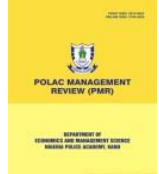




**POLAC MANAGEMENT REVIEW (PMR)
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SOCIO-ECONOMIC EFFECTS AND SPATIAL PATTERNS OF FARMERS AND HERDERS CONFLICT IN SOUTHERN NASARAWA STATE, NIGERIA

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Abstract

The study investigates the socio-economic effects and spatial distribution of farmers and herders conflict in Southern Nasarawa State, Nigeria, using a mixed-method approach. This approach combines quantitative data gathered from questionnaires with affected farmers and herders to understand the conflict's effects, alongside spatial analysis techniques employing Geographic Information System (GIS) and Global Positioning System (GPS) tools to map and identify conflict hotspots. The research focuses on how competition for dwindling resources has exacerbated tensions between farming and pastoral communities, revealing diverse and severe impacts. The conflict's effects include property damage accounting for (37%) of reported cases, followed by economic losses at 22%, and food insecurity representing (14%). These disruptions to livelihoods result in increased poverty and vulnerability. Additionally, psychological trauma accounts for 13% of the impacts, highlighting the mental health challenges that arise from constant threats of violence and displacement. Loss of life (10%) and unemployment (5%) further compound the socio-economic difficulties in the region. The spatial analysis reveals distinct conflict patterns, with areas experiencing varying levels of intensity depending on resource availability, population pressures, and local governance effectiveness. Regions with very high conflict intensity are often characterized by overlapping land claims, severe resource scarcity, and inadequate conflict management mechanisms, leading to frequent disputes. In contrast, areas with lower conflict intensity benefit from more effective resource management practices and stronger local governance structures, which help to alleviate tensions. The study suggests that resolving the farmers-herders conflict requires comprehensive interventions that address underlying causes, including sustainable resource management and land use practices. Strengthening local governance, promoting early conflict resolution, and integrating traditional conflict resolution frameworks are vital for reducing conflict intensity and fostering socio-economic stability. These findings offer valuable insights for policymakers and stakeholders seeking to restore peace and promote sustainable development in Southern Nasarawa State.

Keywords: Farmers, Herders, Conflict, Spatial analysis, Hotspots

1. Introduction

The farmer and herder conflict is a global issue affecting various regions worldwide, where competition for land and resources between agricultural and pastoral

communities leads to tension and violence. This conflict often stems from competition over arable land and water resources, exacerbated by climate change and historical grievances. The effects of this conflict include economic disruption, social fragmentation, and political

instability (Oseni, 2023). In South Asia, similar conflicts are driven by issues of land use and water access, particularly in India and Pakistan. Traditional grazing routes have been disrupted by agricultural expansion and urbanization, leading to tensions between settled and nomadic populations (Kumar and Singh, 2022).

Conflicts between farmers and nomadic cattle herders have been a common feature of economic livelihood in West Africa (Tonah, 2006). In the period before the beginning of the 20th century, the problem was mainly restricted to the savanna belts of West Africa. Cattle rearing were mainly prevalent in the Guinea, Sudan and Sahel savanna belts where crop production was carried out only during the short rainy season on a small scale. This gave the cattle herders access to a vast area of grass land. As time went on, and with the introduction of irrigated farming in the Savanna belt of Nigeria, and the increased withering of pasture during the dry season, less pasture was available to cattle herders. The herdsmen had to move southward to the coastal zone where the rainy season is longer and the soil retains moisture for long, in search of pasture and water – a movement called transhumance.

The large number of wild animals and the fear of losing animals to diseases, especially trypanosomiasis, prevented herders from settling permanently in the humid zone (Blench, 1994). Tonah (2006) stated that there is a consensus among observers that farmers-herders clashes have only since the 20th century become widespread in the coastal countries of West Africa. Although Breusers (1998) is of a dissenting view. Concluded after an investigation of farmers-herders relations in Burkina Faso that the conflict between Mossi farmers and Fulani herders was an old phenomenon. Tonah (2006) opined that the factors that account for the increasing farmer-herder conflict include the southward movement of pastoral herds into the humid and sub-humid zones, promoted by the successful control of the menace posed by disease, the widespread availability of veterinary medicine and the expansion of farming activities into areas that hitherto served as pastureland. He further suggested that since

the 1950s there has been a growth in human as well as livestock population in the coastal countries of West Africa. This gave rise to an increased pressure on natural resources and a stiff competition for available resources between farmers and herders (Adebayo, 1997; Breuser et al 1998; Bermadet, 1999).

The ongoing violent conflict between herdsmen and farmers in Nigeria has several parties and actors. Until last twenty years, the disagreements between herding and farming communities used to be solved by negotiations and usually the heads of villages and herder communities agreed on simple solutions such as a herder must compensate the damage in a farm if he couldn't control his animals and prevent them damaging the growing crops. The dialogue between two communities was not happening only after a bad incident. Instead, during the dry season, if herders would like to use some laid fallow farms as grazing land they would ask for permission from the land owner before using it (Olaniyan and Yahaya, 2016).

More than 90% of nomadic herdsmen in northern Nigeria are ethnic Fulanis and the majority of the Fulanis are Muslims. (International Crisis Group, 2017). This ethnic group is originally migrated from Arabic peninsula and today they are living in not just Nigeria but in several countries in West and Central Africa (Genyi, 2017). They are involved as a main conflict party in disagreements with farmers because of their high numbers in animal husbandry (Olaniyan and Yahaya, 2016). The migration of Muslim Fulanis to south is considered by some Christian groups as an attempt to "Islamize the south". There is also a huge risk that if an ethnic clash occurs between all Fulanis and other many ethnic groups in Nigeria, Fulanis could get support from other Fulani communities in neighboring states and the ethnic problems might enhance incredibly in the West and Central Africa regions (International Crisis Group, 2017).

Nasarawa State, located in central Nigeria, is characterized by its diverse ethnic and religious composition, as well as its rich agricultural potential. The state is home to various ethnic groups, including

the Eggon, Tiv, Alago, and Fulani, among others. Historically, agriculture has been a primary source of livelihood for many residents of Nasarawa State, with both crop farming and animal husbandry playing significant roles in the local economy (Audu, 2021). However, tensions between farmers and herders in Southern Nasarawa State have escalated in recent years, leading to violent confrontations and communal strife (Ibrahim, 2023). This region encompasses local government areas such as Awe, Doma, Nasarawa, and Toto, where clashes between farmers and herders have been particularly pronounced. The conflict is often fueled by competition over dwindling land and water resources, exacerbated by factors such as climate change, population growth, and ineffective land management policies (Okeke and Onuoha, 2020).

In Southern Nasarawa State, the conflict manifests in various forms, including disputes over grazing lands, crop destruction by wandering cattle, and retaliatory attacks by aggrieved parties (Ayih, 2022). The lack of effective conflict resolution mechanisms and the proliferation of small arms further exacerbate the situation, leading to cycles of violence and counter-violence (Suleiman and Abdullahi, 2023). Furthermore, the socio-cultural dynamics in the region play a significant role in perpetuating the conflict. Historical grievances, perceptions of marginalization, and identity politics often exacerbate tensions between farming communities and pastoralists (Ibrahim, 2023).

Additionally, the absence of comprehensive land tenure systems and inadequate government intervention contribute to the persistence of the conflict in Southern Nasarawa State (Audu, 2021).

The farmers-herders conflict in Southern Nasarawa State poses a significant challenge to peace, security, and socio-economic development in the region. At its core, the conflict stems from competing interests over land and natural resources between sedentary farmers and nomadic herders. The lack of clearly defined and enforced land tenure systems exacerbates tensions, leading to disputes over grazing routes, water sources, and farmland encroachment. This unresolved competition for resources fuels a cycle of violence and retaliation, resulting in loss of lives, destruction of property, and the displacement of communities. Thus, the primary problem lies in the inability to effectively manage and reconcile the conflicting interests of farmers and herders in Southern Nasarawa State, leading to prolonged instability and insecurity.

The aim of this study is to examine the effects of Farmers-Herders conflict in Southern Nasarawa State, Nigeria. To achieve this aim, this objective was used analyse the socio-economic effect of Farmer-herder conflict in the study area

2. Material and Methods

Study Area

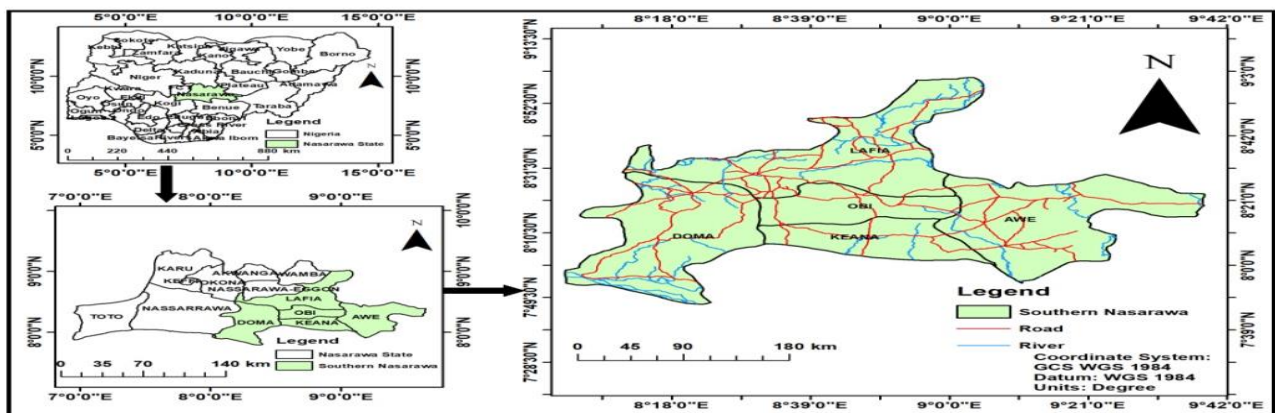


Figure 1: Location of Southern Nasarawa, Nasarawa State

Source: Department of Geography NSUK, 2024

The study area for the research on the effects of farmers-herders conflicts in Southern Nasarawa State, Nigeria, is located in Southern Nasarawa State. It lies between latitude 8°00'01" and 9°05'64" North and longitude 8°09'07" and 9°38'45" East, figure 1.. The precise location within Southern Nasarawa State depend on the extent and intensity of the conflicts and the availability of data and access to research sites.

Data Collection

Primary data was collected from communities within the study area, including surveys and interviews with farmers and herders. The focus was on gathering information about conflict causes, effects, and the socio-economic impact on both parties. Data was gathered through direct interactions with the affected communities, using structured questionnaires. These were aimed at understanding the nature, frequency, and socio-economic effects of the conflicts.

GIS and GPS Mapping

Geographic Information System (GIS) technology was used to map the conflict areas. A Global Positioning System (GPS) was used to capture the precise geographic coordinates of the conflict locations. These coordinates were integrated into a spatial database for further analysis.

Spatial Data Analysis

The spatial distribution of conflicts was analyzed using techniques like Kriging estimation, which helped predict conflict intensities at unsampled locations. The spatial analysis aimed to identify conflict hotspots and assess the underlying patterns of competition over land and resources.

Kriging estimation

In this study, Kriging estimation is applied to analyze the spatial distribution of conflict hotspots across Southern Nasarawa, Nasarawa State. Using known conflict incident data, a semivariogram models the

spatial relationships between these events. The Kriging formula:

$$\hat{Z}(x_0) = \sum_{i=1}^n \lambda_i Z(x_i)$$

Where;

$\hat{Z}(x_0)$ - the estimated conflict intensity at an unknown location

$x_0, Z(x_i)$ - represents the known conflict values

λ_i - weights derived from spatial autocorrelation.

This method predicts conflict intensities at unsampled locations, generating a continuous surface that identifies potential hotspots, supporting conflict resolution strategies and resource allocation across Southern Nasarawa.

3. Results and Discussion

Socio-Economic Effects of Farmer-Herder Conflict in the Study Area

The result in figure 2 bellow reveals that the most substantial impact is damage to properties, which accounts for approximately 55(37%) of the total impacts. This high percentage indicates that the conflict leads to widespread destruction of physical assets, including homes, farms, and infrastructure. The loss of property not only affects the immediate livelihoods of those involved but also has long-term repercussions on the community's ability to rebuild and recover.

Economic losses are the second most significant impact, constituting 33 (22%) of the total. This category encompasses the financial losses incurred due to the destruction of crops, livestock, and other sources of income. Economic losses, making up 22% of the total impact, are a significant consequence of the farmers-herders conflict, affecting both groups. Farmers suffer when cattle destroy crops, leading to lost income and difficulty repaying loans, while herders face financial setbacks when retaliatory actions result in the harm or loss of livestock. The economic strain on farmers and herders can lead to increased poverty and reduced

economic activity in the region. The loss of income can also hinder the ability of affected individuals to invest in their future, perpetuating a cycle of poverty and vulnerability.

Food Insecurity is another critical impact, representing 21 (14%) of the total. The destruction of crops and livestock directly affects the availability of food, leading to shortages and increased prices. This can result in malnutrition and hunger, particularly among vulnerable populations such as children and the elderly. Food insecurity can also exacerbate existing social tensions and contribute to further conflict as communities compete for scarce resources.

Psychological trauma accounts for 19 (13%) of the impacts, highlighting the mental health toll of the conflict. The constant threat of violence, displacement, and loss can lead to anxiety, depression, and other

mental health issues. The psychological impact of the conflict can have long-lasting effects on individuals and communities, affecting their ability to function and thrive. Addressing mental health needs is crucial for the overall recovery and resilience of the affected populations.

Loss of lives and Displacement and Unemployment account for 15 (10%) and 7 (5%) of the effects, respectively. The loss of lives is a tragic and irreversible consequence of the conflict, while displacement disrupts communities and forces individuals to leave their homes and livelihoods behind. Unemployment further compounds the economic challenges faced by affected individuals, making it difficult for them to support themselves and their families. Together, these impacts paint a comprehensive picture of the severe and far-reaching consequences of the farmers and herders conflict in the study area.

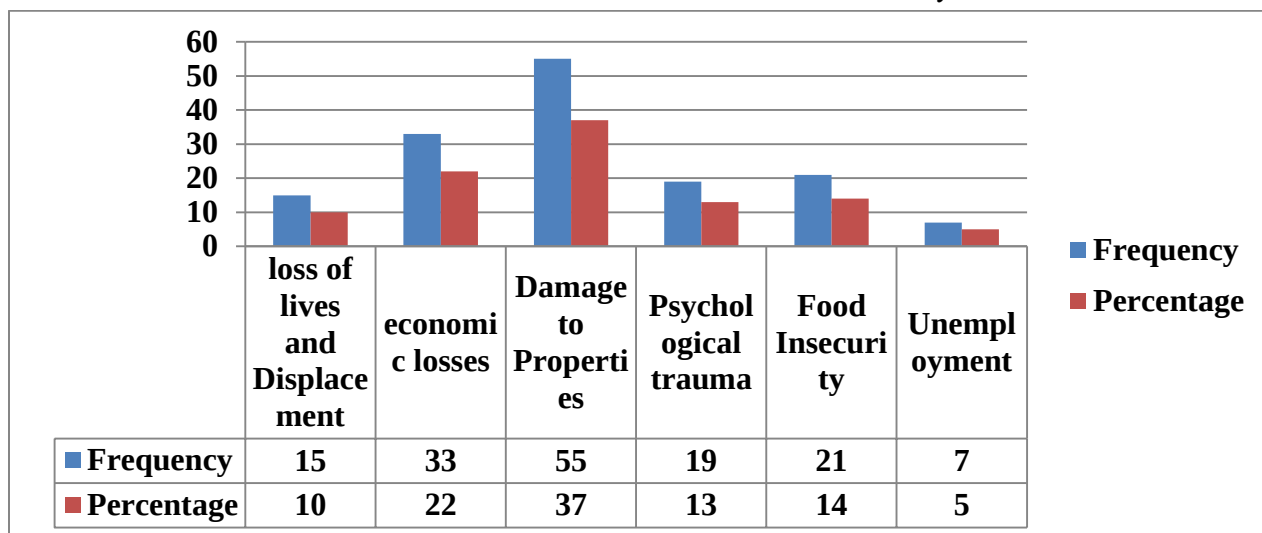


Figure 2: Perceived Socio-economic Effects of Farmer-Herder Conflict in the Study Area

Source: Author, 2024

Pattern of Farmers Herders Conflict in Awe Local Government Area

The pattern of farmers-herders conflict in Awe Local Government Area (LGA) is depicted in a gradient of conflict intensity, ranging from very low to very high levels. This spatial distribution of conflict, driven by the availability and management of resources such as land and water, is consistent with findings from other

conflict-prone areas where resource competition is intense. Research by Benjaminsen et al. (2012) highlights how competition over these essential resources often leads to conflicts, especially in regions with inadequate resource management.

In the northwestern part of Awe LGA, the conflict intensity is predominantly very low (14) to low (15.298), as represented by dark and light green shades

on figure 3. This region likely experiences fewer disputes due to relatively better access to resources and possibly effective local governance and conflict resolution mechanisms. According to Adelakun, Adurogbangba, and Akinbile (2015), areas with effective local governance and traditional conflict resolution practices tend to experience lower conflict intensity. These low-intensity areas may also benefit from less pressure on land and water resources, reducing the likelihood of clashes between farmers and herders. Similar patterns are observed in areas where traditional land-use practices and community-based management strategies are still effective, as noted by Moritz (2010), who argues that such practices can significantly mitigate conflicts.

In the central region, the conflict intensity increases to moderate (16.596) to high (17.894) levels, shown in yellow and orange on the map. This escalation suggests growing competition over land and water, which are critical for both agricultural and pastoral activities. A study by Okoli and Atelhe (2014) attributes such increases in conflict intensity to factors like population

pressure, land fragmentation, and less effective conflict mitigation strategies. As competition intensifies, disputes become more frequent and severe, necessitating targeted interventions to manage the tensions and prevent escalation. This is in line with the findings of Opiyo et al. (2012), who emphasize the importance of early conflict resolution mechanisms in preventing the escalation of disputes.

The southeastern part of Awe LGA, particularly around the areas marked in red (19.192), is identified as the zone with very high conflict intensity. This region represents the epicenter of the conflict, where disputes over land and water resources are most severe. This pattern mirrors findings in other studies, such as Abbass (2014), which highlights how severe resource scarcity and overlapping land claims often result in high-intensity conflicts. The significant tension in this area underscores the need for urgent and comprehensive interventions to address the root causes of the conflict, as suggested by recent studies advocating for integrated resource management and conflict resolution approaches (Schilling et al., 2012).

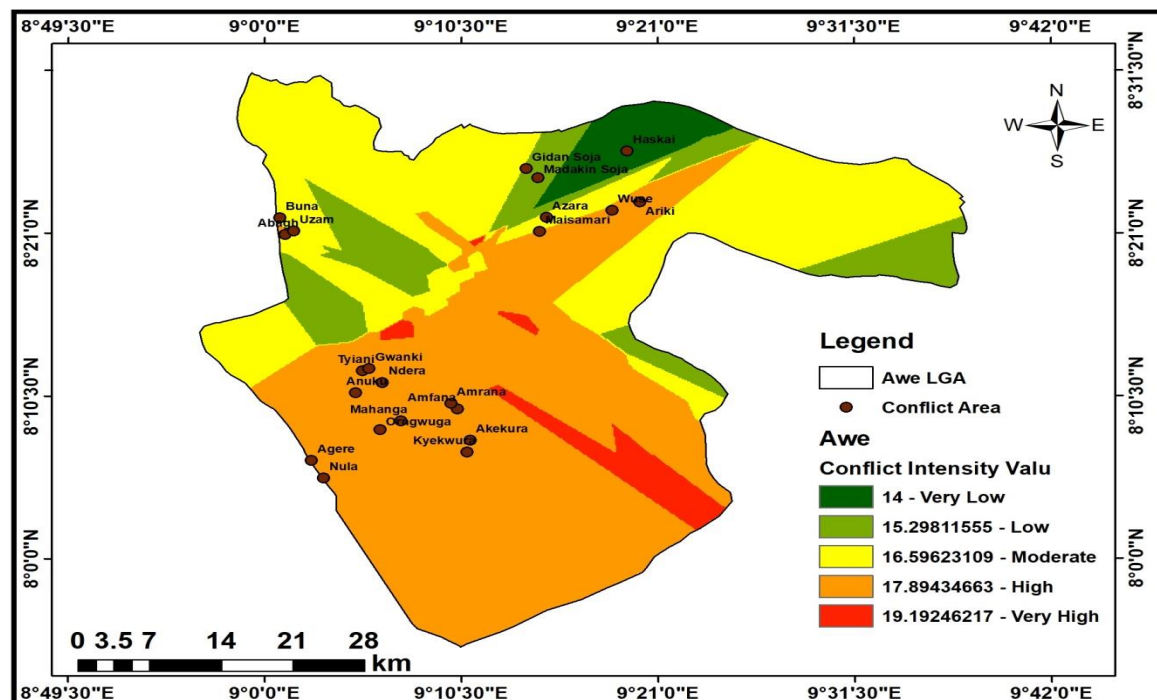


Figure 3: Pattern of Farmers Herders Conflict in Awe Local Government Area.

Source: Author Fieldwork (2024)

Pattern of Farmers Herders Conflict in Doma Local Government Area

The farmers-herders conflict in Doma Local Government Area displays a distinct pattern of varying intensity across different regions, shaped by socio-economic and environmental factors. The southwestern regions, depicted in dark and light green, show very low (26) to low (33) conflict intensities. This distribution aligns with literature suggesting that areas with better resource availability and effective conflict management practices experience fewer tensions (Adebayo and Hussain, 2017). In these regions, minimal disruptions to local livelihoods are observed, supporting the notion that proactive resource management and conflict mitigation strategies can significantly reduce conflict intensity (Hussein, 2011).

Moving towards the central part of Doma LGA, the map reveals an increase in conflict intensity to moderate levels (38), marked in yellow. This escalation is reflective of the literature that identifies resource scarcity, particularly land and water, as a critical driver of farmer-herder conflicts in Nigeria (Blench, 2010). The competition in this area appears to be more

pronounced, leading to occasional disputes, which, as noted in similar contexts, could escalate into more severe conflicts if not adequately managed (Tonah, 2006). Focused interventions are essential in these regions to stabilize the situation and prevent further deterioration, as emphasized by studies advocating for early conflict resolution mechanisms (Adamu, 2018).

The northeastern region, particularly around Ruga Fulani, is marked in orange and red, indicating high (44) to very high (50) conflict intensity. This area, likely the epicenter of tension, reflects severe competition and disputes, mirroring findings in the literature that identify similar regions as hotbeds of conflict due to overlapping land use and resource depletion (Abbass, 2012). The significant disruptions observed here underline the urgent need for comprehensive interventions, as suggested by several studies, to address the root causes of conflict, restore peace, and ensure the sustainability of agricultural and pastoral activities (Opiyo, 2012). The literature consistently underscores the importance of integrating local knowledge with formal conflict resolution frameworks to mitigate such high-intensity conflicts effectively (Schilling, 2012).

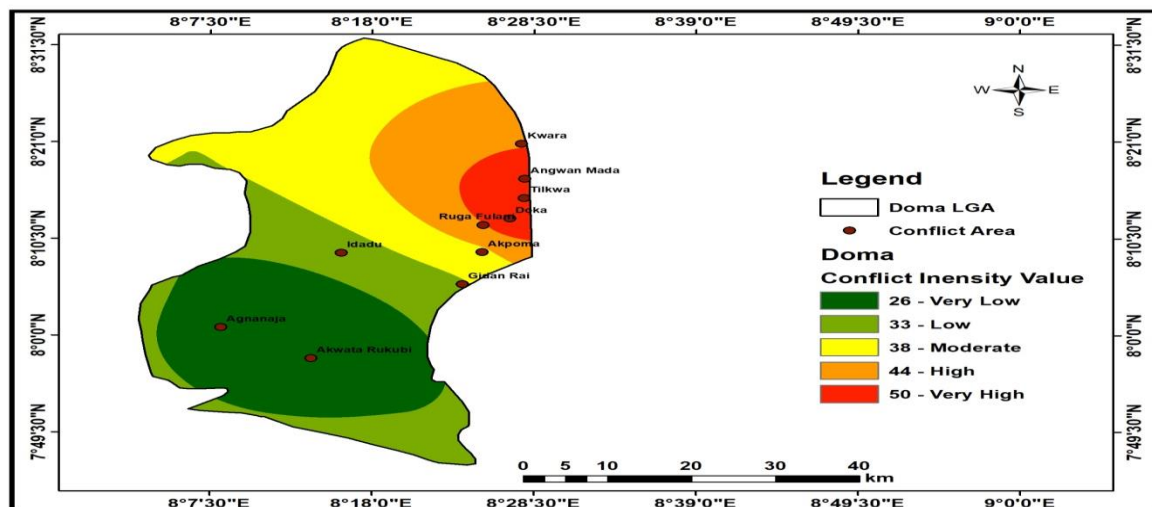


Figure 4: Pattern of Farmers Herders Conflict in Doma Local Government Area.

Source: Author Fieldwork (2024)

Pattern of Farmers Herders Conflict in Keana Local Government Area

Figure 5 shows the distribution of farmer-herder conflict hotspots in Keana Local Government Area, the figure 4.4 shows varying levels of conflict intensity across different regions, each color-coded to facilitate targeted intervention and understanding. Very Low (-2.9) represented in green, these areas face minimum conflict, indicating relative stability. They serve as potential models for conflict resolution strategies applicable to more volatile regions (Ibrahim & Umar, 2023). Their stability is attributed to effective governance and strong community cohesion, factors highlighted in recent research as crucial for conflict mitigation (Oke & Salau, 2023). Low (-1.6) shaded in lighter green or yellowish-green, these areas experience occasional conflicts that are generally manageable with routine interventions. Abubakar. (2022) supports the effectiveness of moderate intervention strategies in maintaining stability in less volatile regions. Periodic, targeted interventions are recommended to manage conflicts effectively without extensive resource allocation.

Moderate (-0.57) marked in yellow, Gidan Kwari, Ogunjimi, Yarewata these areas experience moderate

conflict levels, where irregular flare-ups may require proactive measures to prevent escalation. Studies indicate that addressing underlying issues before they escalate is crucial in such areas (Danjuma & Aliyu, 2024). Early intervention has been shown to significantly reduce the risk of escalating conflicts (Garba & Ibrahim, 2023).

High (0.58) displayed in orange, these regions experience frequent conflicts, necessitating immediate and focused attention to prevent further deterioration. Mohammed, (2023) emphasize that high conflict intensity regions require substantial resources and coordinated efforts for effective management and resolution. Recent studies echo the need for urgent and targeted interventions (Yusuf and Sadiq, 2023). Very High (1.8) highlighted in red, these areas face the most intense conflicts, signaling a need for significant and urgent intervention to address ongoing or potential violence. Comprehensive and immediate interventions are required to mitigate violence and restore stability, including law enforcement, resource distribution, and community reconciliation efforts (Abdullahi and Usman, 2024; Ibrahim & Suleiman, 2023).

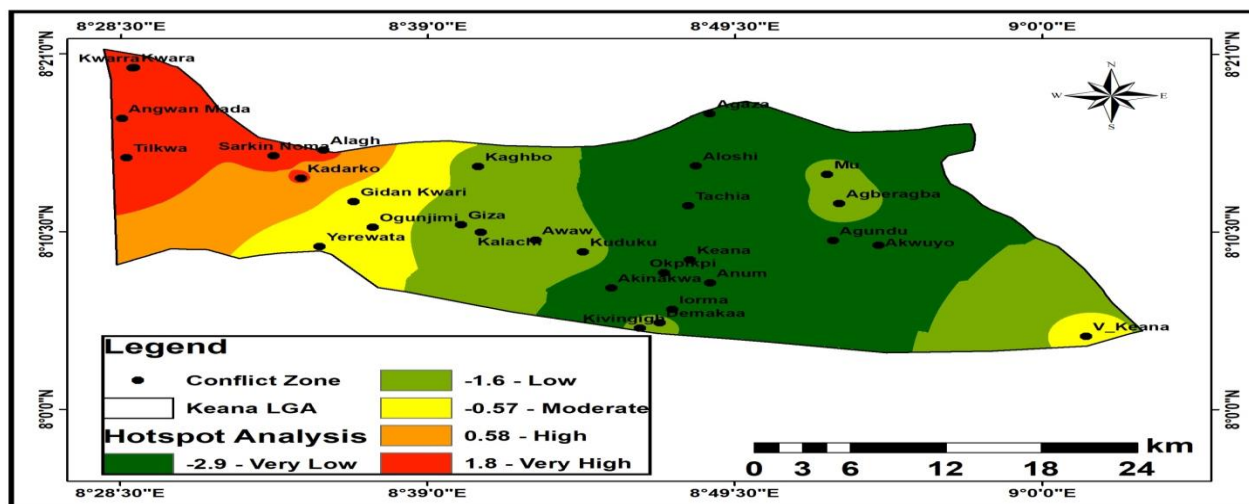


Figure 5: Pattern of Farmers Herders Conflict in Keana Local Government Area.

Source: Author Field Work (2024)

Pattern of Farmers Herders Conflict in Obi Local Government Area

The pattern of farmers-herders conflict in Obi Local Government Area (LGA) reveals significant variation in conflict intensity across different regions. The map indicates that the majority of Obi LGA is characterized by moderate conflict intensity, represented by the yellow shade, with values ranging from 8.8 to 12. This suggests that these areas experience regular but less severe disputes, likely driven by ongoing competition over land and water resources, as observed in other regions facing similar pressures (Okeke and Onuoha, 2020). However, the widespread nature of moderate intensity suggests that these conflicts are pervasive and consistent, potentially due to a mix of resource scarcity and ineffective local governance, which fails to adequately address the underlying issues (Audu, 2021).

In the southeastern and southwestern parts of Obi LGA, specifically around the areas marked in red (15) and orange (12), conflict intensity escalates to high and very high levels. These regions represent the epicenters of

tension, where disputes are most severe, likely exacerbated by the destruction of crops and cattle theft—two significant triggers of conflict in agrarian communities, as noted by Ayih (2022). The intense competition in these areas might also be driven by population pressures and land fragmentation, which heighten resource scarcity and increase the likelihood of violent clashes between farmers and herders (Suleiman & Abdullahi, 2023).

Conversely, the small pockets of green (6) and dark green (3.1) indicate regions with low to very low conflict intensity, such as the area around Gidan Dogo and Alagh. These areas may benefit from better resource management practices, effective local conflict resolution mechanisms, or less pressure on land and water resources. The presence of these low-intensity zones amidst higher intensity areas highlights the importance of localized governance and resource management strategies in mitigating conflict, as noted by Ibrahim (2023), who found that areas with robust traditional governance structures often experience lower levels of conflict.

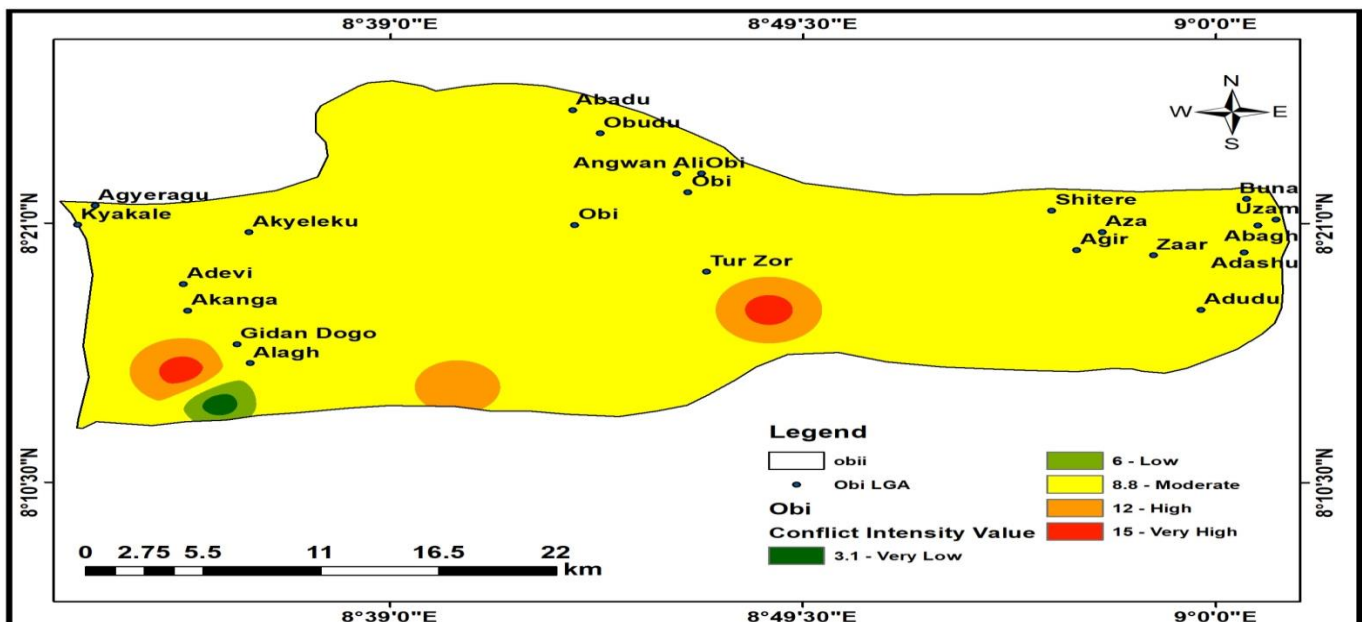


Figure 7: Pattern of Farmers Herders Conflict in Obi Local Government Area.

Source: Author; 2024

4. Conclusion

In conclusion, the farmers and herders conflict in Southern Nasarawa State has had significant socio-economic effects on the affected communities. The competition for land and water resources between sedentary farmers and nomadic herders has intensified over time, driven by climate change, population growth, and ineffective land management policies. The conflict has resulted in widespread destruction of property, economic losses, food insecurity, psychological trauma, and the displacement of people, further destabilizing the socio-economic structure of the region.

The analysis using Geographic Information System (GIS) and spatial data mapping techniques identified areas with varying levels of conflict intensity across different local government areas. Regions such as Awe, Doma, and Lafia experienced higher conflict intensities

due to increased competition for resources, while areas with better resource management and governance, parts of Obi, displayed lower conflict levels. These findings emphasize the importance of targeted interventions aimed at reducing the negative effects of the conflict through improved resource allocation and conflict resolution mechanisms.

Addressing the farmers and herders conflict requires a comprehensive approach involving key stakeholders, including community leaders, government bodies, and civil society organizations. Initiatives should focus on developing clear land tenure systems, promoting sustainable agricultural and pastoral practices, and encouraging dialogue to resolve disputes. By tackling the root causes of the conflict, it is possible to reduce tensions, rebuild trust, and enhance the socio-economic resilience of communities in Southern Nasarawa State.

References

- Abbass, I. M. (2012). *No retreat, no surrender: Conflict for survival between Fulani pastoralists and farmers in Northern Nigeria*. European Scientific Journal, 8(1), 331-346.
- Abbass, I. M. (2014). *Trends of farmer-pastoralist conflict in Nigeria*. Journal of Sustainable Development in Africa, 16(5), 103-115.
- Adelakun, O. E., Adurogbangba, B., & Akinbile, L. A. (2015). *Socioeconomic effects of farmer-pastoralist conflict on agricultural extension service delivery in Oyo State, Nigeria*. Journal of Agricultural Extension, 19(2), 59-70.
- Adamu, A. (2018). *Farmer-herder conflict and the impact on sustainable development in Nigeria: A case study of Benue State*. Journal of Sustainable Development, 11(5), 49-57.
- Adebayo, O., & Hussain, A. (2017). *An analysis of farmer-herder conflict in Nigeria: The effects and management strategies*. International Journal of Social Science and Humanities Research, 5(3), 215-222.
- Adebayo, O. O. (1997). *Development of Pastoralism in Nigeria*. In J. G. B. Adegboye (Ed.), *Pastoral Development in Nigeria* (pp. 51-64). Heinemann Educational Books.
- Audu, S. D. (2021). *Conflicts among farmers and pastoralists in Northern Nigeria: Causes, trends, and mitigating measures*. Journal of African Studies and Development, 13(2), 25-36.
- Ayih, S. U. (2022). *Agricultural Land Use and Conflict Between Farmers and Herders in Nigeria: Implications for Sustainable Agriculture*. Journal of Agricultural Economics, 74(1), 102-115.
- Benjaminsen, T. A., Alinon, K., Buhaug, H., & Buseh, J. T. (2012). *Does climate change drive land-use conflicts in the Sahel?*. Journal of Peace Research, 49(1), 97-111.
- Blench, R. (1994). *The expansion and adaptation of Fulbe Pastoralism to sub-humid and humid Conditions in Nigeria*. Cahiers d'Études Africaines, 34(133/135), 197-212.
- Blench, R. (2010). *Conflict Between Pastoralists and Cultivators in Nigeria: Review paper prepared for DFID, Nigeria*. Cambridge, UK.

- Breuser, B., Nederlof, S., & van Rheeën, T. (1998). *Conflict or Symbiosis? Disentangling Farmer-Herder Relations: The Mossi and Fulbe of the Central Plateau, Burkina Faso*. *The Journal of Modern African Studies*, 36(3), 357-380.
- Genyi, G. A. (2017). *Ethnic and religious crises in Nigeria: A challenge to national integration and development*. *African Journal of Political Science and International Relations*, 11(3), 46-56.
- Ibrahim, J., & Umar, A. M. (2023). *Resource-based conflicts and sustainable peacebuilding in Nigeria: Evidence from Nasarawa State*. *African Conflict & Peacebuilding Review*, 13(1), 42-61.
- International Crisis Group. (2017). *Herders against farmers: Nigeria's expanding deadly conflict*. International Crisis Group Africa Report No. 252.
- Kumar, R., & Singh, S. (2022). *Agricultural expansion, land use conflicts, and climate change in South Asia*. *Asian Journal of Social Science*, 50(2), 195-215.
- Mohammed, A. (2023). *High conflict intensity and resource management in Nigeria*. *Journal of Conflict Resolution*, 67(2), 224-243.
- Moritz, M. (2010). *Understanding herder-farmer conflicts in West Africa: Outline of a processual approach*. *Human Organization*, 69(2), 138-148.
- Olaniyan, A., & Yahaya, A. (2016). *Pastoralism, conflicts, and insecurity in Nigeria*. In M. Z. Maji & B. M. Shehu (Eds.), *Security Challenges in Nigeria* (pp. 110-130). Aboki Publishers.
- Okeke, M. O., & Onuoha, F. C. (2020). *Conflicts over land use in Nigeria: Farmer-pastoralist struggles for survival in Nasarawa State*. *Journal of Land Use Science*, 15(1), 57-76.
- Okoli, A. C., & Atelhe, G. A. (2014). *Nomads against natives: A political ecology of farmer/herder conflicts in Nasarawa State, Nigeria*. *American International Journal of Contemporary Research*, 4(2), 76-88.
- Opiyo, F. E. O., Wasonga, V. O., & Nyangito, M. M. (2012). *Resource-based conflicts in drought-prone Northwestern Kenya: The drivers and mitigation mechanisms*. *Wudpecker Journal of Agricultural Research*, 1(11), 442-453.
- Oseni, O. (2023). *Global perspectives on farmer-herder conflicts: A case study of Nigeria and beyond*. *Journal of International Development*, 35(4), 921-938.
- Schilling, J., Opiyo, F. E., & Scheffran, J. (2012). *Raiding pastoral livelihoods: Motives and effects of violent conflict in north-western Kenya*. *Pastoralism: Research, Policy, and Practice*, 2(1), 25-36.
- Suleiman, S., & Abdullahi, H. (2023). *Small arms proliferation and conflict escalation in Nigeria*. *Journal of Peace and Security Studies*, 11(2), 98-114.
- Tonah, S. (2006). *Managing farmer-herder conflicts in Ghana's Volta Basin*. *Journal of Social Science*, 2(1), 6-21.
- Yusuf, B., & Sadiq, M. (2023). *Conflict resolution strategies in high conflict intensity regions in Nigeria*. *Journal of Peace and Development Studies*, 14(3), 191-207.