

Economic, Psychological and Conflict-Resolution Impacts of Farmer–Herder Clashes on Crop Farmers in Southeast, Nigeria

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Abstract

This study investigates the impact of farmer–herder clashes farmers across the southeast in Nigeria. A multi-stage sampling technique was adopted to select 240 respondents across the region based on conflict-endemic communities using structured questionnaires, interviews, and focus group discussions for data collection. Frequency counts and percentages, mean scores, simple linear regression, and ANOVA, were employed to analysis the data. Findings reveal substantial economic losses incurred by farmers due to the conflict, including a reduction in output ($\bar{x} = 3.93$), food scarcity ($\bar{x} = 3.63$), loss of income ($\bar{x} = 3.80$), and persistent increases in food prices ($\bar{x} = 3.66$). Psychological effects such as fear ($\bar{x} = 3.88$), stress ($\bar{x} = 3.65$), worry ($\bar{x} = 3.74$), and sleeplessness ($\bar{x} = 3.85$) were also reported, significantly affecting farmers' well-being and productivity. However, ANOVA results show no significant difference in the effects of the conflict across the three states ($F = 0.161, p > 0.05$). To resolve these conflicts, stakeholders recommend reducing state actors' involvement in disputes ($x = 3.81$), compensating victims ($x = 3.88$), enforcing agreed herding routes ($x = 3.74$), and reactivating grazing reserves in Northern Nigeria ($x = 3.52$). The study underscores the urgent need for structured interventions, policy reforms, and peace-building initiatives to mitigate the adverse effects of the conflict. Effective conflict resolution strategies, community engagement, and sustainable agricultural policies are essential to restoring harmony and improving the livelihoods of farmers in Southeast Nigeria.

Keywords: *Herder-farmer, conflict, economic losses, psychological Effects, Conflict resolution*

Introduction

The farmer–herder clash in Nigeria has become increasingly prevalent in rural agrarian communities in the South- East, and this undermines rural livelihoods, food security locally and nationally, and social cohesion. According to Ezeamama and Okolie (2022), it reduces farmers' incomes and threatens food security by lowering agricultural output and driving up local market prices. Ofuoku and Isife (2009) estimate that over forty million Naira worth of crops are lost annually to this conflict in the South-South region of the country. Historically, herders and farmers coexisted through mutual agreements and traditional conflict-resolution mechanisms; however, recent years have seen a surge in violent incidents with serious economic,

psychological, and social consequences (Henku,2011). Economically, the clash disrupts agricultural activities as livestock destroy farmlands and crops, causing substantial financial losses. Psychologically, persistent violence inflicts trauma: loss of family members, forced displacement, and destruction of homes have increased cases of anxiety, depression, and post-traumatic stress. Women and children are particularly vulnerable, facing loss of livelihoods, greater risk of exploitation, and disrupted education (Ojie & Otegwu, 2022).

Traditional dispute-resolution mechanisms have weakened, and formal remedies produce mixed results. Restorative justice—repairing harm and rebuilding relationships through dialogue and community involvement—has been proposed as a sustainable approach to addressing root causes and promoting lasting peace (Onah & Olajide, 2020). This study assesses the economic losses suffered by arable crop farmers, examines perceived psychological effects on respondents, and identifies workable intervention strategies for resolving the conflict; hence, it provides primary evidence on farmers perceived economic and psychological impacts and evaluates locally feasible conflict-resolution options.

Methodology

The study was carried out in Southeast Nigeria, which comprises five states: Abia, Anambra, Ebonyi, Enugu, and Imo. A multistage sampling technique was used to select 240 farmers. In the first stage, three states with rising incidences of herder–farmer conflicts—Abia, Ebonyi, and Enugu—were purposively selected. In the second stage, two LGAs were purposively chosen from each of those states, yielding six LGAs. In the third stage, four communities were selected from each LGA (24 communities in total). Finally, with the assistance of community farmers’ cooperative associations, 10 farmers were selected from each community using simple random sampling, producing a sample of 240 respondents. Data were collected through a structured questionnaire, in-depth interviews, and focus group discussions (FGDs), and were analyzed using descriptive and inferential statistics.

The Hypothesis of the study was tested using ANOVA to determine the difference in the effects of the herders-farmers conflict across the states. The model is specified thus:

$$F\text{-statistic} = \frac{MS_{\text{Between}}}{MS_{\text{within}}} \dots\dots\dots (2.0)$$

But,

$$MS_{\text{Between}} = \frac{SS_{\text{Between}}}{Df_{\text{Between}}} \dots\dots\dots (2.1)$$

$$\text{And } MS_{\text{within}} = \frac{SS_{\text{Within}}}{Df_{\text{Within}}} \dots\dots\dots (2.2)$$

Where:

MS_{Between} = Mean sum of squares between the mean effects of herders- farmers conflict across the states.

MS_{Within} = Mean sum of square within the mean effects of herders- farmers conflict across the states.

SS_{Within} = sum of Squares within the mean effects of herders -farmers conflict across the states.

Df_{Between} = Degree of freedom between group given as (k-1);

Df_{Within} = Degree of freedom within group given as (k-1);

The overall null hypothesis for one-way ANOVA with k groups is expressed mathematically as:

$$H_0: \mu_1 = \dots = \mu_k \dots\dots\dots (2.3)$$

The alternative hypothesis is that “the population means are not all equal” and is mathematically expressed as:

$$H_A: \exists i, j: \mu_i \neq \mu_j \dots\dots\dots (2.4)$$

Decision: if $F_{\text{cal}} > F_{\text{tab}}$ at $(P \leq 0.05)$ we reject the null hypothesis and accept the alternative hypothesis and vice versa.

Results and Discussion

Perceived Economic Effects of Farmer-Herder Clash on the Respondents.

Table 1 Mean rating of the economic effect of the conflict on the respondents in the study area

S/n	Losses incurred from herdsman/ farmers Conflicts	Abia (n = 80) $\sum f(x)$	\bar{x}	Ebonyi (n = 80) $\sum f(x)$	\bar{x}	Enugu (n = 80) $\sum f(x)$	\bar{x}	Southeast (n = 240) $\sum f(x)$	Pooled \bar{x}
1	Reduction in Output	315	3.94	312	3.90	315	3.94	942	3.93
2	Food scarcity that leads to hunger and famine	310	3.87	276	3.45	284	3.55	870	3.63
3	Loss of income	298	3.72	307	3.84	308	3.85	913	3.80
4	Loss of lives	269	3.36	214	2.67	227	2.84	710	2.96
5	Loss of Crops	302	3.78	268	3.35	316	3.95	886	3.69
6	Late Farming	236	2.95	133	1.66	199	2.49	568	2.37
7	Loss of Livestock	232	2.90	190	2.37	130	1.62	552	2.30
8	Loss of produce storage	174	2.18	193	2.41	97	1.21	464	1.93
9	Persistent increase in prices of food	299	3.74	294	3.68	286	3.58	879	3.66
10	Reduction in household resources	281	3.51	315	3.94	252	3.15	848	3.53
11	Scarcity of agricultural produce	300	3.75	302	3.78	284	3.55	886	3.69
12	Premature harvest during conflict	180	2.25	253	3.16	129	1.61	562	2.34
13	Inability to repay Loan	309	3.86	273	3.41	312	3.90	894	3.72
	Grand mean		3.37		3.20		3.02		3.20
	Decision mean cut-point		2.50		2.50		2.50		2.50

Source: Field Survey, 2023.

Table 1 shows the mean score distribution for indices of economic losses among farm households in the study area. The indices were measured on a 4-point scale, and a mean score of 2.50 or above indicates a perceived factor contributing to the economic effects of the clash. The results show that the farmer-herder clash had a substantial economic effect in the communities, with a grand mean of ($\bar{x}=3.20$), which is higher than the cutoff of 2.50. This implies that the clash undermines the livelihoods of affected households. Respondents recorded mean scores above the 2.50 benchmark for nine of the thirteen variables listed as perceived contributors to economic loss. Four items fell below the benchmark: premature harvest ($\bar{x}=2.34$), loss of produce storage ($\bar{x}=1.99$), loss of livestock ($\bar{x}=2.30$), and late farming ($\bar{x}=2.37$).

Items above the benchmark were reduction in output ($\bar{x}=3.93$), food scarcity leading to hunger and famine ($\bar{x}=3.63$), loss of income ($\bar{x}=3.80$), loss of lives ($\bar{x}=2.96$), loss of crops ($\bar{x}=3.69$), persistent increase in food prices ($\bar{x}=3.66$), reduction in household resources ($\bar{x}=3.53$), scarcity of agricultural produce ($\bar{x}=3.69$), and inability to repay loans ($\bar{x}=3.72$). These findings indicate that these factors directly or indirectly cause many of the economic consequences of the conflict in agrarian communities, resulting in scarcity food, undermining household livelihoods, and increasing rural poverty. This result is consistent with findings by Antwi (2018), Ajibefun (2017), and reports by The Nation (March 2017), Mercy Corps (2015), and Castagnini and Deininger (2004). Antwi (2018) notes that the socio-economic effects of herder-farmer conflict are largely adverse and include loss of lives and property, reduced production, displacement, and school dropouts. Ajibefun (2017) identifies reduction in output and income, scarcity of agricultural products, and loss of houses and property as key economic effects of herder-farmer clashes. Furthermore, in 2015 it was estimated that the Federal Government lost USD 13.7 billion in annual revenue because of herder-farmer conflicts in Benue, Kaduna, Nasarawa, and Plateau states; on average, these four states lost

47 percent of their internally generated revenue to the conflicts (Mercy Corps, 2015; The Nation, 22 March 2017).

Perceived Psychological Effects of Farmer-Herder Clash on the Respondents

Table 2: Mean rating of the perceived psychological effects of herder- farmers' conflicts on respondents' output in the study area

S/n	Economic effects of conflict on cassava Production	Abia (n = 80) $\sum f(x)$	\bar{x}	Ebonyi (n = 80) $\sum f(x)$	\bar{x}	Enugu (n = 80) $\sum f(x)$	\bar{x}	Southeast (n = 240) $\sum f(x)$	Pooled \bar{x}
1	Loss of lives	290	3.63	221	2.76	270	3.38	781	3.25
2	Fear	298	3.73	318	3.97	315	3.94	931	3.88
3	Impairment and disabilities	298	3.73	318	3.97	316	3.95	932	3.88
4	Worry and anxiety	298	3.73	290	3.63	310	3.87	898	3.74
5	Stress	296	3.70	278	3.47	301	3.76	875	3.65
6	Sleepless nights	299	3.74	316	3.95	310	3.88	925	3.85
	Grand mean		3.71		3.62		3.79		3.70
	Decision mean cut-off		2.50		2.50		2.50		2.50

Source: Field Survey, 2023.

Table 2 presents the mean score distribution of the psychological effects of the conflict on crop farmers. The indices were measured on a 4-point scale, and a mean score of 2.50 or above indicates a perceived factor contributing to the psychological effects of the clash. The results show that the farmer-herder clash had serious psychological effects among farmers in the communities, with a grand mean of (\bar{x} =3.70), which is higher than the cutoff point of 2.50. This implies that the clash makes the farmers experienced some psychological effects.

Respondents recorded mean scores above the 2.50 benchmark for the six variables listed as perceived psychological effects. The following psychological outcomes experienced by farmers were sleepless nights (\bar{x} =3.78), fear (\bar{x} =3.88), impairment and disability (\bar{x} =3.74), worry and anxiety (\bar{x} =3.47), stress (\bar{x} =3.61), and loss of lives (\bar{x} =3.25). These findings indicate that these factors directly or indirectly affect many of the farmers leading to poor productive outcome, and increasing rural poverty. From the context of the above variables, agricultural activities among farmers were seriously impaired and contributed to decreased productivity in the study area.

This result is consistent with findings by Prater (2020), Agyeman (2017), Albert (2007), Ukiwo (2011) and Ogbonna (2020). Prater found that when net sleep decreased because of conflict-related stress, farmers became less stable, with increased anxiety, depression, and worry. This finding also echoes Agyemang (2017), who argued that conflict instills pervasive fear among farmers—especially women; consequently, many women, who constitute a large share of rural farmers, have stopped travelling to distant farms for fear of attack by herders. According to Albert (2007), conflict accounts for loss of loved ones and livelihoods, which lead to intense grief, bereavement, and post-traumatic stress disorder (PTSD) and can result in economic hardship, poverty, and food insecurity. Furthermore, Ukiwo (2011) and Ogbonna (2020) note that conflict-related violence and attacks often cause physical injuries and long-term mental-health impairment that ultimately reduce agricultural productivity and undermining food security,

Intervention strategies for the resolution of the herders – farmer conflict in the study area

Table 3: Mean rating of intervention strategies for the resolution of herder- farmers conflicts in the study area

S/n	Intervention strategies for the resolution of conflict	Abia (n = 80) $\sum f(x)$	\bar{x}	Ebonyi (n = 80) $\sum f(x)$	\bar{x}	Enugu (n = 80) $\sum f(x)$	\bar{x}	Southeast (n = 240) $\sum f(x)$	Pooled \bar{x}
1	Reduce the increased participation of state actors in conflict	310	3.87	313	3.91	291	3.64	914	3.81
2	Intervention by traditional leaders	294	3.68	277	3.46	278	3.48	849	2.40
3	Payment of compensation to victims	306	3.83	314	3.93	310	3.88	930	3.88
4	Reduce structural intervention by law enforcement agents	295	3.69	298	3.72	293	3.66	886	3.69
5	Dialogue between parties involved	266	3.32	283	3.54	255	3.19	804	2.35
6	Reactivation of grazing reserves in the Northern Nigeria	283	3.54	292	3.65	270	3.37	845	3.52
7	Herdsman must keep to agreed routes to avoid encroaching farm lands	299	3.74	291	3.64	307	3.84	897	3.74
8	Sensitization of conflicting parties on peace by community leaders	273	3.41	262	3.28	256	3.20	791	2.30
9	Establishment of peace-building Committees	261	3.26	251	3.14	274	3.43	786	2.28
10	Open up employment window among youths where fresh grass would be supplied to the ranches in the North	307	3.84	310	3.87	316	3.95	933	3.89
	Grand mean		3.62		3.61		3.56		3.60
	Decision mean cut-point		2.50		2.50		2.50		2.50

Source: Field Survey, 2023.

Table 3 shows mean distribution of suggested intervention options for sustainable resolution for crop farmers- herdsman conflicts. The options were measured on 4-point scale, and a mean score of 2.50 or above indicated acceptable options in accordance with the decision rule. The results show that the following workable intervention strategies include opening up employment window among youths where fresh grass would be supplied to the ranches in the North (\bar{x} =3.89), payment of compensation to the victims (\bar{x} =3.88), reduce the increased participation of state actors in conflict (\bar{x} =3.81), herdsman keeping to the agreed routes to avoid encroaching farm lands (\bar{x} =3.74), reduce structural intervention by law enforcement agents (\bar{x} =3.69) and re-activation of grazing reserves (\bar{x} =3.52). The result indicates that those options with a point above benchmark score of 2.50 may most likely provide relevant options in conflict resolution in the study area. This is in line with the works of Ojewale (2019), Okolie and Okeke (2019), Adebayo (2020) and Skabash(2021).

Ojewale (2019) findings argued that with RUGA initiative laid to rest, grass production business can make a difference. The prospect of providing readily available grass to feed cows across the country has the potential to curb recurring violent clashes between farmers and herdsman in different parts of the country (Business Day, 2019). According to Okolie and Okeke (2019), compensation mechanisms can be effective way to address grievances and reduce conflict escalation. Furthermore, Adebayo (2020) noted that state actors' participation can often exacerbate conflicts and alternative approaches are needed. Contributing, Skabash (2021) argued that reactivation of grazing reserves is a crucial step in addressing farmer-herder conflicts. These options may not only reduce tension among pastoralists and farmers but will also open up an innovative window for effective and sustainable intervention strategies.

Test of Significant Difference in the Mean Rating of the Perceived Effects of the Farmer-Herder Clash on Crop Farmers in Southeast States.

Table 4: ANOVA results for differences in mean ratings of the perceived effects of farmer–herder clash on crop farmers across States

	Sum of Squares	Df	Mean Square	F _{cal}	F _{tab}	Sig.
Between Groups	0.021	2	0.010	0.161	3.04	.852
Within Groups	15.285	237	0.064			
Total	15.306	239				

Source: Field survey, 2023

F-cal is not Significant at $p < 0.05$; Df = Degree of freedom

Decision: H_0 accepted at 5% significant level

The Analysis of Variance (ANOVA) f-test used to assess differences in mean ratings of respondents in Abia, Ebonyi, and Enugu States on the perceived effects of farmer–herder clashes among crop farmers is presented in Table 4. The table shows a calculated $F = 0.161$, which is not greater than the critical $F = 3.04$ at $P \leq 0.05$, indicating homogeneity in the perceived effects of the conflict across the three States. In other words, crop farmers in Abia, Ebonyi, and Enugu experienced similar effects from the farmer–herder clashes.

Because the computed $F (0.161)$ is less than the critical $F (3.04)$ at the 5% level of significance, the null hypothesis is upheld: there is no significant difference in the mean ratings of respondents in Abia, Ebonyi, and Enugu States regarding the effects of farmer–herder conflict on crop farmers. The study therefore concludes that the effects of farmer–herder clashes on crop farmers did not differ significantly across the three States.

These findings are consistent with previous studies by Adisa and Adekunle (2017), Adejo (2018), Albert (2017), Ogundele (2018), and Ugwoke (2019), which report similar social consequences of farmer–herder conflict: population displacement, loss of livelihoods, increased poverty, reduced agricultural production, violence, and loss of lives and noted the exacerbating role of cultural differences, traditional practices, and social norms.

Conclusion

The findings show that the farmer–herder clash in Southeast Nigeria has serious economic and psychological effects on crop farmers, contributing to reduced agricultural productivity in the region. Economically, farmers experienced reduced output, food shortages, loss of income, and higher food prices, with the overall economic impact exceeding the decision mean cut-point of 2.50. Psychologically, respondents reported fear, stress, anxiety, sleeplessness, and functional impairment, all of which further undermined their ability to farm effectively. The ANOVA test indicated no significant differences in perceived effects across the three States. These results highlight the urgent need for sustainable, context-sensitive conflict-resolution mechanisms to reduce economic losses and mitigate psychological harm among affected farmers.

Recommendations

Based on the findings, the following recommendations are made:

1. Government and Stakeholders should establish a compensation scheme to support the affected farmers, ensuring they receive fair compensation for losses incurred due to farmer- herder clashes.
2. Government should encourage and subsidize agricultural insurance programmes to protect farmers against crop losses and provide safety net during conflicts.
3. Effort should be made by Government to invest in rural infrastructure like storage facilities and, to improve agricultural productivity and reduce post- harvest losses. More to this, Government and stakeholders should plan to provide training and resources for alternative livelihood such as agro-processing, poultry farming, or small -scale entrepreneurship to reduce dependence on crop farming.
4. Government and stakeholders should prioritize organizing awareness campaigns to sensitize farmers, herders and the broader community about the psychological impact of conflicts and the importance of peaceful coexistence. This may include establishing community -based initiative, such as support groups and peer counseling to promote social cohesion and reduce stress among farmers.
5. There is need to establish and strengthen context -sensitive conflict resolution mechanisms, involving traditional leaders, community representatives, and government agencies to address farmer-herder conflicts effectively. This will encourage dialogue and mediation between farmers and herders to resolve disputes peacefully and promote mutual understanding

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