

## EFFECT OF FARMER-HERDER CONFLICTS ON INCOME GENERATION AMONG CROP FARMERS IN OYO STATE, NIGERIA

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### ABSTRACT

There is heightened insecurity stemming from conflicts between farmers and herders in Nigeria. This has led to killings, insubordination and food insecurity as farmers do not feel safe to go to their farms again. The study determined the effects of farmer-herder conflict on crop farmers' income generation. Oke-Ogun area of Oyo State was purposively selected. Interview schedule was used to elicit data from 100 crop farmers selected using simple random sampling. Data were collected on causes of conflicts, consequences of conflicts, conflict resolution methods and crop farmers' income before and after conflict. Mean, frequency, percentage, t-test and Pearson Product Moment Correlation were used for data analysis at 5%. Reprisal attacks (95.0%), and competition over the use of land/water resources (92.0%) were major reasons for farmers-herders' conflicts. Prominent consequences of conflict include lack of access to farmland (100.0%), a threat to national security (100.0%), destruction of farmland by herdsmen (97.0%) and reduction in output (97.0%). Major methods of conflict resolution were reportage to law enforcement agencies (100.0%) and tolerance (79.0%). A significant difference existed between the annual income of farmers before and after conflicts ( $t=7.558$ ). Age ( $\beta=0.389$ ) and farm size ( $\beta=0.339$ ) significantly determined farmers' income after conflict. Farmer-herder conflicts negatively affected crop farmers' income. Government should enlighten farmers on peaceful coexistence and their importance to national food security attainment.

**Keywords:** Farmer-herder conflicts, Income generation, Consequences of conflicts, Conflict resolution

### INTRODUCTION

Agricultural production requires a favourable and enabling environment to reach its maximum potential. The absence of insecurity and peaceful coexistence among inhabitants of communities is inimical to the attainment of sustainable development goals in Nigeria. Communities where unity exists are more resilient in times of crisis than those that are constantly fighting especially over limited resources. Over years in Nigeria, there has been great unrest in its farming communities. Crop farmers' lands are being encroached by herdsmen who are in search of pastures for their animals. This is linked to the aftermath of some of the effects of climate change. Climate change effects such as extreme droughts and floods have displaced nomadic herdsmen leading to migration and competition over scarce resources in host communities. This usually leads to farm crop destruction and farmer-herder conflicts.

Odivwri (2017) in Akinpeloye, Fatufe and Oladeji (2020) noted that activities involving herdsmen are usually accompanied by threats and attacks on the indigenes of communities where they graze their cattle. Most times the encroachment of farmlands by Fulani herdsmen is intentional, leaving farmers to bear the brunt of their actions. In Ghana, farmer-herder conflicts have reportedly led to the destruction of hundreds of hectares of farmlands in over 25 communities (Boateng, 2022). Agricultural production is the major livelihood of most rural people, incidences of conflict disrupting farming activities implied cutting off of the means of survival of the local people in Nigeria. The effect of which will be directly or indirectly felt by the entire

populace. As an example, conflicts in farming communities can lead to scarcity of food and a hike in food prices in the whole country.

So, farmer-herder conflict is a topical issue of concern in Nigeria for which an urgent solution is sought. Nigeria is experiencing other forms of conflicts that are causing community unrest, panics, restlessness, homelessness and joblessness of great proportions among several ethnic and religious communities across the country. In a social set-up, such as is available in Oke-Ogun area of Oyo State, Nigeria, there is the existence of different socio-ethnic groups whose interrelationships have positive and negative impacts on their immediate society. One of the ethnic groups in Oke-Ogun area of Oyo State is the Fulanis who primarily engage in pastoralism. There had been some issues of concern in Fulanis activities and revenge by community members generating conflict in recent times in the aforementioned area.

For instance, there had been great unrest in Oke-Ogun area of Oyo State owing to abductions, robbery and killings connected with suspected armed herdsmen (Owolabi, 2021). According to Sahara Reporters New York (2021), herdsmen attacked three men with machetes in Saki, Oke Ogun area of Oyo State. Notably, the farmer-herder conflict had threatened people's lives, led to farmers' displacement and disrupted socio-economic activities. Olaniyi (2021a) reported that a village (Oke-Orogun) in Saki West Local Government Area (LGA) of Oyo State, Nigeria was attacked by Fulani herdsmen and a young farmer was tied to a tree and killed with a cutlass. Consequently, in revenge, angry youths set some Fulani huts on fire. In another

report by Olaniyi (2021b), about ten people were killed when Fulani herdsmen invaded Igangan community in Oyo State at midnight. This was done by the Fulani herdsmen in a reprisal attack for their forceful evacuation by the host community. According to Agunbiade (2021), three people - a woman and two children died when Fulani communities were attacked by youths in Iganga, Ibarapa North of Oyo State. To maintain law and order, government enforcement agencies have been on their toes to curtail some of these conflicts. Adejumo (2021) reported that under the banner of Operation Burst, the military operatives had arrested forty-seven armed Fulani herdsmen in Oyo State. However, it is believed that the government is not doing enough to respond quickly to distress calls and give adequate punishment to offenders when reported.

The reports of farmer-herder conflict have been on the rise across States in Nigeria and urgent attention towards redress mechanisms is important. Farmers are no longer able to produce in sufficient quantities to meet the food demand of the populace in the face of continued heightened insecurity. The frequency and scale of these communal conflicts have become alarming, recurrent and destructive. The evidence of crisis in this area calls for research attention to understand the ramifications of the consequences of conflict, especially on farm income since farming is the major occupation of people in the affected communities sampled for this study.

It is worthy of note that farmer-herder conflicts have substantial negative implications on social, economic and political settings at the local and national levels. Both the farmers and the herdsmen have divergent views concerning the situation. While some explained it from the ethnic view, others view it from the point of resource scarcity. There is a need for an empirical and holistic view of the causes and ramifications of the effects of farmer-herder conflict in the affected communities with the aim of proffering feasible solutions to avert continued crisis. There is therefore a need for an empirical study that will unravel and explain the issues surrounding farmers and herdsmen conflict in Oke-Ogun area of Oyo State. It is obvious that farmers cannot farm in an insecure environment, and this has consequential effect on their livelihood. Hence, this study determined the effect of farmer-herder conflicts on crop farmers' income in Oke Ogun area of Oyo State, Nigeria.

The study's objectives are:

1. To examine the causes of conflicts between farmers and herdsmen.
2. To ascertain the consequences of conflicts between the farmers and herdsmen.
3. To determine conflict resolution methods employed by the crop farmers.
4. To assess crop farmers' income before and after conflict.

## METHODOLOGY

The study was conducted in Oke-Ogun area of Oyo State. The area comprises of ten LGAs which are Atisbo, Irepo, Kajola, Itesiwaju, Iwajowa, Olorunsogo, Orelope, Saki West and Saki East. It lies within latitude  $7^{\circ}70'$  N and  $9^{\circ}$  N and longitude  $2^{\circ}60'$  E to  $4^{\circ}20'$  E. Its total land area is 15,193,320 square kilometres. The major occupation of people in Oke-Ogun is farming and crops cultivated include yam, cassava, cowpea, maize, rice, millet, guinea corn and soybean. Other economic activities engaged in are trading, and carpentry, among others. For this study, the major farm crops focused were cassava, maize, rice and yam. These were the crops prominently grown in the study area.

Oke-Ogun Area of Oyo State was purposively selected because of heightened conflicts between farmers and herdsmen in the area. These conflicts led to assaults, abductions and loss of lives which were reported in the Nigerian dailies in 2021 (Owolabi, 2021). The conflicts disrupt farming activities in Oke-Ogun Area of Oyo State. Saki East and Saki West LGAs were purposively selected because of the prominent issues of conflict in the LGAs. Two communities were randomly selected from each LGA to make a total of four communities. Adeduntan and Ogunlere communities were selected from Saki East, while Ekokan and Okerete communities were selected from Saki West. Twenty-five arable crop farmers were randomly selected from each community to make a total of 100 crop farmers sampled for the study. Data was collected using a well-structured interview schedule. The field survey was conducted in 2021.

Measurement of variables - Causes of conflicts, consequences of conflicts and methods of conflict resolution were measured on a 2-point scale of Yes (1) and No (0). The frequency and percentage of each item on the scale were computed. The dependent variable of this study is the income of crop farmers, and this was determined by focusing on four major crops grown in the area, namely cassava, maize, rice and yam. Farmers' annual income from sales of output of crops was determined before the conflict and after the conflict. The recall method was used to collect information on crop farmers' income before the conflict (5 years back before the prominence of the conflict in 2021). Agricultural output as contained in this study was after conflict. Cassava, maize and yam quantities were measured in tonnes, while rice quantity was measured in bags.

Data were analysed using both descriptive and inferential statistics. Descriptive statistics used were frequency distribution, percentage, mean and standard deviation. Inferential statistics used to test

the stated hypotheses were t-test, and regression. Hypothesis one was tested using regression, and hypothesis two was tested using t-test.

**RESULTS AND DISCUSSION**

**Causes of conflict among herdsmen and farmers**

The result of analysis in Table 2 shows that revenge or reprisal attack (95.0%) was a major cause of conflict among herdsmen and farmers. This was followed by competition over the use of land and water resources with the herdsmen (92.0%), destruction of crops by animals (91.0%), grazing right disputes (88.0%) and illegal immigration (88.0%). This result aligns with Olaleye *et al.* (2010) who reported that crop damage and competition for land and water are among the predominant factors

causing farmer-herder conflict. Likewise, Micheal (2012) found that indecent cattle raids, competition over resources and boundary disputes were prominent causes of farmers-herders conflict in Africa. In North Central Nigeria, Gyang (2022) reported the deliberate destruction of crops by pastoralists and cattle rustling by bandits, while Boateng (2022) reported the destruction of farmland and the terrorising of farmers by non-resident herdsmen who invaded communities illegally. Similarly, past studies on farmer-herder conflicts in Africa reported pastoral mismanagement as one of the major causes of farmer-herder conflicts (Nassef, 2023). Pastoral mismanagement includes crop destruction, overgrazing, increased migration, poor land management and overstocking (Nassef, 2023).

**Table 2: Causes of conflict among herdsmen and farmers**

Items	Yes	No
Non recognition of rights of indigenous people	89 (89.0)	11 (11.0)
Competition over the use of land and water resources with the herdsmen	92 (92.0)	8 (8.0)
Violation of tenancy agreement	85 (85.0)	15 (15.0)
Language barrier	87 (87.0)	13 (13.0)
Personal disagreement	72 (72.0)	28 (28.0)
Territorial dispute	41 (41.0)	59 (59.0)
Land encroachment	51 (51.0)	49 (49.0)
Destruction of crops by animals	91 (91.0)	9 (9.0)
Grazing right disputes	88 (88.0)	12 (12.0)
Government negligence	79 (79.0)	21 (21.0)
Illegal immigration	88 (88.0)	12 (12.0)
Revenge or reprisal attack	95 (95.0)	5 (5.0)

Figures in parenthesis are percentages

**Consequences of conflict between herdsmen and farmers**

Consequences of conflict between herdsmen and farmers is revealed in Table 3. Lack of access to farmland (100.0%) and threat to national security (100.0%) were the most severe consequences of conflict. Other prominent consequences were constraints to mobility (98.0%), destruction of farmland by herdsmen (97.0%), kidnapping of farmers (97.0%), migration of labour (97.0%), destruction of properties (97.0%), reduction in output (97.0%), killing of the victims by the herdsmen (96.0%), sexual harassment (96.0%) and hunger (93.0%). These consequences of conflict as found in this study indicate that farmers are finding it difficult to go about their farming activities and other means of livelihood. This is an indication of a

tense environment for farmers and others in the study area. It is noteworthy that conflict further amplifies poverty and food insecurity both in the study area and in Nigeria at large. This is because many farmers had deserted their farmlands in the fear of being killed or kidnapped. The result of this study agrees with the study of Ruto, Mohammed and Isabella (2015) in Kenya who found that farmers-herders conflict had resulted in disruption of socio-economic activities, displacement of lives/properties, and environmental degradation. Also, findings from this study align with Okoro (2018) who reported that farmer-herder conflicts have resulted in loss of lives, displacement, loss of properties, threat to national security, unemployment, and threat to food security, among others.

**Table 3: Consequences of conflict between herdsmen and farmers**

Consequences of conflict	Yes	No
Destruction of farmland by herdsmen	97 (97.0)	3 (3.0)
Hunger	93 (93.0)	7 (7.0)
Blocking of routes by farmers	27 (27.0)	73 (73.0)
Blocking of water points by farmers	22 (22.0)	78 (78.0)
Killing of the victims by the herdsmen	96 (96.0)	4 (4.0)
Kidnapping of farmers	97 (97.0)	3 (3.0)

Consequences of conflict	Yes	No
Migration of labour	97 (97.0)	3 (3.0)
Destruction of properties	97 (97.0)	3 (3.0)
Sexual harassment	95 (95.0)	5 (5.0)
Reduction in output	97 (97.0)	3 (3.0)
Lack of access to farmland	100 (100.0)	0(0.0)
Constraint in mobility	98 (98.0)	2 (2.0)
Threat to national security	100 (100.0)	0(0.0)

Figures in parenthesis are percentages

#### Methods of conflict resolution

The result on methods of conflict resolution in Table 4 shows that all the respondents engaged in reporting to law enforcement agencies (100.0%). That all the respondents reported to law enforcement agencies show that they believe in their intervention in times of crisis and should be responsible for peaceful coexistence among inhabitants of a community irrespective of ethnicity. Other conflict resolution methods employed were tolerance (79.0%), payment of compensation to victims

(45.0%) and intervention of local heads (42.0%). However, peaceful negotiation (24.0%), enlightenment of farmers and herdsmen (24.0%) and establishment of grazing points (12.0%) were the least methods of conflict resolution used. Findings from this study align with that of Nwankwo (2023) who reported some traditional approaches to farmer-herder conflict resolution in Benue State, Nigeria to include the court of law, intervention of traditional institutions, farmer associations and local government authorities.

**Table 4: Methods of conflict resolution**

Conflict resolution strategies	Yes	No
Peaceful negotiation	24 (24.0)	76 (76.0)
Reporting to law enforcement agencies	100 (100.0)	0(0.0)
Intervention of local head (Oba, Baale, Farmers' head)	42 (42.0)	58 (58.0)
Tolerance	79 (79.0)	21 (21.0)
Compromising	83 (83.0)	17 (17.0)
Payment of compensation to victims	45 (45.0)	55 (55.0)
Establishment of grazing point	12 (12.0)	88 (88.0)
Enlightenment of farmers and herdsmen	24 (24.0)	76 (76.0)
Court verdicts	37 (37.0)	63 (63.0)

Figures in parenthesis are percentages

#### Farmers' output and income from crop production

The result of respondents' output in Table 5 after conflict shows that the average quantity of cassava produced in the last season was 22.0 tonnes with majority (66.0%) of the respondents producing between 1-22 tonnes. The average quantity of maize produced was 31.0 tonnes with majority (61.0%) producing between 2-35 tonnes. Most of the respondents (76.0%) produced between 2 and 203

bags of rice with an average quantity of 105 bags. The average quantity of yam produced by the respondents was 0.5 tonnes. It can be inferred from the outcome of this study that most of the respondents' output was low. Very few of the respondents produced assessed crops on a large scale. From the result in Table 5, the average annual output of crop farmers after the conflict was 22±14 tonnes for cassava, 34±31 tonnes for maize, 202±105 bags for rice and 12±8 tonnes for yam.

**Table 5: Distribution of respondents' output after conflict**

Crops grown	Tonnes	Frequency	Percentage	Mean	SD
Cassava (tonnes)	1-22	66	66.0	22.0	14.0
	23-44	2	2.0		
	45-66	6	6.0		
	Above 66	6	6.0		
Maize (tonnes)	2-35	61	61.0	34.0	31.0
	36-69	9	9.0		
	70-103	7	7.0		
	104-150	3	3.0		
Rice (bags)	2-203	76	76.0	202.0	105.0
	Above 203	3	3.0		
Yam (tonnes)	0.50-30	73	73.0	12.0	8.0

**Annual income before and after the conflict**

The result of respondents' income before the conflict in Table 6 shows that the average annual income realized from sales of cassava, maize, rice and yam output were ₦1,702,835, ₦3,183,500, ₦4,133,823 and ₦719,230 respectively before the conflict. After the conflict, the result in Table 7 shows that the average annual income from cassava, maize, rice and yam output sales were ₦591,956, ₦493,928, ₦1,550,151 and ₦338,276, respectively. These results imply that there was a marked reduction in the income earned in the sale of major crops grown in the study area due to this of conflict. It is glaring that conflict between herdsmen and farmers had a negative effect on their output and income. The result of this study agrees with that of Obi-Egbedi et. al. (2023) who reported a significant reduction in income of farmers affected by farmer-

herder conflict in Oyo State, Nigeria. The annual income of farmers affected by conflict was found to be higher than the income of farmers not affected by conflict (Obi-Egbedi et. al., 2023). Significant reductions in the output and income of farmers simply translate to continued poverty and untold hardships for farming communities, especially in the rural areas of Nigeria. It is noteworthy that the evidence of a crisis where farmlands are abundant will deter prospective individuals from going into farming. Consequently, food insecurity will continue to be on the rise and sustainable development goals achievement become impaired. It is noteworthy that people will not undertake a venture that is not profitable and secure. Nobody will want to invest in an area where insecurity is prominently present.

**Table 6: Respondents' annual income before conflict**

Income from crops grown (₦)		Frequency	Percentage	Mean	SD
Cassava	1,000,000-1,350,000	26	26.0	1,702,835	1,250,000
	1,350,001-2,600,001	20	20.0		
	2,600,002-3,850,002	18	18.0		
	3,850,003-4,500,000	3	3.0		
Maize	30,000-2,530,000	29	29.0	3,183,500	2,500,000
	2,530,001-5,030,001	27	27.0		
	5,030,002-7,560,002	11	11.0		
	7,560,003-10,000,000	3	3.0		
Rice	150,000-6,150,000	59	59.0	4,133,823	6,000,000
	6,150,001-12,150,001	8	8.0		
	Above 12,150,001	1	1.0		
Yam	150,000-655,000	38	38.0	719,230	650,000
	655,001-1,305,001	19	19.0		
	1,305,002-1,955,002	6	6.0		
	1,955,003-3,000,000	2	2.0		

**Table 7: Respondents' annual income after conflict**

Income from crops grown (₦)		Frequency	Percentage	Mean	SD
Cassava	15,000-465,000	24	24.0	591,956	450,000
	465,001-915,001	26	26.0		
	915,002-1,365,002	16	16.0		
	Above 1365,002	3	3.0		
Maize	10,000-710,000	60	60.0	493,928	700,000
	710,001-1,410,001	5	5.0		
	1,410,002-2,110,002	3	3.0		
	Above 2,110,002	2	2.0		
Rice	70,000-1,070,000	22	22.0	1,550,151	1,000,000
	1,070,001-2,070,001	22	22.0		
	2,070,002-3,070,002	17	17.0		
	3,070,003-4,070,003	5	5.0		
Yam	4,000-304,000	38	38.0	338,276	300,000
	304,001-604,001	21	21.0		
	604,002-900,000	6	6.0		

**Hypotheses testing**

**Results of t-test showing differences in the annual income of farmers before and after conflict**

The result of the difference in the annual income of farmers before and after the conflict in Table 8 shows that there exists a significant

difference in the income of farmers before and after the conflict. This shows that farmers earned more income from their farm crop output before the occurrence of the conflict compared to after the conflict depicted in Tables 6 and 7. This implies that conflict negatively affected farming activities of farmers in the study environment. Incidences of

conflict will continually heighten low production, decreased income, fear of investing, wasted farmers, efforts, hike in food prices, scarcity of food and poor living conditions of the farmers. This study envisaged that if the occurrence of conflict is prevented, it will help improve farmers' output, income and overall wellbeing.

**Table 8: T-test result showing difference in the annual income of farmers before and after conflict**

	N	Mean	Std. Dev.	Diff.	t	p-value	Decision
Before conflict	100	7,554,375.00	7843699.42	5,284,852.27	7.558	0.000	Significant
After conflict	100	2,269,522.73	1872330.47				

**Contribution of socioeconomic characteristics to the output of farmers after conflict**

Table 9 shows a R<sup>2</sup> value of 0.288 revealing that the variables in the regression model could explain 28.8% of the variance in factors that contribute to the income of farmers. The table further shows that two of the socio-economic characteristic variables significantly predicted the income of farmers. These were age ( $\beta=0.389$ ) and farm size ( $\beta=0.339$ ). They both had a direct influence on the income of farmers. Thus, the aged farmers experienced an increase in their crop income better than younger ones after the

occurrence of conflict. It can be inferred that experience imposed by age as to how to manage post-conflict effects might be responsible for this.

Also, the larger the size of the farmland, the more output and income realised by farmers and the more in reducing the effect of conflict on farmers. According to Ogunwande and Akinrinola (2017), farm size was among the determinants of farm output among arable crop farmers in Oyo State. Large farm size thus enhances farmers' ability to absorb shock and uncertainties occasioned by conflict.

**Table 9: Contribution of socioeconomic characteristics to farmers' income**

Variables	Beta	t-value	p-value
Constant		-0.764	0.447
Age	0.389	2.915	0.004*
Gender	0.048	0.446	0.657
Marital status	-0.137	-1.412	0.161
Religion	-0.146	-1.415	0.150
Educational level	0.027	0.236	0.814
Types of crops grown	-0.183	-1.816	0.073
Household size	-0.136	-1.246	0.216
Source of labour	0.179	1.837	0.070
Farm size	0.339	2.938	0.004*

\*Significant at 1% level of significance

R=0.537, R<sup>2</sup>=0.288, Adjusted R square=0.216, Std Error=180.81623

**CONCLUSION AND RECOMMENDATIONS**

It can be evidently concluded that farmers-herders conflict had negative effect on farmers' output and income. The income realized by farmers from the sales of crops assessed in this study before conflict was higher relative to after conflict. Furthermore, the age of the farmer and farm size were the major determinants of income after conflict. Based on the findings from this study, the following recommendations were made:

1. There is a need for extension agents from public and private institutions to enlighten farmers and herders on the need for peaceful coexistence and their importance in food security in the country.
2. Government should help create grazing routes and awareness should be created to ensure proper use and easy grazing by the

cattle as this will reduce land and water use competition.

3. Both formal and informal methods of settling disputes between herders and farmers should be explored to restore normality in every crisis relating to herding and farming.
4. The government should provide relief funds to farmers to cushion the effect of the conflict on their outputs and general wellbeing.
5. Government should provide grants and low-interest loans for displaced farmers to encourage them to go back into farming.

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