

---

## Effects of Farmers Herdsmen Conflicts on the Food Security Status of Farming Households in Enugu State, Nigeria

---

Oti, O. G., Onyia, C. C. & Umoinyang, M. E.

Department of Agricultural Economics

University of Nigeria, Nsukka

**Email:** oti.okpani@unn.edu.ng

**Corresponding Author:** Oti, O. G.

### **ABSTRACT**

The study examined the implications of the perennial conflict between farmers and Hausa/Fulani herdsmen on food security in Nigeria. The study utilized primary data collected from 210 farm households from seven villages in southeast Nigeria where herdsmen attacks on farm households have been severe. Descriptive statistics such as means and percentages, 2/3 mean monthly per capital food expenditure of households and the logistic regression models were employed in analyzing the data. The result showed that the average age of the heads of the farm households was 48years, 64% of them were males, while another 77% were married. Also, the farm households had an average size of 12 members, with average annual farm and non-farm income of ₦387, 542.30 and ₦132, 400.25, respectively. The food security line of the farm households was ₦2, 533.79. About 45.7% of them were food secure, while 54.3% were food insecure. The logit regression showed that the food security status of farm households were significantly affected by sex, marital status, size of farmlands destroyed, attack on farmers' homes by herdsmen and migration of people away from communities. Policies were recommended that would protect farmers and farmlands from the serial attacks of herdsmen, and attract the interest of youths in agriculture.

**Keywords:** Hausa/Fulani herdsmen, Farm households, Conflict, Food Security

### **INTRODUCTION**

Agriculture is the major livelihood activity in sub-Saharan African (SSA) countries like Nigeria, serving as the swivel for the region's economy (Food and Agriculture Organization [FAO], 2015). According to McIntyre, Herren, Wakhungu & Watson

(2009), agriculture serves as a means of livelihood to over 60% of SSA population and account for an average of 29 percent of gross domestic product (GDP) in the region, ranging from 10% to 70% across countries. This Eva (2009) emphasized while noting the pioneering role of agriculture to

SSA economy in terms of contribution to GDP, income, foreign exchange earnings and employment opportunities. Agriculture provides food for the increasing population; supply of adequate raw materials (and labour input) to a growing industrial sector; a major source of employment and income; generation of foreign exchange earnings; and provision of a market for the products of the industrial sector (FAO, 2015).

However, food security remains a daunting challenge for the sub-Saharan African region as majority of her populace are largely food insecure. Food security represents the absence of hunger and malnourishment. It exists 'when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life,' (FAO, 1996). According to the Food and Agriculture Organization of the United Nations, about 217.8 million people in the region live in hunger and malnutrition, representing 23 percent of the population in the projection for 2014-16 period (FAO, 2015). This implies that one in every four persons in the region is food insecure. The high level of food

insecurity spreads across every segment of the region with 124.2 million in Eastern Africa, 58.9 million in Middle Africa, 31.5 million in Western Africa and 3.2 million in Southern Africa (FAO, 2015).

Successive governments and administrations in Nigeria is committed towards attaining food security through increased agricultural production and productivity, in order to reduce hunger, malnutrition and poverty. However, the perennial conflicts between herdsmen and farmers over the ownership control and use of land and land resources such as grasses and water constitutes a major obstacle to the path of food security in the country. Security is the bedrock of development, as no meaningful agricultural production (economic) activity can take place in the midst of feuds and conflicts. FAO (2006) reported that 60% of the total number of hungry, malnourished and food insecure people in SSA occur in countries where there are conflicts.

The herdsmen in Nigeria who are mainly from the Hausa/Fulani tribe rear their herds especially cattle, but also, sheep and goat through extensive management system. This system is nomadic, as

it involves the movement of herds from one place to another in search of grass and water by the Hausa/Fulani herdsmen. Farmers on the other hand, are everywhere in the country cutting across regions and tribes, and are mainly involved in the cultivation of land for crop production. They also rear livestock only to augment family food and income. Farmers' activities are sedentary in nature, as they reside in one place which most of the time are their places of origin. The activities of the herdsmen whose herd most of the time graze on farmlands bring them in contact with farmers, resulting in conflicts.

There is therefore the need for evidence-based policies that will help to nip at the bud the rising trend of conflicts between herdsmen and farmers, in order to ensure food security in Nigeria and the entire sub-Saharan Africa. Such policies that address the effect of these conflicts on food security have not been well reported. Most studies on food security in the region did not take into cognisance, security challenges posed by herdsmen attack on farmers. Herdsmen-farmers conflict are site-specific

phenomenon requiring local level analyses in order to gain better insight and understanding of it. This will make for effective policy development by national and local governments, non-governmental organizations and bi-lateral donors, towards achieving sustainable food security in the sub-Saharan Africa.

## **METHODOLOGY**

This study was carried out in Enugu State, southeast Nigeria. Uzo-Uwani Local Government Area was purposively selected due to the high level of Hausa/Fulani herdsmen attack on farming communities in the area. Thereafter, seven villages in Ukpabi Nimbo community in Uzo-Uwani Local Government Area (LGA) which have been under the attack of herdsmen were selected. These villages included: Ekwuru, Nimbo-Ngwoko, Ugwuujoro, Ebor, Enugu-Nimbo, Umuome and Ugwuachara. Lastly, thirty (30) farm households were randomly selected from each of the seven (7) selected villages in the study. Data were collected with the aid of well-structured questionnaire administered to 210 farm households.

Descriptive statistics, food security index and logit regression were used to analyze the data. The food security index is specified below:

$$F_i = \frac{\text{per capita food expenditure for the } i^{\text{th}} \text{ household}}{\frac{2}{3} \text{ mean per capita food expenditure of all households}}$$

**Where:**

$F_i$  = food security index;  $F_i \geq 1$  = food secure  $i^{\text{th}}$  household;  $F_i < 1$  = food insecure  $i^{\text{th}}$  household

A household is food secure when its monthly food expenditure is equal to or above two-third of the

mean of per capita food expenditure of all households in the study. But when the households' monthly food expenditure is less than two-third of the mean monthly food expenditure of all the households in the study, it is food insecure.

The binary logit regression is specified as follows:

$$\Pr[Y_j = 1/X_j] = \frac{1}{1 + \exp(-\beta_0 - \beta_j X_j)}$$

$$\Pr[Y_j = 0/X_j] = 1 - \Pr[Y_j = 1/X_j]$$

**Where:**

$F_i = 1$ , if household is food secure, 0 if otherwise

$X_1$  = sex (1 if male, 0 if female)

$X_2$  = marital status (1 if married, if otherwise)

$X_3$  = age (years)

$X_4$  = household size (number)

$X_5$  = level of education (years)

$X_6$  = farm experience (years)

$X_7$  = farm income (₦)

$X_8$  = non-farm income (₦)

$X_9$  = size of farmland destroyed (ha)

$X_{10}$  = attack on home (1, if attacked, 0 if otherwise)

$X_{11}$  = number of household members who have migrated out the village

$X_{12}$  = loss of interest in farming (1 if yes, 0 otherwise)

$X_{13}$  = contamination of water sources (1 if yes, 0 otherwise)

$X_{14}$  = lack of access to market (1 if yes, 0 otherwise)

The parameters of the logistic regression model were estimated using the maximum likelihood approach.

## RESULTS AND DISCUSSION

### Socioeconomic Characteristics of the Farm Households

The socioeconomic characteristics of the farm households were shown in Table 1. It revealed that majority (64%) of the households were headed by males, while their average age was 48years. Furthermore, the result showed that only about 5% of the farmers were single compared to 77% who were married and 18% who were widowed, while their average household size was 12 persons. The average annual farm income of the households was ₦387,

542.30, with majority of them (39%) having an annual income range of ₦301, 000 - ₦400, 000.

**Table 1: Distribution of the respondents according to their socioeconomic characteristics**

Socioeconomic Variables	Frequency	Percentage	Mean
<b>Gender:</b> Male	135	64	
Female	75	36	
<b>Age:</b>			
< 30years	14	7	
31-40years	42	20	
41-50years	70	33	<b>48</b>
51-60years	54	26	
> 60years	30	14	
<b>Marital status:</b> Single	10	5	
Married	162	77	
Widowed	38	18	
<b>Household size:</b> 1 - 5	25	12	
6 - 10	52	25	<b>12</b>
> 10	133	63	
<b>Educational level:</b> < 1year	37	18	
1-6years	84	40	<b>7</b>
7-12years	68	32	
13-18years	21	10	
<b>Farming experience:</b> <10years	56	27	
11-20years	92	44	<b>18</b>
21-30years	50	24	
>30years	12	6	
<b>Primary Occupation:</b>			
Agriculture	199	95	
Non-agriculture	11	5	
<b>Annual farm income:</b>			
< ₦100000	21	10	
₦101000 - ₦200000	17	8	
₦201000 - ₦300000	57	27	
₦301000 - ₦400000	82	39	<b>₦387,542.30</b>
₦401000 - ₦500000	25	12	
> ₦500000	8	4	
<b>Annual non-farm income:</b>			
< ₦50000	62	30	
₦51000 - ₦100000	30	14	
₦101000 - ₦150000	78	37	<b>₦132,400.25</b>
₦151000 - ₦200000	32	15	
> ₦200000	8	4	
Total number of respondents	<b>210</b>		

**Source: Field survey, 2016**

### Food Security Status of Farm Households

The food security status of farming households is shown in Table 2. The result showed that the food security line of the farm households was ₦2, 533.79. This implies that farm households whose mean monthly per capita food expenditure was less than ₦2,533.79 were food insecure, while those with mean monthly per capital food expenditure greater than or equal to ₦2,533.79 were food secure. This food security line is about ₦500.00 less the food security line in Cross River State, South-south Nigeria as reported by Ibok *et al.*, (2014). The study of Ibok *et al.*, (2014) was among urban food crop farming households, unlike this study which was carried out in very remote rural communities, and which may have accounted for the

differences in their food security line.

The result further show that 45.7% of the households were food secure, while a greater majority (54.3%) were food insecure. This finding is at variance with the report of Ibok *et al.*, (2014) which showed that majority of farm households were food secure. The higher proportion of food insecure households relative to food secure households provides a deeper insight to the level of hunger and malnutrition prevalent in rural areas. More importantly, even among the poor in rural areas, when crisis occur the poorest among them are the most affected. As such, the series of attack and fear of future attacks on the farmers by the Hausa/Fulani herdsmen may have informed the result of this study.

**Table 2: Distribution of the farmers according to their level of food security**

	Frequency	Percentage	Mean Monthly Expenditure (₦)
Food secure	96	45.7	6,870.82
Food insecure	114	54.3	1,215.30
Food security line		₦2, 533.79	

**Source: Computed from field survey, 2016**

Further result showed that the mean monthly per capital food expenditure of food secure households was ₦6, 870.82 compared to ₦1, 215.30 for food insecure households. The implication of this is the mean

monthly per capital food expenditure of food secure households was 5.65 times more than those of food insecure households. This is similar to the findings of Ibok *et al.*, (2014). It reflects high rate of income

inequality, contrary to natural expectation that income distribution in rural areas should be more even compared to urban centres. However, it appeared that the result mirrored the outside working of the entire sub-Saharan Africa in terms of income inequality. According to Mubila, Lannes & Aissa (2012), Africa has the second most inequitable income distribution in the world after Latin America.

#### FACTORS AFFECTING FOOD SECURITY OF FARM HOUSEHOLDS

The maximum likelihood estimate of factors affecting the food security status of farm households was shown in Table 3. The result showed that the food security status of the farm households was predicted with 88.6% accuracy. The log-likelihood ratio (LR) statistic (-102.84) was significant. This implies a strong explanatory power of the model, which showed that the explanatory variables explained about 74.2% of

the probability of a farm household being food secure. From the result, the model had an average marginal effect of 0.44, which means that on the average, the probability that the farm households will be food secure is 44%.

#### Sex

The result showed that the sex of the household head had a significant and positive relationship with their food security status. This means that male-headed households had higher probability of been food secure compared to female-headed households. This is expected bearing in mind that in developing economies like Nigeria, males have more access to productive resources such as land and capital. Also, the strong physical built of males confer on them some advantages over their female counterparts, especially in agricultural production, which is highly labour intensive.

**Table 3: Logit model estimates of factors affecting the food security status of households**

Variables	Coefficients	Standard Errors	Z-value	Odds ratio	Marginal effects
Constant	-0.6578	0.2181	0.54	-	-
SEX	1.2001	0.3693	3.25***	1.023	2.406
MS	0.0041	0.0020	2.04**	0.100	0.046
AGE	0.9554	0.7349	1.30	1.254	0.234
HHS	2.0011	1.1370	1.76*	1.042	1.831
LEDU	0.8299	0.9650	0.86	0.127	3.200

**Effects of Farmers Herdsmen Conflicts on the Food Security Status of Farming Households in Enugu State, Nigeria**

FAMEXP	1.8254	6.5193	0.28	1.220	4.847
FI	0.5226	0.3226	1.62	0.867	0.895
nFI	0.0048	0.0024	1.99**	1.068	2.131
FLD	-0.0003	5.28e-5	5.68***	0.172	0.009
HOMEA	-0.6265	0.3386	1.85*	0.055	1.537
MAV	-3.0229	1.1996	2.52**	1.004	0.523
LIF	5.5200	61.333	0.09	0.047	0.176
CWS	0.0385	0.0770	0.50	2.564	0.326
LAMKT	-2.3210	0.550	4.22***	3.063	2.204
Base category			Food secure		
Total number of cases			210		
Number of cases correctly predicted			186 (88.6%)		
Log-likelihood ratio			-102.843		
Prob > $\chi^2$			0.000		
Pseudo R <sup>2</sup>			0.742		
Average marginal effect			0.44		

**Keys:** \*\*\*,\*\*,\* - 1, 5 and 10% significant level, respectively. MS - Marital status; HHS - household size; LEDU - level of education; FAMEXP - farming experience; FI - farm income; nFI - non-farm income; FLD - size of farmland destroyed by herdsmen; HOMEA - attack on home; MAV - number of household members who have migrated out the village; LIF - loss of interest in farming; CWS - contamination of water sources; LAMKT - lack of access to market.

**Source:** computed from field survey, 2016

### Marital Status

The marital status of the household head had a significant and positive relationship with their food security. It implies that households whose heads were married had higher chances of being food secure relative to households with unmarried heads. This study is in agreement with Haliu & Regassa (2007) and Kaloi, Tayebwa & Bashaasha (2005), but at variance with Aidoo et al. (2013).

### Household Size

Household size had a significant and positive relationship with food security status. This implies that households with larger sizes have higher chances of being food secure than households with smaller sizes. This finding is in disagreement with Aidoo *et al.*, (2013), Ibok *et al.*, (2007), Leza & Kuma (2015) and Sikwela (2008).

### Non-Farm Income

Non-farm income had a significant and positive relationship with food security. This means that the chances of households been food



secure increased with increase in their income from other productive activities, besides agriculture. This finding is also in conformity with Aidoo *et al.*, (2013). Rural households are engaged in diversified economic portfolios as artisans, daily farm labourers, daily non-farm labourers, petty traders, okada riders (commercial motorcycle riders), etc.

#### **Size of Farmland destroyed by Herdsmen**

The size of farm land destroyed by herdsmen had a significant and negative relationship with food security status of farm households. In other words, the food security status of farm households worsen with increase in the size of their farmlands destroyed. This suggests that households who have more of their farmlands destroyed by the Hausa/Fulani herdsmen are less food secure. Land is a very important factor in agriculture, and as such, the destruction of farmlands deprives rural households of their primary source livelihood.

#### **Frequency of Attacks on Farmers by Herdsmen**

Also, attack on homes of farmers by herdsmen had a significant and negative relationship with food security. This means that as the

number of homes of farmers attacked by herdsmen increases, food security decreases. Farmers are the primary victims in herdsmen-farmers conflicts and attacks. These conflicts affect the socioeconomic life of the farmers and their agricultural production activities.

#### **Migration**

Migration away from communities had a significant and negative relationship with food security. This implies that food security of farm households decreases as members of their households migrate to other areas. Household members are veritable source of labour for agriculture in sub-Saharan Africa. Herdsmen-farmers conflict destabilizes the internal workings and stability of rural areas where agriculture is practiced, forcing farmers to migrate. Such migrations are usually dominated by youths and younger people, whose strength and risk-taking initiatives are lost to other sectors of the economy.

#### **Lack of access to Market**

Lack of access to market had a significant and negative relationship with food security. Market provides a stimulus for agricultural production. This is because agriculture just like other economic activities, is a business,

and therefore requires effective medium exchange of its products. Market provides both forward and backward integration for agricultural production. Without an effective market, farmers may not be able to buy farm input to produce, and likewise, they may not be able to sell their farm produce. This will be a great disincentive for agricultural production.

### CONCLUSION

Agriculture is the predominant economic activity in Nigeria contributing immensely to the provision of food and employment opportunities for the citizens, raw materials for the industries and foreign exchange earnings for the country. The level of agricultural production has continued to fall below the food needs of the country, as majority of farm households are food insecure. Food security in the region is further worsened by herdsmen attack on farmers and farmlands, which severely affect agricultural production and productivity. Policies that would protect the farmers and farmlands from serial attacks of herdsmen such as the establishment of grazing reserves and the prohibition of open grazing are recommended. Also recommended are policies that would ensure continuous training

and retraining of farmers, and the encouragement of youths to participate in agricultural production.

### REFERENCES

- Aidoo, R., Mensah, J. O., & Tuffour, T. (2013). Determinants of household food security in the Sekyere-Afram Plains District of Ghana. Proceedings of the 1<sup>st</sup> Annual International Interdisciplinary Conference held from 24-26 April in Azores, Portugal.
- Eva, L. (2009). Climate change, water and food security. Background note. Oversea Development Institute, ODI.
- Food and Agriculture Organization [FAO] (1996). World food summit. Rome declaration on food security. FAO, Rome, Italy.
- Food and Agriculture Organization [FAO] (2006). Food security and agricultural development in sub-Saharan Africa: Building a case for more public support. Policy

- Brief No. 1. FAO Policy Assistance Division (TCA), Rome, Italy.
- proceedings of African Crop Science conference, 7, 867-873.
- Food and Agriculture Organization [FAO] (2015). Regional overview of food insecurity: African food security prospects brighter than ever. Accra: FAO.
- Leza, T., & Kuma, B. (2015). Determinants of rural farm household food security in Boloso Sore District of Wolaita Zone in Ethiopia. *Asian Journal of Agricultural Extension, Economics and Sociology*, 5(2), 57-68.
- Hailu, A. & Regassa, N. (2007). Correlates of household food security in densely populated areas of Southern Ethiopia: Does the household structure matter? Department of Rural Development and Family Sciences, Hawassa University, Ethiopia.
- McIntyre, B. D., Herren, H. R., Wakhungu, J. & Watson, R. T. (2009). Agriculture at a crossroads: Sub-Saharan Africa (SSA) report. Washington DC: International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD).
- Ibok, O. W., Bassey, N. E., Atairet, E. A. & Obot, O. J. (2014). Food security determinants among urban food crop farming households in Cross River State, Nigeria. *Asian Journal of Agricultural Extension, Economics & Sociology*, 3(1), 76-90.
- Mubila, M., Lannes, L. & Aissa, M. S. B. (2012). Briefing note 5: Income inequality in Africa. Briefing notes prepared for AfDB's long-term strategy. African Development bank Group.
- Kaloi, E., Tayebwa, B. & Bashaasha, B. (2005). Food security status of households in Mwingi District, Kenya. Being
- Sikwela, M. M. (2008). Determinants of household food security in the semi-arid areas of Zimbabwe: A case study

**Effects of Farmers Herdsmen Conflicts on the Food Security Status of Farming Households in Enugu State, Nigeria**

of irrigation and non-irrigation farmers in Lupane and Hwange Districts. A Masters Degree thesis submitted to the Department of Agricultural Economics and Extension, University of Fort hare, Republic of South Africa.