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"This Is Our Land - Resource Conflict and Arable Crop Production: Evidence from Southwest Nigeria"

Isumonah K. Tofameh and Olajide O. Adeola

<u>tofamehisumonah@gmail.com</u>, preciousfunso@yahoo.com Department of Agricultural Economics, University of Ibadan, Nigeria

## ABSTRACT

It has been said that Africa's soil is the next gold mine. But land resource is becoming a major source of contention between stakeholders; this threatens crop production activities and ultimately the food security situation of the region. But empirical evidence on the drivers of the conflict, the measurement of conflict, the extent and direction of its effect on arable crop production, particularly in developing countries where food production is largely dependent on small holder farmers is required. This study provides some evidence by examining farmer-herdsmen conflict in some rural communities in Ogun state, Nigeria. A multistage sampling technique was used to select 150 farmers from who data were collected through oral interviews with the aid of a structured questionnaire. The data were analyzed using descriptive and regression tools. The results show that 60 percent of the respondents had no alternative source of income; the average farm income was about \$298 per annum and over 70 percent had experienced fights with herdsmen over their land. The drivers of the conflict include Inadequate grazing area, land encroachment by herders, killing of stray cattle by farmers, uncontrolled bush burning, differences in ethnicity, decreasing consumption rates and sustainability concerns. Conflict-index was generated from farmer responses; the Tobit regression shows that it has a potentially negative effect on food crop production in the area. The study recommends local community action for effective management of the situation through bridge building. Further research is also required to examine possible synergies and models of community action that will diffuse tensions effectively.

Keywords: Land, community, conflict, food security, production, tension

### Introduction

Of all resources, land has remained an overwhelming source of farmers-herdsmen conflict among various user groups as well as individuals at varying thresholds in Nigeria (Adisa and Adekunle, 2010). The herdsmen and farmers crisis is posing a serious obstacle to a successful national economy. It has become a major threat to the national security and development of the country. Furthermore, the increased operation of conflict has caused diversion and removed government attention on some key areas of the economy, as huge amount of human and material resources are channeled into curbing the menace. The violent activities by the herdsmen has resulted in huge death of thousands of people, destruction of property, and massive displacement in the country (Ademola Adelehin, 2018). However, little attention has been given to its food production impact, especially on those that were forced to move out of their villages, homes and farms.

The broad objective of the study is to assess the impact of farmers-herdsmen conflicts on food crop production in Odeda local government, Ogun state. Specifically, this paper aims at examining the factors that cause farmers-herdsmen conflict and the effect of farmers-herdsmen conflicts on crop production. The study is based on 3 theories. They are mainstream theory, frustration- aggression model and environmental security status. The idea behind theories is based on scarce resources, retaliation and population as drivers for conflict. The study hypothesized that there is no significant relationship between food crop production and the number of times of farmers-herdsmen conflict was experienced by arable crop farmers in the planting season.

### Methodology

The study area is Odeda local Government Area in Ogun State, Nigeria. The headquarters is in the town of Odeda, located at Abeokuta. It has an area of 1,560km<sup>2</sup> and a population of 109,449 at the 2006 census. Odeda has 10 districts. A multistage sampling technique was used to select 150 farmers from who data were collected through oral interviews with the aid of a structured questionnaire. The data were analyzed using descriptive and regression tools. The Likert scale was used to analyze the cause of farmers-herdsmen conflict while Tobit regression model was used to examine the effect of conflict on crop production. Based on the responses of the farmers from the Likert scale, a conflict level index was generated which was pivotal to the second objective of the study.

The model specification for Tobit regression according to Maddala is as given as,

 $Y^* = \beta 0 + \beta 1X1 + \beta 2 X2 + \beta 3X3 + \beta 4X4 + \dots + \beta nXn + Ui$ 

Where  $Y = Y^*$  if Y = 0 (Y=0 if the production output level is less or equal to zero). In this case, any farmer not affected by the conflict has a zero observation as his production output level.

 $Y = Y^*$  if Y > 0 ( $Y = Y^*$  if production level is greater than zero)  $Y^* =$  production level (ratio of actual output to expected output)

 $\beta$  = parameters to be estimated, Where:

X1 = age

X2 = limited resources

- X3 = Migration
- X4 = killing of cattle
- X5 = Decreased consumption rate
- X6 = loss of lives
- X7 = loss of productivity
- X8 = displacement of farmers
- X9 = malnutrition

X10 = Conflict level

e = Error term

# **Result and Discussion**

# Socio-economic Characteristics of Respondents

In order to clearly understand the impact of farmers-herdsmen conflict in the study area, a descriptive table is drawn to compare and reflect rudimentary socio-economic characteristics of farmers between those who experienced conflict and those who did not experience conflict. Such variables include sex, household size and income from farming.

The socio-economic characteristics presented in table 1 below revealed that above revealed that 72 (48%) of the respondents aged 30 - 59 years had the highest encounter of conflict with herdsmen. This is likely so since those of this age group are in their active stage and are mostly found on their farms making them vulnerable to attacks. Furthermore, the result also showed that about 56% of the males were involved in fights leading to conflict. A factor is possibly the aggression tendencies present in males that prompts retaliatory attacks. This concur with findings carried out by Babagana and Madaki (2019). The household size of the respondents had a mean size of 5 members per household with a minimum of 1 member and a maximum of 10 members respectively. The results show that 60% of the respondents had no alternative source of income with the average farm income of about \$298 per annum.

Table 1: Socio-economic characteristics of respondents

Variables	Experienced Conflict		Not Experienced Conflict		All	
Age	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage

0-29 years	14	9.33	2	1.33	16	10.67
30 – 59 years	72	48.00	41	27.33	113	75.33
$\geq$ 60 years	17	11.33	4	2.67	21	14.00
Sex					· · · ·	
Male	56	37.33	25	16.67	81	54
Female	47	31.33	22	14.67	69	46
Household size						
1-3	27	15.34	10	9.36	37	24.7
4-6	40	33	28	12.6	68	45.6
7-9	25	13	8	9	33	22
$\geq 9$	11	7.33	1	0.67	12	8
Mean = 5						
Income from						
Farming						
\$0 - \$430	82	54.67	37	24.67	119	79.33
\$431 - \$860	17	11.33	8	5.33	25	16.67
\$861 - \$1,290	0	0.00	1	0.67	1	0.67
\$1,291 - \$1,720	4	2.67	1	0.67	5	3.33
11 000						

Mean = \$298

Source: Field Survey, 2019

# Factors That Cause Farmer-Herdsmen Conflict

This section discussed the table presenting the factors that cause farmers-herdsmen conflict in the study

area. The factors are obtained from the Likert scale based on the three (3) mentioned earlier.





The respondents agree that limited resource accessibility by both farmers and herdsmen is a factor that cause conflict between the two parties. This is owing to the fact that resources are scare in supply. In a bid to find pastures for their cattle, herdsmen encroach on farmers' land, feed on the limited vegetation on the field and destroy the crops. Thereby leading to disagreements and ultimately conflict between the farmer and herder. Aggression leading to reprisal attacks is another factor that cause conflict. Farmers are likely to

retaliate due to sight of cattle droppings on their farm land, pollution of water bodies by cattle and uncontrolled bush burning leading to killing of stray cattle and inferably spike some reactions from the herdsmen, thereby leading to conflicts. The desire to sustain feeding consumption rate is also a factor that drives conflict. This could be as a result of decrease in economic productivity due to increasing population which is likely to cause worry among the farmers.

### Effect of Farmers-herdsmen Conflict on Crop Production

The effect of conflict is presented in table 2 below. Of the variables analyzed, significant factors that have effect on crop production are age and conflict level. The age of the arable crop farmers was positive and statistically significant at 1%. This means the higher the age, the higher the crop production level. Conflict-index level was negative and statistically significant at 1%. This implies that crop production increases with decrease in the level of conflict. When conflict strikes, it is associated with reduction of farmers on the field, lack of willingness to work, low productivity, loss of lives and properties. Babagana *et al.*, (2019) opined that the higher the loss of lives experienced in the area, the lower the crop production level attributed to reduced number of labor available to farm. Respondents complained that herdsmen often uproots their plant stands purposefully each time they invade their farmlands. The effect of various uprooting of plant stands negatively affects the quantity of yield obtained during harvesting. With conflict and low productivity, farmers purchase food items at a high rate, even trekking far distances to market places because many farmers have had to leave the area or farmland.

Food production	Coefficient	Std. Err	Z	$P > \{Z\}$	dy/dx
Age	0.022683	0.008679	2.61	0.01**	0.005525
Limited resources	-0.02591	0.085095	-0.3	0.761	-0.19415
Migration of people	0.116867	0.090232	1.3	0.197	-0.06153
Killing of cattle by farmers	-0.00461	0.09682	-0.05	0.962	-0.19603
Decreased consumption rate	-0.08584	0.079322	-1.08	0.281	-0.24266
Loss of lives	0.184714	0.0160933	1.15	0.253	-0.13346
Low productivity	0.078732	0.156085	0.5	0.615	-0.22986
Displacement of farmers	0.089563	0.074506	1.2	0.231	-0.05774
Malnutrition	-0.14539	0.11034	-1.32	0.19	-0.36354
Conflict level	-0.04257	0.012512	-3.4	0.001**	-0.0673
_cons	-49.52789	21.44096	-2.31	0.022	12.8877
No of $obs = 150$					
2					

Table 2: Effect of Farmers-herdsmen conflict on Food Production

LR  $chi^2 = 93.59$ 

 $Prob > chi^2 = 0.0000$ 

Pseudo  $R^2 = 0.3533$ 

Log likelihood = -85.6440

Source: Field survey, 2019 Asterisks \* indicates significance at 10% level, \*\* indicates significance at 1% while \*\*\* indicates at 5%.

### **Conclusion and recommendation**

In conclusion, this study was able to reveal that male farmers were more susceptible to conflicts, 60 percent of the respondents had no alternative source of income, the average farm income was about \$298 per annum and over 70 percent of the male respondents had experienced fights with herdsmen over their land. Added to this, the study also revealed drivers of the conflict includes Inadequate grazing area, land encroachment by herders, killing of stray cattle by farmers, uncontrolled bush burning, differences in ethnicity, decreasing consumption rates and sustainability concerns. The Conflict-index was generated from farmer responses using the Tobit regression showed that it has a potentially negative effect on food crop production in the area. The study recommends local community action for effective management of the situation through bridge building. If these causes were allowed to continue unchecked, farmers-herdsmen conflict cannot be resolved while their devastating impacts of crop production would also continue to escalate and will be felt nationwide. Community leaders, herdsmen and government should meet to deliberate on land appropriation, grazing areas and farmers' orientation strategies. Punishment of culprits who fail to adhere to the rules and regulations of the land must be upheld. Further research is also required to examine possible synergies and models of community action that will diffuse tensions effectively.

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