

IMPACT OF POVERTY ON FOOD SECURITY STATUS OF RURAL FARMING HOUSEHOLDS IN BENUE STATE, NIGERIA

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Abstract

This study analyzed the impact of poverty on food security of rural farming households in Benue State, Nigeria. Simple and stratified sampling techniques were employed in selecting a sample size of 360 rural farming households. Data were collected using structured questionnaire administered on the respondents and analyzed using descriptive statistics such as frequency and percentages and inferential statistics such as food security and poverty indices. Results of data analysis revealed that majority (53.9%) of the respondents were in their active, energetic and productive age (31 – 50 years). Most (37.8%) respondents had large household size of 6 – 10 members with an average of 8 persons, low annual income (47.2%) and a farm size of over 3.1 hectares (39.7%). Majority of the respondent households were male-headed (84.2%), had a farm output of over 1500 kg (52.8%) and at least primary education (69.4%). The result of food security status showed that majority (56.4%) of the rural farming households were food insecure. The result of poverty analysis showed that 73.3 percent of the rural farming household heads were poor. Finally, the result revealed that all the food insecure rural farming households were poor. Hence, it was deduced that, as the impact, poverty was the major cause of food insecurity among the rural farming households in the study area. Based on these findings, it was recommended that, proactive policy in birth control, rural education, skill training and empowerment, rural industrialization and food mediated poverty reduction programmes should be adopted as food security efforts of the government.

Keywords: Food security, food security index, poverty, per capita expenditure, rural farming households, Benue State.

Introduction

The world is facing a potential crisis in terms of food security. The challenge is to provide the world's growing population with a sustainable, secure supply of safe, nutritious and affordable high quality food using less land, with lower inputs and in the context of global climate change, other environmental changes and declining resources (World Food Programme, 2015). Most of the World's undernourished people are found in Asia and Africa. Africa remains the region with the highest undernourishment, with around one in four people estimated to be undernourished (Food and Agriculture Organization of the United Nations, 2013).

Africa's food security and nutrition is growing worse, causing immense loss of life and livelihoods over the past decades (Frimpong, 2013). Sub – Saharan Africa is the region with the highest prevalence of hunger as one person in four (23.2 percent of the population), was estimated to be undernourished in 2014-2016, according to FAO, with some 233 million people in Africa being hungry/undernourished (Ntirenganya, 2016). This ugly situation is occasioned by the high incidence of poverty in the continent. Gladwin *et al.* (2001) stated that food insecurity is primarily a consequence of low household income and poverty, not just in adequate production of food commodities (United States Agency for International Development, 2019) added that, food insecurity is often rooted in poverty, a major obstacle and has a long term effect on the ability of families, communities and countries to develop and prosper. According to World Bank Report (2012), 501 million people, or 47 percent of the sub-Saharan Africa, lived on \$1.90 a day or less, a factor causing widespread hunger.

In Nigeria, World Bank (2014) revealed that poverty is the major factor affecting food security in the country. It asserted that corruption is the major cause of poverty in the country and that the poverty situation in Nigeria has resulted in many citizens dying of hunger and disease. Almost inevitably, food insecurity is a result of poverty. Under normal circumstances, if individuals and households have sufficient resources, they should be able to have access to sufficient food. But poverty has brought about inadequate income, food insecurity, malnutrition and poor social status or image, most especially in the rural areas. According to Sadiq and Kolo (2015), about two – thirds of rural households in Nigeria are engaged in crop and livestock production as their main source of livelihood with most of these households vulnerable to chronic poverty

Omoh (2014) reported that the World Bank had said that Nigeria will be one of 10 countries

that, in the year 2030, will remain as the main contributors to global poverty. Ahuma – Young (2016) also reported that no fewer than 112 million Nigerians now live below poverty level as global poor hits one billion mark. He revealed that according to the poverty report by the National Bureau of Statistics, NBS (*Premium times*, 2012; *Vanguard*, 2016), about 112 million Nigerians (representing 67.1 percent) of the country's total population of 167 million are poor. This shocking figure has a serious negative effect on food security, particularly among rural farming households in the country.

In Benue, about 78.2 percent of Benue people live below the poverty line of \$1.90 per day (Fagite, 2013). The situation is worsened by the present economic doldrums and lack of a well co – ordinated food mediated poverty reduction policy. Therefore, the specific objectives of the study were to:

1. examine the socio – economic characteristics of farming households in Benue State;
2. determine the food security status of the rural farming households in the study area;
3. examine the poverty status of rural farming households in the study area; and
4. investigate the impact of poverty on food security in the study area.

Methodology

The Study Area

The study was conducted in Benue State. It is located in the Middle Belt Region of Nigeria. It is surrounded by six (6) States of the federation: Nasarawa to the North, Taraba to the East, Cross River to the South-east, Ebonyi to the South, Enugu to the South-west and Kogi to the West. It was carved out of Benue-Plateau in 1976. Administratively, the State is divided into twenty-three (23) local government areas, with Makurdi as its headquarters. It is administratively and agriculturally divided into three Zones: A, B and C, with an estimated population of 4,253,641 (NPC, 2006) and 413,159 farm families/households (BNARDA, 2005). It is predominantly rural. The major occupation of the people is agriculture. An estimated 75 percent of the population is engaged in rain-fed subsistence agriculture. Major crops grown are yam, cassava, sweet potato, rice, sorghum, maize, millet, benniseed and soya bean (Ater *et al.*, 2006)

Population and Sampling Procedure

The study population consists of all the rural farming households in Benue State, which were

estimated to be 413,159 (BNARDA, 2005). A sample size of 360 rural farming households was drawn for the study using simple random and stratified sampling techniques. Two local Government Areas were randomly selected from each of the three agricultural zones (A, B and C) of the State, making a total of six Local Government Areas: Kwande and Katsina – Ala Local Government Areas from zone A, with a population size of 12, 272 and 27, 939 respectively, Gboko and Buruku Local Government Areas from zone B, with a population size of 32, 528 and 39, 016 respectively, and Otukpo and Ogbadibo Local Government Areas from zone C, with a population size of 31,176 and 14, 968 respectively (NPC, 2006). From each of the selected Local Government Areas, 360 rural farming households were randomly selected on the basis of their population size using proportionate stratified sampling.

Method of Data Analysis

Food Security Index:

To estimate the food security status of the rural farming households in the study area, the study used the food consumption recall method for a whole household in which the analysis of each type of food mentioned was carried out. A 7-day recall approach was used. The recommended daily per capita calorie intake of 2710–kcal based on FAO criteria was the food security line (FAO). The quantities of food consumed were converted to grams and the calorie content was estimated by using the Nutrient Composition table of commonly consumed food in Nigeria (in the food groups: cereals, roots and tubers; pulses and legumes; dairy products; meat, fish and eggs; oils and fats; fruits and vegetables). Per capita calorie intake was calculated by dividing estimated total household calorie intake by the household size. The household's daily per capita calorie intake was estimated by dividing the household's per capita calorie intake by seven. Households whose daily per capita calorie was up to 2100-kcal was regarded as food secure, otherwise there were regarded as food insecure. The formula used to calculate per capita Kilocalorie intake is given as:

$$HFS_i = \frac{\text{Total Net Calorie Consumed by a Household daily} \dots \dots \dots (1)}{\text{Household size}}$$

where,

HFS_i = Household Food Security of the *i*th household (*i* = 1, 2, 3...360)

Poverty Index:

To estimate the poverty status of the food secure and food insecure rural farming households, the poverty index adopted was Per Capita Household Expenditure (PCHE). According to FOS (2013), there is no official poverty line in Nigeria. Also, there is no clear consensus in the literature about when a household should be classified as poor. However, this approach is preferred to income because literature has shown that income as a measure of welfare especially in sub-Saharan Africa (SSA) is prone to many flaws. First, income varies from year to year and from season to season depending on farm production and prices (two variables that are also not stable). The approach using per capita expenditure has been used in many studies on poverty in Nigeria (Awotide *et. al*, 2011). Also, the International Poverty Line is based on per capita consumption expenditure or subsistence per day. Therefore, Per Capita Household Monthly Expenditure (PCHME) was given as:

$$\text{Total Household Monthly Expenditure} \dots\dots\dots(2)$$

Household size

The poverty measure was done by categorizing the respondents into poor and non-poor groups using two-thirds (2/3) of the mean value of per capita household monthly expenditure in the study area as the benchmark. The farm households whose per capita monthly expenditure (PCE) falls below the poverty line are regarded as poor while those with their per expenditure (PCE) above the benchmark are non-poor.

Therefore,

$$\text{PCHME} = \text{THME}/\text{HHS} \dots\dots\dots (3)$$

$$\text{MPCHME} = \text{TPCHME}/\text{TNR} \dots\dots\dots (4)$$

$$\text{PL} 2/3 * \text{MPCHME} \dots\dots\dots (5)$$

Where:

PCHME = Per Capita Household Monthly Expenditure

THME = Total Household Monthly Expenditure

HHS = Household Size

MPCHME = Mean Per Capita Household Monthly Expenditure

TNR = Total Number of Respondents

TPCHME = Total per Capita Household Monthly Expenditure

PL = Poverty Line

NB: International poverty line = US\$1.9 per day

Results and Discussion

Socio-Economic Characteristics of Rural Farming Households

Result of household socio-economic characteristics presented in Table 1 showed that about 53.9 percent of the rural farming household heads fell within the age range of 31-50 years. This implies that majority of the respondents are in their active, and productive age. The result also showed, however, that only 29.4 percent of the farming households were under 30 years. This could possibly be that majority of the rural farming household heads who were under 30 years had migrated to urban areas in search of white-collar jobs and other greener pastures. This could negatively impact on poverty reduction and food security in the study area. This agrees with the report of Ngqangweni and Delgado (2003) that, most of the younger household heads who are educated are most likely to migrate to urban areas in search for urban employment.

Majority of the rural farming households were male, accounting for 83.3 percent. This is an indication that majority of the respondents could influence decision-making as family heads by providing the resources needed to acquire food to meet the food need of the family. This is consistent with the finding of Van der veen and Tagel (2011) who reported that male-headed households are expected to have higher food security status than their female-headed counterparts because male-headed households are in a better position to supply more labour to do farm work. About 52.8 percent of the rural farming households had farm output of over 1500 kilograms. The average household size of farmers was 8 and most of the rural farming households (37.8%) had family size of 6-10. Household size plays a great role in providing farm labour.

Majority of the respondents (69.4%) had at least primary education. It could be deduced that the rural household heads were largely literate. This could possibly help them to access relevant information and opportunities relating to new technologies to reduce poverty and enhance food security. Their level of education and access to salaried job opportunities would enhance poverty reduction and determine their level of food security. Also, most of the rural farming household heads (47.2 %) had annual income of not more than N50, 000. This implies that most of the respondents were poor and food insecure, since improved access to on- and off-farm sources is likely to bring about household welfare, including food. This result is in conformity with Sadiq and Kolo (2015) who found out that most of the rural households in Nigeria are vulnerable to chronic poverty.

The study also revealed that 39.7 percent of the rural farming households had farm sizes of 3.1 hectares and above. This implies that these farm sizes, though within the small-holder range, would produce high output, leading to food poverty alleviation, increased farm income from sale of surplus farm output and food security. This supports the view of Van der veen and Tagel (2011) that, under subsistence agriculture, holding size is expected to play a significant role in influencing farm household's food security.

Food Security Status of Respondent Households

Result of the food security status of the respondent households with respect to calorie intake is presented in Table 2. It revealed that 42.8 percent of the rural farming households acquired 2766 kilocalorie and above per capita per day and therefore classified as food secure while majority of the rural farming households(57.2%) were unable to meet the recommended calorie intake of 2710 kilocalorie per capita per day and therefore classified as food insecure. This implies that majority of the respondents in the study area are food insecure. The study established food insecurity in the study area.

Poverty Status of Rural Farming Households in the Study Area

Results in Tables 3, 4 and 5 showed the poverty line, the poverty status of rural farming households and specifically, the poverty status of the food secure and food insecure rural farming households respectively in the study area. The poverty line set for the study follows expenditure poverty line measure. The relative poverty line was thus defined based on total monthly expenditure for the households. The poverty line constructed for the farming household per month is N3085.55. That is, the poverty line defined as two-thirds of the mean per capita household monthly expenditure of the total households. This implies that a household whose per capita monthly expenditure was below N3085.55 was classified as poor while a household whose per capita monthly expenditure equalled or was above this amount was classified as non – poor. Hence, households were classified as being moderately poor if their mean per capita monthly expenditure was below N3085.55 and core poor if it was below N1542.78 (Table 3). The estimated poverty lines based on 2016 prices were expected to meet the monthly minimum basic requirements (food and non food) of rural farming household. However, if N3085.55 translates to US\$ 0.3 per day (US\$1 = N350; US\$1.9 = N665), it is even lower than the US\$1.9 international poverty line per day, thus making all the sampled rural households poor (Table 3). The result in Table 4 showed that 26.7 percent, 20.8 percent

and 52.7 percent of the rural farming households are non-poor, moderately poor and core poor respectively. This finding is in line with Fagite (2013) who reported, in line with UNDP that, 78.2 percent of Benue people (mostly rural) live below poverty line.

The high poverty rate in the study area has been the major factor affecting its food security. This situation could be due to government neglect of agriculture, the major source of income for the rural people, high rate of corruption, harsh economic realities, non payment of salaries which has also limited the flow of income from relatives and friends from urban areas to rural areas and the constant clashes between farmers and nomadic herdsmen in the study area.

Impact of poverty on food security in the study area

The result in Table 5 showed that all the non - poor (61.2%) are food secure, while 6.9 percent of the moderately poor and all the core poor (93.1%) are food insecure. This shows a close link between poverty status and food security or insecurity. The result also reveals that 38.9 percent of the moderately poor are food secure. However, this could be transitory just as it could be in the case of the 7.8 percent of the moderately poor who are food insecure. They could experience food surplus or deficit at some weeks or months of the year due to their moderate poverty situation. This finding is consistent with the report of *Nigeria Agriculture* (1999) that, a major obstacle to food security and indeed the root cause of food insecurity has been widely identified to be poverty. It also corroborates the report of USAID (2019), that, food insecurity is often rooted in poverty, a major obstacle and has a long term effect on the ability of families, communities and countries to develop and prosper.

Table 1: Distribution of Respondent by their Socio-Economic Characteristics.

Variables	Frequency	Percentage
Age (Years)		
≤ 30	110	30.6
31-50	194	53.9
≥ 51	56	15.6
Sex		
Male	300	83.3
Female	60	16.7
Output (kg)		
< 500	20	5.6
500 – 1000	46	12.8
1001 – 1500	104	28.9
> 1500	190	52.8
Household Size (Members)		
≤ 5	122	33.9
6 – 10	136	37.8
11 – 15	52	14.4
> 15	50	13.9
Educational Status		
Informal	110	30.6
Primary	102	28.3
Secondary	76	21.1
Tertiary	72	20
Income (N'00)/Annum		
≤ 50, 000	170	47.2
51 – 100, 000	100	27.8
> 100, 000	90	25.0
Farm Size		
≤ 1	119	33.1
1.1 -3	98	27.2
≤ 3.1	143	39.7

Field Survey, 2016

Table 2: Distribution of Respondents by their Food Security Status

Food Security Status	Calorie Consumption Per Person Per Day	Proportion of Households	Percentage
Food Secure	Equal to or Above 2710	157	43.6
Food insecure	Below 2710	203	56.4

NB: Recommended per capita daily intake is 2710– kcal

Field Survey, 2016

Table 3: Poverty Line Construction Frame

Items/Variables	Estimates (N)
Average Household Monthly Expenditure (AHME)	29745.28
Total Per Capita Household Monthly Expenditure (TPCHME)	1666,198.951
Mean Per Capita Household Monthly Expenditure (MPCHHME)	4628.33
2/3 MPCHHME (Poverty line)	3085.55
Dollar Equivalence	US\$0.3/day (N55.26)
1/3 MPCHHME	1542.78

NB: US\$1 = N350 (Assumed); US1.9 = N665 (Int'l poverty line).

Field Survey, 2016.

Table 4: Distribution of Respondents by Poverty Status

Status	Frequency	Percentage
Non – poor	96	26.7
Moderately poor	75	20.8
Core Poor	189	52.5
Total	360	100

Field Survey, 2016

Table 5: Distribution of Respondents by Poverty Status of Food Secure and Food Insecure Households

Poverty Status	Food Secure		Food Insecure	
	Frequency	Percentage	Frequency	Percentage
Food Security Status	157	43.6	203	56.4
Non – poor	96	61.2	-	-
Moderately poor	61	38.9	14	6.9
Core poor	-	-	189	93.1
Total	157	100	203	100

Field Survey, 2016

Conclusion and Recommendations

Poverty and food security or insecurity are socio – economic issues. The study focused on impact of poverty on food security of rural farming households in Benue State. The Result of the analysis revealed that majority of the respondents were in their active and productive age, male – headed and had at least primary education. However, most respondents had large household size with an average of 8 persons, low annual income and farm sizes within the small-holder range, which are characteristics of poverty, which adversely affected food security in the study area. The result also showed that majority of the rural farming households were food insecure, and all the food insecure rural farming households were poor. Hence, it was deduced that, as a negative impact, poverty was the major cause of food insecurity among the rural farming households in the study area. Based on these findings, it was recommended that, proactive policy in health education and birth control, skill training and empowerment, rural industrialization with development strategies and food mediated poverty reduction programmes should be adopted as food security efforts of the government.

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