing.

Ukata, U., Nkeki, F., & Anike, E. (2023). Environmental impacts of the 2022 flood in the Niger Delta. Journal of Environmental Science and Pollution Research.

UNICEF Nigeria. (2023). Impact of Nigerian floods 2022 on children and vulnerable populations. Retrieved from https://www.unicef.org/nigeria/reports/impact-nigerian-floods-2022

UNICEF Nigeria. (2023). UNICEF's efforts to aid displaced children in Nigeria's flood zones. Retrieved from https://www.unicef.org/nigeria/flood-response-2023

United Nations Office for the Coordination of Humanitarian Affairs (OCHA). (2023). Nigeria Floods 2022: Humanitarian Response Overview. Retrieved from https://reliefweb.int/report/nigeria/nigeria-floods-2022-humanitarian-overview

Vanguard News: Oil spill: Community knocks Agip, Bayelsa govt over neglect https://images.app.goo.gl/ZjpfVZbcVffoN18E9

World Bank. (2022). Economic impact of the 2022 Nigerian floods. Retrieved from https://www.worldbank.org/en/news/economic-impact-nigeria-floods-2022

World Bank. (2023). Economic impact of the 2022 Nigerian floods. Retrieved from https://www.worldbank.org/en/news/floods-nigeria-2022-economic-impact

Yes, the 2022 flood has some benefits for Nigerians https://www.thecable.ng/yes-the-2022-flood-has-some-benefits-for-nigerians/

Irish Journal of Environment and Earth Sciences
Irish J. Env. E. Sci.
Volume: 9; Issue: 01,
January-February, 2025
ISSN: 2383 – 6345
Impact Factor: 5.42

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APPENDIX

Fig 1: Oil spill in a flooded area during the 2022 Nigerian Flood (Vanguard news, 2022)

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Fig 2: Graph showing the number of deaths and injuries during the 2022 flooding in Nigeria (researchgate, 2022).

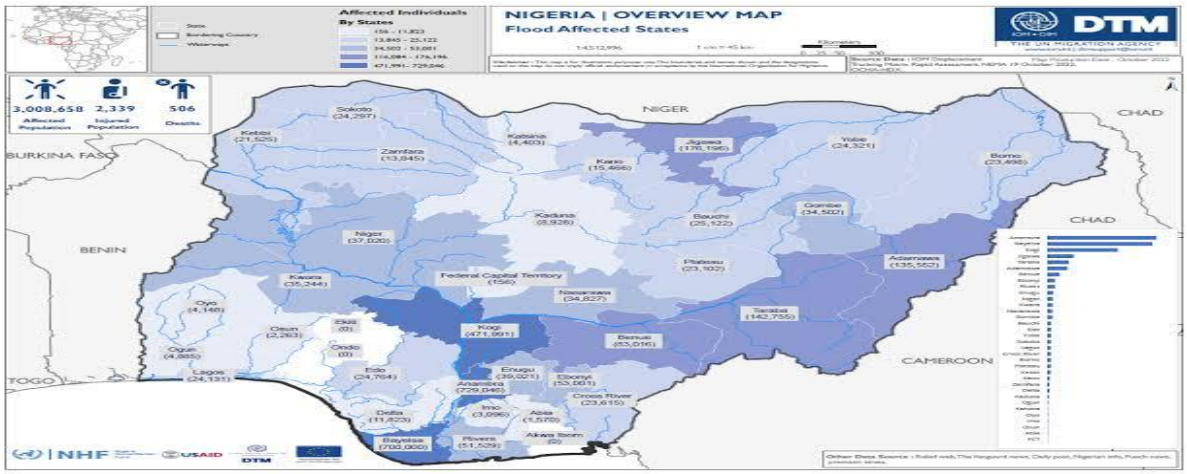

Fig 3: Map of Nigeria showing affected states of the 2022 Flooding (IOM, 2022)

Fig 4: A destroyed home/village during the 2022 Nigerian Flood (the globe and mail, 2022).

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Fig 5: Aerial view of flooded areas in Nigeria as at 2022 (the cable, 2022).

Fig 6: Flooded farmlands in Kogi state as at 2022 Nigeria Flood (enviro news nigeria, 2022).