

## Assessment of Rural Household Poverty: Evidence from South-western Nigeria

<sup>1</sup>R.O. Babatunde, <sup>2</sup>E.O. Olorunsanya and <sup>2</sup>A.D. Adejola

<sup>1</sup>Department of Agricultural Economics and Social Sciences (490b),  
University of Hohenheim, D-70593 Stuttgart, Germany

<sup>2</sup>Department of Agricultural Economics and Farm Management,  
University of Ilorin, PMB 1515 Ilorin, Kwara State, Nigeria

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**Abstract:** This paper analyzes the determinants of farm household poverty in south-western Nigeria. The paper build on sample survey data collected in 2005. We find that 30% of the households are poor, subsisting below the average poverty line of 1985 naira (1US = 126 naira) per capita per month. The prevalence of poverty is higher among older, small-scale farmers and those who do not belong to any farmers' cooperative group. Econometric analysis shows that households with smaller number, headed by male and educated head are better-off in terms of poverty than their counterparts with larger number, headed by female and uneducated head. Other factors that determine poverty include land ownership, farm size and membership of farmers' cooperative society. To reduce the prevalence of poverty, farm households should be targeted with education and birth-control programmes, in addition to policies geared towards general improvement of agricultural production of farming households.

**Key words:** Farm household • Income • Expenditure • Poverty • South-Western Nigeria

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### INTRODUCTION

Poverty is the inability to adequately meet the basic human necessities of food, clothing and shelter. It is a broad, multidimensional, partly subjective phenomenon, often viewed as both the cause and symptom of underdevelopment. It is manifested in many ways, including the lack of capability by individuals or groups to function and feel well in the society [1]. Globally, about 1.2 billion people are in extreme poverty, living on less than a Dollar per day. Majority of these people are in developing countries-44% in South Asia, 24% each in sub-Saharan Africa and East Asia and 6.5% in Latin America and the Caribbean [2]. Because of the large prevalence of poverty, reducing it has been of great concern to many countries for the past few decades. As a result, poverty reduction strategies have been at the center stage of development programmes and policies.

The progress towards the global target of halving, between 1990 and 2015, the proportion of people living in extreme poverty, has been very slow. The progress is

even slower in SSA as oppose to other regions, such as East Asia, which has made remarkable achievement in reducing poverty [3]. Concerned with the lacklustre achievement thus far in SSA, government, donor agencies and researchers, have been trying to identify the means of achieving the poverty reduction goals [4]. Several evidences have suggested that majority of the world's poor live and work in the rural areas and that they would continue to do so in 2025 [2,5]. This indicates that reducing rural poverty is very important to reducing overall poverty. In the past inaccurate targeting of the poor has been identified as one of the reasons for the failure of poverty reduction strategies in developing countries. It has been shown that majority of the poor in SSA are small-holder farmers [2]. For any poverty reduction strategy to be successful, the socioeconomic characteristics of the small-holder farmers, including the pattern and determinants of poverty must be understood. Empirical studies must indicate the poor households, those that are likely to move out of poverty and the factors which enhance their welfare [6].

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**Corresponding Author:** R.O. Babatunde, Department of Agricultural Economics and Social Sciences (490b),  
University of Hohenheim, D-70593 Stuttgart, Germany

This study uses a survey data from Ondo state, south-western Nigeria to examine the level of poverty among small-holder farm households. The specific objectives of the paper include to, (1) examine the socioeconomic characteristics of farm households that may affect their welfare level, (2) assess the level and identify the determinants of poverty and (3) suggest policy recommendations for reducing poverty. The remaining section of the paper is organized as follows. Section 2 presents an overview of poverty in Nigeria. Section 3 describes the data and sample characteristics. Section 4 analyzes household poverty, while determinants of poverty are examined in section 5 and section 6 concludes with policy implications.

**Poverty in Nigeria:** Despite its huge natural resources, poverty is widespread in Nigeria. Poverty statistics showed that poverty level was increased from 46.3% in 1985 to 65.6% in 1996. In absolute terms, the number of poor people in Nigeria was increased four-folds between 1980 and 1996 [7]. The poverty situation in Nigeria worsened since the late 1990s and the country is classified among the 20 poorest countries in the world [2]. On the human development index (HDI), Nigeria, with an index of 0.391 was ranked 142 out of the 174 countries surveyed in 1998. In 2000, the HDI score was 0.433 and the country ranked 151. Nigeria increased its HDI score to 0.453 in 2003 but ranked 158 among 175 countries surveyed [8]. The HDI index however, fell again marginally to 0.448 in 2004 and the country ranked 159 out of 177 countries [9]. Recent poverty assessment survey has shown that over 70% of the population are living on less than a Dollar per day and over 50% living below the national poverty line [10]. The survey also revealed that poverty is especially higher in rural areas where majority of the people are resident and deriving livelihood from agriculture [11]. Women and households headed by women are the most poor within the rural communities and because increasing number of men are migrating from rural to urban areas; the number of households headed by women are increasing and so also poverty.

Rural poverty tends to be evenly distributed across the country rather than concentrated in specific geographical area. However, the level of poverty is higher in some zones, such as in the northern zones, which are arid, marginal to agriculture, environmentally damaged and densely populated. The fishing communities in the

Table 1: Prevalence of poverty in Nigeria (1980-2004)

	1980	1985	1992	1996	2004
	Percentage of poor people in total population				
Total	28.1	46.3	42.7	65.6	54.4
<i>Sector</i>					
Urban	17.2	37.8	37.5	58.2	43.2
Rural	28.3	51.4	46.0	69.3	63.3
<i>Geopolitical zones</i>					
Northeast	35.6	54.9	54.0	70.1	72.2
Northwest	37.7	52.1	36.5	77.2	71.2
Northcentral	32.2	50.8	46.0	64.3	67.0
Southeast	12.9	30.4	41.0	53.5	26.7
Southwest	13.4	38.6	43.1	60.9	43.0
Southsouth	13.2	45.7	40.8	58.2	35.1
<i>Size of household</i>					
1 person	2.0	7.0	29.0	13.1	12.6
2-4 people	8.8	19.3	19.3	59.3	39.3
5-9 people	30.0	50.5	51.5	74.8	57.9
10-20 people	51.0	71.3	66.1	88.5	73.3
More than 20 people	80.9	74.9	93.3	93.6	90.7
<i>Education of household head</i>					
No education	30.2	51.3	46.4	72.6	68.7
Primary education	21.3	40.6	43.3	54.4	48.7
Secondary education	7.6	27.2	30.3	52.0	44.3
Postsecondary education	24.3	24.4	25.8	49.2	26.3

Source: [6]

mangrove swamps along the Atlantic coast are also among the poorest in Nigeria [2]. Table 1 shows an overview of the prevalence of poverty in Nigeria from 1980 to 2004. Among other factors, inadequate rural infrastructure - that limits income-earning opportunities, environmental and land degradation problem, bad macroeconomic policy leading to market imperfection, low productivity and political instability have been identified as major causes of poverty in Nigeria. These factors contribute to reducing the income of an average household thereby perpetuating the poverty cycle [2].

### **Data and Methodology**

**Data Collection:** Data used for this paper was obtained from a sample survey of farm households in Ondo state of Nigeria. The data was collected in 2005. The state was chosen as the study area because it is the poorest state out of the six states in the south-western agro ecological belt characterize by dual cash and food crop farming systems [11]. Ondo state has a population of about 3.4 million people and a land area of approximately

Table 2: Household characteristics

Characteristics	Percentage
<i>Poverty status</i>	
Poor	31.0
Non-poor	69.0
<i>Household size</i>	
1-6	24.1
6-9	63.8
More than 9	12.1
<i>Gender of household head</i>	
Male	84.0
Female	16.0
<i>Age of household head (year)</i>	
21-40	11.0
40-60	78.0
More than 60	11.0
<i>Education of household head</i>	
Informal education	24.1
Primary education	18.1
Secondary education	28.9
Postsecondary education	28.9
<i>Farm size (ha)</i>	
Less than 2	69.8
2-4	24.2
More than 4	6.0
<i>Member of farmers cooperative group</i>	
Yes	78.0
No	22.0
<i>Household income (naira/month)</i>	
Less than 10000	20.3
10000 - 20000	68.9
More than 20000	10.8
<i>Household expenditure (naira/month)</i>	
Less than 8000	6.1
8000 - 24000	65.0
More than 24000	28.9
<i>Land ownership</i>	
Own land	73.0
Landless	27.0

Source: field survey, 2005. Note: Official exchange rate in 2005: 1 US dollar = 126 naira

15,000 square kilometres. Agriculture is characterized by cash crop system in the southern part with Cocoa, Palm produce and Kola being the major crops. Food crop system is practiced mostly in the northern part. Most households practice both cash and food cropping even though farm enterprises are generally small in sizes.

Because of its large area of forest reserve and long coastline, timber and fishing businesses are popular non-farm activities among farm households in the state [12].

Our sample of 100 farm households was selected by two-stage random sampling method. In the first stage, 5 wards<sup>1</sup> were randomly selected from the state and in the second stage 20 farm households were sampled from each of the wards, using a complete list of farm households provided by the local government authority (LGA). The survey instrument was designed to collect information on household composition and other socioeconomic data, including detailed income and expenditure data. Survey data were supplemented with secondary data from Central Bank of Nigeria (CBN), National Bureau of Statistic (NBS) and Ondo state government publications.

**Household Characteristics:** Table 2 summarises selected characteristics derived from the sampled households. Based on the minimum value of expenditure-both food and non-food, needed per adult equivalent to satisfy basic needs, we estimated the poverty line as 1985 naira per month or 66 naira day per capita. Judging by this poverty line, our result shows that 31% of the households are poor while 69% are non-poor.

The poverty prevalence in the area is lower than the national average of 54.4% reported by NBS [11]. This is probably because of the better economic condition of this area-the largest Cocoa producing area of south-western Nigeria. In addition, we found that the per capita average monthly expenditure of 2977.3 naira in the area is higher than the national average of 2511 naira estimated by NBS [11].

The average household size of six adult equivalents is higher than the national average. This is perhaps because of the need for family labour to work on the family farm. About one-sixth of the households are headed by women and the average age of the heads is 52 years. Majority of the households head (78%) are still in their economically active age bracket, about three-quarter of them have formal education and more than three-quarter are member of farmers' cooperative group. The average farm size of 2 hectare is comparable to the national average. The average total

<sup>1</sup>A ward is made up of several villages that are often composed of people of related ethnicity and culture. Several wards combine together to form a local government area (LGA), which is the smallest administrative unit in Nigeria.

Table 3: Prevalence, depth and severity of poverty according to household characteristics

Household characteristics	Prevalence of poverty (%)	Depth of poverty (%)	Severity of poverty (%)
<i>Household size</i>			
1-6	26.1	7.5	2.30
6-9	24.1	6.4	2.10
More than 9	18.2	0.9	0.08
<i>Age of household head (year)</i>			
21-40	16.2	0.5	0.03
40-60	22.8	5.2	2.00
More than 60	41.0	5.5	2.20
<i>Education of household head</i>			
Informal education	22.3	5.5	2.20
Formal education	24.6	5.1	1.50
<i>Farm size (ha)</i>			
Less than 2	29.6	7.0	3.20
2-4	5.0	0.1	0.03
More than 4	4.0	15.3	6.60
<i>Member of farmers cooperative group</i>			
Yes	26.7	6.1	1.80
No	40.0	15.3	6.60
<i>Household expenditure (naira/month)</i>			
Less than 8000	35.7	18.2	10.20
8000-24000	18.6	8.9	5.60
More than 24000	8.8	7.7	2.10
<i>Land ownership</i>			
Own land	25.8	6.2	2.00
Landless	26.1	7.5	2.70
<i>Non-farm jobs</i>			
No	32.4	7.8	2.40
Yes	6.3	1.5	0.40
<i>Other employed member</i>			
No	29.6	7.1	2.10
Yes	25.0	6.1	2.00

Source: field survey, 2005. Note: Official exchange rate in 2005: 1 US dollar = 126 naira

household expenditure of 18524 naira (147 US \$) per month is somewhat lower than the national average, but appears consistent with those obtained elsewhere for rural areas.

**Analysis of Household Poverty:** In this section, we analyze household poverty status by decomposing it using three indicators - prevalence of poverty ( $P_0$ ),

poverty depth ( $P_1$ ) and severity of poverty ( $P_2$ ). Prevalence of poverty indicates the percentage of the households falling below the poverty line, poverty depth shows the amount by which the poor households fall short of the poverty line and severity of poverty is the sum of the square of poverty depth divided by the number of poor households in the sample. Table 3 shows the result of these indicators according to selected household's characteristics. The result shows that the prevalence of poverty is higher among households with older head and those that are not member of farmers' cooperative group. This implies that there are more income-earning opportunities for younger farmers and those that are member of cooperative group. Benefits such as credit and bulk marketing of farm produce are often restricted to member of farmer cooperative group. This bulk marketing is very important considering the constant fluctuation in price of Cocoa, which is the major cash crop in the area.

Our result indicates that poverty rate is higher among small-scale farmers-those cultivating less than 2 hectare of land. The poverty rate among this group is about three times higher when compared to those that cultivate more than 2 hectare. Poverty prevalence is also higher among the households in the lowest expenditure class-those spending less than 8000 naira (63.5 US \$) per month. Poverty rate among households that are engaged only in farming is higher than those that combine farming with other non-farm work. This is expected given the low return to labour in farm compared to non-farm work. In addition, poverty rate is lower among households with other working members apart from the household's head. The prevalence of poverty is not considerably different between households with head that have formal and informal education. The same is also true of households that have land and those that are landless.

**Determinants of Poverty:** The analysis of household poverty discussed in the foregoing section has already showed some interesting pattern of poverty among different household types, we analyze the determinants of rural poverty more explicitly in this section. To do this, we regressed an indicator of poverty - total household expenditure, on several independent variables. Our dependent variable is per capita household expenditure which is a proxy for income and a measure of welfare.

Table 4: Determinants of household poverty

Independent variables	Coefficient	t-value
Male (dummy)	0.425***	2.91
Log age (year)	-0.206	0.94
Log education (year)	0.204**	2.22
Log household size (AE)	-0.492***	3.54
Other employed member (dummy)	0.124*	1.72
Log land ownership (ha)	0.237***	-3.25
Member of farmer group (dummy)	0.253***	3.61
Log farm size (ha)	0.336***	-5.17
Constant	1.73***	3.24
R <sup>2</sup>	0.768	
F-value	4.38	

Dependent variable is log of per capita household expenditure

\*\*\*, \*\*, \* indicate coefficient significant at 1%, 5% and 10% level respectively

We used household expenditure because, it is often less varied and less understated as income [13].<sup>2</sup> All the explanatory variables are assumed to be exogenous and a test of multicollinearity shows no serious problem of multicollinearity among the variables. The OLS regression estimate of the model is shown in table 4. The coefficient of determination (R<sup>2</sup>) indicates that the model's predictive ability is high.

The result indicates that income is positively related to gender of the household's head, indicating that, female-headed households are poorer than their male-headed counterparts. Expectedly, education of household head is positively related to household income, implying that households with less-educated head are poorer than those with more educated head when other things are constant. This result makes sense, because more education tends to open more opportunities for income generation through non-farm jobs. Belonging to farmers' cooperative group has a positive impact on household welfare. Farmers who belong to cooperative group are better-off than their colleagues who are not member. This is in support of our earlier submission that the prevalence of poverty is higher among households which do not belong to any farmers' cooperative group.

Household size has a significant negative relationship with per capita expenditure, indicating that poverty was increased with increasing in household size. This is consistent with our expectation. Large household size

tends to reduce the per capita income available to the household and large adult equivalents can be said to be poverty-enhancing. Households that have other working members appear to be better-off than those which do not have. This is not surprising because, more members would be contributing to the household total income and it agrees with our earlier submission. Land ownership is positively related to household income, when other factors are constant. This makes sense, because in this area, land is a means of holding wealth and land has a high economic value as a result of the cash crop farming system that is dominant in the area. The positive relationship of farm size with income shows that poverty decrease with increase in farm size. Other things being equal, increase in farm size could mean increased output and income leading to improve household welfare.

### CONCLUSION

In this paper, we have analyzed the determinants of poverty among farm households in Ondo state of south-western Nigeria, using survey data collected in 2005. About 30% of the households are poor, subsisting below the average poverty line of 1985 naira per capita per month. Majority of the farmers are still within the economic active age range and about 16% of the farm households are headed by women. More than three-quarter have formal education and close to two-third of the households have between 6 and 9 people. More than 75% of the farmers are member of farmers' cooperatives and majority cultivate farm that are less than 2 hectare. We find that the prevalence of poverty is higher among older, small-scale farmers and those who do not belong to any farmers' cooperative group. Econometric analysis shows, that gender, education of household head, household size, land ownership, farm size, membership of cooperative group and presence of other working member in the household are the important determinants of rural poverty.

Poverty is complex and multidimensional; just as it can not be capture by one indicator only, poverty reduction efforts have to be multi-targeted. However, our study has many implications for poverty reduction efforts in Nigeria. One of the policy implications is that, since larger households and those with less-educated heads are

<sup>2</sup> Other reasons while expenditure is preferred include that it shows the actual current standard of living and it is easy to recall, making it less subjective to error as income.

poorer, effective education and birth-control programmes are needed to reduce the present high rate of poverty in the country. Education opens up more income-earning opportunities for the farm households especially in the non-farm sector. This becomes even more important because of the declining farm income. Targeting the farmers with education programmes would allow them take advantage of the existing non-farm jobs in their locality to improve their income. Birth-control programmes would ensure that farmers have a manageable family size.

The second implication is that there is need for efficient land distribution system that is pro-poor, since land ownership is a major determinant of poverty. A system that would allow more farmers to own and cultivate more land would help to reduce poverty considerably. Finally, since all households, regardless of whether they have land or not, are dependent on agriculture for their livelihood, policies to improve agricultural production will have a positive impact on rural household welfare. Effort to increase agricultural output can be initiated through subsidizing inputs, distribution of improve seeds, extension services and encouraging farmers to form cooperative group for bulk marketing of their farm produce.

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