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Determinants of Poverty among Farming Households in Nasarawa State, Nigeria

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Abstract

The study assessed the poverty status, identified the determinants of poverty as well the poverty coping strategies among farming households in Nasarawa State, Nigeria. Simple random sampling was used to select 150 farming households. The Costs of Calorie method and Discriminant Analysis were used to determine the incidence of poverty as well as its determinants respectively. The incidence of poverty among the sampled households was found to be high and the major determinants of poverty include household size, number of income sources of the household head, number of household members employed outside agriculture and the number of literate adult males and females in the household. The major poverty coping strategies include skipping of meals, reduction in the quantity of meals served and engaging in wage labour. The study recommends that the farming households should be effectively involved in the formulation of strategies for imparting knowledge on family planning to the farming households. In addition, to diversify the number of income sources of the household heads, the skills acquisition centres should be extended to all rural areas in the state and the existing centers should be further strengthened.

Key words: *Poverty, Discriminant Analysis, Coping Strategy, Farming Households*

Introduction

Poverty has become an important topic of discussion among world leaders. This was reflected in the theme of the World Vision 2020 Africa conference held in Uganda (IFPRI, 2003). The United Nation general assembly in 2000 summarized the development goals agreed upon at various international conferences and World summits during the 90s and tagged it the “Millennium Development Goals” (M.D.Gs.) with reducing extreme poverty and hunger by half by the year 2015 as the first among the eight point targets (Vincent, 2006).

Poverty is multifaceted and has no single universally accepted definition. The World Bank (2001) defined poverty as a pronounced deprivation of human wellbeing; which include vulnerability to adverse events outside their control, being badly treated by the institutions of state and society and being excluded from having a voice and power. Any household or individual with insufficient income or expenditure to acquire the basic necessities of life is considered to be poor (Olayemi, 1995).

Most countries of the world fall under the absolute poverty line, which indicates that they live on less than one U.S Dollar per day. Those that are moderate or relatively poor live on more than one US Dollar but less than two Dollars per day (Buhman *et al*, 1988). In Nigeria, according to NPC (2004), 50% of the populations

live below the poverty line, only 40% of the population have access to safe drinking water, about 55% of the urban populations live in single rooms, and 62% of the population have no access to primary healthcare facilities. Furthermore, 60% of the population are illiterate and feed on one – third of the required minimum protein and vitamin intake due to low purchasing power. The incidence of poverty in Nigeria rose from 28% in 1980 to about 70% in 2003; the nation's per capita income reduced from \$698 in 1980 to \$290 in 2003; and the nation's ranking in Human Development Index (HDI) was 158 in 2003 dropping from 129 in 1990 out of 177 countries (World Bank, 2005).

The Problem Statement

The bulk of agricultural production in Nigeria takes place in the rural areas and ironically, the level and incidence of poverty is very pronounced in these areas (NPC, 2004). With the recognition by the Nigerian Government of the multi-sectoral and multi-dimensional nature of poverty, a number of coordinated programmes and policies had been formulated to combat poverty in all its ramifications. The Federal Government of Nigeria has also taken a number of measures to reduce the level and incidence of poverty in Nigeria and among farming households in particular. Some of these measures and programmes include the National Poverty Eradication Programme (NAPEP), the National Economic Empowerment and Development Strategy (NEEDS) (National Bureau of Statistics, 2006). The procurement of 12 billion Naira worth of fertilizer between years 2000- 2003 at 25 % subsidy to farmers was especially targeted at reducing poverty amongst the farming households. In 2005 the sum of N50 billion was set aside as credit to farmers at a concessionary interest rate of eight percent. In addition, the Nasarawa State Government complemented the efforts of the Federal Government by procuring and distributing fertilizer and other inputs to farmers' cooperatives at highly subsidized rates. Despite these efforts, poverty in Nigeria depicts a regional variation with higher rate (40%) in the Northern agro-climatic zone where Nasarawa State falls compared to the 38% and 24% in the Middle and Southern zones respectively (FOS, 1999).

In addition, these measures seems not to be able to slow down the incidence of poverty especially amongst the rural farming households. The foregoing suggests that gaining a thorough understanding of poverty amongst farming households requires further knowledge about their characteristics, constraints and coping strategies against poverty. This information is crucial to formulating an effective strategy for reducing poverty and for designing social protection programmes. In view of this, the need to assess the current poverty situation among farming households in Nasarawa State becomes imperative. The objectives of this study are to:

1. describe the socio-economic characteristic of the farming households
2. determine the level of poverty among farming household.
3. identify the determinants of poverty among farming households and.

4. identify the coping strategies in the study area.

Methodology

Nasarawa State has a land area of approximately 27,117 square kilometers, with an estimated population of over 1.8 million. It is located on latitude 7° - 9° N and longitude 7° - 10° E. It lies within the Guinea Savannah region with a tropical climate and rainfall of 1311.75 cm annually. There are plain lands and hills measuring up to 300 metres above sea level at some points. Nasarawa State is predominantly an agrarian state. The major crops grown include, yam, cassava, sesame, rice, groundnut and cowpea (Nasarawa State Ministry of Information, 2005).

Sampling Technique

Simple random sampling was used to select one local government area from each of the three senatorial zones in the state. Five villages were randomly selected from each of the local government areas. Finally, ten farming households were randomly selected from each village to give a total of 150 respondents for the study. Primary data were collected with the aid of interview schedules administered by the researchers and NADP extension agents. Data were collected on socio-economic characteristics such as age, tenure system, and literacy level, access to credit and on food consumption within the last one month. Secondary data were collected on the basic calorie requirement for different age categories and gender.

Analytical Techniques

Poverty Line Estimation

The food energy approach in which the individual calorific intakes were regressed against the per capita or adult equivalent expenditure to determine the level of income or expenditure at which the minimum energy was achieved was adopted for the study. The approach which is also known as the Cost of Calorie (C.o.C) was used to estimate the poverty line for the study area. The method yields a value that is usually closed to the minimum calorie requirement for human survival. The Cost of Calorie method proposed by Greer and Thorbecke (1984) has been used in previous studies by Hassan and Babu (1991) and Adejobi (2004). Following their approach, the nutritional poverty line is specified as:

$$\ln X = a + bC \dots\dots\dots 1$$

Where X is the adult equivalent food expenditure (naira) and C is the actual calorie consumption per adult equivalent of a household in (kilocal). The Calorie content of the recommended minimum daily nutrient requirement (L) was used to determine the poverty line, Z, as shown in equation 2.

$$Z = e^{(a+bL)} \dots\dots\dots 2$$

Where:

Z = the cost of buying the minimum calorie intake

L= Recommended minimum daily energy (calorie) level, 2250kcal as recommended by FAO (1982)

a and b = parameters estimated from equation 1. Based on the value of Z calculated, households were classified as poor or non-poor depending on which side of the line they fall. Thus, the level of poverty was obtained as follows.

$n/N * 100$

n = number of households below the poverty line, Z, and N is the sample size (150).

Discriminant Analysis:

This was used to achieve objective 2 of the study. Discriminant analysis is a statistical technique used to classify an observation into one or several a priori groupings based on its characteristics (Madukwe, 2004). The procedure generated a discriminant function based on a linear combination of the predictor variables which provides the best discrimination between the groups. Discriminant analysis forms one or more linear combination of the discriminating variables of the form:

$$D_i = d_{i1}Z_1 + d_{i2}Z_2 + d_{i3}Z_3 + \dots + d_{in}Z_n$$

D_i = total score on the discriminant function

d_i = was the weighting coefficient

Z = Standardized values of the discriminating variables used in the analysis.

The variables hypothesized to determine poverty among farming households are as follows:

Z_1 = household size (No)

Z_2 = number of non-working females in the households

Z_3 = access to credit (1 = Yes, 0 = otherwise)

Z_4 = expenditure on health (₦)

Z_5 = expenditure on education (₦)

Z_6 = highest education qualification of any adult household member

Z_7 = number of literate adult males

Z_8 = number of literate adult females

Z_9 = number of household members employed outside agriculture

Z_{10} = number of income sources of the household head.

Z_{11} = farm size (ha)

Z_{12} = land tenure (1 = Secured, 0 = otherwise)

The grouping variables is poverty thus households above the poverty line Z are non-poor while those below the line are poor households. Simple descriptive statistics such as means and percentages were used to achieve objective 3 of the study.

Results and Discussion

A poverty line of ₦1,126 per month, ₦281.5 per week and ₦40.2 per day were estimated. Farming households whose per adult equivalent mean monthly expenditure on food was below this poverty line are classified as poor. Those above

it are the non-poor farming households. About 53 % of the farming households fall below the poverty line and were, therefore, the poor households, while only 47 % of the households are above the line. The distribution of the farming households in the study area by their poverty status is as shown in Table 1.

Table 1 Incidence of Poverty among Farming Households.

Category	Frequency	Percentage
Poor	80	53.0
Non poor	70	47.0
Total	150	100.0

Source: Data analysis 2007

Socio -Economic Characteristics of Farming Households based on their Poverty Status

Household Size

The result shows that majority (71.43%) of the non poor farming households have about 4-6 household members .The poor households on the other hand have larger household size. This implies that the dependency ratio in the poor households will be high especially where majority of the members are children or unemployed. A similar observation was made by Hassan and Babu (1991).

Table 2 Household size

Category (No)	Poor %	Non- poor %
4-6	37.5	71.43
7-9	37.5	28.57
10 and above	25.0	-
Total	100.0	100.0

Source: Data analysis 2007

Number of Non-Working Females in the Households.

The result shows that majority of the poor farming households have a higher number of non-working females. The non-poor farming households, on the other hand, have a relatively fewer number of non-working females in their households. The finding agrees with that of International Food Policy Research Institute (2004). Some of the women in the non-poor households are equally into income- generating activities such as petty trading, dyeing of cloths and produce marketing. The finding can be further explained to mean that activities that can empower women economically such as the provision of skills acquisition centres and support for rural entrepreneurial enterprises will go along way in reducing the incidence of poverty among the farming households.

Table 3 Household Non-Working Female Composition.

Category (No.)	Poor %	Non – poor %
Working Females	15.3	85.7
Non working Females	84.7	14.3
Total	100.0	100.0

Source: Data analysis 2007

Number of Literate Adult Males

The poor farming households have a lower number of literate adult males while the non- poor households have more literate adult males. Omonona (2000) equally made a similar observation. This implies that the ability of the adult males to read and write can enable them make rational decisions on issues that affect their households, especially their standard of living. In addition, it can equally make them obtain jobs but in the lower paying sector.

Table 4 Literate adult male in the household

Category (No.)	Poor (%)	Non poor (%)
Literate Adult males	25.0	85.7
Non Literate Adult males	75.0	14.3
Total	100.0	100.0

Source: Data analysis 2007

Number of Literate Adult Females

The poor households have a fewer number of literate adult females compared to the non-poor households. This suggests that having an additional literate adult female household member can be associated with a reduction in the incidence of poverty among farming households. Most importantly, this finding underscores the importance of girl child education and adult literacy classes for women.

Table 5 Literate adult female composition.

Category (No.)	Poor (%)	Non poor (%)
Literate Adult females	10.5	87.4
Non Literate Adult females	89.5	12.6
Total	100.0	100.0

Source: Data analysis 2007

Number of Household Members employed outside Agriculture.

The result shows that majority of the poor household heads are primarily into agriculture, indicating that they have a single income source as against the non-poor

household heads. The members of the non-poor households are also engaged in economic activities such as tailoring, carpentry, masonry and petty trading. This finding compared favourably with those of Adejobi (2004); Ajakaiye (2001) and Omonona (2000). The implication of this finding is that the diversification of income source of the farming household heads can help to reduce the risk associated with income from a single source especially a very risky enterprise such as agriculture.

Table 6 Household members employed outside Agriculture

Category (No.)	Poor (%)	Non poor (%)
Number employed in		
Agriculture and other enterprises	37.5	28.57
Primarily employed in agriculture	63.5	71.43
Total	100.0	100.0

Source: Data analysis 2007

Farm Size and Poverty Status

The result shows that the farm size was evenly spread among the poor and the non-poor farming households. This finding contradicts that of FOS (1999) and Omonona (2000). The implication of this finding is that the size of the farm alone may not translate into higher yields and income. This is because the productivity of the land is equally very important in obtaining higher yields and, subsequently, higher incomes and lower incidence of poverty.

Table 7 Farm Size of the Households.

Category (Ha)	Poor %	Non-poor %
1 -5	50.0	57.14
6-10	37.5	28.57
11 and above	12.5	14.29
Total	100.0	100.0

Source: Data analysis 2007

Determinants of Poverty among Farming Households

The result of the step-wise discriminant analysis is as presented in Table 8. Seven variables (out of the twelve subjected to the analysis) were selected as discriminating significantly between the poor and non-poor farming households. Among the seven variables selected, three made positive contributions while four made negative contributions in the discrimination. The positive signs obtained for household size, number of non-working females and expenditure on education means that farming households are likely to be poorer with an increase in any of these variables. This implies that, any increase in any of these variables will increase

the vulnerability of the farming households to poverty. On the other hand, the negative signs obtained for the number literate adult males ,number of households employed outside agriculture, number of income sources of household head and farm size means that these variables are likely to decrease the vulnerability of the farming households to poverty .

Table 8 Discriminant function coefficients

Variables	Unstandardised coefficient	%
Household size (Z ₁)	6.8	22.0
No. of non working females (Z ₂)	0.51	1.66
Expenditure on Education (Z ₅)	4.9	5.90
No. of Literate Adult males (Z ₇)	-4.9	15.9
H.hold members employed Outside Agric. (Z ₉)	-6.3	20.6
No. of Income sources (Z ₁₀)	-6.7	21.7
Farm size (Z ₁₁)	0.53	1.7

Source :Data analysis 2007

Coping Strategies

The major strategies utilised by the poor farming households in coping with poverty are presented in Table 9. The strategies include skipping of meals (26.50%), engaging in wage labour (22.4%) and reduction in the quantity of meals consumed (20.04). The poor household members skip some meals especially breakfast and lunch. They, however, do have supplementary feeding like “Kunu”, a local drink, while on the farm. Another strategy used in coping with food poverty is engagement in wage labour as farm workers and as domestic servants or house helps by members of the household to complement the efforts of the household head and also to meet some personal needs. The young boys and women are often the farm workers, while the young girls work as domestic servants. These jobs attract low pay and are often not secured. The reduction in quantity of meal served to the household members is, also, a common strategy used by the farming households. This practice will obviously result into a situation of hunger and malnutrition especially for the younger members of the households.

Table 9 Coping strategies used by poor households

Coping strategies	%	Rank
Skipping of meals	26.5	1
Quantity of meal is reduced	20.4	3
Less preferred food is purchased	4.2	6
Sales of some Assets	14.3	4
Engaging in wage labour	22.4	2
Borrowing from friends and relations	12.2	5
Total	100.0	

Source: Data analysis 2007

Conclusion and Recommendations

Majority of the farming households in the study area are poor. Household size and the number of income sources of the household head are the major determinants of poverty in the study area. Based on the findings of the study, the following recommendations are hereby made.

- i. There is an urgent need to sensitize the farming households in the study area on the relevance of family planning. The farming households should be effectively involved in the formulation of strategies for imparting knowledge on family planning to the farming households.
- ii. There is need for the state and local government to extend the skills acquisition centres to more rural areas in the state and to further strengthened the existing ones. This will help diversify the income sources of the household heads.
- iii. The school feeding programme which is still on a pilot stage should be extended to more primary schools in the rural areas. This will improve the nutritional intake of the younger members of the households.

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Determinants of Effectiveness of Electronic Media in Agricultural Information Delivery in Yola North Local Government Area of Adamawa State, Nigeria.

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Abstract

Rapid advancement in electronic and communication technologies has opened up new and more effective channels for agricultural information dissemination. This study was carried out to analyze the determinants of effectiveness of electronic media (radio and television) in the delivery of agricultural information to farmers in Yola North Local Government Area (LGA) of Adamawa state. Data were collected by means of a structured questionnaire administered to 106 farmers randomly selected from all the wards of the LGA. The data were analyzed using descriptive and inferential statistics. Results of the analysis showed that majority (82.27%) of the respondents owned radio with only 10 (9.09%) respondents having television. In terms of the demographic distribution of the farmers, most of them (58.5%) were male with a high proportion (39.6%) were between the age ranges of 31 – 40 years. The major problem limiting access to information through electronic media was lack of constant power supply (96.2%). Based on the results and the need for improving the effectiveness of the media, the study recommended that more competent presenters knowledgeable in the area of agriculture for both radio and television be engaged. There should be increased area of coverage as well as airtime for agricultural programmes by the electronic media in the state. General improvement in the level of infrastructure, particularly electricity supply and establishment of more television viewing centers and radio clubs should be encouraged.

Keywords: Effectiveness, Information dissemination, Innovation and communication

INTRODUCTION:

In this era of globalization, information and communication technology (ICTs) has become an increasingly powerful tool for improving the delivery services and enhancing local development opportunities (Gorstein, 2003). As a broad tool for providing local farming communities with scientific knowledge, ICT heralds the formation of knowledge societies in the rural areas of the developing world (Shark et al, 2004). Rural communities require information on supply of inputs, new technologies, early warning system (drought, fresh, and diseases), credit, market price and their competition. Such information, knowledge, technology and services will contribute to expanding and energizing agriculture (Munyna, 2000). The diversity and large number of possible applications of new communication technologies are very promising. They form the emergence of global trade and