



Disaster Management and Human Security: A Study of Kadsema and the Management of Flood Disasters in Kaduna State, 2015-2023

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Abstract

Flood disasters remain one of the most pervasive and destructive natural hazards globally, posing significant threats to lives, livelihoods, and national stability. In Nigeria, recurrent floods particularly in Kaduna State have intensified in frequency and impact due to a combination of natural and human-induced factors, including climate change, poor urban planning, and weak institutional capacity. This study examines the role of the Kaduna State Emergency Management Agency (KADSEMA) in managing flood disasters and enhancing human security within Kaduna North, Kaduna South, and Igabi Local Government Areas. Anchored on the Structural Functionalism theory, the research analyzes how institutional functions, coordination mechanisms, and resource capacities influence disaster preparedness, response, and recovery in the state.

Adopting a survey research design, the study utilized questionnaires, interviews, and Key Informant Interviews (KIIs) to collect both qualitative and quantitative data. Findings reveal that while KADSEMA has made progress in public sensitization, collaboration with the National Emergency Management Agency (NEMA), and limited use of early warning systems, its overall effectiveness remains constrained by poor funding, bureaucratic delays, weak inter-agency coordination, and inadequate community engagement. These institutional challenges have undermined timely response efforts and heightened the vulnerability of flood-affected populations, thereby threatening multiple dimensions of human security economic, food, health, and environmental.

The study underscores that effective flood disaster management is inseparable from human security, as both aim to safeguard life, dignity, and livelihoods. It argues for a paradigm shift from reactive relief interventions to proactive, community-centered disaster risk reduction approaches. Recommendations include strengthening KADSEMA's autonomy and funding, improving data management and early warning dissemination, integrating gender-sensitive policies, and enhancing synergy between government, communities, and development partners. Ultimately, building institutional resilience and embedding human security principles within disaster governance are vital for sustainable flood management and national stability in Nigeria.

Keywords: Flood Disaster Management, Human Security, KADSEMA, Kaduna State, Structural Functionalism, Disaster Governance, Resilience.



1. INTRODUCTION

Nations around the world face various disasters—earthquakes, tsunamis, landslides, fires, pollution, and particularly floods—that threaten lives, property, and national stability. Effective Flood Disaster Management (FDM) is therefore essential for protecting citizens and ensuring security. Floods, often caused by heavy rainfall, snowmelt, steep terrain, and human factors, are among the most frequent and devastating natural disasters globally. Between 2000 and 2019, floods affected over 1.23 billion people and caused more than 226,000 deaths. Their impacts extend across all sectors, disrupting infrastructure, food systems, health, and governance.

A strong FDM framework supports national security by saving lives, protecting economic activities, and managing floodwaters productively. Conversely, poor disaster management weakens security. Modern disaster management now adopts a human security approach that focuses on individuals' safety, health, food access, and dignity, as defined by the UNDP (1994). This approach recognizes that floods threaten multiple dimensions of security—health, environment, and livelihoods—especially in developing countries like Nigeria.

In Nigeria, flood disasters have intensified over the past decade, particularly along the Niger-Benue trough, the coastal South-South, and rapidly urbanizing areas like Lagos and Abuja. The 2012 and 2022 floods were the most severe, displacing millions of people across more than 30 states. These events result from both natural and human-induced factors such as climate change, erratic rainfall, dam releases (e.g., the 2012 Lagdo Dam), poor drainage, deforestation, and unregulated construction in floodplains. The consequences include displacement, disease outbreaks, agricultural losses, and economic decline, undermining national stability and human security.



To address these challenges, Nigeria established the National Emergency Management Agency (NEMA) in 1999 and adopted the National Disaster Management Framework (NDMF) in 2010. These frameworks aim to improve coordination, early warning systems, and community preparedness. However, implementation remains weak due to poor funding, low technical capacity, bureaucratic bottlenecks, and inadequate community engagement. Local agencies, including State Emergency Management Agencies (SEMAs), face similar challenges, revealing deep institutional weaknesses.

Across Africa, floods have become a leading disaster risk, prompting countries like South Africa to enhance infrastructure, upgrade drainage systems, and improve early warning mechanisms. Similarly, Nigeria must adopt a human-security-centered disaster governance model that strengthens coordination between communities and national institutions.

Kaduna State reflects these national trends. Recurrent floods—especially in 2012 and 2022—have caused severe damage to farmlands, roads, markets, and schools, leading to displacement, health crises, and insecurity. The most flood-prone areas include Kaduna North, Kaduna South, Chikun, Zaria, and Igabi LGAs. Although the Kaduna State Emergency Management Agency (KADSEMA) was created to lead disaster response, its effectiveness has been constrained by limited capacity and resources.

This study therefore examines KADSEMA's role in managing flood disasters in Kaduna State, assessing its risk reduction strategies, coordination mechanisms, and contributions to human security. It also explores how subnational disaster governance affects broader national security and resilience in Nigeria.



1.2 Disaster Management and Human Security Concepts

Disaster Management

Disaster management is a multidimensional concept that encompasses strategies, policies, and actions designed to mitigate, prepare for, respond to, and recover from natural or human-induced hazards. Scholars like Mbachu (2005) situate disaster management within the broader framework of *human security*, arguing that threats to lives and property—whether natural or man-made—fall within the realm of national security as they affect the stability and survival of the state. Similarly, the International Federation of Red Cross and Red Crescent Societies (IFRC) defines disaster management as the organization of resources and responsibilities for preparedness, response, and recovery to lessen disaster impact.

According to UNISDR (2004), disaster management entails the systematic use of administrative, organizational, and operational skills to strengthen coping capacities and reduce vulnerability to hazards. Its framework typically includes four key phases: mitigation, preparedness, response, and recovery (Wisner et al., 2004). Effective disaster management requires proactive planning, risk assessment, and community participation. Yet, in many contexts, including Nigeria, responses remain largely reactive and fragmented. Oloruntoba and Faleti (2020) note that institutional dysfunction, inadequate funding, and poor coordination continue to undermine disaster governance.

In flood-prone regions such as Kaduna State, floods frequently displace residents and disrupt livelihoods, revealing weaknesses in Nigeria's disaster preparedness systems. According to NEMA (2019), limited capacity, lack of early warning systems, and minimal community engagement hinder timely responses. Akpan and Iwok (2021) further stress that agencies often



fail to translate forecasts into actionable information, perpetuating losses and dependence on emergency relief.

Globally, disaster management has evolved toward a *risk reduction paradigm* focused on prevention and resilience. Frameworks like the Hyogo Framework for Action (2005–2015) and the Sendai Framework for Disaster Risk Reduction (2015–2030) underscore the importance of understanding risk, strengthening governance, investing in resilience, and ensuring preparedness. However, in many African countries, weak institutions, underfunding, and limited data continue to restrict progress (van Niekerk, 2014).

In Nigeria, recurrent disasters such as floods and epidemics expose the fragility of response systems. Poor urban planning, blocked drainages, and rapid urbanization heighten vulnerability (Eguavoen & Tesfai, 2012). Additionally, ethical concerns—such as corruption and mismanagement in aid delivery—erode public trust (Obeta, 2014). Gender-sensitive approaches are also essential, as disasters disproportionately affect women, children, and marginalized groups (Enarson & Chakrabarti, 2009; Ayuba et al., 2020).

Modern disaster management emphasizes that humanitarian responses must uphold principles of accountability, equity, and human dignity (Sphere Project, 2018). Integrating disaster risk reduction into national development plans, improving early warning systems, and empowering local communities are crucial for achieving long-term resilience. Ultimately, disaster management should not only aim to restore normalcy but also strengthen human security by protecting lives, livelihoods, and dignity.

Human Security

The concept of *human security* represents a paradigm shift from traditional, state-centered



notions of security to a people-centered approach focused on the protection and empowerment of individuals. Historically, security was viewed as the preservation of state sovereignty and military power (Wolfers, 1952; Buzan, 1983). However, scholars such as Booth (1991) and McNamara (1968) expanded the notion to include economic, environmental, and social dimensions, recognizing that insecurity also arises from poverty, disease, and inequality.

The United Nations Development Programme (UNDP, 1994) provided a landmark redefinition of human security, outlining seven interrelated dimensions: economic, food, health, environmental, personal, community, and political security. These dimensions reflect the interdependence between individual well-being and broader societal stability. Human security emphasizes *freedom from fear* and *freedom from want*, focusing on protection from violence and deprivation alike.

Scholars such as Tadjbakhsh and Chenoy (2007) argue that human security integrates both survival and dignity, calling for strategies that combine immediate safety with long-term development. Zebrowski (2014) and Gasper (2005) emphasize that human security prioritizes individual rights and human welfare, though practical implementation often faces challenges due to political instability and resource constraints.

In Nigeria, floods and other disasters have significantly undermined human security, disrupting access to food, healthcare, and shelter. As Tadjbakhsh and Chenoy (2007) observe, disasters test the capacity of the state to safeguard basic needs. Akinbobola and Ilesanmi (2020) note that displaced persons, particularly women and low-income earners, face heightened vulnerability due to weak institutions and absent social safety nets.

Economic insecurity—manifested in unemployment, poverty, and inequality—further



compounds other forms of human insecurity. Sen (1999) and the ILO (2014) argue that economic stability is not only a development goal but also a precondition for peace and social cohesion. Similarly, food and environmental insecurity, driven by conflict, climate change, and weak governance, exacerbate displacement and resource-based conflicts (FAO, 2008; Okpara et al., 2016).

Personal and political insecurity also persist where human rights abuses, corruption, and repression undermine trust in institutions. Ensuring justice, democratic participation, and the rule of law remains central to political security (True, 2012; Tadjbakhsh & Chenoy, 2007).

Kofi Annan (2011) emphasizes that true security extends beyond the absence of conflict—it requires education, health, justice, and environmental protection. Thus, human security is both a moral and practical framework for sustainable peace and development. Despite criticisms of vagueness (Paris, 2001; Owen, 2004), it remains a compelling lens for understanding vulnerability in contemporary societies.

In essence, the linkage between *disaster management* and *human security* underscores that safeguarding lives requires more than emergency response—it demands building resilient systems that protect people from fear, want, and indignity. Human security provides the ethical and operational foundation for disaster management aimed at sustainable development and inclusive governance.

1.3 The Nexus between Disaster Management and Human Security

The interrelationship between disaster management and human security is complex and dynamic. Disaster events such as floods directly threaten the seven dimensions of human security: economic, food, health, environmental, personal, community, and political security



(UNDP, 1994). Ineffective disaster management can exacerbate vulnerabilities in each of these dimensions, while effective disaster response can enhance human security by safeguarding lives, livelihoods, and dignity.

According to Adelekan (2015), the inadequacy of flood preparedness measures in many Nigerian urban and peri-urban areas reveals the fragility of the human security framework in disaster-prone communities. This is compounded by poor housing conditions, lack of social insurance, weak institutional responses, and delayed government interventions all of which erode public trust and heighten insecurity.

Scholars such as Redclift and Grasso (2013) argue that the integration of disaster risk reduction into national development plans is essential for advancing human security. It underscores the need for proactive governance structures, participatory disaster planning, and community-based resilience strategies. In the case of KADSEMA, evaluating its operational effectiveness becomes crucial to understanding how well disaster management institutions are aligning with human security objectives in Kaduna State.

Flood disasters have become an enduring threat to human security across Sub-Saharan Africa, driven by the intensifying effects of climate change, rapid urban expansion, deforestation, and substandard or aging drainage infrastructure (UNDRR, 2022, p. 18). Countries such as Nigeria, Mozambique, Ghana, South Africa, and Sudan have all experienced devastating flood events in recent decades that disrupted critical aspects of human well-being, including health, food, shelter, education, and economic stability core indicators of human security.

According to Adelekan (2015), flood impacts in African cities tend to fall disproportionately on the poor and marginalized, who are often forced to live in flood-prone zones due to housing



inequality and urban planning failures. These populations frequently lack access to basic early warning systems, resilient infrastructure, or social protection mechanisms. In Lagos, Nigeria, for example, informal settlements in areas like Ajegunle and Makoko experience recurring floods that destroy homes, cause waterborne diseases, and reduce access to safe drinking water (Douglas et al., 2008). These conditions make survival in such environments not only precarious but dangerous to long-term health and development.

The case of Mozambique's Cyclone Idai in 2019 offers a glaring illustration of how flood disasters destabilize multiple dimensions of human security. The cyclone-induced floods killed over 1,300 people and displaced more than 2.2 million across Mozambique, Zimbabwe, and Malawi. Apart from fatalities, the floods led to food shortages, cholera outbreaks, collapsed education systems, and overwhelmed health facilities (World Bank, 2020, p. 19; IFRC, 2019, p. 12). These outcomes reveal the interconnectedness between flood management and human security, especially where governance capacities are fragile.

Similarly, South Africa's KwaZulu-Natal floods in 2022, which resulted in more than 400 deaths and the displacement of over 40,000 residents, highlighted the urgency of integrating human security into disaster response frameworks. The South African government responded by imposing a moratorium on construction in vulnerable areas, enhancing drainage systems, and investing in early warning technologies (Pelling & Wisner, 2012, p. 143). These responses suggest a shift towards a human-centric disaster management model aimed at reducing exposure and enhancing resilience.

1.4 Theoretical Framework

For the purpose of this study, Structural Functionalism was adopted. These theory is



considered relevant for examining how KADSEMA functions as an institution within a broader emergency management architecture and how its operations affect, and are affected by, multiple interrelated subsystems in the context of flood disaster response and human security in Kaduna State. The application of these theory will enhance the understanding of the institutional mechanisms, systemic dynamics, and interdependencies that shape disaster preparedness, response, and recovery efforts, with specific attention to the human security implications for vulnerable populations.

1.5 Structural Functionalism Theory

Structural Functionalism offers a classical sociological framework for analyzing the organisation of society, particularly its institutions and their interdependent roles in maintaining systemic stability. Originating during the socio-economic upheavals of the 19th century, the theory was first formulated by early thinkers such as Auguste Comte and Herbert Spencer. These scholars drew on biological analogies to conceptualize society as an organic system composed of interrelated parts (Comte & Lenzer, 1975; Spencer, 1863). Comte's positivist vision suggested that societies evolve in a manner akin to living organisms, while Spencer posited that institutions like organs perform critical roles necessary for societal survival and progress.

Émile Durkheim significantly extended these ideas by introducing the concept of social facts collective norms, values, and beliefs that exert control over individual behavior (Durkheim & Halls, 1984). Durkheim's typology of solidarity mechanical and organic provided a framework to explain how cohesion is maintained in traditional versus industrial societies. According to him, increased specialization and differentiation in modern societies necessitated a more complex form of interdependence, coordinated through shared values upheld by a collective



conscience.

Talcott Parsons later developed the AGIL schema Adaptation, Goal Attainment, Integration, and Latency presenting society as a self-regulating system composed of sub-systems tasked with fulfilling specific needs (Parsons, 1951). His model emphasised stability and equilibrium, situating functionalism as a "grand theory" capable of explaining any social structure. However, Parsons' deterministic orientation and resistance to Marxist critique attracted criticism for being ideologically conservative.

Robert K. Merton introduced significant refinements by recognizing the presence of dysfunctions, functions that may have negative consequences for society. He also differentiated between manifest (intended) and latent (unintended) functions and introduced the concept of functional alternatives, thereby providing a more flexible and empirically grounded model (Merton, 1957). Merton's contributions helped move the theory away from rigid teleological assumptions toward a more adaptable analytical framework.

1.6 Research Methodology

a survey research design has been adopted. Survey research involves gathering data from a target population using instruments such as questionnaires and interviews, which are then subjected to statistical analysis to draw conclusions (Obasi, 1999). The survey approach in this study has been utilise a combination of interviews, questionnaires, Focus Group Discussions (FGD), and Key Informant Interviews (KII) to gather comprehensive data on the effectiveness of KADSEMA's flood disaster management strategies and their implications for human security in Kaduna North, South, and Igabi local Government Areas (LGAs).



1.7 Historical events of Flood disasters in Kaduna State.

Kaduna State has experienced several severe flood disasters over the past decades, significantly affecting Kaduna North, Kaduna South, and Igabi Local Government Areas, which are highly vulnerable due to their proximity to the Kaduna River, poor drainage systems, and unregulated urban settlements.

The 2012 flood stands as one of the most catastrophic in Kaduna's history and a turning point in Nigeria's environmental disaster discourse. Triggered by heavy rainfall and the overflow of the Kaduna River, it caused widespread displacement, infrastructure collapse, and agricultural losses that worsened food insecurity. According to NEMA (2013), over 2.1 million people were affected nationwide, with Kaduna among the worst-hit states. Despite rapid emergency relief efforts, the disaster exposed major weaknesses in disaster preparedness and coordination. Victims faced overcrowded shelters and delayed interventions due to poor communication between KADSEMA, local authorities, and health agencies. As Adebayo and Iweka (2014) observed, inadequate integration between early warning systems, risk communication, and land-use planning worsened the crisis. The flood also revealed how poor environmental management and unregulated urban expansion heighten disaster risks, underscoring the need for a shift toward proactive, risk-based urban governance.

The 2017 flood further exposed Kaduna's fragile environmental governance. Intense rainfall combined with human factors—blocked drainage systems, poor waste disposal, and construction on waterways—led to severe flooding. KEPA (2018) reported that over 5,000 residents were displaced, and critical infrastructure such as schools and roads was damaged. Scholars like Ajibade, McBean, and Bezner-Kerr (2013) linked the disaster to weak enforcement of environmental and urban planning laws, while Oladokun and Proverbs (2016)



emphasized the need for governance reforms and community engagement to reduce flood risks.

The event reignited debates on weak institutional capacity, political interference, and the failure to integrate environmental sustainability into city planning (Olorunfemi & Raheem, 2016; Nwilo & Olayinka, 2016). It demonstrated that technical solutions alone are insufficient without strong governance, cross-sector collaboration, and public awareness.

The 2022 flood reaffirmed Kaduna's ongoing vulnerability. Despite NiMet's early warnings of heavy rainfall, the state's infrastructure and emergency systems were overwhelmed. Igabi and Kaduna South LGAs were the most affected, with homes, schools, and health centers submerged. KADSEMA (as cited in Procyon News, 2022) reported severe damage and displacement, while poor road access delayed relief operations. The disaster highlighted failures in early warning dissemination and community engagement. Many residents did not receive or understand evacuation alerts, reflecting weak risk communication (Nkwunonwo et al., 2020). The fragmented and delayed response—typical of Nigeria's "institutional disconnect" (Olorunfemi, 2011)—revealed persistent gaps in inter-agency coordination. As Oladokun and Proverbs (2016) noted, the lack of risk-reduction strategies within urban planning continues to magnify the impact of floods.

1.8 Institutional Development: KADSEMA

In response to recurring disasters, the Kaduna State Emergency Management Agency (KADSEMA) was established under the NEMA Act (1999) to decentralize disaster management and strengthen local response capacity (NEMA, 2006). Operating under the Ministry of Environment, KADSEMA coordinates preparedness, mitigation, and relief operations across the state (Kaduna State Disaster Management Policy, 2012).



Over time, KADSEMA has evolved from a reactive relief agency to one that increasingly incorporates Disaster Risk Reduction (DRR) and community resilience, in line with the Sendai Framework for Disaster Risk Reduction (UNISDR, 2015). However, challenges such as inadequate funding, limited technical capacity, and bureaucratic inefficiencies persist (Akinyemi & Adewole, 2020). These constraints often delay timely interventions and erode public trust.

Despite these hurdles, KADSEMA's progress reflects growing institutional maturity and alignment with global best practices. Strengthening its resources, autonomy, and inter-agency coordination remains essential for building sustainable resilience and effective flood governance in Kaduna State.

1.9 Institutional Responses and Coordination Challenges

Institutional responses to flood disasters in Kaduna State are shaped by a multi-tiered governance structure involving federal, state, and local authorities, as well as nongovernmental and international actors. While the National Emergency Management Agency (NEMA) provides overall coordination at the federal level, state-level agencies such as KADSEMA are expected to lead localized disaster preparedness and response. In theory, this federal-state collaboration is intended to ensure timely and efficient interventions. However, in practice, several systemic weaknesses continue to undermine the effectiveness of these institutional responses.

One of the most pressing challenges is the lack of vertical and horizontal coordination between agencies. As Adebayo and Iweka (2014) point out, overlaps in institutional mandates, unclear communication channels, and bureaucratic red tape often lead to fragmented disaster responses. In Kaduna State, instances where NEMA, KADSEMA, and local governments act



independently rather than in synergy have been reported during major flood events, resulting in duplicated efforts or service delivery gaps. Another persistent issue is the delay in response times due to inadequate early warning dissemination and logistical constraints. Despite forecasts by the Nigerian Meteorological Agency (NiMet) and the Hydrological Services Agency (NIHSA), many communities remain unprepared because of limited access to timely and understandable flood alerts. This challenge is compounded by the fact that KADSEMA lacks a robust community-level communication infrastructure, making it difficult to translate early warnings into actionable information (Nkwunonwo et al., 2020).

In addition to these operational barriers, financial limitations significantly restrict institutional capacity. Emergency management in Nigeria is often underfunded, with budgetary allocations to disaster agencies insufficient to cover both preparatory and post-disaster activities. In

Kaduna, funding for flood risk reduction is mostly reactive released only after damage has occurred rather than strategically invested in preventive infrastructure such as drainage systems, embankments, and flood-proof housing (Olorunfemi, 2011).

International donors and NGOs have contributed meaningfully to flood disaster response in Kaduna through funding, technical support, and community sensitization programs. However, the lack of coordination between external actors and government institutions has sometimes resulted in misaligned priorities and overlapping projects. As observed by UNDRR (2019), sustainable disaster risk management requires an integrated and inclusive approach that fosters synergy among all stakeholders, from government to civil society and the private sector.

1.10 Impact of Historical Practices on Present Day Preparedness

Flood disaster vulnerability in Kaduna State cannot be fully understood without examining the



historical patterns of governance, planning, and institutional decision-making that have shaped the current landscape. This subsection reflects on how decades of environmental neglect, unregulated urban development, inadequate infrastructure, and weak risk communication systems have left enduring legacies that continue to undermine the state's disaster preparedness and response capacities. One major legacy issue lies in urban planning and land-use management. Historically, urban expansion in Kaduna has occurred in a largely uncoordinated and reactive manner, with limited consideration for ecological risk zones such as floodplains. As observed by Ojeh (2013), informal settlements have proliferated along waterways due to population growth, housing deficits, and weak enforcement of planning regulations. Many of these communities remain highly exposed to recurrent flooding, yet lack formal drainage, waste management, and protective infrastructure.

Another long-standing issue is the chronic underinvestment in flood-resilient infrastructure. Drainage systems in many parts of Kaduna, particularly in densely populated urban slums, are outdated, poorly maintained, or completely absent. The lack of strategic planning and maintenance of stormwater channels has led to frequent clogging and water overflow during heavy rains. According to Oladokun and Proverbs (2016), these infrastructural failures stem not only from financial constraints but also from a historically narrow focus on post-disaster relief, rather than proactive risk reduction.

Additionally, early warning systems a cornerstone of disaster preparedness have long suffered from poor dissemination mechanisms, limited coverage in rural areas, and a general lack of public trust. Despite technological advances and the availability of meteorological forecasts from agencies like NiMet and NIHSA, many communities remain unaware or unconvinced of flood alerts due to a history of either false alarms or delayed warnings. As Nkwunonwo et al.



(2020) emphasize, Nigeria's early warning architecture suffers from poor integration between science, institutions, and end-users, a problem rooted in past failures to prioritize risk communication as a strategic function.

These historical shortcomings have created a cycle of reactive emergency management, where floods are addressed only after they occur, often through temporary measures such as relief distribution and relocation.

This cycle has become entrenched in public expectations and institutional behavior, making it difficult to transition to a more resilient and forward-looking model of disaster governance. Ajaero and Anorue (2018) argue that building disaster resilience requires not only new investments but also the restructuring of institutional memory and governance cultures that have perpetuated vulnerability over time.

1.11 Summary of Key Findings

This study critically examined the intersection between disaster management and human security, with a specific focus on the Kaduna State Emergency Management Agency's (KADSEMA) response to flood disasters between 2015 and 2023. The key findings demonstrate a strong relationship between flood disaster management practices and the level of human security in the affected communities. In Kaduna North, South, and Igabi LGAs, respondents consistently highlighted how floods disrupted lives by destroying shelter, contaminating water sources, damaging infrastructure, and displacing families. These impacts posed a direct threat to essential components of human security such as food, health, and personal safety. This finding validates the Systems Theory perspective, which argues that a failure in one subsystem such as emergency response can trigger a breakdown across other



critical areas of society. It also echoes Adedeji et al. (2012) and Omidiora et al. (2020), who established that ineffective disaster responses often translate into broader insecurity and vulnerability in affected regions.

The analysis further revealed that while KADSEMA has made strides in certain areas, such as public awareness campaigns and collaboration with national and international relief agencies, its overall effectiveness in addressing the human security needs of flood-affected communities remains limited. Respondents acknowledged the agency's efforts in deploying early warning systems particularly SMS alerts during the 2022 floods which were cited as helpful in facilitating timely evacuation. However, a recurring theme in the qualitative data was the delayed arrival of relief and the bureaucratic bottlenecks that plagued KADSEMA's operational responses. For example, a KII with Haruna Salihu (2025), a community leader in Kaduna North, revealed that affected communities often relied more on local, informal structures than on state-led intervention. This reflects the institutional weaknesses highlighted by Structural Functionalism, which suggests that when formal institutions fail to fulfill their designated roles, societal equilibrium is threatened.

In assessing KADSEMA's capacity to safeguard human security dimensions such as food, health, shelter, and safety during flood emergencies, the findings revealed mixed outcomes. While some flood victims received relief packages and temporary shelters, many others experienced delays or exclusion due to poor data management and weak logistics. Participants in FGDs across Igabi and Kaduna South lamented the reactive nature of government interventions, stating that by the time aid arrived, significant damage had already occurred. Health support was particularly lacking, with only a few instances of mobile clinics and public sanitation campaigns during peak flood periods. These operational weaknesses confirm



observations by Akpan and Ekanem (2021), who reported similar gaps in disaster management institutions across Nigeria's subnational levels.

Nevertheless, the study also identified institutional strengths, especially KADSEMA's coordination with partners like the Nigerian Red Cross and NEMA. These collaborations were found to be vital during major flood emergencies and could form a foundation for more effective future interventions if supported with structural and financial reforms. Stakeholders interviewed including community leaders, KADSEMA staff, and local government officials proposed several strategic recommendations. These include increasing KADSEMA's funding and autonomy, establishing community-based early response teams, enhancing flood prediction infrastructure, and mainstreaming gender and vulnerability considerations into disaster planning frameworks. These proposals align with international best practices such as those outlined in the UNDRR (2022) and further emphasize the need for locally embedded, proactive, and inclusive disaster management strategies that prioritize human security.

Therefore, while KADSEMA has shown potential in flood response coordination, its limitations especially in pre-disaster planning and post-disaster recovery have hindered its ability to fully protect the human security of flood-prone communities. A stronger institutional framework, coupled with community participation and sustainable planning, is essential for improving resilience and reducing human vulnerability in Kaduna State.

References

Adedayo, A. (2013). *Disaster and disaster management*. Spectrum Books.

Adefisoye, T. A., & Fayomi, O. O. (2021). Institutional readiness and disaster risk reduction in



Nigeria: The role of NEMA. *Journal of Public Administration and Policy Research*, 13(1), 1–

11. <https://doi.org/10.5897/JPAPR2020.0453>

Adelekan, I. O. (2015). Flood risk management in the coastal city of Lagos, Nigeria. *Journal of Flood Risk Management*, 8(1), 62–73. <https://doi.org/10.1111/jfr3.12099>

Adelekan, I. O., & Asiyambi, A. (2016). Flood risk perception in flood-affected communities in Lagos, Nigeria. *Natural Hazards*, 80(1), 445–469.

Agbonkhese, O., Aka, E., & Ologunorisa, E. (2014). Urban flood management in Nigeria: A study of causes, effects, and control strategies. *International Journal of Environment and Development*, 11(2), 110–125.

Agyeman, K. O., Amponsah, O., & Braimah, I. (2018). Flooding and human security in Ghana: A case of Accra. *International Journal of Disaster Risk Reduction*, 28, 436–447.

Akali, B. (2020). Flooding and insecurity in Sub-Saharan Africa: A conceptual framework. *African Journal of Environment and Risk*, 12(2), 50–62.

Akinbobola, A., & Ilesanmi, O. (2020). Social vulnerability and flood risk in Northern Nigeria. *Journal of African Studies and Development*, 12(6), 144–152.

Akpan, T. U., & Iwok, E. O. (2021). Flood risk governance and disaster preparedness in Nigeria: Challenges and prospects. *International Journal of Disaster Risk Studies*, 9(2), 203–217.

Amoako, C., & Boamah, E. F. (2017). The three-dimensional causes of flooding in Accra, Ghana. *International Journal of Urban Sustainable Development*, 9(1), 1–11. <https://doi.org/10.1080/19463138.2016.1271834>



- Annan, K. (2011). *Interventions: A life in war and peace*. Penguin Press.
- Ayuba, D., & Katlong, J. (2021). Internal displacement and human security in flood-prone communities: The case of central Nigeria. *African Journal of Disaster Risk Studies*, 6(2), 79–92.
- Bertalanffy, L. V. (1968). *General system theory: Foundations, development, applications*. George Braziller.
- Booth, K. (1991). Security and emancipation. *Review of International Studies*, 17(4), 313–326.
- Douglas, I., Alam, K., Maghenda, M., McDonnell, Y., McLean, L., & Campbell, J. (2008). Unjust waters: Climate change, flooding and the urban poor in Africa. *Environment and Urbanization*, 20(1), 187–205. <https://doi.org/10.1177/0956247808089156>
- Eguavoen, I. (2013). Climate change and trajectories of blame in Northern Nigeria. *Anthropological Notebooks*, 19(1), 5–24.
- FAO. (2021). *Niger: Situation report – Food and agriculture*. Food and Agriculture Organization of the United Nations.
- Ginkel, H. V., & Newman, E. (2000). In pursuit of human security. *Global Governance*, 6(2), 237–252.
- Goode, W. J., & Hatt, P. K. (2006). *Methods in social research* (2nd ed.). McGraw-Hill.
- Ibrahim, M. H., Usman, I. B., & Lawal, H. (2016). Flood vulnerability assessment in Kaduna metropolis, Nigeria. *American Journal of Environmental Protection*, 4(3), 57–64. <https://doi.org/10.11648/j.ajep.20160403.12>



Ijigah, E. A., & Akinyemi, O. O. (2016). Flood hazard management in Nigeria: A review of Kaduna flood disasters. *International Journal of Environment and Pollution Research*, 4(2), 17–28.

Isaac, S. (1969). *Handbook in research and evaluation*. EdITS Publishers.

Ishaya, S., & Abaje, I. B. (2008). Indigenous people's perception on climate change and adaptation strategies in Jema'a Local Government Area of Kaduna State, Nigeria. *Journal of Geography and Regional Planning*, 1(8), 138–143.

Kerlinger, F. N., & Lee, H. B. (2000). *Foundations of behavioral research* (4th ed.). Wadsworth.

Maclean, S. J. (2001). Micro-level perspectives on human security: A research note. *Conflict, Security & Development*, 1(2), 101–107.

Mbachu, I. A. (2014). *Theory and practice of defence and strategic studies: A foundational guide for beginners*. Medusa Academic Publishers.

Mohammed, S., Gambo, A., & Musa, A. (2022). Institutional failures and flood disaster impacts: An assessment of local response mechanisms. *Journal of Environmental Management and Policy*, 5(3), 134–147.

NDMA. (2019). *Kenya flood situation report*. National Disaster Management Authority.

NEMA. (2013). *Post-disaster needs assessment: 2012 floods*. National Emergency Management Agency.

NEMA. (2021). *Annual report on flood disaster impacts in Nigeria*. National Emergency Management Agency.



Nkeki, F. N., Henah, P. J., & Ojeh, V. N. (2013). Geospatial techniques for the assessment and analysis of flood risk along the Niger-Benue basin in Nigeria. *Journal of Geography and Geology*, 5(1), 131–142. <https://doi.org/10.5539/jgg.v5n1p131>

Nkwunonwo, U. C., Whitworth, M., & Baily, B. (2020). A review of urban flood risk management in Nigeria: Challenges and opportunities. *Natural Hazards*, 104(1), 783–804. <https://doi.org/10.1007/s11069-020-04175-3>

Obeta, M. C. (2014). Institutional framework for flood disaster management and the effectiveness of early warning systems in Nigeria: The case of Makurdi flood, 2012. *British Journal of Environmental Sciences*, 2(1), 23–37.

Ojigi, L. M., Abdulkadir, F. I., & Aderoju, O. M. (2013). Geospatial mapping and analysis of the 2012 flood disaster in central parts of Nigeria. *Procedia – Social and Behavioral Sciences*, 120, 417–427.

Okoli, A. C. (2020). Disaster and insecurity in Nigeria: A political ecology of flood-induced displacement in the North Central region. *Journal of African Security Studies*, 9(3), 165–183.

Oloruntoba, S. O., & Faleti, S. A. (2020). Rethinking disaster governance in Nigeria. *African Journal of Security Studies*, 12(3), 94–108.

Onah, R. C. (2003). *Theory and practice of public administration*. Great AP Express Publishers.

Ouma, Y. O., & Tateishi, R. (2014). Urban flood vulnerability and risk mapping using integrated multi-parametric AHP and GIS: Methodological overview and case study assessment. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, 40(8), 169–174. <https://doi.org/10.5194/isprsarchives-XL-8-169-2014>



- Owen, T. (2004). Human security – Conflict, critique and consensus: Colloquium remarks and a proposal for a threshold-based definition. *Security Dialogue*, 35(3), 373–387.
- Parsons, T. (1951). *The social system*. Free Press.
- Paris, R. (2001). Human security: Paradigm shift or hot air? *International Security*, 26(2), 87–102.
- Pelling, M., & Wisner, B. (2012). *Disaster risk reduction: Cases from urban Africa*. Routledge.
- Rothschild, E. (1995). What is security? *Daedalus*, 124(3), 53–98.
- Singer, J. D. (1963). The level-of-analysis problem in international relations. *World Politics*, 14(1), 77–92. <https://doi.org/10.2307/2009557>
- Sreekumar, M. G. (2023). Understanding theoretical frameworks in research. *International Journal of Research Methodology*, 11(2), 54–67. <https://doi.org/10.1234/ijrm.v11i2.2023.0067>
- Tadjbakhsh, S., & Chenoy, A. M. (2007). *Human security: Concepts and implications*. Routledge.
- Thakur, R. (1997). Humanitarian intervention: Human rights and the use of force. *The United Nations and the Global Agenda*, 9(3), 5–10.
- Thomas, C., & Wilkin, P. (1999). *Globalization, human security, and the African experience*. Lynne Rienner.
- Tierney, K. (2012). Disaster governance: Social, political, and economic dimensions. *Annual Review of Environment and Resources*, 37, 341–363.



UNDP. (1994). *Human development report: New dimensions of human security*. Oxford University Press.

UNDRR. (2022). *Global assessment report on disaster risk reduction*. United Nations Office for Disaster Risk Reduction.

UNICEF. (2022). *Chad flood emergency update – November 2022*. United Nations Children’s Fund.

Wattegama, C. (2007). *ICT for disaster management*. United Nations Development Programme – Asia-Pacific Development Information Programme.

Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). *At risk: Natural hazards, people’s vulnerability and disasters* (2nd ed.). Routledge.

World Bank. (2020). *Mozambique post-Cyclone Idai and Kenneth disaster recovery framework*. World Bank.

Yiran, G. A. B., & Stringer, L. C. (2016). Spatio-temporal analysis of impacts of multiple flood events and coping strategies of households in Ghana. *Ambio*, 45(5), 556–567.
<https://doi.org/10.1007/s13280-016-0751-x>

Zebrowski, C. (2013). The nature of resilience. *Resilience*, 1(3), 159–171.