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Estimation of Poverty among Rural Farming Households in Delta State, Nigeria

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Abstract

This study examined the socioeconomic characteristics of the farming households in Delta State, Nigeria with a view to isolating those that affect poverty. It determined the expenditure pattern of the people and subsequently estimated their poverty level. Primary and secondary data were used for the study. Primary data were collected through the use of structured questionnaire while secondary data were sourced from various ministries and extra ministerial departments in Delta state. The data were analysed using head count index, poverty gap index, percentages, means and frequency distribution. The results revealed that 70% of the respondents were poor based on the poverty line drawn at two-thirds mean monthly expenditure of ₦5010, while the remaining 30% were not poor. The estimated average monthly additional income required to bring an average poor person up to the poverty line is ₦2105. The major factors aggravating poverty in the study area were low level of education, low income, small farm size and inadequate social infrastructures. It is suggested that income of farming households should be augmented through government assistance to farmers in form of subsidization of farm inputs and provision of functional and effective social amenities.

Keywords: Poverty, Standard of Living, Poverty Gap, Basic Needs, Household.

Introduction

Poverty refers to the inability to attain minimum standard of living. It is a social condition characterized by the inadequacy of access to basic human needs (food and non food) for the sustenance of socially acceptable minimum standard of living in a given society. Some of these basic determinants of well-being among others are: adequate food, shelter, potable water, health care, education and employment opportunity. As access to most of these facilities is largely market determined, income or disposable resources available to individuals or households invariably determine who has what. A household or individual without enough income to meet the minimum levels of these needs in a given society is generally said to be poor.

Needless to say that poverty is a global problem; however the menace of poverty is most devastating in the developing countries of the world. Particularly, during the last decade, human conditions in most of the developing countries have grossly deteriorated, real disposable income has declined steeply and malnutrition rates have risen sharply. Food production has hardly kept pace with population size and the quantity as well as quality of health has also massively deteriorated. According to the World Bank Development Report, (2000), more than one billion people in the developing world are poor based on the poverty line criterion of an annual per capita expenditure equivalent to us $370.

Of the world's continents considered to be in either absolute or relative poverty, Africa is the most glaring, especially sub-Saharan African countries where, averages, 45 to 50 percent of the people live below the poverty line (Anyawu, 1997, World Bank 1997, Mbaku, 1994). These countries are characterized with features such as overcrowded settlements in major urban areas without basic social services, remote, and isolated rural settlements. The World Bank Report (1997) estimated that 50 percent of the poor people in sub-Saharan Africa come from Nigeria and other East African countries - Ethiopia, Somalia, Uganda, Tanzania and Rwanda.

Out of the population in absolute poverty in Nigeria, more than 75 percent are estimated to live in rural areas. It is sad but interesting to state that there is no state in Nigeria without rural dwellers. Four-fifth (4/5) of these rural dwellers are engaged in farming and other low income vocation (World Bank Development Report, 2004). Farming households therefore is the target of this study.

The declining standard of living in the country has .inspired studies into the poverty situation in Nigeria. These studies have shown that poverty exists both at urban and rural areas but its effect are more pronounced in the rural areas (UNDP, 2000; World Bank, 1997; FGN, 1996). Unfortunately, most of these studies were macro in nature. However, the primary manifestation of poverty occurs at the household or individual level. A better understanding of the actual situation of poverty therefore, requires micro studies of this type. Although attempts have been made to fill the gap through a series of studies and household surveys, not much has yet been said about poverty in farming households in Delta State of Nigeria. This study is thus, concerned with finding solutions to questions such as, what actually arc the poverty level among farming households in Delta Slate? What percentage of the population of Delta State is poor? What is the severity of poverty among the people? What are the socioeconomic characteristics of the people responsible for such poverty?

Specifically, the objectives are to:

(i) Examine the socioeconomic characteristics of the farming household in the Delta State with a view

to isolating those affecting their survival and
(ii) determine the expenditure pattern of the people in the study area and subsequently estimate their poverty level.

Methodology

Area of Study

Delta State, which is one of the nine (9) states in the Niger Delta region of Nigeria, is the location of the study. The state was created on 27th August, 1991 and lies between Longitudes 5°00 and 6°45` East and Latitudes 5°00 and 6°301` North. It has a total land area of 17,440 square kilometres, about one-third of this is swampy and water logged, (Delta State Diary, 2003). The State is made up of 25 Local Government Areas (LGAs) and has a population of 4.1 million (National Population Census, 2006).

Delta State has a tropical climate with distinct dry and rainy seasons. The rainy season is mainly from April to October while the dry season is from November to March. The rainfall ranges from 190.5cm to 266cm monthly. The temperature ranges from 29°c to 34°c with an average of about 30°c (Delta State Ministry of Agricultural Statistic Information, 2000). Farming and fishery are the main occupation of the indigenes of the state. While traditional and small-scale fishing is the means of livelihood to the Ijaws and Itsekeri who inhabit the coastal areas, food and tree crops production are the mainstay of the Urhobo, lsoko and the Igbo people who live in the central and northern agro-ecological zones of the state.

Sampling Procedure

Delta State consists of three (3) agro-ecological zones. These are the Delta North; Delta Central and Delta South agro-ecological zones. The three zones were used for the study. Multistage sampling technique was used to draw samples for study. Of the nine LGAs that make up Delta-North agro-ecological zone, three (3) were randomly selected. The same procedure applied for both Delta Central and Delta South agro- ecological zones. This gave a total of nine (9) local government areas. From each of the nine (9) local government areas, three (3) communities were randomly selected per local government areas and this gave a total of 27 communities. A list of households from these 27 communities formed the sample frame. Fifteen (15) farming households were randomly sampled from each of the selected community and this gave a total of four hundred and five (405) farming households that were utilized for the study.

Data Collection/Analysis

Data for this study were from primary and secondary sources. The secondary sources consisted mainly of official records of State Ministries of Education, Works, Health, National Poverty Eradication Programme (NAPHP) office as well as the Slate Ministry of Agriculture. Structured and pre-tested questionnaires were administered to the respondent farming households through the use of trained enumerators. Data carried out at two levels. The first centered on an inventory of social facilities in the selected local government areas. These included roads, health and education facilities through the Ministries of Works, Health, Education (Primary and Post-primary Education Boards). The variables considered under social facilities were the distribution of health institutions in the state and the distribution of primary and secondary schools per Local Government Area in the state. Information was also gathered on government, non-governmental organization and Community Development Programmes on Poverty alleviation in the study area.

The second stage of data collection was on interviewing the selected households on both quantifiable and non-quantifiable factors affecting income and household expenditure pattern. These factors included Households monthly income and their sources, household size, age, marital status, expenditure on various consumer items, occupation/employment and other household non-food expenditure. The consumer items that were considered are food, accommodation, clothing, transport, electricity, education, drinks and entertainment and other goods and services.

Various tools (procedures) were employed for analysis of data for the study. To identify the poor, determine their number, the depth and severity of poverty, analytical tools such as poverty lines, headcount index, poverty gap index, were employed.

Construction of Poverty Line

To begin, the total expenditure of each household was calculated for a month, and then corrected for each household size by dividing the household total by the number of people within the household i.e.

$$\text{Per Capita Expenditure} = \frac{\text{Total household Monthly Expenditure}}{\text{Household Size}}$$

Then the total household's per capita expenditure was calculated by finding the summation of all the household per capita expenditure for the sampled households. The mean per capita expenditure was calculated by dividing the 'Total per capita expenditure by the total number of households surveyed'.

$$\text{Means Per Capita Household Expenditure (MPCHHE)} = \frac{\text{Total per capita expenditure for all households}}{\text{Total number of households}}$$

From this mean, of per capita household expenditure, two lines were set or drawn relative to the standard of living in the study area (as used in Nigeria Poverty Assessment Document 1995).

i The moderate poverty line, equivalent to two thirds of the mean per capita household expenditure;
ii A core poverty line, equivalent to one-third of the mean per capita household expenditure.

Households were classified into one of the three mutually exclusive groups separated by this poverty line either as:

a. Core poor b. Moderate poor and c. Non poor

The Headcount Index

To assess the number of the poor in the moderate, core, and all the poor in the study area, the headcount index was calculated for all levels. The headcount index for moderate poor was calculated by dividing the total number of moderate poor households by the total number of the respondents.

$$\text{Headcount Index for Moderate poor} = \frac{\text{Total number of moderate poor households}}{\text{Total number of Respondents}}$$

The headcount index for the core poor was calculated by dividing the total member of households in the core poverty level by the total member of the respondents and in the same vein the Headcount index for all the poor was calculated by dividing the total number of all the poor households by the total number of the respondents.

The Poverty Gap Index or Income Shortfall

To determine the income shortfall of an average poor in the study area with a view to knowing the level of income transfer required to bring all the poor from the sampled households to the poverty line (or line of equality), the Poverty Gap Index was calculated for the moderate, core and all poor.

The Poverty Gap Index for moderate poverty was calculated or obtained by dividing the income shortfall of an average poor person in the moderate poverty level by the moderate poverty line.

Poverty Gap Index (Moderate Poor) = Moderate Poverty line - Means of the Moderate Poor Moderate Poverty Line

$$= \frac{\text{Income. Shortfall of an average Moderate Poor}}{\text{Moderate Poverty Line}}$$

The poverty gap index for the core poor was also calculated by dividing the income shortfall of an average person in the core poverty level by the core poverty line.

$$\text{Poverty Gap Index (core poor)} = \frac{\text{Core poverty line - Mean Income of the core poor}}{\text{Core poverty line}}$$

$$= \frac{\text{Income shortfall of an average core poor}}{\text{Core poverty line}}$$

And the poverty gap index for all the poor was calculated by the dividing the income shortfall of an average poor person in the sampled households by the absolute poverty line.

$$\text{Poverty Gap Index (of the poor)} = \frac{\text{Moderates poverty line – Mean income of all the poor}}{\text{Moderate poverty line}}$$

To known the level of income transfer required to bring all the poor to the line of equality (poverty line) the poverty gap (income shortfall) calculated for all the poor was multiplied by the headcount index for all the poor.

Results and Discussion

Socio-Economic Characteristics of the Respondents

Socioeconomic factors are personal characteristics of individuals which collectively determine the level of individuals farming household expenditure. The distribution of age (Table 1) reveals that majority of the respondents fall between the ages of 25 and 55 years and this constituted 76 percent of the years of sampled respondents. The implication of the finding is that majority of the respondents are middle aged which is within the economically active and productive age.

The marital status of the respondents indicates that 79 percents were married while sixty nine (69) percent had one form of formal education or the other. A higher number of educated citizenry implies higher level of literacy which translates to a reduction in poverty (Zulberti, 2004).

Household size is the number of people residing in the same house and eating from the same pot. Household size is a function of the number of wives and persons staying with the Household head. The study showed that the people had fairly large Household size of between six and nine members. The average size of the households, surveyed was seven. Earlier findings indicate that large household size is positively correlated with poverty (Omonona et al, 2000; Ike and Oboh, 2009).

In this study, the type of occupation engaged in by the respondents is used synonymously with employment. There were only four main occupations in the study area - farming, pretty trading, civil service and artisans. The analysis revealed that 84 percent were fully engaged in farming while the remaining 16 percent were part-time farmers. From the finding, over 80 percent of respondents are engaged in full-time farming. That is, the household heads were full-time farmers and consequently should be able to cater for the basic needs of their families if farming is a profitable venture in Nigeria.

The average farm size per household is 0.95 hectares. The distribution shows that 75 percent of the surveyed farming households owned less than one hectare of land per household, 20 percent owned between one and three hectares and only 5 percent of the respondents owned above 3 hectares per households. This implies that most of the farmers in the study area are small scale farmers and consequently output is generally low.

The average annual household income is ₦72,000.00 while the mean monthly household income is ₦6,000.00. The income distribution reveals that 95 percent of the respondents earned below ₦70,000 per annum, the remaining 5 percent of the respondents earned above ₦70,000. This finding supports the United Nation Development Programme (UNDP) (2005) reports that over 60 percent Nigerians live on less that $1 per day.

Households Monthly Expenditure on Basic Needs

The total monthly household expenditure was ₦ 3,005,290 (Table 2). Out of this amount, 73.4 percent was spent on food, 5.9 percent was spent on housing, 5.8 percent on transport, 4.7 percent on health, 6.6 percent on education, 0.7 percent on electricity, 0.3 percent on water, 2.2 percent on clothing and security was 0.3 percent.

This finding implies that a whopping 73.4 percent (₦2,204,405) was spent on food and this shows that poverty incidence is high in the study area. This is deduced from Engel's law which states that the higher the incidence of poverty, the higher the proportion of the household expenditure on food.

Analysis of the Poverty Status of Respondents

Poverty line or poverty threshold is the basic or lowest amount of money an individual needs to survive per day. In 1985, the World Bank set an International Poverty at US $1 per person per day. However, nations are expected to establish their own poverty line using either cost of-basic-needs (food and non-food items) methods, food or dietary energy intake or food-share method (Ekong, 2002). Another approach that is commonly used in Nigeria and which was employed in this study, involves taking an arbitrary proportion i.e. two-third (2/3) and (1/3) of the mean expenditure as poverty lines where, 1/3 of the mean expenditure defines core poverty line and 2/3 mean expenditure represents the moderate poverty line (Nigeria Poverty Assessment Document, 1995).

In order to construct the poverty line of the study area, the total households surveyed were divided into deciles in ascending order of their expenditure. A decile is any value which divided a set of data into 10 equal parts known as deciles and are denoted by D_1, D_2, D_3 ………D_9. Each decile consisted of ten (10) households. The average total per capita household expenditure (PCHHE) on food and non-food items in each decile was then calculated, summed up at the end and divided by the total number of the sampled household to obtain Per capita household expenditure. Two lines were then drawn from the mean per capita household expenditure representing two-third (2/3) (MPCHHE) and 1/3 (MPCHHE) to determine the poverty levels of the respondents.

Moderate Poverty Line: This is the two-third (2/3) of monthly per capita household expenditure (MPCHHE). The sum total of the mean monthly per capita household expenditure (MPCHHE) of the respondents was ₦7,513.20.

Therefore, the moderate poverty line is the two-third of ₦7,513.20

2/3 x ₦7,513.20
= ₦5008.8 = ₦5,010.00.

Core Poverty Line: This is the one-third (1/3) of the mean monthly per capita household expenditure.
Core Poverty line = 1/3 x ₦7,513.20 =
₦2,504.4 = ₦2,505

This implies that any household in the study area with per capita monthly expenditure greater than or equal to ₦5,010 is considered to be non-poor, or rich while any household with per capital monthly expenditure below ₦5,010 was considered poor. Also, from the calculation above, the core poverty line or (one-third) MCPHHE) was constructed or calculated to be ₦2,505. This means than any household in the study area with per capita monthly expenditure greater than ₦2,505 but less than M5,010 was considered to be moderately poor, but any household in the study area with per capita monthly expenditure below ₦2,505 was considered to be extremely poor.

Twenty eight (28) percent of the total households sampled (i.e. 112) was below core poverty level. (The farmers could not spend more than ₦2,505 a month to buy the basic necessities of life. These farming households were considered as the extreme poor while 42 percent or 168 farming households were moderately poor; their monthly consumption per person was below the poverty line of ₦5,010, but more than ₦2,505. In all, the analysis showed that 70 percent of the sampled farming households was relatively poor and could not attain the minimum standard of living. This leaves 30 percent of the total farming households with per capita monthly expenditure equal to or higher than ₦5,0l0.

The Poverty Gap Index of the Study Area

The poverty gap index or depth of an average poor person below the core poverty line was 0.25. In order words, the income transfer (shortfall) required to bring an average poor person below the moderate poverty line was 0.30, meaning that 0.30 of ₦5,010 which is ₦1,503 income transfer to the average moderate poor will bring him up to the poverty line. The poverty gap index for all the poor households sampled was 0.42. This means that to bring an average poor person in the study area to the moderate poverty line, an income transfer of 0.42 of ₦5,010 which is ₦2,104.2 is required. Since the total number of the poor household in the study is 70 percent, their the average monthly amount required to be transferred to all the poor people in the study area to bring them up to the poverty line was 70 multiplied by ₦2,104.2 which is ₦147,294. The implication here is that a lot still need to be done for the farmers in the state. Poverty alleviation measures should be aimed at improving the standard of living of the farmers. This can be achieved through subsidies of farming inputs, land improvement techniques, provision of basic infrastructure to enhance increased productivity and subsequently improved standard of living.

Conclusion/Recommendations

In the light of the result of the analysis presented, the following major conclusions are reached. The main occupation was farming, which confirmed the general notion that farming serves as the main occupation of the rural dwellers. These farmers produce more than 80 percent of food consumed in the state. Poverty is deeply entrenched in among the rural farming households in the study area as analysis showed that 70 percent of the sampled farming households was relatively poor and could not attain the minimum standard of living. This leaves 30 percent of the total farming households with per capita monthly expenditure equal to or higher than ₦ 5,010.

Good governance and government commitment to rural development as well as budget discipline are important ingredients to developmental successes and poverty reduction. Government that demonstrate commitment to rural development by allocating public resources to rural areas for roads, electrification, water and irrigation, agricultural research and agricultural extension (technical assistance to farmers) will boost their agricultural production and poverty alleviation.

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Table 1: **Socioeconomic Characteristics of Respondents.**

Variables	Frequency	Percentage Distribution
Age		
<25	16	4
25 to 55	304	76
> 55	80	20
Marital Status		
Single	16	4
Married	316	79
Widowed/Divorced	68	17
Level of Education		
No Formal Education	124	31
Primary	200	50
Secondary	40	10
Tertiary	36	9
Household Size		
2-4	160	40
5-9	208	52
10 and above	32	8
Employment		
Full-Time farming	336	84
Part-Time farming	64	16
Farm Size (Hectares)		
< 1	300	75
1.1 -2.9	80	20
>3	20	5
Income (₦)		
< 10,000	10	2,5
10,000 – 20,000	40	10
20,001 – 30,000	70	17.5
30,001 – 40,000	130	32.5
40,001 – 50,000	40	10
50,001 - 60,000	60	15
60,001 – 70,000	30	7.5
> 70,000	20	5

Table 2: The Distribution of Monthly Expenditure on Basic Needs of Households.

Items	Amount (₦)	Percentage of total Expenditure
Food	2,204,405	73.4
Housing	180,215	5.9
Transport	175,655	5.8
Health	140,185	4.7
Education	199,785	6.6
Electricity	20,755	0.7
Water	10,240	0.3
Clothing	65,320	2.2
Security	8.730	0.3
Total	**3,005,290**	**99.9 = 100**