ASSESSMENT OF FOOD SECURITY STATUS OF FARMING HOUSEHOLDS IN ABIA STATE, NIGERIA

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Abstract
The insurgency in northern Nigeria and the Niger-delta unrest has posed a serious threat to food security in the country. The study was conducted to determine the status of food security in the study area, to identify the major determinants of food security among the rural household and challenges faced by households in their bid to stay food secure. 60 farming households were randomly selected in the three agricultural zones of Abia State; food security index and probit analysis model were the major tools used in the study. The survey result shows that about 36.7% of sampled farmers were food secure. Farm Size, marital status, gender, household size, and farm income were significant variables having varying degrees of influence on household food security. The study recommends that government should provide storage facilities which will reduce waste of excess produce as a result of lack of storage facilities.

Key words: Food security, probit and farming households

Introduction

Food security has been an issue of global concern in recent times. Nigeria with her huge endowment in both human and natural resources is not spared. The incidence of Boko haram and the unrest in the Niger-Delta region which have crippled the Nigerian economy have increased the hardship and cost of living of the citizens. The price of goods and services is on sprinting increase pushing the economy to depression. Nigeria is the 8th most populous nation in the world, with 160 million inhabitants (NBS, 2014). Poverty is widespread with an estimated 80 percent of Nigerians subsisting on less than 2 dollars a day (UNDP, 2009). Recent estimates from UNDP (2015) put the number of hungry people in Nigeria at over 53 million which is about 30 percent of the entire country's total population. Nigeria, which is pre-dominantly known for subsistence-oriented farming system is now at risk of gradual marginalization. Food security is a condition in which all people have access at all times to enough food of an adequate nutritional quality for a healthy and active life. There are four dimension of food security (i) Availability of sufficient amount of food which is a function of food production. (ii) Stability of supply over time which depends on the ability to preserve produced food and supplement available food through imports if necessary.(iii) Access to the available food which depends on income levels and its distribution and Food utilization which encompasses procurement, ingestion, and digestion all of which are dependent on nutritional quality, education and health.

Food price volatility has exerted considerable pressure in Nigeria's food security. The average increase in food prices contributed significantly to increase in food insecurity and lack of adequate technology, low production resulting from inefficient use of resources and wrong enterprise combination are contributing factors to food insecurity in the country. The study tries to ascertain food security status of the farming households in the study area; examine the determinants of farming households' food security in the study area and examine the challenges which lead to food insecurity.

Methodology

The study was carried out in Abia State. Abia state is in the South eastern region of Nigeria and its capital is at Umuahia. The state is approximately within latitudes 4° 41' and 6°14' north of the equator and longitudes 7°, 10' and 8'° east of the Greenwich meridian. The state was carved out of Imo state in August 27, 1991. It has 17 local government areas and three agricultural zones of Umuahia, Aba and Ohafia. Aba and Umuahia are referred to as the urban areas and the rest are rural areas. In agriculture, the state is divided into three agricultural zones, namely Umuahia, Aba, and Ohafia. Major agricultural produce includes maize, yam, plantain, rice, vegetable, melon, beans etc. livestock reared in the area include goat, sheep, pigs, poultry and fish. Most prominent of economic activities in Abia state includes: farming, trading, manufacturing, and fabrication. Multi-stage random sampling was used in the selection of respondents. In the first stage, the three (3) agricultural zones in Abia state were selected. In the second stage, two (2) local government areas were randomly selected from each of the agricultural zones of Abia state. In the third stage, four (2) autonomous communities were randomly selected from each of the local government areas. In the fourth stage, five (5) farming households were randomly selected from each of the autonomous communities in the local government areas which resulted to a total number 60 farming households, which is the sample size. A well-structured questionnaire was used to elicit information from the respondents. Food Security Index was used to ascertain the food security status of respondents in the study; probit analysis was used to determine the factors influencing food security in the study area and descriptive statistics was used to examine the challenges to food security in the area.

Food security index is given as

$$fi = \frac{per\ capita\ food\ expenditure\ for\ the\ Ith\ household}{\frac{2}{3} mean\ per\ capita\ food\ expenditure\ of\ all\ households} \quad \text{..... (1)}$$

Where *fi* = Food Security Index

$fi \geq 1$ it implies that the I^{th} household is food secured

$fi < 1$ it implies that the I^{th} is food insecured

The model in its general form is implicitly specified as below:

$P(Y=1|X) = Pr(Y^*>0) = Pr(\beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4X4+.....+.\beta iX10+e>0)$

Where Y=food security(1= food secure; 0= food insecure)

X_1 = Age (years)

X_2 = Sex (male=1, female=0)

X_3 = Marital status (married=1, others=0)

X_4 = Farming Experience (years)

X_5 = Level of Education (years)

X_6 = Household size (Number)

X_7 = Household income (₦)

X_8 = Quantity of food consumed from own production (₦)

X_9 = Farm size (Hectares)

X_{10} = Cooperative membership (yes=1, No=0)

b_0 = Constant

β_1-β_{10} = Coefficients of the variables

e_1 = error term

Results and Discussion

Food Security Index

Table 1 shows the food security status of the respondents in the study area. Food security index was used to determine food secure or food insecure households in the area.

Table 1: Food security status of respondents

Food Security Status	Frequency	Percentage (%)
Food secure	22	36.7
Food insecure	38	63.3
Total	60	100

Field survey 2016

The results of the analysis of the food security status of rural households as presented in Table 1, showed that 22 (36.7%) of the farming households were food secured while 38 (63.3%) of the farming households were food insecure. This result is not a surprise since the economy of Nigerian has been declining at a sprinting rate. This have permeated into all facet of life in the country with its resultant effects to include high prices of food commodity, high cost of living, little to non-payment of workers' salary, Government indifference to the plight of the masses. Also, the unrest and Political Tension in the country is also taking its toll on the food security situation of the masses. The insurgency in the north east has increased the price of food commodity; people are scared of going to the north were most of the food crops are grown to bring them to the east. The Niger Delta Avengers have also crippled the oil production in the country which is the main source of foreign exchange in the country and these have led to inflation in the country. This means that more farming households were food insecure. This result was consistent with the result of Aidoo *et al.* (2013) who found out that majority (79%) of the households in Sekyere, a farm district in Ghana were food insecure. However Ojiako and Ogunkwa (2012) found out that majority (72.9%) of rural landless households of Middle belt, Nigeria was food secured while 27.1% of the households were food insecured.

Determinants of Food Security status among Farming Households in Abia State

The probit estimates of the determinants of food security status of farming households in the study area were summarized in the Table 2. The result revealed a Chi-square of 73.250 which was significant at 10% level showing goodness of fit of model. The coefficient of household size of the respondents is positively related to the status of the farmers' household food security and is highly significant at 5% level. This means that the higher the size of the farm family, the higher the probability that farmers will be food secured and vice versa. Increasing farmers' household size by one person increases their labour size which in turns increases their likelihood of been food secured. Household members are source of cheap labour. Farmers with large household size utilize them in production which saves him the expense of hired help. Afolabi (2008) found a positive relationship between family size and the productivity of farmers due to the extensive utilization of family labour in the farming activities. This means that the higher the size of the farm family, the higher the probability that farmers will be food secured and vice versa.

Table 2: Probit estimates of factors influencing food security of farming households

Explanatory variables	Beta coefficient	Standard error	Z –Value
Intercept	-2.226	0.658***	-3.383
Age	-0.023	0.019	-1.209
Education	-0.022	0.021	-1.026
Marital status	0.275	0.234*	1.767
Experience	0.012	0.015	.770
Household size	0.113	0.044**	2.597
Cooperative membership	0.241	0.183	1.321
Expenditure	0.000	0.000	-1.255
Income	0.000	0.000**	2.668
Sex	-0.358	0.204*	-1.751
Farm size	0.594	0.066**	2.985
Chi square	73.250*		

Source: Field survey, 2016

*, ** and *** is significant at 10%, 5% and 1% level of probability respectively

The result also shows that marital status is significant at 10%. Marriage is positively related to farmers' household security status. Married farmers are more likely to be food secured than single farmers. With growing commercialization, there will be a division of labour in married households unlike single households where all the work is been left for one particular person. In addition, the division of labour and specification of duties within the farmers household has the effect of increasing effectiveness, labour maximization and overall productivity which increases the likelihood of the farmer been food secured. This also confirms the results of Ojiako and Ogbukwa (2012) in which marital status had significant positive correlations with food security. Income from agriculture is highly significant at 5% level and is positively related to farmers' food security status. An increase in the income will increase the likelihood of being food secured. This confirms the findings of Oladeebo and Oladeebo (2008) in their study of determinants of productivity among small-holder farmers in Ogbomosho agricultural zone of Oyo state, Nigeria. They found a significant positive relationship between food security and income. This shows that farmers who have higher income are more likely to be food secured than farmers who earn lower income from their farm.

Sex has a negative coefficient and it is significant at 10% level. This implies that female farmers are more likely to be food secured than Male farmers. This might be due to the saying that females are more disciplined than male, they make sure production resources given to them are used for their intended purposes. Women tend to optimize available resources better than men, even after production and harvest they go ahead in ensuring the produce are delivered and sold at a good price in the market. And the ones that are meant to be consumed are not wasted. The results confirm those of Ojiako and Ogbukwa (2012). The result from the findings indicates that farm size owned by the respondents is significant at 5% and had positive relationship with food security status of households suggesting the larger the farm size, the better food secure status of the farming household. As farm size increases, income increases with better farm management practices and food security as well also increases. The possible explanation is that the major source of food in the study area comes form own production and there was limited access to other means of income

generating activities. So the household who have large size of cultivated land has better production which gives a better chance for the household to be food secured. This result is in agreement with the findings of Bashir *et al* (2012) Tesfaye (2005), Yilima (2005)and Thewodros (2007).

Challenges of Food Security

The challenges militating against food security of the farming households is presented in Table 3. The result shows that one of the major problems militating against the food security status of the respondents in Abia State is poor harvest, as indicated by 73.3% of the respondents. Another problem faced by the respondents in ensuring food security is lack of adequate storage facilities in ensuring an extended shelf life of their food produce for future use or consumption as indicated by 66.7% of the respondents in the study area. About half (65%) of the respondents are faced with the problems of high cost of labour. An equivalent of 61% of the respondents attests to face the problem of inability to acquire land for their agricultural activities and High price of food stuff respectively. Other problem include difficulty in obtaining loan (60%), lack of adequate productive planting materials (58%), and poor demand of their produce (48.3%).

Table 3: Challenges militating against Food Security of Farming Households

Challenges	*Frequency	Percentage (%)
High price of food stuff	37	61.7
Poor access to land	37	61.7
Ready market	31	51.7
Low demand for farm produce	29	48.3
Pest and disease attack	38	63.3
Lack of storage facilities	40	66.7
High labour cost	39	65.0
Lack of planting material	35	58.3
Poor harvest	44	73.3
Lack of technical know how	33	55.0
Rain fed agriculture	33	55.0
Difficulty to obtain loan	36	60.0

Source: Field survey, 2016 *= multiple responses

Conclusion

It could be concluded from the study that majority of households in Abia State were food insecure during the period of the survey. Consistent with *a priori* expectation and findings from previous studies, farm size, Marital Status and Household size were found to significantly influence household food security in the study area. The major problems militating against the food security status of the respondents in Abia State were poor harvest and post harvest activities. The recommends that policies that will make micro-credit from government and non governmental agencies accessible to farmers will go a long way in addressing their resource acquisition constraints and eventually improving household food security in the country. Also, Government on their own part should support various extension agencies involved in the dissemination of these technologies that enhance the food security state of farmers in Abia state.

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