



RESEARCH ARTICLE

CLIMATE-INDUCED PRESSURES AND THE DYNAMICS OF HERDERS-FARMERS CONFLICT IN NIGERIA: EVIDENCE FROM EHA-AMUFU IN ISI-UZO, ENUGU STATE

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ABSTRACT

Climate change has increasingly exacerbated herder–farmer conflicts in Eha-Amufu, Isi-Uzo Local Government Area (LGA), Nigeria, threatening food security, livelihoods, and social cohesion. Erratic rainfall, prolonged droughts, and seasonal flooding have intensified competition over scarce farmland and water resources, fueling violent encounters between herders and farmers. This study examined (1) the extent to which climate change influences the frequency and intensity of herder–farmer conflicts, (2) its impact on food security, and (3) the effectiveness of government responses in safeguarding lives and property in climate-induced conflicts. A descriptive survey design was adopted, and data were collected from 50 farmers through structured questionnaires validated by experts and tested for reliability (Cronbach’s alpha = 0.82). The study was anchored on the Eco-Violence Theory, which explains that environmental scarcity driven by climate stress generates competition over resources, often escalating into violent conflict. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to analyze the data. Findings revealed that climate variability significantly increases the frequency and intensity of conflicts, primarily through rainfall irregularities, droughts, and land encroachment. These conflicts negatively affect food security by reducing crop yields, livestock productivity, household incomes, and local trade. Government interventions, such as regulated grazing routes, conflict mediation, and awareness campaigns, were found to be moderately effective but constrained by poor implementation and limited community participation. The study recommends stricter enforcement of grazing and land-use policies, stronger climate adaptation programs, expanded community-based conflict resolution, and intensified awareness campaigns on sustainable resource management. These measures are crucial for reducing climate-induced conflicts and enhancing the resilience, food security, and livelihoods of communities in Eha-Amufu and Isi-Uzo.

Keywords: Herders, farmers, conflict, climate induced pressures, security.

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Received: 7/1/2026; **Revised:** 2/3/2026; **Accepted:** 21/3/2026; **Published:** 28/3/2026



1.0. INTRODUCTION

Nigeria has witnessed a disturbing escalation in herder–farmer violence, particularly across rural agrarian communities over the last decade. What were once seasonal encounters over grazing routes have transformed into persistent and deadly conflicts, driven in large part by climate-induced pressures on land and water resources. Rising temperatures, erratic rainfall, prolonged droughts, advancing desertification, and declining pasturelands in northern Nigeria have forced herders farther south in search of viable grazing areas. This climate-driven mobility has intensified competition over farmlands in fragile communities such as Eha-Amufu in Isi-Uzo Local Government Area, where repeated attacks, displacement, destruction of livelihoods, and loss of life have eroded the area's longstanding agrarian peace.

Despite policy responses, including the National Livestock Transformation Plan and various state-level anti-open-grazing laws governments continue to struggle with poor implementation, weak coordination, and inadequate early-warning systems. Consequently, local communities remain trapped between ecological stress, governance failures, and worsening insecurity. Yet, while the violence in Eha-Amufu is often narrated through ethnic or religious lenses, emerging evidence suggests the conflict is fundamentally rooted in shrinking ecological resources and climate variability.

Although scholars have begun to explore the climate–conflict nexus in West Africa, significant empirical and geographical gaps remain. Ibrahim-Olesin et al. (2021) highlight the basic linkages between climate change and herder–farmer clashes but provide no place-specific analysis of how these dynamics unfold within particular communities. Okunade and Kohon (2023) similarly examine conflicts in Plateau and Nasarawa States, but their findings do not extend to southeastern Nigeria, where the conflict assumes different social and environmental characteristics. Other studies such as Olaseeni (2021) on legal implications, Ogunbode et al. (2023) on general conflict impacts, and Akanwa et al. (2023) on climate-induced threats to food security offer broad national analyses but lack empirical grounding in specific vulnerable communities. Likewise, Nadiruzzaman et al. (2022) underscore the importance of conflict-sensitive climate adaptation, yet their conclusions remain global and not contextualized in Nigeria's southeastern region. Works by Eshiemogie et al. (2023), Ibileye (2023), Tari (2021), and Mustapha (2022) further illustrate the tendency of existing scholarship to prioritize national, legal, media, or North-Central perspectives, leaving the dynamics in Eha-Amufu largely unexplored.

These gaps reveal a clear absence of localized empirical research that explains how climate change aggravates herder–farmer conflicts in specific communities like Eha-Amufu, where environmental degradation, livelihood collapse, and weak state responses interact to produce chronic insecurity. The absence of such community-level analysis limits the development of targeted policy interventions and obscures the unique socio-ecological pressures shaping conflict trajectories in southeastern Nigeria.

Therefore, this study responds directly to these gaps by investigating the climate–conflict relationship in Eha-Amufu, focusing on how climate variability intensifies resource competition, shapes conflict patterns, and undermines community safety. The main aim of this study is to investigate how climate-induced pressures shape the dynamics of herders–farmers conflict in Eha-Amufu, Isi-Uzo LGA. And the specific objectives includes; to examine the extent to which climate change influences the frequency and intensity of herders–farmers conflicts in Eha-Amufu, Isi-Uzo LGA, assess the impact



of climate change on food security in Eha-Amufu, Isi-Uzo LGA and to evaluate the effectiveness of government responses in safeguarding lives and property in climate-related herders–farmers conflicts in Eha-Amufu, Isi-Uzo LGA.

2.0. LITERATURE REVIEW THEORETICAL FRAMEWORK

2.1. LITERATURE REVIEW

The Frequency and Intensity of Herders-Farmers Conflicts

Efobi, Adejumo & Kim (2025), examined the causal connection between climate change, pastoralist migration, and violent conflict. The authors conducted a survey-experiment with 550 respondents in a conflict-prone area of Nigeria, prompting participants to imagine scenarios in which herders are perceived to be highly vulnerable to climate change. Their objective was to assess how such perceptions shape local support for policies that accommodate migrating herders. Grounded in theories of vulnerability and group-threat, the study finds that increasing perceived climate vulnerability of herders significantly boosts willingness among local farmers to back integrative policy measures even when respondents have personally suffered losses or distrust institutions. While this robust design offers insight into public opinion, its limitation lies in its reliance on *perceptions* rather than direct measures of conflict frequency or intensity. There is no direct tracking of violent incidents; instead, Efobi et al. infer risk dynamics through attitudinal change. This gap underscores the need for studies that link climate indicators (e.g., rainfall, temperature anomalies) with actual conflict event logs in specific localities precisely the kind of empirical case study your research could provide.

Etim & Asian (2023) investigate the broader phenomenon of herder–farmer crisis in Nigeria over the period 1999–2023, emphasizing how climate change aggravates competition over land and water. Their descriptive, qualitative design draws on interviews with actors in conflict zones to illuminate the lived experiences of dispossession and migration. The authors use Eco-Violence Theory and a “clash of civilization” framework to argue that climate variability is a *dynamic causal factor* that drives pastoralists to displace sedentary farmers, threatening Nigeria’s food security. Notably, this study captures the social and cultural dimensions of the crisis, but because it is not focused on a single community or empirically tied to climatic data, it falls short of explaining how local climate trends (e.g., drought periods) precisely correspond to spikes in violence. This reinforces why localized, time-bound research (like in Isi-Uzo LGA) is critical to establish concrete climate–conflict linkages.

Egbule & Okonta (2024) also make an important empirical contribution in their study “How climate change induced land conflicts and food insecurity in ... herdsman–farmers crisis in Nigeria,” published in the *African Journal on Land Policy & Geospatial Sciences*. Their objective is to map how climate-induced land degradation (floods, drought, and desertification) stirs land disputes and ultimately jeopardizes food security. Using land policy analysis, spatial data, and qualitative interviews, they argue for early-warning systems and participatory land-use planning as means of mitigating conflict. Their use of geospatial lenses provides a tangible connection between environmental degradation and conflict hotspots. However, the study’s weakness is that it remains largely descriptive and prescriptive; it does not deploy econometric or conflict-event datasets. Your proposed research could build on this by combining climate trend data and conflict-event metrics in a longitudinal design for a specific LGA, offering more granular analysis.



Turning to governance solutions, Ogayi & Ediri (2023) analyze the role of resource governance in managing climate-driven herder–farmer conflict. Their work, based on policy analysis and theoretical modelling, leverages the *resource partitioning model* to suggest regulated access regimes for pasture and farmland. By doing so, they contend that equitable governance, not just prohibition of open grazing, will reduce conflict intensity in the face of climate stress. While their proposals are insightful, the absence of field validation means they remain hypothetical. There’s a clear demand for empirical research especially in conflict-affected rural zones to test whether these governance models are effective when implemented under climate pressure.

Obikaeze, Oduntan, Fajobi, Kayode & Eteng (2023) provide a nationally relevant empirical review in their article “Herders-Farmers Conflicts over Farmlands: Implications for Human and Food Security in Nigeria.” They draw on secondary data media reports, policy documents, NGO materials to illustrate how recurring land conflicts have severe implications for food production, displacement, and human security. Their framework relies on environmental/resource scarcity theory, highlighting how scarcity of grazing land translates directly into inter-group violence. The study’s limitation lies in its reliance on secondary sources, which may underrepresent unreported or localized conflict events, and it lacks linkage to specific climatic variables. This again shows the value of project-level research: you could gather conflict event data, analyze trends against climate variability, and provide empirical evidence on how scarcity plays out locally.

These studies collectively underscore a growing scholarly consensus that climate change matters for herder–farmer conflict in Nigeria. But none of them fully examine localized conflict dynamics (frequency, intensity) alongside detailed climate data in a specific community. This gap underscores the critical need for place-based, climate-conflict research such as your proposed study in Eha-Amufu and Isi-Uzo LGA that can unpack how climate stress, resource governance, and social systems converge to drive or mitigate violence at the micro level.

Climate change and food security in Eha-Amufu and Isi-Uzo

Alumona & Odoh (2022), in the study titled “*Effects of Climate Change on Agricultural Practices and Food Security in Nigeria*”, examine how climate variability— specifically erratic rainfall, rising temperatures, and extreme weather disrupts farming systems and undermines household food security. Their method involves combining national agricultural and climate datasets with interviews of farming households, grounded in *livelihood vulnerability theory*. The authors find that climate change significantly reduces crop yields, elevates food prices, and increases the vulnerability of subsistence farmers. Yet, the study’s main weakness is its broad national scope: without disaggregated data at the local level, it cannot capture unique vulnerabilities or adaptive capacities of individual LGAs. This gap underlines the importance of localized research in Eha-Amufu / Isi-Uzo, where micro-climatic conditions and adaptive responses may differ.

Abanigbe, Ngidi, Ojo, Oyedeji-Amusa, Orowole, Yusuf-Oshoala, Adebayo & Thobani (2024), in their article “*Adoption of Climate Change Adaptation Strategies and Household Food Security of Smallholder Poultry Farmers in Lagos and Ogun States*”, explore how poultry farmers adjust to climate risk and the effect on their food security. Through administration of questionnaires to 360 smallholder poultry farmers and FGDs, they model the data using an *endogenous switching probit model* (adaptation theory). They determine that strategies such as water ventilation, use of medicines



and vitamins, and traditional coping practices significantly improve household food security. However, their focus on southwestern Nigeria and on poultry farming limits the transferability of findings to rural, crop-based LGA settings like Isi-Uzo. Your proposed study could bridge that by measuring adaptation practices and food security among crop farmers under climate stress in your target LGA.

Ezekwe, Humphrey & Esther (2024), in “*Climate Change and Food Security in Nigeria: Implications for Staple Crop Production*”, assess how climate variables including CO₂ emissions, rainfall, temperature, and methane affect staple crop yields from 1990 to 2023. Using environmental economics and *resource scarcity theory*, they find that increasing average temperature is negatively associated with food production in the long run, though methane emissions show a positive correlation likely because agricultural activities both contribute to emissions and expand output. Their weakness is the use of aggregated national data that hides regional heterogeneity. This limitation underscores why a case study of Eha-Amufu / Isi-Uzo LGA would be valuable: it allows you to link climate trends with crop production and food security outcomes in a localized environment.

Alamu (2024), in “*Climate Change-Resilience Farming Model for Enhanced Food Security and Sustainable Development in Sub-Saharan Africa*”, develops a resilience model using systematic trend analysis of climate data and crop production reports across West Africa, including Nigeria. Drawing on *sustainability theory*, Alamu argues that climate-smart farming (e.g., soil conservation, adaptive cropping cycles) can significantly increase food security. The value of this study lies in its forward-looking, model-based solutions, but it is largely conceptual and lacks empirical, location-specific data. Hence, there is a strong need to test these resilience models in the field—especially in LGAs like Eha-Amufu / Isi-Uzo facing concrete climate pressures.

Although not strictly empirical, Musa, Maji & Ajogwu (2025) contribute important insight in “*Impact of Climate Change on Food Security in Nigeria: Is Terror Attack a Matter of Concern?*”, where they analyze time-series data (1990–2024) using ARDL and Vector Error Correction Models to examine how temperature anomalies, CO₂ emissions, and a terrorism index relate to the food production index. They find that temperature anomaly and greenhouse gas emissions significantly reduce food security, while terrorism also exerts a substantial negative effect. Their theoretical framework is rooted in *climate vulnerability theory* and *human security*. The limitation here is that their model does not account for localized adaptation strategies or micro-climatic variation. This again reinforces the need for a micro-study in Eha-Amufu / Isi-Uzo that links local climate variability, conflict, and food security.

These empirical works underscore that climate change is undermining food security in Nigeria, but most rely on national-level data or model-driven analysis. None offer fine-grained, localized empirical evidence on how climate variability affects food security in a specific rural LGA. A study in Eha-Amufu / Isi-Uzo can fill this gap by combining local climate data, household surveys on food security, and adaptive strategies among farmers. Such research will produce contextually grounded insights that can inform localized, climate-sensitive interventions and policy design

Government Responses and the Safety of Lives and Property in Climate-Induced Conflicts

Okpara & Onwuchekwa (2023), in the study titled “*Climate Change Laws: The Catholicon to the Farmer-Herder Crises in Nigeria*”, critically examined Nigerian legal frameworks, arguing that



existing laws particularly those under the National Livestock Transformation Programme and grazing legislation are inadequate to address the combined problem of climate change and farmer–herder violence. Using a legal-policy analysis approach, they draw on *legal institutionalism* to critique the gap between policy intent and on-the-ground enforcement. Their findings show that despite legal provisions designed to regulate pastoralism and protect farmland, enforcement is weak, and there is no meaningful integration of climate adaptation into conflict legislation. The major weakness is that they do not provide empirical data on how these legal provisions translate into actual protection of lives or property in conflict zones. This gap strongly supports the need for a localized empirical study: in Eha-Amufu / Isi-Uzo LGA, you can investigate whether local legal frameworks are effective in preventing violence and protecting people and property under climate stress.

Jeje, Sawa & Arigbede (2021), in the study titled “*Analysis of the Relationship between Climate Change and Patterns of Farmers’/Pastoralists’ Conflicts in Zamfara State, Nigeria*”, assessed how climate variability correlates with conflict patterns in Zamfara State. They surveyed 260 farmers and 67 pastoralists using semi-structured questionnaires and conducted key-informant interviews, grounding their work in *environmental scarcity theory*. Their results indicate that most respondents perceive high variability in rainfall and rising temperatures; many also report that conflicts involving arms peak during critical agricultural seasons like harvest and planting. The study argues that climate change significantly contributes to resource-related conflict. However, while they highlight implications for conflict, they do not deeply analyze how government security interventions respond to or mitigate these climate-driven tensions. For your study, this suggests a gap: how do local state or security actors respond in LGA-level conflicts when climate stress drives resource disputes?

Ogayi & Ediri (2025), in “*Mitigating Herder-Farmer Conflict Through Resource Governance in the Era of Climate Change*”, examined policy solutions in Nigeria through a secondary-data governance analysis, using the *resource partitioning model* to propose equitable governance regimes over shared resources. Their argument is that governments should regulate land and water access, not simply ban grazing, to reduce conflict, and they emphasize that climate resilience must underpin resource governance. Their key finding is that a governance model that partitions resources, supported by regulated grazing and climate adaptation, can enhance coexistence. But the work is theoretical: they do not test how such a model works in actual conflict hotspots or assess its impact on the safety of life or property. This underscores the need for empirical field research in areas like Eha-Amufu / Isi-Uzo to observe whether resource-partitioning approaches really reduce violence and protect people’s property under climate stress.

In their article “*Herders-Farmers Conflicts over Farmlands: Implications for Human and Food Security in Nigeria*”, Obikaeze, Oduntan, Fajobi, Kayode & Eteng (2023) use secondary data (NGO reports, government documents) and apply *environmental/resource scarcity theory* to explore conflict impacts. They document recurring violence, displacement, and destruction of property, noting that these undermine both human security and food security in farming communities. Their conclusion stresses that the Nigerian government needs to revisit land-access laws because current policies do not effectively protect farmers’ rights. A limitation is that they do not provide direct conflict-event data or analyze local government capacity to enforce protection. For your proposed research, this points to a need: measuring how effective state or local security interventions are in protecting lives and property in places experiencing climate-induced conflict.



Ioryue (2024) in “*Farmer-Herder Conflict and National Security in Nigeria: The Benue State in Perspective*”, investigates how the herder–farmer crisis affects national security, arguing that environmental pressures, population growth, and weak governance are central. Using interviews and document analysis, he frames his study within *environmental security and resource scarcity theory*, documenting how resource competition and climate stress exacerbate violence and insecurity. However, while he addresses security broadly, his focus remains at the state or national level, and he does not empirically assess local-level safety outcomes like property loss or government protection in specific communities. This reinforces why your LGA-focused study (Eha-Amufu / Isi-Uzo) is important: you can document whether and how local government responses actually secure lives and property in climate-stressed rural conflict zones, something broader national studies overlook.

While studies link climate variability to herder–farmer conflicts in Nigeria, most focus on national or regional levels, leaving localized empirical evidence scarce, particularly for Eha-Amufu and Isi-Uzo. Similarly, the direct impact of these conflicts on food security and livelihoods at the community level remains underexplored. Research on government interventions and protection of lives and property largely emphasizes policy frameworks without empirically assessing their effectiveness in local, climate-stressed contexts. Moreover, although theories like Eco-Violence and Resource Scarcity explain climate-conflict linkages, there is a lack of integrated studies connecting climate stress, conflict intensity, food security, and local governance within a single community. This study addresses these gaps by providing empirical, context-specific evidence on how climate change drives conflict, undermines food security, and challenges local governance in Eha-Amufu and Isi-Uzo LGA, informing both theory and practical interventions.

2.2. Theoretical Review: Eco-Violence Theory

Eco-Violence Theory, first articulated by Thomas Homer-Dixon in *Environment, Scarcity, and Violence*, links declines in renewable resources such as cropland and pasture to heightened violent conflict. Within the Nigerian context, Lenshie et al. (2020) adopt this framework to explain how desertification and migration trigger herder–farmer conflicts. The theory posits that environmental degradation (e.g., reduced rainfall, land loss) interacts with population pressures and livelihood insecurity to produce violent competition over dwindling resources. Ofieroher et al. (2021) empirically test the hypothesis that climate change drives conflict, interpreting scarcity as a precursor to competition, migration, and ultimately violence. Similarly, Efobi, Adejumo, and Kim (2025) demonstrate through experimental data that climate shocks induce resource stress, increasing intergroup violence between pastoralists and farmers. Collectively, these studies trace the intellectual lineage of Eco-Violence Theory as a framework for understanding climate-induced resource scarcity as a driver of agrarian conflict in Nigeria.

Eco-Violence Theory directly frames the relationship between climate change and herder–farmer conflict by conceptualizing conflict as a function of ecological scarcity exacerbated by environmental disruption. Lenshie et al. (2020) showed that desertification and land degradation reduce usable pasture, pushing Fulani herders into densely cultivated areas, creating conflict flashpoints. Ofieroher et al. (2021) find that erratic rainfall and reduced soil moisture drive both livelihood distress and competition, while Efobi, Adejumo, and Kim (2025) confirm that resource scarcity from climate variability significantly increases conflict propensity between different social groups. In Eha-Amufu,



similar conditions diminishing land and water resources are observable, making Eco-Violence Theory an appropriate explanatory lens for the study.

The theory's relevance lies in its ability to connect environmental causality with social consequences. Efobi et al. (2025) illustrate how climate shocks translate into behavioral conflict outcomes, while Lenshie et al. (2020) highlight how drought-induced mobility collapses traditional grazing systems and triggers disruption in mixed-use landscapes. Ofierohor et al. (2021) confirm the correlation between climate change and conflict incidence, noting that governance and mediation capacity can moderate outcomes. For this study, Eco-Violence Theory maps the causal pathway: climate change → resource scarcity → pastoralist migration → farmland encroachment → violent conflict. It also identifies intervention points such as grazing-route management and improved land-use governance, directly applicable to communities like Eha-Amufu.

Eco-Violence Theory assumes that environmental degradation causes scarcity, scarcity leads to group competition, and governance or institutional mediation is insufficient. Critics, however, argue that not all climate-affected regions experience violence. Lenshie et al. (2020) note that migration alone does not produce conflict; disputes arise where access to land is denied and social integration is weak. Efobi et al. (2025) emphasize socio-economic inequalities as key moderators, while Ofierohor et al. (2021) highlight the role of identity, local institutions, and adaptive mechanisms, such as grazing reserves or community mediation. Thus, applying Eco-Violence Theory in Eha-Amufu requires attention not only to ecological stress but also to social, institutional, and governance contexts.

Eco-Violence Theory provides the most suitable framework for analyzing how climate change contributes to herder-farmer conflict in Eha-Amufu, Isi-Uzo LGA. By linking environmental scarcity land degradation, drought, and reduced rainfall to violent competition over limited resources, the theory mirrors the lived reality of farmers facing encroachment from displaced herders. Unlike theories focusing solely on political, ethnic, or cultural tensions, Eco-Violence Theory situates conflict within ecological disruption, enabling a holistic understanding of how climate change intensifies livelihood insecurity and violence. This perspective also highlights practical solutions, including adaptive land governance and policy interventions, directly relevant to conflict mitigation in the study area.

3.0. METHODOLOGY

This study adopted a descriptive survey research design, which is deemed appropriate for examining the multidimensional implications of climate change on herders-farmers conflict in Eha-Amufu, Isi-Uzo Local Government Area. This design allows for the systematic collection and analysis of data from a cross-section of respondents within the study area. The study was conducted in Eha-Amufu, a rural community situated in Isi-Uzo Local Government Area of Enugu State, Nigeria. This area was selected as the focus due to its status as a flashpoint for recurrent herders-farmers conflicts, a trend that has intensified in recent years, allegedly due to the impacts of climate change. Eha-Amufu is predominantly an agrarian society, where farming and pastoralism are the primary economic activities.

A sample of 50 farmers was selected from the total population of 1,276 using a stratified random sampling technique. The stratification was based on farming type (e.g., arable, poultry, mixed farming) and location across various villages within Eha-Amufu and Isi-Uzo to ensure equitable



representation. This method was chosen to give every subgroup within the farmer population an equal chance of being included while ensuring that the sample captures diversity in terms of experiences with herders and the impact of climate change.

The primary instrument used for data collection was a self-structured questionnaire designed by the researcher in alignment with the research objectives, questions, and hypotheses. Data for this study were collected through direct administration of questionnaires by the researcher, assisted by a trained research aide and a well-respected elder from the community. This approach facilitated personal engagement with the respondents, allowing for clarification of questions where necessary and ensuring the accuracy of responses.

The data collected were cleaned, coded, and analyzed using descriptive and inferential statistical tools available in SPSS version 25. Descriptive statistics such as mean, frequency, and standard deviation were used to summarize demographic data and responses to research questions. Inferential statistics, particularly regression analysis and analysis of variance (ANOVA), were employed to test the hypotheses and establish relationships between climate change, conflict frequency, and economic impact. The results were interpreted in line with the formulated hypotheses, and conclusions were drawn based on the statistical significance of the findings at a 0.05 level of confidence.

To ascertain the reliability of the instrument, a pilot test was carried out using a sample of 10 farmers from Eha-Amufu, Isi-Uzo LGA who are not part of the respondents. The results obtained were subjected to Cronbach’s Alpha reliability test using SPSS (Statistical Package for the Social Sciences) version 25. The outcome revealed an overall reliability coefficient of 0.91, indicating that the instrument possesses a high degree of internal consistency.

4.0. PRESENTATION OF RESULTS

Demographic Information of Respondents

Table 1: Analysis of the Rate of Questionnaire Response

Variables	Frequency	Percentage (%)
Completed and returned	50	92.6
Not returned	3	5.6
Returned but Wrongly Filled	1	1.8
Total Distributed	54	100%

Source: Authors’ field survey, 2025

The table shows that out of 54 questionnaires distributed, 50 were correctly completed and returned, giving a high response rate of 92.6 percent. Only a small fraction of respondents either did not return (5.6 percent) or wrongly filled (1.8 percent) the questionnaires.

Table 2: Analysis of the Gender of Respondents

Variables	Frequency	Percentage (%)
Male	21	42
Female	29	58
Total	50	100.0

Source: Authors’ field survey, 2025



From the data, female respondents (58 percent) slightly outnumbered male respondents (42 percent), reflecting balanced gender participation in the study area. This distribution ensures that both male and female perspectives on climate change and herders-farmers conflicts are captured.

Table 3: Analysis of the Age of Respondents

Variables	Frequency	Percentage (%)
18- 30 Years	14	28
31- 40 Years	17	34
41 Years and above	19	38
Total	50	100

Source: Authors’ field survey, 2025

The age distribution shows that 28 percent of respondents were 18–30 years, 34 percent were 31–40 years, and 38 percent were 41 years and above. This spread indicates participation across young, middle-aged, and older farmers, providing a wide range of experience and insight. It helps in understanding how different age groups perceive and are affected by climate change and conflict.

Table 4: Analysis of Educational Qualification of Respondents

Variables	Frequency	Percentage (%)
No formal education	9	32
Primary/ Secondary	21	42
NCE/ OND	11	22
B. Sc./ B. Ed/ B. Tech	5	10
M. Sc./ Ph. D	4	8
Total	50	100

Source: Authors’ field survey, 2025

Most respondents had primary/ secondary education (42 percent), followed by no formal education (32 percent), with fewer holding NCE/OND (22 percent) and B. Sc/ B. Ed/ B. Tech (10 percent), and very few with M.Sc/ Ph.D (8 percent). This distribution suggests that literacy levels vary and could influence awareness and adaptive strategies against climate-related conflicts. Understanding education levels is key to tailoring interventions and communication strategies.

Table 5: Analysis of Farming Experience of Respondents

Farming Experience	Frequency	Percentage (%)
0-5 years	24	48
6-10 years	18	36
11-19 years and above	8	16
Total	50	100

Source: Authors’ field survey, 2025

Nearly half of the respondents (48 percent) have 0–5 years of farming experience, 36 percent have 6–10 years, while 16 percent have 11 years and above. This indicates a mix of relatively new and more experienced farmers, which can affect perceptions of climate change and conflict resolution practices. It also highlights the need for capacity-building programs targeting less experienced farmers.



Table 6: Analysis of Type of Farming Respondents Engaged

Type of Farming	Frequency	Percentage (%)
Crop farming	31	62
Livestock rearing	7	14
Mixed farming	12	24
Total	50	100

Source: Authors’ field survey, 2025

The majority of respondents practice crop farming (62 percent), with 14 percent involved in livestock rearing and 24 percent in mixed farming. This shows that crop production is the dominant livelihood, making farmers particularly vulnerable to herder incursions and climate impacts. The type of farming engaged in also informs the design of targeted conflict mitigation strategies.

Analysis of Research Objectives

Research Question 1: How does climate change affect the frequency and intensity of herders-farmers conflicts in Eha-Amufu, Isi-Uzo?

Table 7: Analysis of How Climate Change Affect Herders-FARMERS Conflict in Isi-Uzo

Items	X	Std. Dev	Remark
Changes in rainfall patterns have increased the frequency of conflicts between herders and farmers in my community.	3.38	0.91	Accepted
Prolonged droughts and irregular weather have intensified disputes over farmland and grazing areas.	3.32	0.99	Accepted
Climate change has forced herders to encroach on farm lands more frequently, leading to more violent encounters.	3.30	0.78	Accepted
Seasonal flooding or water scarcity has worsened tensions between herders and farmers.	3.36	0.87	Accepted
Erratic weather patterns have made resource competition (land and water) a major trigger for conflicts.	3.32	0.65	Accepted

Source Authors’ field survey, 2025

(N=50)

The data in Table 7 indicates that changes in rainfall patterns, prolonged droughts, and irregular weather events have significantly increased the frequency and intensity of conflicts between herders and farmers in Eha-Amufu. Most respondents strongly agreed that climate variability forces herders to encroach more frequently on farmland, leading to violent encounters. Seasonal flooding and water scarcity were also identified as exacerbating factors, creating heightened competition for scarce resources.

The mean scores, all above 3.30, and relatively low standard deviations indicate a high level of consensus among respondents. This confirms that climate change is a major driver of herder-farmer disputes in the study area. Erratic weather patterns have been noted as critical triggers, directly linking environmental stress to social tension. The findings underscore the need for adaptive strategies in land use and conflict prevention. Overall, respondents perceive climate change as a substantial factor influencing both the frequency and severity of local conflicts.



Research Question 2: How has climate change affected food security in Eha-Amufu, Isi-Uzo LGA?

Table 8: Analysis of How Climate Change Affect Food Security

Items	X	Std. Dev	Remark
Climate-related conflicts have negatively impacted crop yields and farmers income in my community.	3.46	0.83	Accepted
Frequent disputes between herders and farmers have disrupted local trade and markets.	3.34	0.79	Accepted
Loss of livestock and farm produce due to climate-induced conflicts has affected food security.	3.38	0.89	Accepted
Climate stress has contributed to increased poverty levels among farming households in Eha-Amufu and Isi uzo.	3.24	0.84	Accepted
Damage to infrastructure (farmlands, irrigation systems) caused by climate-related conflicts has hindered food security locally.	3.50	0.73	Accepted

Source: Authors’ Field Survey (2025)

(N=50)

Table 8 demonstrates that climate-related conflicts have severely impacted crop yields, livestock, and overall household income, affecting economic stability in the community. Most respondents strongly agreed that frequent disputes disrupt local trade and markets, reducing economic activity and hindering growth. Climate stress has been linked to increased poverty levels among farming households, further compounding livelihood insecurity. Infrastructure damage, including farmlands and irrigation systems, was noted as another consequence that obstructs local economic development. The mean scores, ranging from 3.24 to 3.50, indicate consistent agreement on the economic repercussions of climate-induced conflicts. Standard deviations below 1 suggest minimal variability in responses, reflecting shared experiences among respondents. These findings highlight the dual impact of climate change on social relations and local economic well-being. In summary, the results confirm that herder-farmer conflicts exacerbated by climate variability have a direct negative effect on community livelihoods and economic sustainability.

Research Question 3: How effective are government responses in ensuring the safety of lives and property in climate-induced herder–farmer conflicts in Eha-Amufu, Isi-Uzo?

Table 9: Analysis of the Effectiveness of Government Responses in Ensuring Safety of Lives

Items	X	Std. Dev	Remark
Government policies on land allocation and grazing routes have improved safety of lives and property.	3.50	0.88	Accepted
Local authorities provide adequate support for conflict resolution between herders and farmers during climate stress periods.	3.32	0.65	Accepted
Programs promoting climate adaptation and resource management by the government have mitigated disputes effectively.	3.24	0.84	Accepted
Government mediation and dialogue initiatives have improved understanding between herders and farmers.	3.46	0.81	Accepted
Awareness campaigns and enforcement of grazing regulations by the government have helped reduce climate-induced conflicts.	3.34	0.95	Accepted

Source: Authors’ Field Survey (2025).

(N=50)



Table 9 reveals that government policies on land allocation, grazing routes, and conflict resolution have been largely effective in reducing the intensity of climate-induced conflicts. Respondents reported that local authorities provide adequate support, including mediation and dialogue initiatives, fostering better understanding between herders and farmers. Programs promoting climate adaptation and resource management were acknowledged as mitigating disputes in the community. Awareness campaigns and enforcement of grazing regulations also received strong agreement as effective tools in conflict prevention.

The mean scores, ranging from 3.24 to 3.50, indicate high levels of respondent approval for government interventions. Standard deviations below 1 demonstrate consistent perceptions across participants, reinforcing the reliability of responses. These results suggest that proactive government measures can play a significant role in managing climate-related conflicts. Overall, respondents perceive government policies as crucial mechanisms for reducing tension and promoting peaceful coexistence in Eha-Amufu.

4.2. DISCUSSION OF FINDINGS AND SUMMARY

4.2.1. Discussion of Findings

The findings from this study provide strong evidence that climate change significantly influences the dynamics of herder–farmer conflicts in Eha-Amufu, Isi-Uzo LGA, and these effects are consistent with the principles of Eco-Violence Theory. This theory posits that environmental degradation such as land depletion, irregular rainfall, drought, and flooding creates scarcity in critical resources, which then heightens competition and triggers violent interactions between groups reliant on those resources (Lenshie et al., 2020; Ofierohor et al., 2021; Efobi, Adejumo & Kim, 2025).

Regarding the first research question, the data in Table 7 indicate that erratic rainfall patterns, prolonged droughts, and seasonal flooding have increased both the frequency and intensity of herder–farmer conflicts. Respondents consistently reported that these environmental stresses force herders to encroach more frequently on farmland, resulting in violent encounters. This observation aligns with Eco-Violence Theory, which frames conflict as an ecological outcome of resource scarcity. The high mean scores (all above 3.30) and low standard deviations reflect strong consensus among respondents that climate variability is a primary driver of local disputes.

These findings corroborate the work of Lenshie et al. (2020), who found that desertification and land degradation push pastoralists into cultivated areas, thereby intensifying conflicts, and Ofierohor et al. (2021), who demonstrated that climate-induced resource scarcity elevates intergroup tensions. In the context of Eha-Amufu, seasonal flooding and water scarcity have created hotspots of competition, illustrating how environmental stressors directly exacerbate local conflicts.

The second research question, Table 8 shows that climate-induced conflicts have had a substantial impact on food security. Respondents highlighted reduced crop yields, livestock losses, disrupted local trade, and diminished household income. The mean scores, ranging from 3.24 to 3.50, indicate that these effects are widely experienced within the community. Eco-Violence Theory explains these dynamics by linking ecological stress to socioeconomic disruption: scarcity of land and water resources not only triggers conflict but also undermines agricultural productivity and economic stability (Efobi, Adejumo & Kim, 2025; Nadiruzzaman *et al.*, 2022). These results extend the literature by demonstrating the localized impacts of climate-induced resource stress on food security in Eha-Amufu, highlighting the compounding effects of environmental and social pressures. The data



underscore the critical need for conflict-sensitive climate adaptation strategies to safeguard both livelihoods and food systems.

Concerning the third research question, Table 9 indicates that government interventions such as regulation of grazing routes, conflict mediation, awareness campaigns, and climate adaptation programs have positively influenced the safety of lives and property. Respondents largely agreed that these initiatives mitigate the intensity of disputes, with mean scores ranging from 3.24 to 3.50. From the lens of Eco-Violence Theory, effective governance and institutional mediation can buffer the link between environmental scarcity and violent conflict. This is consistent with United Nations (2020) recommendations on inclusive, participatory frameworks for managing climate-related conflicts and echoes the findings of Baderinwa (2019) and Olaniyi, Olutimehin, and Funmilayo (2019), who emphasize that well-structured policies and local engagement are crucial in reducing resource-based tensions. While interventions in Eha-Amufu have had measurable effects, the persistence of conflicts during extreme climate events suggests that policy implementation must be reinforced with proactive resource management, early warning systems, and sustainable land-use planning.

4.2.2. Summary

The study found that climate variability, including erratic rainfall, prolonged droughts, and seasonal flooding, has significantly increased the frequency and intensity of herder–farmer conflicts in Eha-Amufu, Isi-Uzo LGA. Respondents reported that environmental stress drives herders into farmlands, causing frequent and sometimes violent encounters, consistent with Eco-Violence Theory.

Climate-induced conflicts negatively affect local livelihoods and food security. Frequent disputes reduce crop yields, cause livestock losses, damage infrastructure, and undermine household incomes, exacerbating poverty and threatening economic stability.

Government interventions such as regulated grazing routes, land allocation, conflict mediation, climate adaptation programs, and awareness campaigns were perceived as effective in reducing disputes. Dialogue initiatives and institutional support foster understanding between herders and farmers, though persistent conflicts during extreme climate events suggest a need for reinforced resource management and community-based adaptation strategies.

5.0. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

This study has established that climate change is a key driver of herder–farmer conflicts in Eha-Amufu, Isi-Uzo LGA. Variations in rainfall, prolonged droughts, and flooding have intensified competition over limited farmland and water resources, leading to more frequent and severe clashes. These conflicts have direct adverse effects on the local economy, disrupting crop production, reducing household incomes, hindering trade, and damaging infrastructure. The findings underscore that environmental stress, coupled with livelihood insecurity and weak governance, heightens social tensions and economic vulnerability in rural agrarian communities.

The study also concludes that government interventions, including regulated grazing routes, conflict mediation, awareness campaigns, and climate adaptation programs, are critical in mitigating these conflicts and fostering peaceful coexistence. However, for such measures to be effective, they must be proactive, context-specific, and inclusive, reflecting local socio-economic and ecological realities.



5.2. Recommendations

1. To address the influence of climate change on the frequency and intensity of herder–farmer conflicts, the government should strengthen climate-adaptive grazing routes, improve water resource management, and implement early-warning systems to reduce farmland encroachment and resource competition.
2. To mitigate the impact of climate-induced conflicts on food security, government and development partners should provide crop insurance, credit facilities, and livelihood diversification programs to stabilize household incomes, protect crop yields, and support local trade.
3. To enhance the effectiveness of government responses in ensuring the safety of lives and property, policy enforcement should be strengthened, community participation in conflict resolution increased, and awareness campaigns expanded to promote peaceful coexistence and better local compliance.

Conflict Of Interest

The authors declare that no conflict of interest exist in this manuscript.

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