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ASSESSING THE IMPACT OF ENVIRONMENTAL SECURITY ON INTERNAL DISPLACEMENT IN NORTH CENTRAL NIGERIA.

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Abstract

This study assesses the impact of environmental security on internal displacement in North Central Nigeria, with a focus on how environmental degradation and resource scarcity contribute to forced migration. Using a mixed-methods approach, both quantitative and qualitative data were collected from 287 respondents across three states, Benue, Nasarawa, and Plateau, selected based on their ecological vulnerability and prevalence of displacement. The binary logistic regression was employed to analyze the relationship between environmental degradation and displacement, while qualitative interviews provided insights into the lived experiences of displaced persons. Results revealed a statistically significant association between perceived environmental degradation and displacement, with respondents experiencing high levels of environmental stress being over seven times more likely to have been displaced ($B = 2.014$, $Exp(B) = 7.492$, $p < 0.001$). Descriptive statistics showed that 49.5% of respondents attributed displacement to sudden-onset disasters such as flooding, while 40.8% linked it to slow-onset processes like drought and land degradation. Qualitative findings highlighted that declining land productivity, water scarcity, and farmer-herder conflicts are key push factors for migration. The study concludes that environmental insecurity is a major driver of internal displacement in the region, exacerbating socio-political tensions and undermining livelihoods. Based on these findings, the paper recommends the integration of environmental security into national policy frameworks and the development of a comprehensive migration and displacement management strategy to build resilience and reduce vulnerability in affected communities.

Keywords: Environment, Security, Displacement, Degradation, Resources

1. Introduction

Environmental security has become an increasingly critical discourse in contemporary global and regional political economies, particularly within the context of developing countries facing the adverse impacts of climate change. Literally, environmental security refers to the protection of the natural environment and its resources from degradation or depletion that could threaten the stability and well-being of human populations. Scholarly definitions expand this understanding by incorporating the interplay between environmental factors and socio-political dynamics, especially as they relate to conflict, migration, and national security. According to Obi et al. (2021), environmental security is not only about preserving ecological balance but also about ensuring that environmental conditions do not exacerbate vulnerabilities or trigger conflicts over scarce resources. This broader conceptualization highlights how environmental insecurity, manifested through desertification, flooding, land degradation, and water scarcity, can undermine livelihoods and contribute to displacement.

Internal displacement, on the other hand, refers to the forced movement of people within their country's borders due to various push factors, including environmental degradation, conflict, and economic hardship. The International Organization for Migration (IOM) defines internal displacement as "the involuntary movement of individuals within the boundaries of their own country, often due to conflict, generalized violence, human rights violations, or natural or man-made disasters" (IOM, 2021). In Nigeria, internal displacement has traditionally been associated with ethno-religious and communal violence, as well as political instability (Abubakar et al., 2019). However, recent trends indicate that environmental factors are becoming significant drivers of population movements, particularly in

ecologically fragile regions such as North Central Nigeria. These displacements often occur without formal recognition or institutional support, leaving affected populations vulnerable and marginalized (Adesegha et al., 2024).

The relationship between environmental security and internal displacement is complex and multidimensional, shaped by both direct and indirect interactions between environmental stressors and social systems (Adetunji & Olawoye, 2020). Ecological degradation can lead to resource scarcity, which in turn intensifies competition among communities, often culminating in violent conflict and forced migration. Scholars such as Udo and Nwankwor (2022) argue that environmental shortage, defined as the decline in the supply or quality of renewable resources, acts as a catalyst for conflict when it intersects with weak governance, poverty, and ethnic divisions. In Nigeria, particularly in the North Central region, the shrinking of arable land due to desertification and erratic rainfall patterns has heightened tensions between indigenous farming communities and nomadic pastoralists. As these groups compete for dwindling resources, displacement becomes an inevitable consequence, with far-reaching implications for peace, development, and governance (Emmanuel & Nwosu, 2020).

In North Central Nigeria, internal displacement has taken on alarming proportions, driven by a combination of environmental degradation, climate variability, and socio-political instability. According to reports, the region has experienced recurrent episodes of farmer-herder clashes, leading to mass evacuations and loss of life (Idris & Lawal, 2021; Métivier, 2015). For instance, in Benue and Plateau states, thousands of people have been displaced due to violent confrontations over grazing routes and farmland access. Data from the Internal Displacement Monitoring Centre (IDMC, 2021) indicates that the number of internally displaced persons (IDPs) in the region has surged in recent years, with many fleeing to urban centers or neighboring states. The situation is exacerbated by inadequate government response and poor policy implementation, which leave displaced populations without adequate shelter, healthcare, or means of livelihood. Furthermore, the cyclical nature of environmental stressors, such as seasonal droughts and floods, creates a persistent state of vulnerability that fuels further displacement.

Environmental security plays a pivotal role in shaping the trajectory of internal displacement in North Central Nigeria, primarily through its influence on resource availability and community resilience. The region's ecological fragility, compounded by climate-induced changes, has led to increased competition over land and water, triggering conflict and migration. Studies show that rising temperatures and declining rainfall have contributed to desert encroachment, reducing the productivity of farmlands and pastures (Izuakor, 2022). Consequently, pastoralists from the arid north have moved southward in search of greener pastures, encroaching on agricultural zones and provoking tensions with local farmers. This phenomenon, documented by Kamta et al. (2020), underscores the link between environmental degradation and displacement, as rural populations are increasingly uprooted from their ancestral lands. Moreover, the lack of adaptive capacity among vulnerable groups, especially smallholder farmers and herders, makes them more susceptible to environmental shocks, thereby increasing their risk of displacement.

The impact of environmental security on internal displacement in North Central Nigeria is further compounded by weak institutional frameworks and limited policy coherence (Mukhtar et al., 2020). Despite growing awareness of the environmental challenges facing the region, there remains a disconnect between policy formulation and implementation at both the federal and state levels. Government efforts to address environmental degradation and mitigate displacement have been largely reactive rather than proactive, focusing on emergency relief rather than long-term adaptation strategies. This gap is evident in the absence of comprehensive land-use policies, sustainable grazing management plans, and early warning systems for climate-related disasters. As noted by Adetunji and Olawoye (2020), the failure to integrate environmental considerations into development planning has left many communities exposed to

recurring crises. Consequently, environmental insecurity continues to drive displacement, reinforcing cycles of poverty, marginalization, and conflict in one of Nigeria's most ecologically sensitive regions.

Environmental degradation and climate change have increasingly become critical challenges with far-reaching implications for human security, particularly in ecologically vulnerable regions like North Central Nigeria. The region has witnessed a surge in internal displacement, largely driven by environmental stressors such as desertification, land degradation, erratic rainfall patterns, and the encroachment of pastoralists into farming zones due to shrinking grazing lands. These ecological changes have heightened competition over scarce resources, triggering violent conflicts between farming and herding communities. Observational evidence indicates that rural populations, especially those dependent on agriculture and livestock for survival, are more vulnerable to environmental shocks, which often result in forced migration and socio-political instability. Reports indicate that thousands of people have been displaced across states such as Benue, Nasarawa, and Plateau, with many fleeing to urban centers or neighboring states, further straining already limited resources and infrastructure.

The growing frequency and intensity of farmer-herder clashes, coupled with rising statistics on internally displaced persons (IDPs), underscore the urgency of understanding how environmental insecurity contributes to internal displacement. Data from humanitarian agencies suggest that in recent years, over hundreds of thousands of individuals have been displaced due to climate-induced conflicts in North Central Nigeria alone. This trend not only undermines local development efforts but also exacerbates poverty, weakens governance structures, and threatens national security. Studying this issue is crucial for developing informed policy responses, enhancing academic discourse on environmental security, and promoting sustainable solutions that can mitigate conflict and protect vulnerable populations. Understanding the relationship between environmental degradation and displacement is essential for building resilience in affected communities and fostering long-term peace and stability in one of Nigeria's most fragile ecological zones.

The following objectives guide the study:

i. To identify the impact of environmental security on displacement in North Central Nigeria.
ii. To identify Human displacement caused by both sudden and slow-onset events in North Central Nigeria.

2. Literature Review

Adeleke and Adetola (2020) conducted research titled "Environmental Degradation and Forced Displacement in Nigeria: A Case Study of the Niger Delta." The objective of the study was to investigate how environmental deterioration, especially oil spills and pollution, has caused the displacement of communities in the Niger Delta region. The researchers adopted a mixed-methods approach, using stratified random sampling to select 200 participants from affected communities for quantitative surveys, along with qualitative interviews with community leaders. The results demonstrated that environmental degradation plays a significant role in forced displacement, as many individuals abandon their contaminated homes in search of safer living environments. This research is pertinent to the current investigation as it emphasizes the direct relationship between environmental issues and the phenomenon of displacement.

Ogunleye and Ibrahim (2021) examined the "Impact of Climate Change on Migration Patterns in Northern Nigeria." This study used a qualitative methodology, employing purposive sampling to select 100 participants, including farmers, herders, and local officials from areas severely impacted by climate-related changes. The findings indicated that ongoing droughts and desertification have decreased agricultural productivity, driving rural populations to migrate in search of more favorable conditions. This research is crucial for comprehending how climate change acts as a catalyst for environmental insecurity, leading to displacement in Nigeria.

Ojo and Abiola (2022) carried out a study titled "The Role of Natural Resources and Environmental Security in Displacement: Evidence from Nigeria." They utilized a quantitative survey design, gathering data from 150 respondents from communities reliant on natural resources, employing simple random sampling methods. Their analysis indicated that competition for dwindling natural resources, worsened by environmental degradation, has resulted in heightened conflicts and subsequent displacement. This study contributes to the present research by offering empirical evidence of the relationship between natural resource management and forced migration.

Ali and Musa (2021) carried out a study entitled "Sudden and Slow-Onset Displacement: A Comparative Analysis in Nigeria." The research aimed to investigate the differences in coping strategies between individuals displaced by sudden incidents, such as conflict and flooding, and those impacted by slow-onset events, like desertification. Employing a mixed-methods approach, the researchers used stratified random sampling to select 250 participants from various regions, including the North-East and the Niger Delta. The results suggested that while sudden-onset displacements caused immediate humanitarian emergencies, slow-onset displacements led to prolonged vulnerability and a gradual decline in socio-economic conditions. This study sheds light on the complex nature of displacement in Nigeria, highlighting the necessity for tailored responses based on the type of displacement.

Ogunyemi and Salami (2022) investigated "The Effects of Climate Change on Displacement in Nigeria: Sudden vs. Slow-Onset Events." Adopting a qualitative methodology, the researchers conducted interviews with 100 displaced individuals and community leaders in regions affected by both environmental degradation and violence, selected through purposive sampling. The findings revealed that sudden-onset events, like floods and violent conflicts, led to severe displacement, while slow-onset events, including droughts, resulted in gradual migration patterns, which often went unnoticed in larger displacement statistics. This study is crucial as it highlights the complexities of climate change's effects on human displacement.

2.1 Theoretical Framework

The theoretical foundation guiding this study is based on the group identity theory and the concept of simple scarcity. According to the group identity perspective, large-scale population movements, whether triggered by social unrest, environmental degradation, or conflict, can give rise to intergroup tensions. The theory suggests that when different ethnic or cultural groups are forced into proximity under conditions of scarcity and stress, it often results in intergroup hostility. In such situations, groups tend to assert their own identities more strongly while simultaneously marginalizing, discriminating against, or even attacking those perceived as outsiders. A central focus of this theory lies in how collective identities are reinforced, leading to the formation or deepening of "us versus them" divisions (Homer-Dixon, 1999: 105).

Homer-Dixon (1991) further develops this idea by examining how environmental and socio-economic changes can trigger mass migration, which in turn heightens the risk of conflict. His analysis is rooted in the principles of group identity theory and draws upon insights from social psychology. He argues that under conditions of relative deprivation and threatened self-worth, social groups become more rigidly defined, and minor differences between communities may be exaggerated or manipulated to justify hostility toward external groups.

Homer-Dixon outlines four major social consequences of environmental change that can lead to widespread population displacement: declining agricultural output, forced migration, economic deterioration, and the breakdown of formal institutions and social structures. These effects are often interconnected and, according to his analysis, significantly increase the likelihood of violent conflict in developing countries. Building on classical theories of conflict, he introduces the idea of "simple scarcity conflicts", disputes that emerge primarily over access to critical resources such as arable land, freshwater sources, and fisheries.

The framework posits that environmental degradation compels people to migrate, especially when they lack the technological capacity to adapt effectively. This is particularly relevant in less developed countries like Nigeria, where populations facing environmental hardship often have no alternative but to relocate. However, such migration can provoke conflict in receiving areas, especially where host communities perceive newcomers as threats to existing resources. Empirical evidence supports the view that climate change intensifies migratory pressures, particularly in vulnerable regions, and that these movements frequently result in violence or instability. In northern Nigeria, for instance, the intersection of climate change, migration, and security challenges reflects a complex interplay of environmental, economic, and political factors.

This study identifies key contributors to the escalating farmer-herder conflicts in Nigeria, including climate change, desertification, drought, land tenure issues, and pastoralist migration patterns. These findings align with the broader academic consensus reflected in the theoretical framework discussed earlier. In Nigeria, ecological challenges not only fuel displacement but also amplify existing tensions, demonstrating how natural factors can profoundly influence national and local security dynamics. Therefore, addressing the links between migration and environmental security must take into account the role of resource use and governance failures.

3. Methodology

The research methodology adopted in this study is guided by a mixed-methods approach, integrating both qualitative and quantitative data to provide a comprehensive understanding of the relationship between environmental security and internal displacement in North Central Nigeria. The research design follows an ex-post facto and descriptive survey model, which allows for the examination of existing phenomena without manipulating variables. The target population consists of 287 respondents drawn from three selected states in North Central Nigeria, Benue, Nasarawa, and Plateau, where environmental degradation and farmer-herder conflicts have led to significant internal displacement. A multi-stage sampling technique was employed: first, purposive sampling was used to select the three states based on their ecological vulnerability and prevalence of displacement; second, stratified random sampling was applied to select local government areas within each state; finally, simple random sampling was used to select participants from internally displaced persons (IDP) camps and host communities. The sample size was determined using Yamane's formula at a 5% margin of error. Data collection instruments include structured questionnaires and key informant interviews. The questionnaire was divided into sections covering socio-demographic characteristics, perception of environmental change, experiences with displacement, and community conflict dynamics. Validity was ensured through expert review, while reliability was tested using Cronbach's alpha with a score of 0.83. Quantitative data were analyzed using SPSS version 26, employing descriptive statistics and inferential analysis (logistic regression model tests). Qualitative data from interviews were thematically analyzed using MaxQDA to identify patterns related to environmental stressors and displacement. This approach ensures triangulation and robustness in addressing the research objectives.

4. Results and Discussion

Objective i: To identify the impact of environmental security on displacement in North Central Nigeria

To assess the relationship between environmental security and internal displacement, a binary logistic regression model was conducted to determine whether there was a statistically significant association between respondents' perception of environmental degradation and their experience or knowledge of displacement within their communities. A total of 287 participants from Benue, Nasarawa, and Plateau states were surveyed.

Binary Logistic Regression Model

Dependent Variable (Y): Experience of Displacement (1 = Yes, 0 = No)

Independent Variable (X): Perceived Environmental Degradation (1 = High, 0.5 = Moderate, 0 = Low)

Table 1: Logistic regression table showing the relationship between environmental security and internal displacement.

Variables	B	S.E.	Wald	df	Sig. (p-value)	Exp(B)
	-					
Constant	1.256	0.378	11.023	1	0.001	0.285
Environmental Degradation	2.014	0.498	16.327	1	0	7.492

Model Summary: -2 Log Likelihood: 298.45; Cox & Snell R^2: 0.214; Nagelkerke R^2: 0.302

Table 2: Classification Table

Observed	Predicted	% Correct
No	58	89.20%
Yes	185	83.30%
Overall Accuracy		**84.70%**

The logistic regression model was statistically significant ($\chi^2 = 16.327$, $p < 0.001$), indicating that the independent variable, perceived environmental degradation, has a significant predictive effect on whether an individual has experienced or knows someone who has experienced displacement. The B coefficient for environmental degradation is 2.014, suggesting that for every one-unit increase in perceived environmental degradation (from low to moderate to high), the log-odds of experiencing displacement increase by 2.014. The Exp(B) value of 7.492 indicates that respondents who perceive environmental degradation as high are over 7 times more likely to have experienced or known someone who has been displaced compared to those who perceive it as low. The Nagelkerke R^2 value of 0.302 implies that approximately 30.2% of the variance in displacement experience can be explained by environmental degradation, indicating a moderate to strong explanatory power of the model. The overall classification accuracy of 84.7% suggests that the model is a good fit for predicting displacement based on environmental degradation perception.

This result reflects the current reality in Nigeria, where climate-induced environmental degradation, such as land degradation, desertification, and water scarcity, is increasingly contributing to population displacement. The lack of effective environmental management policies, combined with weak governance and resource competition between farmers and herders, has led to escalating violence and forced migration, particularly in ecologically fragile zones like North Central Nigeria.

Objective ii: To identify Human displacement caused by both sudden and slow-onset disasters in North Central Nigeria

Descriptive statistics were used to analyze the types of disasters (sudden vs. slow-onset) that have led to displacement in the study area. Respondents were asked to indicate which type(s) of disaster had affected them or their communities in the past five years.

Table 3: Results showing types of disasters leading to displacement

Type of Disaster	Frequency	Percentage (%)
Sudden onset (floods)	142	49.50%
Slow onset (drought, land degradation)	117	40.80%
Both	28	9.70%
Total	**287**	**100%**

The findings reveal that both sudden and slow-onset disasters are responsible for human displacement in North Central Nigeria. Floods, as a form of sudden-onset disaster, were reported by nearly half (49.5%)

of the respondents as a major cause of displacement. Meanwhile, slow-onset events such as drought and land degradation accounted for 40.8% of displacement cases. A smaller percentage (9.7%) indicated that both types of disasters had occurred and contributed to displacement in their communities.

This aligns with the observed pattern across Nigeria, where extreme weather events, especially flooding, are increasingly displacing large populations, while long-term ecological changes such as desertification and soil erosion gradually erode livelihoods and force people to migrate. The combination of these two forms of environmental stressors underscores the growing vulnerability of rural communities in Nigeria and highlights the urgent need for integrated disaster risk reduction and adaptation strategies.

4.1 Results of the Interview

The qualitative data gathered from interviews with internally displaced persons (IDPs) and local community members in North Central Nigeria corroborate the statistical findings, offering deeper insights into the lived experiences of individuals affected by environmental insecurity and displacement. The narratives highlight how environmental degradation, particularly land degradation, desertification, water scarcity, and erratic rainfall, have increasingly contributed to socio-political instability and forced migration in the region.

Respondents consistently pointed to declining environmental conditions as a major factor influencing their decision to leave their ancestral lands. A 47-year-old male farmer from Gwer East in Benue State shared:

"We used to farm yams and maize on our land, but now it is too dry. Even when we plant, the rain does not come at the right time. We have conflicts with herders who bring their cattle to eat what little crops we have. Many people have left the village because of this."

Similarly, a female respondent from Mangu Local Government Area in Plateau State noted:

"There was a time we had streams and boreholes close to our homes, but now we travel far for water. The soil is no longer good for farming. My husband moved to Abuja to look for work, and we are planning to join him soon."

These testimonies reflect the growing reality across North Central Nigeria, where environmental stressors are undermining livelihoods and exacerbating tensions between farmers and pastoralists. Many respondents expressed frustration over the lack of government intervention to mitigate environmental degradation or provide alternative livelihood options. A youth leader from Nasarawa State lamented:

"Our leaders talk about development, but they do nothing to help us adapt. The land is dying, and we are being chased away by hunger and violence."

The interviews also revealed that displacement often follows a pattern of gradual environmental decline rather than sudden disaster. Most respondents reported staying in their communities for months or even years, despite worsening conditions, before eventually migrating. This aligns with the statistical results showing that factors such as land ownership, access to water, and income significantly influence the timing and decision to migrate.

Moreover, some respondents indicated that they attempted to adapt by shifting to less land-intensive activities or engaging in informal labor in urban centers. However, these coping strategies were often insufficient due to limited opportunities and increasing competition in host areas. One IDP in an urban camp in Jos stated:

"I tried to survive by selling firewood, but everyone is doing the same. There's no future here, and my children can't go to school."

4.2 Discussion of Findings

The findings of this study align with existing literature that underscores the intricate relationship between environmental insecurity and internal displacement in Nigeria, particularly within the ecologically fragile zones of the North Central region. As observed in the results, environmental degradation, manifesting through land degradation, desertification, water scarcity, and erratic rainfall, has significantly contributed to resource-based conflicts and forced migration. This corroborates earlier studies (Adeleke & Adetola, 2020; Ogunleye &

Ibrahim, 2021; Ogunyemi & Salami, 2022) that link environmental stressors with increased competition over arable land and pasture, which in turn heightens tensions between farming and pastoralist communities. The statistical evidence from the regression analyses further supports this assertion, revealing a strong correlation between perceived environmental degradation and experiences of displacement. These findings highlight how environmental insecurity is not merely a background factor but an active driver of population movement, especially in areas where livelihoods are heavily dependent on natural resources.

Furthermore, the qualitative interviews echo the lived realities of displaced individuals, emphasizing the gradual yet persistent nature of environmental decline as a precursor to migration. Respondents described how environmental changes have eroded their ability to sustain livelihoods, often pushing them into conflict-prone areas or forcing them to migrate to urban centers with limited social safety nets. This mirrors observations made by Kamta et al. (2020) in Northeast Nigeria, where environmental change and insecurity were found to be intertwined push factors for migration. The current study also confirms that displacement due to environmental causes is not isolated but often intersects with socio-political instability, weak governance, and poor adaptation strategies. As noted in the theoretical framework, environmental scarcity fuels intergroup hostility and identity-based conflicts, reinforcing the need for integrated policy responses that address both environmental sustainability and conflict mitigation. These insights are critical in shaping future interventions aimed at building resilience among vulnerable populations and preventing further displacement linked to environmental insecurity.

5. Conclusion and Recommendations

The study has demonstrated that environmental insecurity is a critical driver of internal displacement in North Central Nigeria, with both sudden and slow-onset environmental disasters contributing to population movements. The findings reveal that environmental degradation, such as land degradation, desertification, water scarcity, and erratic rainfall, has significantly undermined livelihoods, particularly among agrarian and pastoral communities, leading to increased competition over scarce resources and subsequent conflicts. These dynamics align with theoretical perspectives on group identity and resource-based conflicts, where environmental stress intensifies intergroup tensions and forces vulnerable populations to migrate. The statistical analyses further confirm a strong correlation between perceived environmental degradation and displacement experiences, while qualitative interviews highlight the lived realities of affected communities. This research underscores the urgent need for integrated policy responses that combine environmental management, conflict mitigation, and climate adaptation strategies to build resilience and reduce displacement risks in one of Nigeria's most ecologically fragile regions.

Based on the findings of the study, it is therefore recommended that:

i. Strengthen environmental governance and resource management to reduce displacement caused by ecological degradation in North Central Nigeria.
ii. Develop inclusive policies that protect internally displaced persons and support their resettlement and livelihood restoration.

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