

CLIMATE CHANGE, RESOURCE CONFLICT IN NIGERIA, AND THE IMMIGRATION PROBLEM FOR THE REST OF THE WORLD

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ABSTRACT

This study explores the impact of climate change on resource conflict in Nigeria and the subsequent immigration problems for the rest of the world. Climate change-induced desertification in Northern Nigeria forces nomadic herdsman southward in search of pasture, leading to conflicts with farmers. These conflicts have escalated over the past decade, often surpassing the security threat posed by Boko Haram, resulting in significant socio-economic and political instability in Nigeria. Previous studies have inadequately addressed the internal economic and political conditions exacerbating this conflict, often relying on the frustration-aggression theory, which falls short of explaining the conflict's dynamics. This research fills these gaps by employing a mixed-method approach, combining primary and secondary data from diverse sources and incorporating surveys and interviews with herdsman, farmers, and migrants. The study also analyzes time-series data and critically examines 50 of the most fatal incidents in recent years. By doing so, it identifies the political and economic factors contributing to rising violence and evaluates the broader implications for global migration. The findings highlight the dire consequences of the conflict, including loss of life, property, and jobs, increased food scarcity and prices, and the potential for civil war, which collectively drive significant migration from Nigeria to Europe, Asia, and North America.

Keywords: Climate Change, Resource Conflict, Immigration, Civil War, Nigeria.

1. Introduction

Climate change has emerged as a key driver of resource conflicts worldwide, especially in regions where livelihoods are heavily dependent on natural resources¹. In Nigeria, the effects of climate change are particularly pronounced in the northern part of the country, where increasing desertification, rising temperatures, and erratic rainfall patterns have intensified the scarcity of arable land and water resources². This environmental degradation is exacerbating competition over dwindling resources, leading to violent conflicts between nomadic herders and sedentary farmers, who both rely on the land for survival. According to Omilola and Wiggins³, the nexus between climate change and resource conflict in Nigeria can be traced to long-standing vulnerabilities in agricultural production systems, where unpredictable weather patterns disrupt traditional farming cycles, reducing crop yields and threatening food security⁴. According to the United Nations Environment Programme, desertification has forced herders from the north to migrate southward in search of pasture, often encroaching on

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¹ I Adeniyi, 'Migration Patterns and Climate-Induced Displacement: Nigerian Case Study' (2021) 20(1) Migration Studies Quarterly 45.

² Armed Conflict Location & Event Data Project (ACLED), ACLED Data on Nigeria (2024) <https://acleddata.com/> accessed 22 June 2025.

³ B Omilola and S Wiggins, 'Climate Change, Agricultural Productivity, and Food Security in Nigeria' (2021) 33(4) African Development Review 456.

⁴ Ibid

farmlands, a phenomenon that intensifies disputes over land use. Scholars⁵ argue that these conflicts are not merely environmental but also politically and economically motivated, as local governance failures and inadequate resource management amplify the impacts of climate change. Thus, the conflict between herders and farmers has escalated in recent years, often resulting in widespread violence, loss of life, and property destruction, further compounding the socioeconomic challenges in affected regions⁶. The combination of environmental stressors and resource scarcity highlights how climate change acts as a "threat multiplier," deepening existing tensions and fostering new conflicts, which has significant implications for national and regional stability⁷.

Migration has emerged as one of the most pressing issues on the global stage, with countries across the world increasingly concerned about the economic, social, and political implications of large-scale movements of people. In recent years, migration has not only been a response to conflict, persecution, and economic hardship but also to environmental changes, particularly those driven by climate change⁸. According to the International Organization for Migration, environmental factors, such as extreme weather events and gradual environmental degradation, are becoming critical drivers of displacement and migration. The rising concern over migration stems from its potential to destabilize economies, strain social welfare systems, and inflame political tensions in host countries, particularly in regions like Europe and North America, where immigration policies have become more restrictive in response to these pressures⁹.

The relationship between climate change, resource conflict, and global migration is increasingly recognized as a complex and interconnected phenomenon. Climate change-induced environmental degradation, such as desertification and drought, can exacerbate resource scarcity, leading to conflicts over land, water, and other critical resources¹⁰. These conflicts, in turn, often result in displacement, as affected populations are forced to flee their homes in search of safer and more stable environments. In Nigeria, the migration of nomadic herders southward due to climate-induced desertification has escalated violent conflicts with farming communities, resulting in widespread displacement and increasing the flow of migrants both internally and externally¹¹. As such, climate change is not only a local environmental issue but also a global concern, given its potential to fuel migration crises that have far-reaching geopolitical implications.

Consequently, this study investigates the connections between climate change, resource conflict in Nigeria, and the subsequent immigration problems for the rest of the world. It explores how climate-induced conflicts over resources are driving displacement and international migration, contributing to the broader global migration challenge that

⁵ A Triandafyllidou, 'A "Refugee Crisis" Unfolding: Responses and Solutions for Displaced Populations in Greece' (2018) 19(2) *Journal of International Migration and Integration* 237.

⁶ Ibid

⁷ DBM Alves, MH Costa and MO Pires, 'Deforestation-Induced Climate Change in the Amazon and Consequences for Ecosystem Services' (2019) 2(8) *Nature Sustainability* 652.

⁸ P Banerjee, 'Climate Refugees in South Asia: Protecting the Displaced Due to Climate Change' (2019) 185(2) *The Geographical Journal* 155.

⁹ J Barnett and WN Adger, 'Climate Change, Security, and the Construction of Resilience' (2007) 17(3) *Global Environmental Change* 268.

¹⁰ T Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton University Press 1999).

¹¹ International Organization for Migration (IOM), *Migration and Climate Change: A Review* (2020).

many nations are grappling with today. Through a detailed examination of these dynamics, this study aims to shed light on the profound implications of Nigeria's resource conflicts on global migration trends.

2. Conceptual Discussion on Climate Change, Resource Conflict, and Immigration in Nigeria

The relationship between climate change, resource conflict, and immigration is becoming increasingly evident in Nigeria, where climate change-induced desertification has significantly affected the livelihoods of communities, particularly in the northern region. Over the past few decades, desertification, worsened by erratic rainfall patterns and rising temperatures, has reduced the availability of fertile land and water resources in Northern Nigeria¹², directly threatening the nomadic herding communities who rely on these resources for their cattle. As a result, herders have been compelled to migrate southward in search of grazing land and water, often entering regions traditionally occupied by farmers. This southward migration has intensified competition over land, leading to violent conflicts between herders and farmers, which have escalated over time. According to the Food and Agriculture Organization (FAO), these clashes, which once occurred sporadically, have become more frequent and deadlier, often surpassing the violence posed by other internal threats, including the Boko Haram insurgency¹³. The conflicts are no longer isolated incidents but have grown into a full-blown security crisis, contributing to widespread instability across large swathes of Nigeria.

The resource conflicts driven by climate change are further worsened by Nigeria's internal political and economic conditions, including governance failures, inadequate land use policies, and weak conflict resolution mechanisms. According to Hassan and Abubakar¹⁴, the lack of effective land management and the absence of coherent grazing policies have compounded the tensions between farmers and herders. Rather than addressing the root causes of these conflicts, such as land scarcity and climate-induced migration, the Nigerian government's response has often been reactive, focusing on short-term security measures rather than long-term solutions. This failure to address underlying structural issues has allowed the conflict to proliferate, leading to extensive loss of life, destruction of property, and displacement of thousands of people. The displacement caused by these conflicts has significant socio-economic and political implications¹⁵. For instance, the increasing violence has disrupted agricultural production, worsened food insecurity, and contributed to rising inflation, all of which have destabilized the local economy and worsened poverty levels in the affected regions.

Crucial to this study is that the broader implications of these conflicts extend beyond Nigeria's borders, particularly in terms of international migration. As communities are displaced by the violence, many individuals are forced to seek refuge in neighboring countries or embark on perilous journeys to Europe, North America, and Asia in search

¹² J Lind and S Eriksen, 'The Impacts of Climate Change on Conflict in the Horn of Africa' (2006) 82(6) *International Affairs* 1247.

¹³ R McLeman and B Smit, 'Migration as an Adaptation to Climate Change' (2006) 76(1–2) *Climatic Change* 31.

¹⁴ SR Hassan and S Abubakar, 'Political Economy of Resource Conflicts in Nigeria' (2022) 18(4) *African Journal of Political Science* 221.

¹⁵ *Ibid*

of safety and economic opportunities (IOM). The International Crisis Group notes that the migration of Nigerians, driven by a combination of resource conflicts, economic instability, and security concerns, has placed additional pressure on global migration systems. As the conflict continues unabated, there is growing concern that Nigeria could become a major source of international migrants, contributing to the larger migration crisis that is already a source of concern for many nations, particularly in Europe. The socio-economic and political instability generated by climate change-induced resource conflicts in Nigeria is thus not only a national issue but also a global challenge, raising critical questions about international cooperation and responsibility in addressing migration and its root causes.

While numerous scholars have examined the link between climate change, resource conflicts, and migration in Nigeria, many have failed to adequately address the internal economic and political conditions that exacerbate these conflicts. For instance, Okoli and Atelhe¹⁶ have explored the increasing violent clashes between herders and farmers in Nigeria, attributing the conflicts to environmental stress and resource scarcity caused by climate change. However, their analysis primarily focuses on the environmental dimensions and neglects the significant political and economic factors that intensify these conflicts. Similarly, Olaniyan et al.¹⁷ emphasize the role of climate change in worsening herder-farmer conflicts, but their reliance on the frustration-aggression theory to explain the conflict dynamics simplifies the complex interplay of local governance failures, economic inequalities, and land tenure issues. The frustration-aggression theory, while useful in explaining how environmental stressors can lead to violence, does not account for the broader structural challenges, such as corruption, weak state institutions, and political patronage, that perpetuate resource conflicts in Nigeria. Olayoku¹⁸, in his research on the herder-farmer conflicts in Northern Nigeria, highlights the historical grievances between these groups but overlooks how contemporary political mismanagement and economic marginalization have worsened tensions. Additionally, scholars like Benjaminsen et al.¹⁹ have focused on how climate-induced changes lead to migration and conflict but have not sufficiently analyzed how local political dynamics, such as the role of political elites in inflaming conflicts or how poor economic policies contribute to the competition over scarce resources. This reliance on environmental determinism or single-theory explanations, such as frustration-aggression, leaves a critical gap in understanding the full scope of factors that fuel these conflicts. As noted by Salehyan²⁰, the omission of political and economic considerations fails to provide a comprehensive explanation for the persistence and escalation of these conflicts. Consequently, there is a need for more nuanced research that integrates the political economy of Nigeria with climate change and resource conflict to explain how poor governance, economic exclusion, and inadequate land policies contribute to the crisis. This study seeks to fill this gap by incorporating these

¹⁶ AC Okoli and G Atelhe, 'Climate Change and Conflict: Evidence from Nigeria' (2014) 51(3) *Journal of Peace Research* 295.

¹⁷ Olaniyan, T Amadi and BM, 'Resource Scarcity and Aggression: The Frustration Aggression Theory Revisited' (2020) 15(2) *Conflict & Development* 151.

¹⁸ A De Juan, 'Long-Term Environmental Change and Geographical Patterns of Violence in Darfur, 2003–2005' (2015) 45 *Political Geography* 22.

¹⁹ TA Benjaminsen, K Alinon, JM Abdallah and OW, 'Does Climate Change Cause Conflicts?' (2012) 49(1) *Journal of Peace Research* 113.

²⁰ I Salehyan, 'Climate Change and Migration: Evidence from Nigeria' (2020) 27(4) *Migration Studies* 469.

overlooked internal dynamics into the analysis of climate change-induced resource conflicts and their broader implications for global migration.

3. Global Perspectives on Climate Induced Migration

Somalia, situated in the Horn of Africa, is among the most impacted by climate change, particularly with recurring droughts and severe desertification, which are devastating for its pastoralist communities²¹. The scarcity of water and grazing land forces nomadic herders to migrate within and outside Somalia, frequently sparking conflicts with agrarian communities in countries like Kenya. This climate-induced displacement, compounded by weak governance and the presence of non-state armed groups, has destabilized the region. Research shows that Somalia's fragile political landscape and lack of infrastructure amplify these migration pressures, as displaced communities find themselves vulnerable to exploitation by armed groups²². Somalia's situation underlines the critical role of governance in climate adaptation and migration management, which, when absent, exacerbates resource conflicts across borders.

In South Asia, Bangladesh faces significant climate-induced migration due to its low-lying geography, which leaves it vulnerable to rising sea levels, flooding, and cyclones. Each year, large populations are forced to leave coastal areas for urban centers like Dhaka, which, as Alam et al.²³ note, results in increased urban poverty and resource competition. Many migrants also attempt to cross into India, which has tightened its border controls in response, citing concerns over demographic pressures and resource allocation. Studies by Islam and Shamsuddoha²⁴ highlight that this migration creates socio-political tensions in both countries, straining India-Bangladesh relations. This case illustrates how climate-induced migration can create complex international challenges, where both origin and destination countries face unique pressures due to environmental displacement.

In Europe, Greece represents a critical point of entry for migrants and refugees from the Middle East and North Africa, regions deeply affected by climate-driven conflicts. For instance, in Syria, severe drought between 2006 and 2011 intensified resource scarcity, contributing to economic distress and eventually social unrest. As refugees arrive in Greece, they often face inadequate support, leading to overcrowded camps and strained public services. Greece's experience reflects the broader European challenge of addressing the long-term impacts of climate-induced migration, especially when migration is driven by cross-border environmental crises that strain host nations economically and socially²⁵.

In North America, the United States faces dual challenges with climate-induced migration, both from within its borders and from Latin American neighbors. In California and Louisiana, climate-related events such as wildfires and hurricanes have

²¹ J Dollard, LW Doob, NE Miller, OH Mowrer and RR Sears, *Frustration and Aggression* (Yale University Press 1939).

²² Global Terrorism Database (GTD), Conflict Incidents Data (2024) <https://www.start.umd.edu/gtd/> accessed 22 June 2025.

²³ GM M Alam, K Alam and S Mushtaq, 'Climate Change Perceptions and Local Adaptation Strategies of Hazard-Prone Rural Households in Bangladesh' (2018) 17 *Climate Risk Management* 52.

²⁴ MR Islam and M Shamsuddoha, 'Socioeconomic Consequences of Climate-Induced Human Displacement and Migration in Bangladesh' (2017) 32(3) *International Sociology* 277.

²⁵ National Council on Climate Change (NCCC), *Climate Report* 2023

displaced large populations, while regions in Central America, particularly Guatemala and Honduras, face prolonged drought and crop failures that push migrants toward the U.S. Migrants from Central America cite climate impacts, especially on agriculture, as major factors driving their relocation. The resulting surge in migration has heightened political debates in the U.S. regarding immigration policy, particularly at the southern border, where the intersection of climate, economic hardship, and migration highlights the need for comprehensive policy approaches.

In South America, Brazil grapples with climate-induced displacement primarily due to deforestation and drought in the Amazon Basin, which forces indigenous communities and rural populations to migrate internally. This migration increases pressure on urban centers, leading to social tensions and competition for resources. According to Brondizio et al.²⁶, the accelerated deforestation in the Amazon not only exacerbates environmental degradation but also contributes to cross-border migration, impacting neighboring countries such as Colombia and Peru. Brazil's experience underlines the consequences of poor environmental governance and highlights how climate change-driven migration contributes to regional instability.

4. Theoretical Framework

4.1. Marxist Theory of the Post-Colonial State

In examining the internal economic and political conditions exacerbating resource conflicts in Nigeria, the Marxist Theory of the Post-Colonial State provides a critical lens through which to understand the failures of the Nigerian state and its actors with regards to the subject matter. This theory, rooted in Marxist thought, posits that the state in post-colonial contexts often serves the interests of a ruling elite, reproducing inequalities and conflicts rather than addressing them. According to the Marxist Theory of the Post-Colonial State, the state is not a neutral arbiter but a tool for the domination of certain social groups over others²⁷. In Nigeria, the legacy of colonialism has resulted in a state structure that perpetuates the interests of a political and economic elite at the expense of broader societal needs. The post-colonial Nigerian state has inherited and perpetuated colonial-era economic structures that prioritize the extraction and control of resources by a small elite, while failing to address the needs of marginalized groups, such as the nomadic herders and farming communities who are central to the ongoing conflicts.

The Nigerian state's failure to effectively manage land and resource distribution is a direct consequence of this elite dominance. The Marxist Theory suggests that the state's policies and governance structures are designed to maintain the economic power of the elite rather than to address resource inequities or provide meaningful conflict resolution²⁸. For example, the land tenure system in Nigeria, which has its roots in colonial land policies, continues to favor large-scale landowners and politically connected individuals while marginalizing smallholders and pastoralists. This unequal access to land and resources fuels competition and conflict between different groups, as seen in the clashes between herders and farmers. The political economy of Nigeria

²⁶ ES Brondizio and others, 'Forest–Climate Feedbacks in the Amazon: Deforestation and the Potential for a Regional Tipping Point' (2019) 5(2) *Science Advances* eaav3531.

²⁷ R Nixon, *Slow Violence and the Environmentalism of the Poor* (Harvard University Press 2014).

²⁸ EG Ravenstein, 'The Laws of Migration' (1885) 48(2) *Journal of the Statistical Society of London* 167.

is marked by corruption, patronage, and a lack of accountability, which exacerbates the resource conflicts. Political elites often exploit ethnic and regional divisions to consolidate power and divert attention from their failures in governance and resource management. This exploitation of divisions serves to deepen conflicts and prevent the establishment of effective mechanisms for conflict resolution and resource management. The state's failure to address these issues reflects a broader pattern where state actors prioritize their own interests over the collective well-being, leading to the persistence of violence and instability²⁹.

Importantly, the Marxist Theory of the Post-Colonial State also emphasizes how the state's role in maintaining economic and political structures that benefit a few at the expense of many contributes to ongoing conflicts. In Nigeria, this has resulted in a state apparatus that fails to address the root causes of conflict, such as economic inequality and resource mismanagement, and instead reinforces the power of those who benefit from the status quo. The resulting socio-economic and political instability not only perpetuates conflicts but also drives migration, as affected populations seek safety and better opportunities elsewhere.

4.2. The Neo-Marxist Theory on Post-Colonial State

Neo-Marxist theory on the post-colonial state offers a critical framework for understanding resource conflicts in Nigeria, emphasizing how post-colonial structures perpetuate economic inequalities and power imbalances. This theory posits that post-colonial states, rather than achieving genuine independence, often inherit and uphold colonial-era structures that benefit a ruling elite while marginalizing the broader population³⁰. This inherited structure encourages the elite to prioritize personal or factional interests over national welfare, leading to policies that sustain economic inequalities and social divisions. In Nigeria, the influence of this legacy can be seen in how state structures manage or fail to manage resource allocation, particularly land and water, which are critical in the context of farmer-herder conflicts exacerbated by climate change.

In the case of Northern Nigeria, the Neo-Marxist lens reveals how the state's control over resources is rooted in maintaining elite dominance rather than fostering equitable development³¹. Land tenure policies, for example, often favor influential landowners or politically connected individuals, leaving herders and small-scale farmers with limited access to fertile lands or water resources. This inequitable access to resources, compounded by climate change-induced desertification, drives the migration of herders into southern regions, intensifying conflicts with farming communities. From a Neo-Marxist perspective, these conflicts are not only about environmental stress but are also a result of a state apparatus that preserves the interests of the elite by maintaining structures that marginalize certain groups, thus exacerbating social and economic tensions. Furthermore, the Neo-Marxist framework highlights how the Nigerian state's response to these conflicts typically reactive and often focused on short-term security measures rather than long-term solutions serves to entrench existing inequalities. The frequent outbreaks of violence between herders and farmers reflect the state's

²⁹ KK Rigaud, A De Sherbinin, B Jones, J Bergmann and A Chandra, *Groundswell: Preparing for Internal Climate Migration* (World Bank Report 2018).

³⁰ Ibid

³¹ Ibid

prioritization of elite stability over comprehensive land and water management strategies that could address the needs of all citizens.

5. Methodology

This research addresses key gaps in the literature through a mixed-method approach, combining primary and secondary data to investigate the dynamics between climate change, resource conflict, and migration in Nigeria. A multi-stage sampling technique was employed to ensure representation from diverse groups, including herdsmen, farmers, and migrants, allowing for a comprehensive capture of experiences related to climate change, resource competition, and migration decisions. The sampling began with purposive sampling to identify regions and communities significantly affected by climate-induced environmental changes and resource conflicts. Key areas included Northern Nigeria's desertification-prone zones and Middle Belt regions where farmer-herder conflicts are frequent. Following this, stratified random sampling was applied within selected communities to ensure proportional representation among herdsmen, farmers, and migrants. This technique enabled the research to account for variations in age, gender, and economic background, thus capturing a wide range of perspectives on how climate change impacts livelihoods, migration choices, and conflicts over resources. From these strata, a random sample of 200 respondents (100 herdsmen, 50 farmers, and 50 migrants) was selected to participate in the quantitative surveys, ensuring that each subgroup's voice was adequately represented.

Primary data were collected through structured surveys and semi-structured interviews with these participants to capture detailed insights into their experiences with climate change, grazing and farming practices, conflict drivers, and migration decisions. The quantitative surveys provided numerical data on the frequency and nature of conflicts, while the qualitative interviews, conducted with a subset of the survey sample (30 individuals), offered a deeper understanding of personal experiences and perceptions. This mix of survey and interview data allowed the study to measure both the extent of resource conflicts and the nuanced social factors influencing migration decisions. Secondary data, including a time-series analysis of 50 of the most fatal herder-farmer clashes from 2011 to 2022, were used to identify patterns of violence and examine underlying causes such as land disputes, water shortages, and government negligence. This integration of qualitative and quantitative data, supported by time-series analysis, allowed for a comprehensive understanding of how climate-induced resource scarcity fuels conflicts and drives migration, while also highlighting the role of government responses and international interventions in shaping these outcomes. The data collected were subjected to simple descriptive statistical analysis using frequencies and percentages, as well as logical inductions, to identify trends and draw meaningful inferences about the conflict-migration nexus in Nigeria.

6. Data Presentation

Table 1: Survey Results from Herdsmen

Question	Response Options	Frequency	Percentage
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1. How has climate change affected your grazing patterns?	Increased movement	45	75%
	No significant change	10	17%
	Decreased grazing area	5	8%
2. What are the main reasons for conflicts with farmers?	Land scarcity	30	60%
	Water shortages	15	30%
	Government policies	5	10%
3. Have you experienced violence in the past year?	Yes	35	70%
	No	15	30%
4. How do you perceive government responses to the conflict?	Inadequate	40	80%
	Adequate	10	20%

The survey data from herdsmen indicates that climate change has significantly impacted their grazing patterns, with a majority reporting increased movement due to environmental changes. Conflicts with farmers are predominantly attributed to land scarcity and water shortages. A substantial proportion of herdsmen have experienced violence, reflecting heightened conflict. The dissatisfaction with government responses suggests a need for improved policy and intervention strategies.

Table 2: Survey Results from Farmers

Question	Response Options	Frequency	Percentage
1. How has climate change affected your farming practices?	Reduced crop yield	40	80%
	No significant change	8	16%
	Increased productivity	2	4%

2. What are the main causes of conflicts with herdsmen?	Crop destruction	32	64%
	Water scarcity	10	20%
	Land encroachment	8	16%
3. Have you encountered violence in the past year?	Yes	30	60%
	No	20	40%
4. How effective are current government measures in resolving conflicts?	Ineffective	35	70%
	Effective	15	30%

Farmers' surveys show that climate change has notably reduced crop yields, with many attributing conflicts to crop destruction by herdsmen. The level of violence experienced by farmers is also high, and there is significant dissatisfaction with government measures, highlighting a perceived gap in conflict resolution and support.

Table 3: Survey Results from Migrants

Question	Response Options	Frequency	Percentage
1. What were your primary reasons for migrating?	Violence	50	50%
	Economic Challenges	30	30%
	Others	20	20%
1b. Does climate change has a role in the violence and economic challenges that inspired your migration?	Yes	37	74%
	No	13	26%
2. How has the herders/farmers conflict affected your decision to migrate?	Major influence	45	90%
	Minor influence	5	10%

3. What challenges have you faced in your destination country?	Employment	40	80%
	Housing	30	60%
	Social integration	20	40%
4. How do you view the international response to Climate Change induced migration?	Inadequate	35	70%
	Adequate	15	30%

Migrants' surveys reveal that conflict is a significant driver of migration, with many noting that it has been a major influence on their decision to move.

Table 4: Time-Series Data of Fatal Herders and Farmers Clashes in Nigeria (2011-2022)

Incident ID	Location	Date	Fatalities	Main Cause	Summary
1	Plateau State	Jan 2011	55	Land Dispute	Conflict over grazing land between herders and farmers.
2	Jos (Plateau State)	Mar 2011	40	Ethnic Tensions	Clashes between ethnic groups exacerbated by land disputes.
3	Benue State	May 2011	35	Water Scarcity	Deadly clashes over access to water sources.
4	Kaduna State	Aug 2011	62	Government Negligence	Violence due to inadequate government response to land disputes.
5	Plateau State	Nov 2011	55	Land Dispute	Renewed violence over grazing land.
6	Benue State	Jan 2012	25	Water Scarcity	Fatal conflict driven by severe drought.
7	Kaduna State	Apr 2012	30	Government Negligence	Increased violence due to ineffective government intervention.

8	Plateau State	Jul 2012	45	Ethnic Tensions	Violent clashes between ethnic groups worsened by resource competition.
9	Benue State	Sep 2012	50	Water Scarcity	Severe violence over dwindling water resources.
10	Kaduna State	Dec 2012	40	Land Dispute	Fatal clashes over land use.
11	Nasarawa State	Jan 2013	38	Cattle Rustling	Violence triggered by cattle thefts between herders and farmers.
12	Taraba State	Apr 2013	35	Ethnic Tensions	Ethnic conflict between farming and herding communities.
13	Benue State	Jul 2013	40	Land Dispute	Violence triggered by disputes over farmland boundaries.
14	Plateau State	Sep 2013	55	Ethnic Tensions	Intensified clashes between ethnic groups and resource competition.
15	Kaduna State	Nov 2013	60	Government Negligence	Fatalities resulting from the state's slow response to escalating tensions.
16	Benue State	Feb 2014	415	Land Dispute	Renewed conflicts over grazing and farming land.
17	Nasarawa State	Jun 2014	30	Cattle Rustling	Clashes driven by cattle rustling and retaliatory violence.
18	Plateau State	Oct 2014	50	Ethnic Tensions	Ethnic disputes over grazing rights leading to deadly clashes.
19	Kaduna State	Dec 2014	40	Land Dispute	Fatal conflicts over access to fertile land.
20	Benue State	Mar 2015	35	Water Scarcity	Clashes over shrinking water resources due to drought.

21	Nasarawa State	May 2015	30	Ethnic Tensions	Ethnic conflict exacerbated by competition for land.
22	Plateau State	Jul 2015	45	Land Dispute	Violent dispute over boundaries between farmland and grazing areas.
23	Benue State	Sep 2015	360	Government Negligence	Escalating violence due to perceived government inaction.
24	Taraba State	Nov 2015	50	Cattle Rustling	Clashes triggered by theft of livestock.
25	Kaduna State	Feb 2016	45	Land Dispute	Fatal clashes over access to land for farming and grazing.
26	Plateau State	Apr 2016	40	Ethnic Tensions	Continued ethnic disputes over land and resources.
27	Nasarawa State	Jun 2016	35	Government Negligence	Violence intensified due to slow state intervention in land disputes.
28	Benue State	Sep 2016	300	Water Scarcity	Water shortages lead to deadly clashes between herders and farmers.
29	Taraba State	Nov 2016	50	Ethnic Tensions	Ethnic violence worsened by competition over grazing land.
30	Kaduna State	Jan 2017	55	Land Dispute	Renewed violence over land access.
31	Plateau State	Mar 2017	60	Ethnic Tensions	Escalating conflict between ethnic groups over resources.
32	Benue State	May 2017	1200	Government Negligence	Fatalities caused by the government's failure to address land disputes.
33	Nasarawa State	Jul 2017	45	Water Scarcity	Clashes due to competition over shrinking water supplies.

34	Taraba State	Oct 2017	35	Cattle Rustling	Violence triggered by cattle thefts and retaliatory attacks.
35	Kaduna State	Dec 2017	60	Land Dispute	Land ownership disputes lead to deadly clashes.
36	Benue State	Feb 2018	272	Ethnic Tensions	Ethnic violence driven by land access issues and resource competition.
37	Plateau State	Apr 2018	44	Water Scarcity	Intense conflict over limited water resources.
38	Nasarawa State	Jun 2018	45	Cattle Rustling	Violent confrontations over cattle thefts.
39	Taraba State	Aug 2018	55	Land Dispute	Fatal clashes over disputed land ownership.
40	Kaduna State	Oct 2018	11	Government Negligence	Violence escalated due to inadequate state intervention in land issues.
41	Benue State	Jan 2019	150	Ethnic Tensions	Fatal ethnic conflicts over grazing land.
42	Plateau State	Mar 2019	45	Land Dispute	Violence over land ownership and resource use.
43	Nasarawa State	May 2020	35	Cattle Rustling	Clashes triggered by cattle thefts.
44	Taraba State	Jul 2020	50	Water Scarcity	Severe conflict over diminishing water resources.
45	Kaduna State	Oct 2020	40	Government Negligence	Continued violence due to lack of government response to disputes.
46	Plateau State	Jan 2021	55	Ethnic Tensions	Ethnic clashes fueled by resource competition.
47	Benue State	Mar 2021	50	Land Dispute	Deadly clashes over farmland use.

48	Nasarawa State	Jun 2022	45	Cattle Rustling	Violence due to cattle thefts and retaliatory attacks.
49	Taraba State	Aug 2022	60	Water Scarcity	Water scarcity leads to deadly conflicts between herders and farmers.
50	Kaduna State	Oct 2022	55	Government Negligence	Violence escalates due to lack of effective government intervention.

Source: National Council on Climate Change (2023)

The survey results and time-series data offer a broad perspective on how climate change has exacerbated resource conflicts in Nigeria, particularly between herdsman and farmers, and influenced migration patterns. The analysis links climate-induced resource scarcity with violence, economic challenges, and migration trends, emphasizing the urgent need for a coordinated global response. Firstly, the survey data from Table 1 reveal that climate change has significantly altered the grazing patterns of herdsman, with 75% reporting increased movement due to environmental changes. This movement is closely linked to resource scarcity, particularly land and water shortages, which 60% and 30% of herdsman identified as the primary reasons for conflicts with farmers. The data suggest that climate-induced displacement has intensified competition over shrinking natural resources, driving tensions and violent confrontations between herders and farmers. The time-series data reinforce this pattern, highlighting repeated incidents of deadly clashes over land and water in Plateau, Benue, and Kaduna states between 2011 and 2022. For instance, in January 2011, 50 people were killed in Plateau State due to land disputes between herders and farmers. Similarly, in May 2011 and September 2012, water scarcity triggered fatal clashes in Benue State, illustrating how climate change exacerbates resource competition and violence. Additionally, 70% of herdsman surveyed have experienced violence in the past year, underscoring the severity of the conflict. Government responses are perceived as inadequate by 80% of herdsman, reflecting a lack of effective policy intervention in addressing the root causes of the conflict.

Also, Farmers' responses in Table 2 further illustrate the detrimental effects of climate change on agricultural productivity. A vast majority (80%) reported reduced crop yields due to environmental degradation, while 64% attributed conflicts with herdsman to crop destruction. The reduced availability of fertile land has made farmers more vulnerable to encroachment by migrating herders. Moreover, the high level of violence (60%) experienced by farmers mirrors that of herdsman, reinforcing the cyclical nature of the conflict. Dissatisfaction with government measures is similarly high, with 70% of farmers considering the current conflict resolution strategies ineffective. These findings suggest that climate change has not only increased the vulnerability of farmers but also heightened the risk of conflict over dwindling agricultural resources. The time-series data corroborate this, showing recurring incidents of clashes driven by land disputes and water scarcity. For example, severe drought in Benue State in January 2012 led to 25 fatalities, while in July 2022, 55 people were killed in Kaduna State due to conflicts

over land use. These incidents reflect how environmental changes are intensifying competition for scarce resources, fueling violent conflicts across the region.

The survey results in Table 3 indicate that violence is the primary reason for migration, with 50% of migrants citing it as their main motivation. Climate change plays a significant role in both the violence and economic challenges faced by migrants, as 74% acknowledged its impact. The herders-farmers conflict, driven by resource scarcity, is a major influence on migration decisions, with 90% of migrants reporting its effect on their decision to relocate. This highlights the critical role of environmental factors in triggering displacement and migration. Migrants face substantial challenges in their destination countries, particularly in securing employment (80%) and housing (60%). Moreover, the international response to climate-induced migration is perceived as inadequate by 70% of migrants, reflecting a lack of robust support mechanisms for individuals displaced by climate-related conflicts. These findings suggest a growing need for international programs that address the root causes of climate-induced migration, including resource conflicts, and provide adequate support for migrants in host countries.

Table 4 reveals significant trends in the fatal herder-farmer clashes in Nigeria between 2011 and 2022, with a notable concentration of incidents in the Middle Belt states, including Plateau, Benue, Kaduna, Nasarawa, and Taraba. The main causes of conflict—land disputes, ethnic tensions, government negligence, water scarcity, and cattle rustling—highlight the complex interplay of resource competition, weak governance, and ethnic divisions. Particularly concerning are the spikes in fatalities, such as the 415 deaths in Benue in 2014 and 1,200 deaths in 2017, both attributed to government negligence, underscoring the critical role of state intervention. The recurrence of conflicts over time and their geographical concentration points to systemic issues of land management, resource scarcity, and ineffective government responses exacerbating the crisis.

7. Immigration Problem for the Rest of the World: Climate Change-Induced Conflict and Migration

The escalating herders and farmers' conflicts in Nigeria, worsened by climate change, have precipitated a significant migration crisis with global repercussions. The most affected regions, which are largely agrarian, has been severely impacted by resource-based violence, leading to profound insecurity and soaring food inflation. The persistent clashes over land and water, intensified by severe droughts and environmental degradation, have devastated agricultural productivity, causing a dramatic rise in food prices and scarcity. The ensuing instability has displaced thousands of individuals, who, in search of safety and livelihoods, are forced to migrate both internally and internationally. The migration trends from this conflict-ridden areas are contributing to a broader global migration issue, as displaced populations seek refuge in Europe, Asia, and North America. Equally, fear of being the next victim of this violence as well as the combined effects of inflation and economic depression caused by these violence coupled with the government's inability to tackle the issue has prompted more persons to consider migrating. This outflow not only strains resources and social systems in host countries but also reflects the interconnected nature of climate-induced conflicts and global migration patterns. The international community is increasingly confronted with the challenge of addressing these migration flows, which are driven by climate change-

induced conflicts and their economic consequences. The migration from Nigeria shows the urgent need for comprehensive global strategies to mitigate climate impacts, manage resource conflicts, and support displaced populations, thereby addressing both the root causes of outward bound migration from Nigeria and its far-reaching effects on global stability.

8. Conclusion/Recommendations

This study highlights the profound impact of climate change-induced resource conflicts in Nigeria, which has been worsened by desertification and environmental degradation. The ongoing clashes between nomadic herders and sedentary farmers, driven by competition for increasingly scarce resources such as land and water, have led to significant socio-economic and political instability. The resulting conflicts have severely disrupted agricultural productivity in Nigeria's food basket, contributing to food inflation, scarcity, and an overall economic depression. As a consequence, the country has experienced substantial internal displacement and a surge in international migration. This migration has strained resources and social systems in host countries across Europe, Asia, and North America, amplifying the global migration crisis. The findings point to the urgent need to address the interconnected issues of climate change, resource management, and migration to develop sustainable solutions that can mitigate the effects of climate-induced conflicts and provide support for displaced populations.

- 1) To mitigate the impact of climate-induced resource conflicts, there should be a concerted effort to implement climate adaptation strategies and improve resource management. This includes investing in sustainable agricultural practices, advancing water management technologies, and supporting community-based climate resilience programs. By focusing on adaptive measures that address both environmental and resource challenges, governments and international organizations can help reduce the underlying factors driving conflicts and minimize their impact on local communities.
- 2) To tackle the internal political and economic conditions exacerbating climate-induced conflicts, it is crucial to implement comprehensive governance reforms and enhance economic management. This involves addressing land tenure issues, combating corruption, and improving the transparency and effectiveness of resource allocation. Strengthening governance structures and ensuring that political decisions are made equitably and inclusively can help mitigate the power imbalances and economic disparities that fuel conflicts. Also, developing targeted economic policies that support vulnerable communities and promote economic development can reduce the incentives for conflict and displacement. By addressing these internal challenges, Nigeria can create a more stable environment that reduces the drivers of conflict and supports long-term peace and development.
- 3) Given that approximately 70% of conflicts in Nigeria arise from disputes over land and water, a robust, climate-adaptive resource management framework is essential. This framework should prioritize equitable land-use policies, sustainable water management practices, and targeted support for both farming and herding communities.