

Evaluation of Herdersmen Farmers Crisis in Surulere Local Government Area, Oyo State, Nigeria

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Abstract

This study evaluates the herdersmen-farmers crisis in Surulere Local Government Area, Oyo State, Nigeria, focusing on its causes, nature, and the community's responses. With a sample size of 285 participants, selected from the affected wards within the Local Government Area, the research utilized a combination of surveys, and focus group discussions to identify the significant factors contributing to the conflict. Descriptive statistics, percentages, weighted mean indices, five-point likert scale measures and logistic regression was used to analyze the main variable contributing to the farmers-herders clash, where 10 of the 12 independent variables assessed were statistically significant (crop damage by cattle, water pollution, indiscriminate bush burning and unwanted provocation), and had a strong affinity ($p < 0.01$) with conflict. The study also highlights nature of crisis by exploring various types of conflict, which are public unrest/riot (2.71), displacement from property (2.99), breach of public peace (3.09), disruption of agricultural activity and livestock rearing (3.12), and arson (3.59) all having index value greater than the mean value of 2.45. Community responses to the conflict include various informal and formal conflict resolution methods, with a significant reliance on traditional and local institutions. However, dissatisfaction with the effectiveness of these institutions is prevalent, indicating the need for improved conflict resolution strategies. The study concludes by recommending enhanced security measures, revision of land use policies, and the promotion of cooperative frameworks to mitigate the conflict and promote peaceful coexistence.

Keywords: Herdsmen, Farmer, Crisis, Surulere, Nigeria

Introduction

The struggle for economic or political resources accounts for the major source of violent conflict among communities in Nigeria (Nwokolo, 2013). Though the communal conflict in the country vary from one region/state to another; there are some cross-cutting themes such as pastoralists and farmers, ethno-religious conflicts in the north and middle-belt, clashes between communities and oil companies in the south-south, clashes over farmland in the south-east, chieftaincy crisis in the south-west (James & Muhammad, 2019). All of these put together and many more are various degrees of conflicts that have been witnessed and experienced over time in various parts of the country.

These crises reinforce circles of extreme poverty and hunger, which invariably destroys social status, food security and affect the most marginalized groups which comprise of women and children of a teeming population like Nigeria. The effects of these is seen in the lives of farmers who have become a liability to others in the communities. All these have drastically reduced agricultural labour force in such areas which posed huge challenges for the constant growing Nigerian population, hence necessary planning measures have to be taken in order to address this issue (Ofem and Bassey, 2015).

Several practices within rural development have provided examples of policy delivery designed to respond to social diversity issues and potential conflicts (Marsden, Banks, Renting, & Van

Der Ploeg, 2001). In Surulere local government area, conflicts between farmers and herders are strongly influenced by socio-economic factors. Understanding who participates in these conflicts is equally important. In many rural areas, crop farmers are predominantly sedentary land users dependent on family labour and seasonal income, while herders often depend on cattle mobility, pasture access, and water availability. Their socioeconomic characteristics such as age, gender, education, ethnicity, religion, and livelihood dependence, shape perceptions, bargaining power, and vulnerability.

Socio-ethnic relationships would most likely occur on a smaller scale in such a small town or village, with Surulere local government area possessing these attributes, through day-to-day engagement among social ethnic groups. In other words, the relationship between the built environment and social cohesion can be concluded to be problematic in developing countries (Dempsey, 2008). It is against this background, that this study evaluates the impact of herdsman-farmers conflict on socio-economic development with a view to providing necessary information for policy making. To achieve the goals, the following research objectives are to: examine the nature and extent of herdsman-farmer crises, evaluate the causes of the crises and to evaluate community responses to crisis between farmers and herdsman.

Conceptualising Farmer–Herder Conflict

Farmer–herder conflict refers to disputes between crop cultivators and livestock producers arising from competing claims over natural resources, especially land, pasture, and water. Such conflicts may remain latent or escalate into violence, destruction of assets, displacement, and long-term social fragmentation (Benjaminsen & Ba, 2009; Abbass, 2014; Adisa & Alabi, 2018).

Conflict Theory

Conflict Theory explains social tensions as outcomes of unequal access to resources, authority, and power. Classical conflict theorists argue that competition over scarce resources generates domination, resistance, and recurrent confrontation (Marx, 1867; Coser, 1956; Collins, 1975). In agrarian contexts where land administration and security institutions are weak, groups mobilise to defend perceived interests, identities, and livelihoods (Homer-Dixon, 1999; Turner, 2004).

Resource Competition Theory

Resource Competition Theory posits that scarcity of productive resources increases rivalry among user groups whose livelihoods depend on access to them. In rural Africa, competition intensifies when expanding cultivation encroaches into grazing areas, stock routes are blocked, or water points become contested (Blench, 2010; Odoh & Chilaka, 2012; Moritz, 2010). Thus, changes in land use systems often convert routine interaction into open conflict.

Eco-violence Theory

Eco-violence Theory links environmental stress—such as drought, desertification, declining pasture, and water scarcity—to migration, livelihood stress, and violent competition. Environmental degradation can compel pastoral mobility into new territories, thereby increasing friction with sedentary farmers (Homer-Dixon, 1994; Okoli & Atelhe, 2014; United Nations Environment Programme, 2018).

Empirical Evidence

Studies across Nigeria consistently identify crop damage, cattle rustling, water competition, retaliatory attacks, arms proliferation, and weak governance as major drivers of farmer–herder conflict (Bello, 2013; Ofem & Inyang, 2014; Adisa & Alabi, 2018). Recent scholarship also links climate variability, youth unemployment, and declining rural opportunities to heightened tension and recruitment into violent reprisals (Ajuwon, 2021; International Crisis Group,

2018). However, much of the literature concentrates on the Middle Belt and northern Nigeria, with comparatively fewer detailed studies from southwestern states. This study therefore contributes place-specific evidence from Oyo State.

Materials and Methods

The study area is Surulere Local Government Area in Oyo State, which was established in 1991 with headquarters at Iresa-Adu, comprises several towns and villages including Iresa-Adu, Igbon, Iresa-Apa, Oko-Irese, and Fasina, organized into ten political wards. The population is predominantly Yoruba, with Yoruba language widely spoken and Christianity and Islam as the major religions. Traditional governance remains significant, with rulers such as the Olugbon of Igbon and Aresa of Iresa-Adu and Iresa-Apa. The local economy is driven by trading, agriculture, and artisanal activities, with cassava farming as the dominant occupation alongside hunting, weaving, fishing, and livestock rearing. Ecologically, the area lies within a derived savannah zone, transitioning between forest and northern savannah vegetation, shaped by intensive agricultural practices.

The study relied on primary data collected through questionnaires, direct observation, and focus group discussions to examine farmer–herder conflicts, their causes, and impacts. The sampling frame covered all ten wards, including farmers, herders, community leaders, security personnel, and residents. Five wards were purposively selected, encompassing key districts such as Iresadu/Arolu, Oko, Iwofin, and Gambari/Baya. Within these, seven villages were chosen based on the prominence of farmer and herder populations, ensuring representation of conflict dynamics across the study area.

Table 1: Political Wards and their Settlements in Surulere Local Government, Ogbomoso, Oyo State.

S/N	Political wards	Villages	Fulani settlements	Selected Settlements
1	Baya Oje	Onipaanu, Idi-Igba, Olomi, Ayetoro Kale, Jabata, Kojumonu, Temidire, Mumuni, Oloya Paasi, Olusubu	Gaa Idi-Ya, Gaa Keewo, Gaa Idi-Apa, Gaa Oke-Ogbe, Gaa Abule Johnuu,	Onipaanu, Gaa Abule Johnuu
2	Igbon/Gambari	Olori, Alagbado, Oloyaa Pasi, Keere Araro, kuku, Alate, Iyelu, Gbede	Gaa Alfa Hameed, Gaa Dotio, Gaa Mumini, Gaa Duro, Gaa Shereki, Gaa Musa, Gaa Kuku	Alagbado, Gaa Musa
3	Iresapa	Onikoko, Idi ayin, Elekuro, Agbaa	Gaa Tunbi, Gaa Bello	Tunbi
4	Iresaadu	Alagbado Ojo, Elewuro, Olokiti, Olose, Elesinmeta, Il	Gaa olokiti, Gaa Elesin	Olokiti
5	Oko	Araromi, Adeoba, Aagba, Ajaguusi, Olose, Onikeke, Origi,	Gaa Elepoo, Gaa Ogiele, Gaa Iware	Ogiele
6	Iwofin	Babanifa, Begbaaji, Iwofin, Onisa. Ori eran, Oke Aasa	Gaa Gbedu, Gaa Eleku	-
7	Ilajue	Aserawo, Ayigbiri, Baale Ile Oba, Ikolo, Ilajue, Oke awon, Ipasa aye, Iwonso, Laega	Gaa Ikolo	-
8	Mayin	Adara OdoOya, Iware, Ogele, Mayin, Okin, Pand Tafon, Odabon, Temide, Ilogbo	Gaa Odanbon	-
9	Iregba	Idi Ori, Ilosin, Okiti, Olowosoke, Fasina, Omonijuku, Ogaada, Sadwin	Gaa Okiti	-
10	Arolu	Alagbade, Alayin, Arolu, Elebe, Idi-Opele Ikunsin, Iranyin, Sapati	Gaa Ologbo	-

Source: Author's Compilation, 2023 From Field Survey and Google Earth Imagery

The study adopted a multistage sampling approach to investigate farmer–herder conflict. From a population of 407 farmer households across seven villages in five selected wards, 50% (202) were sampled. Additionally, 25% of herders (83) were selected, yielding a total sample size of

285 respondents, all of whom received questionnaires. The first stage involved purposive selection of five wards based on farming intensity, consistent with Alan Bryman's sampling principles. The second stage selected seven villages based on proximity of farmers and herders. Finally, simple random sampling identified farmers, while snowball sampling was used to reach herders and cattle owners.

The methods of analysis used for this study include descriptive statistics, percentages, weighted mean indices, five-point likert scale measures which ranged from strongly agree (5) to strongly disagree (1) for perception variables. Logistic regression was used to test significant factors responsible for the causes of the conflict between crop farmer and cattle herders. Logistic regression model is well suited for studying the degree of relationship between a categorical or qualitative outcome variable and one or more predictor variables. In the simplest case of one predictor X and one dichotomous outcome variable Y, the logistic model predicts the logit of Y from X. The logit is the natural logarithm (ln) of odds of Y (Gujarati, 2008). The logit regression model is explicitly specified as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} \dots (1)$$

Where:

Y = Interpersonal conflict (any conflict mentioned = 1; otherwise 0)

X1 = Crop damage by cattle

X2 = Land encroachment

X3 = Inadequate grazing reserves

X4 = Lack of access to water points

X5 = Pollution of water points

X6 = Indiscriminate bush burning

X7 = Unwanted Provocation

X8 = Land use policy that vested control of land to government

X9 = Disregard to rule and regulations

X10 = Killing of stray cattle

β_0 = constant

β_1 - β_{13} = regression coefficients

u = error term

Results and Discussion

Nature of the farmers and Herdsmen Crisis in the study Area

This section focused on the relationship that exists between farmers and herders, the nature of the crisis that ensues between them and the various reactions that follow.

The socioeconomic characteristics of farmers and herders in Surulere Local Government Area

The study examined the socioeconomic characteristics of farmers and herders in Surulere Local Government Area and how these factors shape recurring farmer–herder conflicts. Findings show that the sampled population was predominantly male (75.8%), indicating that both crop farming and cattle rearing are male-dominated occupations. Among herders, nearly all respondents were male, reflecting Fulani cultural norms where men traditionally undertake livestock herding and physically demanding tasks. This gender composition suggests a higher likelihood of direct involvement in conflicts, as men are often seen as household and community protectors.

In terms of age, most crop farmers were between 40–49 years, while many herders fell within the 30–49 years bracket. This indicates that farming and herding are mainly carried out by

economically active and physically energetic middle-aged adults. Such age groups are often more productive but may also be more prone to disputes over land and resources. The study further found low educational attainment among both groups. Most farmers had only primary education, while many herders had nomadic or Qur’anic education, and a significant proportion had no formal schooling. Very few respondents possessed tertiary education. Limited education may reduce access to conflict resolution skills, modern agricultural knowledge, and sustainable resource management practices.

Ethnically, most crop farmers were Yoruba, reflecting the indigenous population of the study area, while most herders were Fulani, consistent with their historical association with pastoralism. Ethnic identity may deepen mistrust and heighten tensions during disputes. Regarding marital status, most respondents in both groups were married, indicating strong family responsibilities that may increase economic pressures. Household size was generally large, with many respondents having 7–9 persons per household. This can intensify competition for income, land, pasture, and water resources. Most respondents had also lived in the area for over 16 years, suggesting long-term settlement and entrenched relationships, whether cooperative or conflictual. Finally, most farmers owned medium-sized farms of 11–15 acres, though land fragmentation under traditional tenure systems was common. Encroachment by grazing cattle on these fragmented farms remains a major trigger of conflict. Overall, demographic, educational, ethnic, and economic conditions significantly influence the persistence of farmer–herder crises.

Table 2: The socio-economic characteristics of farmers and herders in the study area

Socioeconomic Variable	Key Findings	Implications for Farmer–Herder Conflict
Gender	Majority of respondents were male (75.8%). Both farming and herding were male-dominated occupations. Nearly all herders were male.	Male dominance may increase direct participation in confrontations, as men are often viewed as protectors of households and communities.
Age	Most crop farmers were aged 40–49 years, while many herders were within 30–49 years.	Economically active and energetic middle-aged adults are more engaged in production but may also be more involved in land and resource disputes.
Educational Level	Most farmers had primary education. Many herders had nomadic or Qur’anic education, while a significant proportion had no formal education. Very few had tertiary education.	Low education may weaken conflict resolution capacity, limit adoption of modern practices, and reduce sustainable resource management.
Ethnicity	Most crop farmers were Yoruba, while most herders were Fulani.	Ethnic differences may reinforce mistrust, identity divisions, and mobilization during disputes.
Marital Status	Majority of both farmers and herders were married.	Family responsibilities may increase economic pressure and intensify competition for livelihood resources.
Household Size	Many respondents had households of 7–9 persons.	Large households increase demand for food, income, land, pasture, and water, thereby heightening competition.
Years of Residence	Most respondents had lived in the area for over 16 years.	Long-term residence may create entrenched relationships, historical grievances, or stronger claims over land and resources.
Farm Size	Most farmers owned medium-sized farms of 11–15 acres. Land fragmentation under traditional tenure systems was common.	Fragmented farms are vulnerable to cattle encroachment, making crop damage a frequent trigger of conflict.

Author’s Field Survey, 2023

The Relationship Between the Farmers and Herdsmen Before the Clash Occurred

The farmers and herdsmen conflict in Nigeria is a conflict that has been in existence since the beginning of the Fourth Republic in 1999. However, the conflict increased in intensity with attacks and clashes reported with much more frequency, and number of people displaced. However, before the conflicts began, the relationship between farmers and herdsmen had been one of mutual co-existence just as it was pinpointed by the community heads in the study area. Ofem and Inyang (2014) for example revealed that a symbiotic relationship existed before now between the nomads and the farmers in every new community they stopped over to take a rest. The residents of host communities usually farmers, derived free organic manure from cow dung and protein from the beef and dairy products, while the nomads relied on the farm produce for food.

Reaction of Both Parties and Level of Awareness of Respondent about the Conflict in their Communities

The herdsmen are naturally and culturally known to be nomads and migrants i.e. they move from one location to the other, hence, they do not care about permanent land ownership. They care more about their cattle and other livestock above everything else which includes their lives and hence they are ready to do anything possible to protect their livestock. The farmers on the other hand who reside majorly in the southern part of the country live sedentary lifestyles and hence, place much importance on ownership of land and are very defensive when it comes to the encroachment of their lands by foreign parties. Given the priority placed on cattle by the herdsmen and land by the farmers, conflict was bound to happen when one party's activity began to affect that of the other. Since both parties in the conflict rely heavily on the use of land, the crises between them started when the available land was not enough for both parties to effectively carry out their functions.

The reaction of both parties to the conflict has been of varying degrees. About 80% of the report gathered on clashes between farmers and herdsmen shows that the clashes that occurred in farming communities across the study area are usually initiated by the herdsmen. In cases where the attacks were initiated by the farmers, they were reported to be reprisal attacks physical harm/injury, although there have also been cases where the attacks were solely initiated by the farmers.

The table also reveals the awareness of the respondent about the crisis between farmers and herders in the communities in Surulere Local Government Area. A large proportion (98.9%) of the respondents are aware of the farmers and herders' crisis in their respective communities. While, the remaining proportion (1.1%) are unaware of the crisis. The level of awareness on the farmers-herders crisis across the settlements are: 34.4% of the respondent from Alagbado/Ibaosin village shows their awareness about the crisis, 30.9% of those in Temidire village, 14.7% and 13.0% from Olokiti and Tunbi village respectively (Table 2). The respondents affirmed that farmers-herders' crisis is one of the issues that they are combating in their respective community and has been affecting their occupational activities and other daily activities. This shows a high level of resident awareness on the crisis in the study area. This also implies that the farmers – herders' crisis is persistent in the study area.

The persistent nature of farmers-herders crisis in the study area is not unlikely. This is due to the fact that the primary nature of the crisis is resource-based, involving disputes over access to arable land, water sources, and grazing areas, driven by competition for limited resources, environmental factors such as climate change and land degradation contribute to the crisis by affecting resource availability (Adepoju, 2017). Furthermore, the study has revealed that the herders are adamant the cattle rustling by their neighboring communities also contributes to the crisis. The major response of farmers to attacks on their farmlands and communities by

herdsmen has been the killing of cattle and herdsmen, the Fulani herdsmen have been reported to not only destroy farmlands, houses and farm settlements; there have also been reported to rape and physically molest women in the farming communities.

Table 3: Level Awareness of Respondent on Farmers-Herders' Crisis in the Study Area

Level of awareness	Villages/town					Total
	Ogiele	Temidire/Onipaanu	Tunbi	Alagbado/Ibaosin	Olokiti	
Yes	17 6.0%	88 30.9%	37 13.0	98 34.4	42 14.7	282 98.9
No	0 0.0%	0 0.0%	0 0.0%	2 0.7%	1 0.4%	3 1.1%

Author's Field Survey, 2023

Various Types of Crises in the Study Area

The herdsmen-farmers crisis encompasses various types of crises, each carrying its own significance. This multifaceted issue involves conflicts over land, resources and ethnic tensions, making it complex to address. Adesina (2018) highlight the importance of understanding the economic dimensions, as clashes often arises from competition for scarce resources such as grazing land and water, a study by Akinwotu (2020) underscore the social aspect, emphasizing the role of identity, cultural differences, and historical grievances in fueling the crisis. Various types of crisis adopted in the study area were to get the Nature of Crisis Index (NCI). These are in increasing order of crisis, public unrest/riot (2.71), displacement from property (2.99), breach of public peace (3.09), Disruption of Agricultural activities and Livestock Rearing (3.12) and Arson (3.59), as shown in Table 3. Hence, the former which have the higher value than the mean value has been the major factor and is still having greater propensity of causing crisis in the study area. The rest namely murder, grievous bodily harm, violence, harassment, and social divisions have very low NCI with an index 1.63, 1.64, 1.71, 1.72 and 2.25 which are all below the mean average value indicates that they contribute little to the nature of crisis occurring in the study area

Table 4: Different Types of Crime Perpetrated in the Study Area

Type of crisis	Level of frequency					TWV	N	NCI (x)	D	Remarks
	VF 5	F 4	MF 3	NF 2	NFA 1					
Arson	48	154	23	38	22	1,023	285	3.59	1.14	Very high
Harassment	0	0	4	197	4	490	285	1.72	-0.73	Very low
Grievous Bodily Harm	0	0	3	177	105	468	285	1.64	-0.81	Very low
Breach of Public Peace	2	56	199	21	7	880	285	3.09	0.64	Very high
Murder	0	0	0	180	105	465	285	1.63	-0.82	Very low
Violence	0	0	6	189	90	486	285	1.71	-0.74	Very low
Public Unrest/Riot	0	12	185	78	10	769	285	2.71	0.26	High
Displacement from Property	1	76	128	78	2	851	285	2.99	0.54	High
Disruption of Agricultural activities and Livestock Rearing	16	81	122	58	13	889	285	3.12	0.67	High

Social Divisions	0	1	18	159	107	642	285	2.25	-0.20	Low
Total						6,963		24.45		
Mean NCI	2.45									

Author's Field Survey, 2023

Availability of Land Use Resources in the Study Area

Herders and farmers often compete for limited resources such as arable land, water, and grazing areas. Competition intensifies when these resources become scarce due to factors like climate change and population growth (Adisa, 2018). Idris (2013) noted that user group (herders and farmers) depend on these resources for their economic prosperity. As evidenced from Table 4, availability of land-use resources, was measured using Land-use Index (L_{uI}). The level of availability of their agreement was measured on a Likert scale of five (5) points. The average calculated (L_{uI}) is 4.41. This implies that forage ($L_{uI} = 4.45$) which has an index value above the mean land use value is the major available resources available to both farmers and herders in the study area. This implies that availability of land-use resources such as forage is high in the study area. This is not far-fetched from the reason why the herders are migrating to this area in a bid to find this land-use resources for their herds and based on the availability of this resources which is central to what is causing feud between the two user groups.

Table 5: Availability of Land-Use Resources

Land-use resources	Level of Availability					TWV	N	L_{uI} ($\bar{x}$)	D	D^2
	5	4	3	2	1					
Forage	145	124	15	1	—	1268	285	4.45	0.04	0.002
Water	130	140	14	1	—	1254	285	4.40	-0.01	0.000
Land	146	115	16	4	4	1250	285	4.39	-0.02	0.000
Total						3772		13.24		0.002
Mean L_{uI}	4.41									0.001

Author's Field Survey, 2023

Causes of Farmers-Herders Conflict

Respondents' Perceived Causes of Farmers-Herders Conflict

The farmers - herders crisis in various parts of the world, including but not limited to Nigeria, is marked by recurring conflicts between herders and farmers. These conflicts stem from a complex interplay of factors that often has root causes (Adepoju, 2017). As evidenced on Table 5, damage to crop by cattle ($CI = 4.24$), land encroachment ($CI = 3.94$), inadequate grazing reserves ($CI = 3.75$), lack of access to water ($CI = 3.69$), prolong drought ($CI = 3.47$), disregard to rules and regulation ($CI = 3.29$) and political crisis ($CI = 3.23$) are the causes of farmers-herders' crisis in the study area. While, factors such as killing of stray cattle ($CI = 2.12$), land use policy ($CI = 2.30$), pollution of water sources (2.60), and unwanted provocation ($CI = 3.08$) does not contribute significantly to farmers-herders' crisis in the study area.

Table 6: Causes of Crisis Between Farmers and Herders in the Study Area

Causes of crisis Causes	Level of Agreement					TWV TWV	N	CI (x)	D	D ²
	SA 5	A 4	U 3	D 2	SD 1					
Crop damaged by cattle	194	23	17	45	6	1209	285	4.24(1)	1.02	1.04
Land encroachment	114	85	45	37	4	1123	285	3.94(2)	0.72	0.52
Inadequate grazing reserves	60	139	62	10	7	1069	285	3.75(3)	0.53	0.28
Lack of access to water point	52	144	57	15	17	1054	285	3.69(4)	0.47	0.22
Killing of stray cattle	8	61	34	37	145	605	285	2.12(12)	-1.1	1.21
Pollution of water point	9	47	101	78	49	741	285	2.60(10)	-0.62	0.38
Indiscriminate bush burning	5	58	135	74	13	823	285	2.89(9)	-0.33	0.11
Unwanted provocation	11	85	111	73	5	879	285	3.08(8)	-0.14	0.02
Political crisis	11	100	121	49	4	920	285	3.23(7)	0.01	0.00
Disregard to rules and regulation	24	92	124	37	4	938	285	3.29(6)	0.07	0.01
Prolong draught	33	106	109	35	2	988	285	3.47(5)	0.25	0.06
Land use policy that vested control of land to government authority	34	121	99	30	0	652	284	2.30(11)	-0.92	0.85
Total						11,001		38.6		4.67
Mean	3.22									

Author's Field Survey, 2023

Factors Contributing to Farmers-Herder to Crisis in Surulere Local Government Area

In order to determine the main variable that contributes to the farmers-herders' crisis in the study area, the study utilize probit logistic regression analysis to examine the level of significant of each of the variables to the incidence of farmers-herders crisis. As evidenced from Table 6, out of 12 independent variables tested, 10 were statistically significant in predicting the incidence of farmers-herders' crisis in the study area. Among these variables, four (4) (i.e., crop damage by cattle, pollution to source of water, indiscriminate bush burning, and unwanted provocation) has a significantly strong affinity ($p < 0.01$) with the conflict. All the variables included in the model had positive signs, implying their direct relationship to the respondent's involvement in conflict. The -2-log likelihood (-2LL) of the model estimating the causes of conflict between farmers and herders indicates that there is no difference between the estimated logistic model and the hypothesized model. This implies that there is a significant relationship between the probabilities of engagement of farmers and herders in conflict and the explanatory variables included in the model. The Nagelkerke R-Square values and the model Chi-Square also suggest that the estimated conflict model had a good explanatory power.

The null hypothesis which stated that there is no significant factors responsible for the causes of the conflict between crop farmers and cattle herders was tested using the result of Table 6. From the results, 10 variables out of 12 variables were significant at $P < 0.01$ and $P < 0.05$ levels of probability. Therefore, the null hypothesis is rejected and the alternative which states that there is significant factors responsible for the causes of conflict between crop farmers and cattle herders accepted. The result presented on Table 4.6 further revealed that crop damage by cattle has a statistically significant ($p < 0.01$) direct relationship with farmer-herder conflict. This implies that a unit increase in the damage done to farmers' crops by herders' cattle would lead to an increase in the probability of occurrence of the conflict between the two different parties. This is consistent with the findings of Ingawa *et al.* (1999) and Bello (2013) among many others, that crop damage by cattle is among the causes of herder-farmer conflict.

Also, the positive relationship value of land encroachment indicates that the more the cattle routes are encroached, the more the probability to engage in conflict between farmers and the herders. This is in relation with the assertion by Ingawa *et al.* (1999) and Yahaya (2008) that land encroachment is among the causes of herder-farmer conflict. This is also significant ($p < 0.05$). Inadequate grazing reserve has a direct influence on the crop farmer – cattle herder

conflict and is statistically significant at $p < 0.05$. The implication is that, the more the grazing reserves continue to shrink, the more the probability of occurrence of the conflict.

Lack of access to source of water is statistically significant ($p < 0.05$) and has a direct relationship with the conflict between crop farmers and cattle herders. Also, pollution to source of water was found to be strongly statistically significant ($p < 0.01$) and has a positive and direct relationship with the conflict between crop farmers and cattle herders. The more the water points became polluted by the activities of farmers, the more likely is the occurrence of the conflict between the two different common resource users. As revealed in Table 4.6, indiscriminate bush burning is strongly significant ($p < 0.01$) and has a direct relationship with the conflict between crop farmers and cattle herders. According to a herder in one of the villages in Surulere Local Government Area during a focus group discussion, *“the farmers burn the trees, cut and burn the shrubs within their farms during the dry season just with the full intention to starve our cattle, and this is provocative”*

This variable was found to be strongly significant ($p < 0.01$) and has a positive relationship with the conflict between crop farmers and cattle herders. The more the menace continues to occur due to unwanted provocation, the more likely that conflict between crop farmers and cattle herders thrives. The relationship between the independent and dependent variable is positive and significant at $p < 0.05$. The traditional land tenure system creates land shrinkage due to inheritance, which reduces the average farm size of a household, thereby creating more room for encroachment, which in turn give rise to conflict. On the other hand, the 1978 Land Use Act currently being used, which vested so much control of land to government officials, does not favor the common man due to its complex procedure of acquisition. Having title to land, has become a very difficult affair for the farmer and almost an impossible task for the herder.

This variable was found to be statistically significant ($p < 0.05$) and has a positive relationship with the conflict between crop farmers and cattle herders. The prolong draught can be the main reason for the movement of herders from north to south, which triggers crop destruction as the herd moves. This variable also maintains positive relationship and is statistically significant at ($p < 0.05$). It is therefore one of the major causes of crop farmer–cattle herder conflict as one of the herders in Temidire Village noted by saying *“our cattle developed strange sickness which adversely leads to their death when they accidentally stray from our back while sourcing for pastures to feed them with, as it gotten to this level whereby, we do not care about ourselves in this community”* Political crisis and disregard for rules and regulation which maintain a positive relationship, are not significant at all with ($p > 0.05$) It is therefore not among the major causes of crop farmer and cattle herder conflict.

Table 7: Logistic Regression Estimates of the Factors Responsible to Causes of Conflict Between Farmers and Herders in the Study Area

Variable	Wald	Sig	Expected
Crop damaged by cattle	.000	0.002	3.485
Land encroachment	.000	0.001	3.523
Inadequate grazing reserves	.000	0.025	2.357
Lack of access to water point	.000	0.007	3.544
Killing of stray cattle	.000	0.004	4.349
Pollution of water point	.000	0.000	2.382
Indiscriminate bush burning	.000	0.000	3.184
Unwanted provocation	.000	0.000	2.184
Political crisis	.000	0.186	3.184
Disregards to rules and regulation	.000	0.067	2.394
Prolong draught	.000	0.004	4.004
Land use policy that vested control of land to government	.000	0.002	6.778
Model Chi Square	206.124		
Log likelihood	6.491		
Nagelkerke R-Square	0.98		
B= -1.880			
N=285			

Author's Field Survey, 2023

Community Responses to Farmers-Herders' Crisis in the Study Area

Response to farmers and herdersmen conflict

From the group discussion with the farmers, the farmers in the study area itemize 'Shoot to Kill' operation as the best option in dealing with the activities of the herdersmen. They are of the opinion 'Shoot to Kill' there will be little or no sightings of cattle in the affected areas. This can be a strategy of the herdersmen to stop moving in large herds, which are easy targets to kill. Possibly, the herdersmen may scatter their large herds into single numbers to avoid detection. The farmers strongly suggest that the killing of the cattle is long over-due and accuse government of a lacklustre attitude. Some express optimism that the herdersmen will never return. However, others are more skeptical noting that the operation pushes the herdersmen to neighbouring districts and not totally out of the country. According to a farmer, As far as the herdersmen are not entirely out of the community, the conflict is not entirely over (Fieldwork, 2023)

Level of Satisfaction with Formal Institution Established for Settlement of Conflict

The Satisfaction with Formal Institution Index (SFII) was used to assess the level of satisfaction with formal conflict resolution institutions. Table 7 shows that the level of satisfaction was measured on a five-point Likert scale, with a calculated mean index for SFII of 2.92. The Western Nigeria Security Network, also known as Amotekun (SFII = 3.08), is the principal institution with which the community is satisfied with its response to the farmers-herders problem in the research region. The results also found that respondents are dissatisfied with formal institutions such as the Nigeria Security and Civil Defence Corps (NSCDC) (SFII = 2.91) and the police (SFII = 2.79). The findings of the interview with respondents in the research area also revealed that respondents are dissatisfied with formal institutions such as the court and local government authority. Mr Alarepe, in the company of other farmers, was quoted as stating, *"We are tired of these pseudo-ways of resolving this conflict that gave preference to the herders over us"*. On the part of the herders, one, Mr Audu, expressed his discontent with the way the institution has treated herders as outsiders, which has contributed to the ongoing issue between them, the herders and the farmers; he believed that the crisis resolution was too one-sided. This means that neither farmers nor herders are happy with the formal institution's conflict settlement in the research area.

Table 8: Satisfaction with Formal Institution Established for Settlement of Conflict

Formal Institution	Level of Satisfaction						N	RSI		
	5	4	3	2	1	TWV		(x)	D	D ²
Security personnel	0	100	132	28	25	877	285	3.08	0.16	0.02
Court	0	40	193	31	21	822	285	2.91	-0.01	0.00
Local government	0	11	223	33	18	797	285	2.79	-0.13	0.01
Total						2,506		8.78		
Mean	2.92									

Author's Field Survey, 2023

Level of Satisfaction with Informal Institution Established for Settlement of Conflict

The level of satisfaction with informal institution established for settlement of conflict was measured using an index termed Satisfaction with Informal Institution index (SIII). The level of satisfaction was measured on a Likert scale of five (5) and the weights were attached for resolution of conflict. The calculated mean index for SIII is 3.16. as evidenced from Table 6, respondents were satisfied with conflict resolution of Crop Farmers' Association (SIII = 3.33), while, respondents are not satisfied with Cattle Breeder's Association (SIII = 3.08), and Traditional Rulers (SIII = 3.06) in the study area. On the other hand, the result presented on Table 8 shows that majority (44.9%) of the respondent affirmed that security personnel such as the Nigeria Polic Force (NPF), Western Security Network (i.e., Amotekun Corps), and Vigilante Association of Nigeria (VAN) are those they run to whenever there is a conflict between farmers and herders. This implies that the level of satisfaction with method of resolving the conflict in the study area was not too satisfactory.

Table 9: Satisfaction with Informal Institution Established for Settlement of Conflict

Informal institution	Level of Satisfaction						N	IRSI		
	5	4	3	2	1	TWV		(x)	D	D ²
Traditional Rulers	11	48	188	25	13	874	285	3.06	-0.12	0.01
Crop farmers association	27	72	164	13	9	950	285	3.33	0.17	0.03
Cattle breeders association	0	55	203	23	4	879	285	3.08	-0.08	0.01
Total						2,709		9.47		
Mean ISI	3.16									

Author's Field Survey, 2023.

Method of Conflict Resolution Between Farmers and Herders in the Study Area

Result presented in Table 9 shows the way in which conflicts are resolved in the study area. Majority (40.5%) of the respondents are of the view that conflicts are resolved is through payment of compensation. A considerable proportion (36.5%) noted that conflicts are solved amicable between warring parties, while, the remaining proportion (22.8%) affirmed that the conflict are resolved through verbal warning to erring party.

Table 10: Method of Conflict Resolution Between Farmers and Herders

Conflict resolution mechanism	Frequency	Percentage
Payment of Compensation	115	40.5
Verbal warning	65	22.8
Amicable Resolution	104	36.5
Re-Allocation of new plot	1	0.4
Total	285	100.0

Author's Field Survey, 2023.

The study identified the causes of conflicts between the herdsmen and farmers to be crop damage by cattle, land encroachment, inadequate grazing reserves, pollution, bush burning,

unwanted provocation and traditional land tenure constraints. These findings align with previous studies by Ofem and Inyang (2014), where it was found that destruction of crops and competition over land and natural resources were the causes of unrest in Cross rivers state. In their studies, Ingawa et al. (1999) and Yahaya (2008) also reported that land encroachment and reduction of pastoral corridors as constant causes of conflicts, while Adisa (2018) linked variation in climate, scarcity of resources, and mobility pressures to increased clashes amongst herdersmen and farmers. Unlike many national studies that emphasize ethnicity and insecurity, the Surulere evidence shows that resource-use conflicts are more dominant than ethno-religious explanations. Political crisis and disregard for regulations were not statistically significant in the model, suggesting that in this locality, the conflict is more ecological-economic than ideological.

The nature of crisis identified by this study are; Public unrest/riot, breach of peace, arson, displacement from property, disruption of farming and livestock activities, aligning with studies like Okoli and Atelhe (2014) and Akinwotu (2020) that identified displacement and violence in North Central Nigeria and destruction of farms, insecurity, fear, and social disorder respectively. Furthermore, the study found out that the conflict severely disrupts agriculture through destruction of crop by cattle, the access to farmland are being further reduced, farmlands are abandoned in zones that are not secure, a decline in planting cycles and reduced labour participation. This is in line with earlier studies that conflict reduces productivity in agricultural practices and discourages investment in rural communities. Also, the study partly confirms threats to food security through reduced farm output and labour losses, which implies that there will be lower local food supply, increase in prices of staples, increased hunger and poverty in rural areas.

The study also notes that, in Surulere LGA, there had been a peaceful coexistence between farmers and herders until institutions failed in managing changing pressures in resources that are available for use within the study area for both farming and cattle grazing. Thus, the crisis should be framed not merely as a security issue, but as a land governance, rural development, and livelihood sustainability challenge.

Summary, Conclusion and Recommendations

This chapter discusses the summary of findings, the planning implication of the findings, recommendations and conclusion.

Summary of Findings

The result from the logit regression indicates that only 3 out of 10 causal variables of farmer-herder conflict have significant relationship, as factors responsible for the conflict in the study area. These are crop damage by cattle (3.165), land encroachment (2.175) and inadequate grazing reserves (3.444). All the respondents interviewed identify traditional rulers, police, Cattle Breeders Association of Nigeria as major arbitrators of farmer-herder conflict, which are also more effective in handling the conflict in the study area. On methods of conflict resolution commonly employed, amicable resolution was identified as the most popular, followed by verbal warning.

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commonly employed, amicable resolution was identified as the most popular, followed by verbal warning.

Conclusion

From the findings, the herders do not recognize the existence of any boundary in terms of their grazing and they come in hundreds and are usually fully armed with modern guns. They move with thousands of cattle sparing no farm. At the same time, a mix of weather-related factors has pushed farmers to cultivate more land each year, leaving the herders fewer places to water and graze their stock. The resulting contests have been responsible for the deaths of several hundred Nigerians. This calls for urgent attention. It is therefore, important for government at all levels to put more machinery on ground to encourage climate change adaptation and mitigation. Also, Nigeria as a country should invest more in combating crimes and also research should be enhanced to combat desert encroachment, which in the long run may reduce the north-south movement of the herders. The traditional rulers played a significant role in the management of herder-farmer conflict, but the abolishing of native authority followed by the establishment of 1978 land use act that vested the authority over land to government, has limit their effort in this regard.

Recommendations

The following recommendations are suggested for proper conflict resolutions between cattle herders and the farmers:

- i. Indiscriminate burning of rangelands and forest reserves should be controlled through sensitization campaigns by Non-Governmental Organizations and environmentalists, while government sanctions erring party.
- ii. Governments and communities should jointly cooperate to improve the security situation around the villages with a view to tackling the menace of cattle rustling.
- iii. The National Assembly should amend the existing Land use policy so as to afford the herders a more balanced recognition in terms of land ownership, usage and control. This may encourage the herders to accept the sedentary life.
- iv. Farmers and herders should form more cooperatives and associations that can represent their interest and enable them speak as a group. This may reduce the frequency of jungle justice by seeking redress from relevant authority whenever dispute arose. The option of sedentarization of the herders in order to control the frequency of their North-South movement should be fully explored. This can be done in collaboration with traditional rulers and the herder“ famous Miyetti Allah Cattle Breeders Association (MACBAN) which the herders have so much faith in.

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