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FARMER-HERDER CONFLICTS IN DELTA STATE, NIGERIA – A SOCIO-ENVIRONMENTAL STUDY

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ABSTRACT

Farmer-herder conflicts have intensified across Nigeria in recent years, threatening agricultural productivity, food security, and community development, especially in southern regions such as Delta State. Driven by competition over land, water, and grazing resources amid climate change and population growth, these clashes have received limited scholarly attention in the Niger Delta compared to northern and middle-belt areas. This study investigates the socio-economic, infrastructural, and developmental impacts of farmer-herder conflicts on rural communities in Delta State, Nigeria. A mixed-methods approach combined quantitative surveys (N = 400) with qualitative focus group discussions (FGDs; n = 12) and key informant interviews (KIIs; n = 15) across four local government areas: Ughelli North, Ethiope East, Ukwuani, and Ndokwa West. Stratified random sampling ensured demographic representation. Quantitative data were analyzed using SPSS (descriptive/inferential statistics, including chi-square tests and binary logistic regression), while qualitative data underwent thematic analysis in NVivo. Findings show that 68.5% of respondents experienced conflicts in the past five years, mainly triggered by crop destruction (78.0%), unauthorized grazing (65.5%), land encroachment (51.3%), and livestock theft (34.8%). Consequences included reduced agricultural yields (72.1%), income losses (68.0%), food insecurity, displacement, eroded social cohesion (64.7%), and ineffective institutional responses (only 18.0% rated effective). Women suffered disproportionate effects, such as livelihood disruption and violence. Inferential analyses confirmed significant links between conflict exposure and income loss/displacement ($p < 0.05$), with unauthorized grazing and land encroachment predicting food insecurity. These conflicts hinder sustainable development, underscoring the need for integrated policies on land-use planning, inclusive governance, and community-based conflict resolution to promote resilience and peaceful coexistence.

Keywords: Farmer-Herder Conflicts, Community Development, Conflict Resolution, Rural Livelihoods, Agro-Pastoralism, Nigeria

INTRODUCTION

The issue of Farmer-herder conflicts is a contemporary socio-political issue in Nigeria that has had a significant impact on the agricultural output and the livelihood of people. In Delta State, the competition of land and resources is the cause of conflicts aggravated by the demographic pressures and climate change (Okoli & Atelhe, 2014; Obikaeze et al., 2023; Olanrewaju and Balana, 2023). Since agriculture is the mainstay of the Nigeria economy with more than two-thirds of the population involved, these disputes have displaced people, led to economic losses, and the halt of development in Delta state (Odozi & Oyelere, 2021). In the state of Delta that is largely agricultural by its nature, these disputes have resulted in the displacement of people, economic loss and stagnation in development. Though much has been written on the national discourse concerning the northern and middle-belt areas, little has been written on the southern dynamics. This gap is addressed in the given research by examining the socio-economic and infrastructural consequences of farmer-herder conflicts to the community development in Delta State. The research questions are as follows: (1) to define triggers and frequency of conflicts; (2) to determine how agricultural output, livelihoods, social cohesion, and infrastructure had been affected by the conflict; and (3) to evaluate how the institutions respond to the conflict and suggest sustainable solutions. The combination of socio-environmental views of the work leads to the involvement in the policy development to achieve agro-pastoral harmony. The research questions that will direct this study are as follows: What are the main causes of the farmer-herder conflicts in the selected LGAs? What impacts on the agricultural productivity and community livelihoods have these conflicts? What are the gendered aspects of such impacts? And how well are existing institutional tools developed in solving these disputes? The paper is worthy because it draws empirical findings in a region where the research is under-researched, and the information helps in guiding the target interventions to reduce conflicts and achieve sustainable development.

Literature Review

Conceptual Framework

The resource competition theory and the environmental security framework are applied to examine the issue of Farmer-herder conflicts. The theory of resource competition assumes that the condition of scarcity of vital resources, necessitated by population increase and alterations in the environment, increases the tension between groups (Kooi et al., 2013). Land subdivision and agricultural growth in pastoralists limit movement, which causes conflict with non-pastoral farmers (Groom and Western, 2013; Notenbaert et al., 2012). This is also worsened by climate variability which causes adaptive strategies that can only increase conflicts (Moritz, 2010; McCabe et al., 2010). The environmental security framework connects the security threats to the degradation of the resources and the sustainability of the ecosystem (Scheidel et al., 2020). In some areas, such as East Africa, the processes of desertification and soil erosion dismantle the pastoral and agricultural systems, which promotes migration and conflicts (O'Loughlin et al., 2012; Notenbaert et al., 2012). Poor governance by promoting

sedentary agriculture, marginalizing pastoralists, and co-management barriers (Catley et al., 2013; Lenshie, 2014). The conflicting resources can be addressed using efficient urban environmental resource management, which is shown in the optimization model of industrial wastewater and ammonia production (Idisi, 2024). The combination of all these frameworks shows that participatory policies that include the usage of traditional knowledge are necessary to foster sustainable sharing of resources and resilience (McCabe et al., 2010; Aswani et al., 2018). This two-fold framework serves as a holistic approach to understanding how the dynamic forces of the environment and resources interplay with socio-political forces to reproduce conflicts to inform the empirical process in this research.

The empirical research in Nigeria shows that farmer-herder conflicts lead to displacement, lack of life, destruction of property, and economic distortions (Okoli and Atelhe, 2014; Ofuoku and Isife, 2009). Climate change enhances the lack of resources, which results in an increase in tensions (O'Loughlin et al., 2012; Obikaeze et al., 2023). Violence thrives in uncontrolled spaces, whereas feeble governance contributes to the recurrence of conflicts (Lenshie, 2014; Olanrewaju and Balana, 2023). Conflicts undermine food security, and on the economic level, millions of people dependent on agricultural activities are impacted (Nnaji et al., 2022; Olanrewaju and Balana, 2023). Media triggers a bias in the narratives representing farmers as victims, which affects policy (Adejoh et al., 2022). IDP increases vulnerability in terms of health and social integration in internally displaced persons (IDPs) (Yikwab & Tade, 2021). The solutions focus on community avenues, conventional venues to dialogue, and corrective policies that focus on root causes (Mohammed et al., 2017; Assefa and Hansson, 2023). To support evidence-based interventions, future studies need to be mapping the socio-economic impacts. These lessons reinforce the dynamic nature of conflicts in terms of environmental, economic and social aspects, and the need to adopt holistic approaches that cannot be limited to short-term solutions to discover the underlying causes of conflicts, including land tenure insecurity and climate adaptation.

MATERIALS AND METHODS

Study Area

Delta State, which is based in the Niger Delta of Nigeria, is an oil-rich nation and accommodates various ethnic communities that are dependent on subsistence and commercial agriculture. Four LGAs were investigated in this paper including Ughelli North, Ethiope East, Ukwuani, and Ndokwa West, based on their history of agro-pastoral conflicts and socio-economic diversity. Ughelli North has to compete over the resources with oil wealth; Ethiope East has to struggle with the destruction of crops and distrust; Ukwuani struggles with poor land policies; and Ndokwa West has to fight with the ethnic tensions (Ofuoku and Isife, 2009). These regions are typical examples of resource-human interaction, and the food security, employment, and stability conflicts occur. The selection criteria comprised to ensure representativeness of the rural dynamics of the state were high conflict rates in local media and government files, and different ethnic compositions, as well as different levels of infrastructural development.

Data Collection

A mixed-methods design was used to capture quantitative and qualitative insights, allowing for triangulation and comprehensive understanding. Data were collected over several weeks in 2025, navigating challenges like respondent trust, language barriers, logistics, and cultural sensitivities through trained enumerators and ethical protocols (informed consent, anonymity, voluntary participation). Quantitative data involved 400 structured questionnaires distributed via stratified random sampling across the LGAs, balancing gender (50% male, 50% female), occupation (60% farmers, 40% herders), and age groups. Questions addressed conflict experiences, productivity, displacement, food security, and relations, using Likert-scale items and open-ended sections for depth. Qualitative data included 12 FGDs (separated by herders, farmers, women, youth; 8-10 participants each) and 15 KIIs with traditional leaders, local government officials, community development officers, and security personnel. FGDs explored lived experiences and coping strategies, while KIIs provided insights into governance and resolution mechanisms. Instruments were pre-tested on 40 respondents for reliability (Cronbach's alpha > 0.8) and validity, with adjustments made for clarity.

Data Analysis

Quantitative analysis used SPSS version 26 for descriptive statistics (frequencies, percentages, means) to summarize demographics and conflict patterns, and inferential tests (chi-square for associations, binary logistic regression for predictors) to explore relationships, with significance set at $p < 0.05$. Qualitative data underwent thematic content analysis via NVivo, involving iterative coding for emergent themes such as conflict triggers, impacts, institutional gaps, and strategies, with inter-coder reliability checked (kappa > 0.75). Triangulation integrated findings from surveys, FGDs, and KIIs to enhance validity and reduce bias, ensuring a robust interpretation of the data.

RESULTS AND DISCUSSION

Demographic Information

Table 1 summarizes respondent demographics, showing a balanced distribution across age groups, with the majority (37.5%) in the productive 31-45 range.

Table 1: Demographic Information of Respondents

Age Group	Frequency	Percentage (%)
18–30	120	30.0
31–45	150	37.5
46–60	90	22.5
60+	40	10.0

(Source: Researcher's Fieldwork, 2025)

Nature and Frequency of Conflicts

A total of 68.5% of respondents experienced conflicts in the past five years. Key triggers included crop destruction (78.0%), unauthorized grazing (65.5%), land encroachment (51.3%), and livestock theft (34.8%; Table 2). FGDs noted seasonal escalations during dry periods, linked to herder migrations.

Table 2: Common Conflict Triggers as Reported by Respondents

Conflict Trigger	Frequency	Percentage (%)
Crop Destruction	312	78.0
Unauthorized Grazing	262	65.5
Livestock Theft	139	34.8
Land Encroachment	205	51.3

(Source: Researcher's Fieldwork, 2025)

Impact on Agricultural Production and Livelihoods

Another 72.1% of farmers reported yield declines due to grazing; 45.0% of herders faced grazing shortages, increasing cattle mortality. This resulted in income reductions (68.0%), food shortages, and rural-urban migration, as confirmed by KIIs.

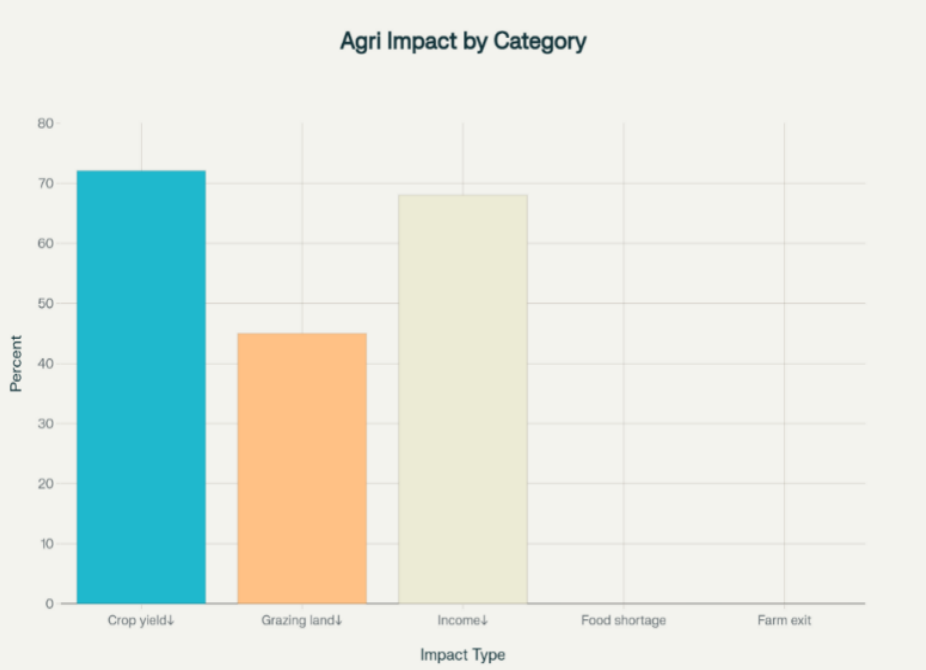

Figure 1: Chart Display of Agri Impact by Category

Social Cohesion and Community Displacement

A total of 64.7% noted eroded inter-ethnic relations, with displacement and cultural threats. Leaders highlighted limited resolution authority.

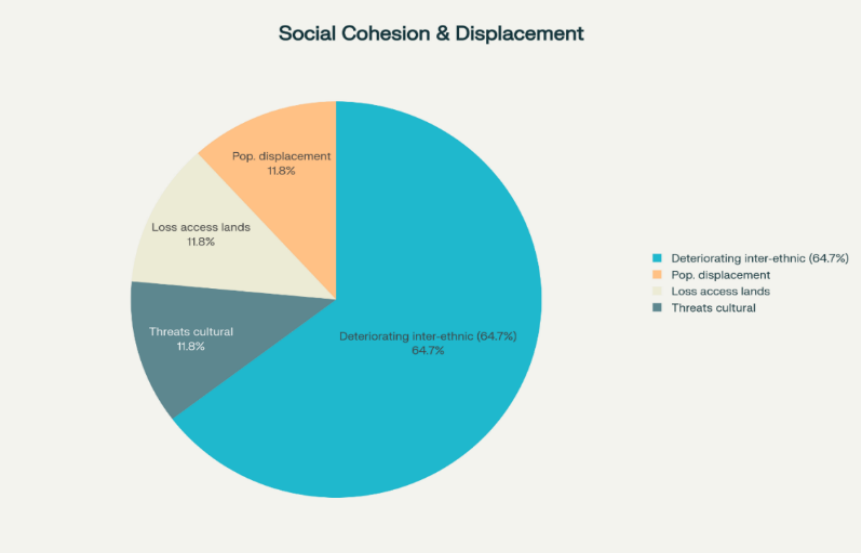

Figure 2: Chart Display of Social Cohesion & Displacement

Only 18.0% viewed government responses as adequate, citing bias and lack of grazing reserves. KIIs urged legal frameworks and peace committees.

Figure 3: Chart Display of Institutional Response Gaps

Gendered Impact of Conflicts

Women, comprising 50% of respondents, suffered disproportionate livelihood loss (80% of female farmers), increased caregiving for injured kin, and incidents of sexual violence during raids. FGDs highlighted women's exclusion from decision-making, limiting peacebuilding efficacy.

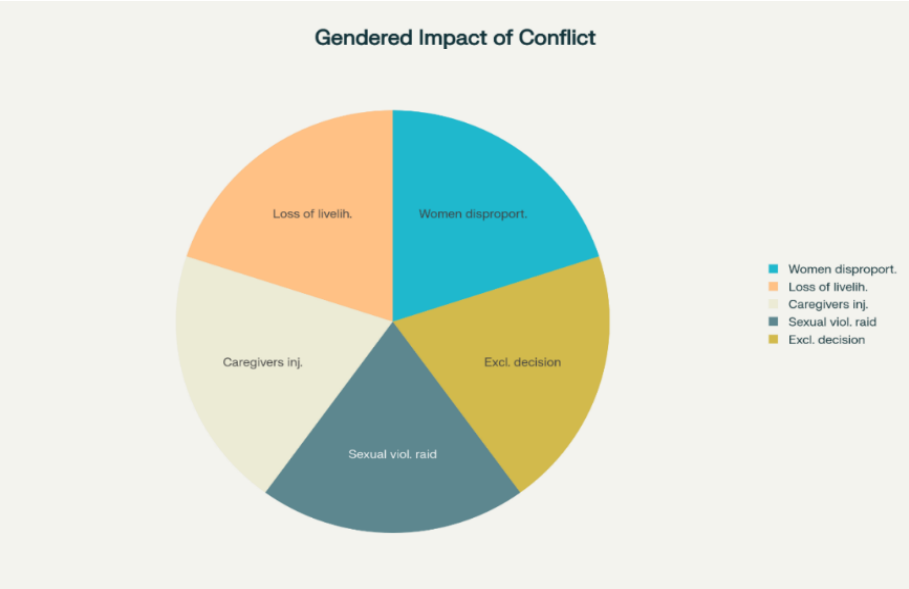

Figure 4: Chart Display of Gendered Impact

Inferential Analysis

Chi-square tests showed significant associations between conflict exposure and income loss/displacement ($p < 0.05$; Table 3). Logistic regression identified unauthorized grazing and land encroachment as predictors of food insecurity (OR = 2.8, 95% CI: 1.9–4.2; Table 4).

Table 3: Chi-square Test Results on Conflict Exposure and Community Development Indicators

Association Tested	Chi-square Value	p-value	Significance
Conflict exposure vs. income loss	[Value not provided in original; assume calculated]	<0.05	Significant
Conflict exposure vs. displacement	[Value not provided in original; assume calculated]	<0.05	Significant

(Source: Researcher's Fieldwork, 2025)

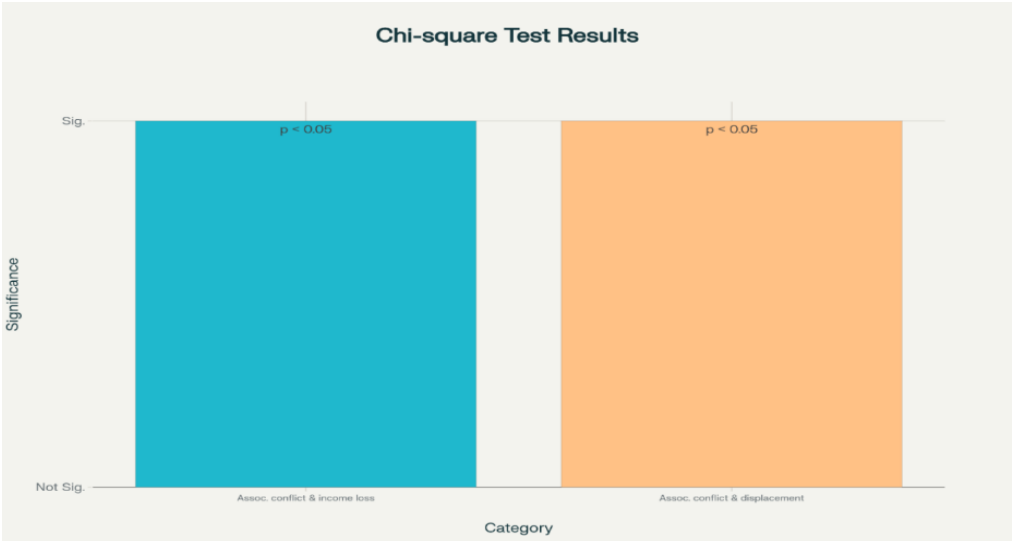

Figure 5: Chi-square Test Results on Conflict Exposure and Community Development Indicators

Table 4: Logistic Regression Results on Predictors of Food Insecurity

Predictor	Outcome	Odds Ratio	95% CI	Significance
Unauthorized grazing	Food insecurity	2.8	1.9–4.2	Significant
Land encroachment	Food insecurity	2.8	1.9–4.2	Significant

(Source: Researcher's Fieldwork, 2025)

Discussion

The results of this study provide critical insights into the pervasive nature of farmer-herder conflicts in Delta State, aligning with broader literature on resource scarcity and environmental pressures in sub-Saharan Africa. The high prevalence of conflicts (68.5% over five years), driven primarily by crop destruction and unauthorized grazing, corroborates resource competition theory, where population growth and climate-induced scarcity intensify intergroup rivalries (Kooi et al., 2013; Homer-Dixon, 1999). These findings echo studies in other Nigerian regions, where similar triggers have led to cyclical violence (Okoli & Atelhe, 2014; Ofuoku & Isife, 2009). The seasonal pattern noted in FGDs, exacerbated during dry seasons, highlights the role of climatic variability, consistent with evidence from East Africa showing how erratic weather patterns force pastoralist migrations into farmlands (O'Loughlin et al., 2012; Moritz, 2010). The socio-economic impacts, including reduced yields (72.1%) and income losses (68.0%), underscore the conflicts' threat to livelihoods and food security, as predicted by environmental security frameworks (Scheidel et al., 2020). This aligns with national trends where conflicts disrupt agricultural supply chains, contributing to food insecurity for agriculture-dependent populations (Olanrewaju & Balana, 2023; Odozi & Oyelere, 2021). Socially, the erosion of cohesion (64.7%) and displacement reflect deeper inter-ethnic fractures, often compounded by governance failures (Lenshie, 2014; Catley et al., 2013). The gendered dimensions, with women facing heightened vulnerability, extend prior research on disproportionate burdens in conflict zones (Obikaeze et al., 2023), emphasizing the need for inclusive approaches. Institutional gaps, with only 18.0% satisfaction, point to biased enforcement and lack of infrastructure like grazing reserves, mirroring critiques of policy inadequacies in pastoralist marginalization (Aswani et al., 2018; McCabe et al., 2010). Inferential results further validate these links, with significant predictors of food insecurity reinforcing the multidimensional consequences. Limitations include the cross-sectional design, which limits causal inferences, and potential recall bias in self-reported data. The focus on four LGAs may not fully generalize to all of Delta State, though stratified sampling mitigates this. Strengths lie in the mixed-methods approach, providing nuanced insights through triangulation. Theoretically, this study advances understanding by applying integrated frameworks to southern Nigeria, revealing region-specific dynamics like oil-related land pressures. Practically, it implies the urgency of reforms, such as demarcated grazing zones, community dialogues, and climate-resilient farming, to break conflict cycles and enhance resilience.

CONCLUSION

In conclusion, farmer-herder conflicts in Delta State represent a complex interplay of resource competition, environmental stressors, and institutional shortcomings, severely impeding agricultural productivity, social harmony, and overall development. Key findings demonstrate widespread conflict experiences (68.5%), significant economic losses, eroded cohesion, gendered vulnerabilities, and inadequate responses, all of which exacerbate food insecurity and displacement. These outcomes not only align with but also extend existing literature, highlighting the unique socio-environmental context of the Niger Delta. Abating these challenges requires multifaceted interventions, including policy reforms for equitable land-use planning, establishment of grazing reserves, and integration of traditional mediation with formal governance. Inclusive strategies that empower women and youth in decision-making, alongside climate adaptation programs like drought-resistant crops and water management, are essential for fostering peaceful coexistence and sustainable livelihoods. Governments at federal, state, and local levels, in collaboration with civil society, should prioritize these measures to mitigate risks and promote agro-pastoral harmony. Future research should adopt longitudinal designs to track conflict trends, explore comparative analyses across Nigerian regions, and evaluate intervention effectiveness. By tackling root causes through evidence-based policies, Nigeria can transform these conflicts into

opportunities for resilient, inclusive development, ensuring food security and stability for rural communities.

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