



## Quantifying Poverty of Fishing Households in Akwa Ibom State, Nigeria

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### Abstract

Poverty is an unacceptable deprivation in human wellbeing. The extent of deprivation was investigated using the Foster, Greer, Thorbecke (FGT) weighted poverty measure. Using a multi-stage sampling procedure, 80 fishing households were randomly sampled from 10 villages. Primary data were obtained for the study through well structured questionnaire. Descriptive statistics and FGT weighted poverty measure were used in data analysis. The poverty line of ₦1,739.51 was estimated from the monthly mean per adult equivalent household expenditure (MPAEHE) of ₦2,609.27. Result of FGT decomposition revealed that 59 percent of the fishing households were poor, the average depth of the poor households from the poverty line was 40 percent and 16 percent of the households were the poorest of the poor. Findings further reveal that the poverty levels among fishing households increased with increase in age of household heads and household size. Results also show the poverty level decreased with increase in household heads years of formal education.

**Keywords:** Poverty, Fishing, Households, Nigeria.

### 1.0 Introduction

According to World Bank (2000), Poverty is an unacceptable deprivation in human well-being that can comprise both physiological and social deprivation. The extent of depth of poverty in the developing world is a disgrace (Pinstrup-Andersen and Pandya-Lorch, 2001). While the last century saw great progress in reducing poverty and improving well-being, poverty remains a global problem of huge proportion. Of the world's 6 billion people, 2.8 billion live on less than U.S \$2 per day, 1.2 billion live on less than US \$1 per day (World Bank, 2002). Poverty is a rural phenomenon in most of the developing world especially the low-income developing countries. World Bank (1990) reported that an important consensus in the literature on poverty is that, poverty is a rural phenomenon. By this, it is acknowledged that rural communities are the worst hit by poverty. Unfortunately, the importance of the rural poor is not always understood, partly because the urban poor are more visible and more vocal than their rural counterparts. Incidentally, the rural sector is the predominant sector in the Nigeria economy. A study by Federal Office of statistics, FOS (2004) shows urban poverty was lower than rural poverty between 1980 and 2004 in

Nigeria, and the majority of the rural poor derive their livelihood from subsistence agriculture. The study further reveals that the percentage of poor people were 32.1%, 43.1%, 38.7%, 72.3% and 64.1% for farming households and 16.3%, 37.2%, 36.0% 59.2% and 35.4% for non-farming households in 1980, 1985, 1992, 1996 and 2004 respectively.

The poverty situation in Nigeria is worrisome because despite Nigeria's physical and human resources endowment, there had been progressively worsening of welfare conditions of its nationals (Okunmadewa, 2001., Etim *et al*; 2009). This situation is paradoxical and was tagged "poverty in the midst of plenty" by World Bank (1996). It is more worrisome that despite huge material and human resources devoted to poverty reduction over the years by successive governments, no feasible success has been accomplished. Kayizzi-Mugerwa (2003) reported that mismanagement and corruption are major problems in Nigeria. The Human Development Report by UNDP (2005) reveals that Nigeria is one of the poorest among the poor countries of the world. With Human Poverty index (HPI-I) value of 38.8 percent, Nigeria is ranked 75<sup>th</sup> among 103 developing countries (see Table 1).

Table 1: Human Poverty in Nigeria

	HPI – 1 rank 103 Countries	HPI – 1 value %
Nigeria	75	38.8
Best Performer in Sub-Saharan Africa (Mauritius)	24	11.4
Worst Performer in Sub-Saharan Africa (Niger)	103	64.4
Best Performer in the World (Uruguay)	1	3.6
Worst Performer in the World (Niger)	103	64.4

Source: United Nations Development Programme, 2005.

The worst performer in the world is Niger with HPI-I value of 64.4% whereas the best performer in the world is Uruguay with HPI- value of 3.6%. FOS (2004) reported that the incidence of poverty in Akwa Ibom State was 50.8%.

It is not uncommon to see rural poor households engage in fishing and other income generating activities (Etim and Patrick, forthcoming). As poverty systematically deepens in our fishing communities and people's meager incomes do not cover their basic food and dietary needs, interest in fishing has increased. Fishing and other income generating activities is being practiced by virtually all homes in the coastal regions. But these activities have had limited success in increasing income and improving welfare. Estimating the relationship between sex, age, education, household size and the extent of deprivation by fishing households is important when designing policies to meet their needs and improve their welfare. This study was therefore conducted to determine to what extent poverty profile relates with age, education and household size.

## 2.0 Methodology

### 2.1 Study Area, Sampling and Data Collection Procedure

The study was conducted in Mbo Local Government Area in Akwa Ibom State, Nigeria. Mbo Local Government shares boundaries with Udung Uko, Iboko, Urue Ofong Oruko and the Atlantic Ocean. The area lies within the humid tropical rain forest zone. Annual precipitation ranges from 2000 –

3000mm per annum. According to Etim and Ofem (2005) and Etim *et al.* (2008), this rainfall regime received in most part of the State encourages farming throughout the year. Mbo has an estimated population of 104,012 (NPC, 2006). Mbo Local Government Area consists of five major clans viz: Enwang, Uda, Effiat and Udari and the settlement pattern is dispersed.

A multi stage sampling procedure was employed in selecting the representative fishing households used for the study. The first stage was the random selection of 2 out of the 5 clans that made up Mbo viz: Enwang and Effiat. The second stage was the random selection of 5 villages per clan to make a total of 10 villages. Furthermore, a total of 8 households were randomly selected to make a total of 80 fishing households.

The study utilized mainly primary data obtained from fishing households using well structured questionnaires over a period of 6 months. Consumption expenditure and information on households' income (fishing income and non fishing income) formed the majority of the data collected. The former include expenditure on food which was produced and purchased by respondents, and non food items comprised health-care/medication, transportation, clothing, education farm resources and social activities. Values of the open resources such as wild vegetables/fruits, fish, medicinal plants and firewood. Social characteristics of the households also formed part of the data collected. For ease of analysis data were collected on weekly and monthly basis, and data not available on monthly basis; were collected weekly and then converted to monthly basis.

## 2.2 Analytical Technique

### 2.2.1 Standard of living, absolute Poverty line and FGT weighted Poverty Measure

Consumption expenditure (mainly consumption goods and non food items) and the values of open resources was used to measure the standard of living of households in the study area. The households' expenditures were then summed up to get the total expenditures of the households. The total household expenditure was divided by the number of household members to get the per capita

expenditure as used by World Bank (1996). Since households differ in size and composition, aggregate household consumption can be misleading about the welfare of individual members of the household. Therefore for any given household, an equivalence scale provided by FOS (2004) was used to approximate the number of single adults, based on nutritional requirement, sex and age of the member of the households. Differences in needs are reflected in differences in consumption. According to UN (2001), adult female are assigned a male equivalence of less than one since they typically consume less; however, that may not mean that they have lower “needs” but rather have less power within the household. The monthly mean per adult equivalent household expenditure (MPAEHE) for the sampled households were obtained by multiplying the nutrition equivalence scales with the number of household members that fall in any of the age and sex categories. The expenditure patterns of the fishing households were studied by this procedure.

The MPAEHE of the sampled households was used to compute the poverty line used for this study. The poverty line which was estimated using two-third of the means of MPAEHE of the sampled households has been used in several studies (see: World Bank, 1996; FOS 1999 (a)(b); Omonona 2001, FOS 2004, Bandabla, 2005 and Etim 2007). The households expenditure was determined by ranking MPAEHE of the households and then dividing the population into equal increments. The divisions were based on deciles or 10% increments in the study. The poverty line for the study was estimated by calculating two third of the mean.

The most widely used method in quantitative poverty assessment, the Foster, Greer and Thorbecke (FGT's) weighted poverty measure was used for this study (Foster et al 1984). The P-alpha measures in this class of additively decomposable poverty analysis relate to the different dimensions of the poverty indices and measures  $P_0$ ,  $P_1$ ,  $P_2$  and the incidence, depth and severity of poverty respectively. The three measures are all based on a single formula, but each index puts different weights on the degree to which a household or individual falls below the poverty line. The FGT poverty measure is particularly useful due to its decomposability of the overall population into sub-groups which allows for

comparison of poverty over the various mutually exclusive sub-groups. To see how the measures are defined, the consumption or household expenditures were arranged in ascending order, from the poorer  $Y_1$ , next poorest  $Y_2$ .... with the least poor  $Y_q$ .

The FGT poverty measure is defined mathematically as:

$$P_{\alpha i} = n^{-1} \sum_{j=1}^{q_i} \frac{z - Y_{ij}}{ZO_{\max}}$$

where

$P_{\alpha i}$  is the weighted poverty index for the  $i$ th subgroup;  $n_i$  is the total number of households in the  $i$ th subgroup household in poverty;  $q_i$  is the number of households below the poverty line;  $Y_{ij}$  is the per adult of household  $j$  in sub – group  $i$ ;  $z$  is poverty line;  $\alpha$  is the degree of concern and takes values 0, 1, 2.

Microsoft Excel Package was utilized to compute the weighted poverty measures ( $P_\alpha$ ) and their corresponding standard errors. The contribution ( $C_i$ ) of each groups weighted poverty measure to the whole groups weighted poverty measure were determined using:

$$C_i = \frac{n_i P_{\alpha i}}{nP_\alpha}$$

### 3.0 Results and Discussion

#### 3.1 The Expenditure pattern of the sampled Households

Presented in Table 2 are the estimated households' economic wellbeing indicators by consumption level as monthly MPAEHE. The result reveals that sampled households that were within the first deciles on the bottom 10 percent lived on an average of ₦762.82 per month and their part of the total monthly MPAEHE was 2. 92% on an average of N6964.76 monthly and their share of the total monthly MPAEHE was 26.69%. The first decile represented the poorest eight households from the sampled eighty households, while the tenth decile represented presumably eight richest households of the sample. Two thirds of the mean of monthly MPAEHE was N1739.51 (Poverty line) and was located within the eight households of the sixth decile.

Table 2: Monthly MPAEHE by Deciles.

Deciles	MPAEHE(₦)	Expenditure Distribution (%)
1 <sup>st</sup>	762.82	2.92
2 <sup>nd</sup>	1006.74	3.86
3 <sup>rd</sup>	1284.28	4.92
4 <sup>th</sup>	1506.66	5.77
5 <sup>th</sup>	1712.44	6.56
6 <sup>th</sup>	1816.20	6.96
7 <sup>th</sup>	2246.82	8.61
8 <sup>th</sup>	3109.710	11.92
9 <sup>th</sup>	5682.24	21.77
10 <sup>th</sup>	6964.76	26.69
<b>Total</b>	<b>26092.67</b>	
Mean	2609.27	
$\frac{2}{3}$ MPAEHE	1,739.51 (Poverty line)	

### 3.2 Poverty Line and Poverty Profile

Using the estimated poverty line, the results of 3 poverty measures for the study area were  $P_o$  (0.59)  $P_1$  (0.40) and  $P_2$  (0.16). The implication is that 59% of the fishing households in the study area were poor; the average depth of the poor households from the poverty line was 40% while the poorest of the poor were 16%. This shows that the poor households were not equally poor but they vary in their magnitude of the poverty.

### 3.3 Sex of Household Heads

The households' poverty were decomposed into male and female headed households in Table 3. The result reveals that the incidence, depth and severity of poverty were higher among male headed fishing households than female headed households. A proportion of 63% of the male headed households were impoverished while 52% of the female headed households were poor. The poverty depth and severity and their contribution to the whole groups poverty follow similar pattern like that of the poverty incidence.

The fact that male headed households are poorer than female may be attributable to the fact that most females that headed households were single parents either divorcees or widows with smaller household members compared to the male headed households. Similar finding was documented by Omonona (2001)

that poverty tends to be more among the male headed households than female headed households.

Table 3: Comparison of Poverty by Sex.

Sex of Household Head	$P_o$	$P_1$	$P_2$	Contribution to $P_o$		
	$P_o$	$P_1$	$P_2$	$P_o$	$P_1$	$P_2$
Male	0.63	0.29	0.16	0.81	0.78	0.60
Female	0.52	0.14	0.09	0.19	0.22	0.40
All	0.59	0.40	0.16	1.00	1.00	1.00

### 3.4 Age of Household Heads

These age categories were used to profile poverty among fishing households viz: 21-40 years, 41-60 years and 61-80 years. However, the incidence of poverty among fishing households increases with the age of household head. Table 4 reveals that poverty incidence was highest (68 percent) among household heads within the age interval of 60-80 years, 51 percent of heads whose age are in the sub-group 41-60 years are poor, while households whose heads age are between 21-40 years have 33 percent of them in poverty. The contribution to the whole group poverty incidence are 13, 76 and 11 by fishing households whose heads' age are 21-40 years, 41-60 and 61-80 years respectively. The age of the household head is directly related to the level of poverty.

This is attributable to the fact that as one increases in age, the ability to do difficult work of which fishing is one decreases. Findings are synonymous with Dercon and Krishnan (1998) and Etim (2007) who in their studies on changes in poverty in rural Ethiopia and poverty status of rural households in Nigeria found that poverty incidence, depth and severity were lower among households headed by persons aged below 45 years.

Table 4: Comparison of Poverty by Age of Household Head

Age of Household Heads (Years)	Contribution to					
	$P_o$	$P_1$	$P_2$	$P_o$	$P_1$	$P_2$
21-40	0.33	0.10	0.05	0.13	0.18	0.15
41-60	0.51	0.20	0.15	0.76	0.61	0.65
61-80	0.68	0.12	0.04	0.11	0.21	0.20
All	0.59	0.40	0.16	1.00	1.00	1.00

### 3.5 Educational status of the Household Head

Results on Table 5 reveal that the incidence of poverty was highest (63 percent) among fishing household heads without formal and lowest (18 percent) among family heads with tertiary educational attainment. Similarly findings were obtained by Schubert (1994) and FOS (1999b) that people with low levels of human capital tend to have higher incidence of poverty. The incidence of poverty is 54 and 33 percent among households heads with primary and secondary education respectively. Findings further reveal that 46 percent of the whole groups poverty incidence is contributed by households headed by persons without formal education. This is followed by heads having primary education (26 percent), secondary education (18 percent) and tertiary education (10 percent) (Table 5). In summary, the extent of poverty increases with decrease in the educational qualification of the heads of fishing households. This may not be unconnected with the fact that rate of adoption of modern fishing methods increases with higher educational status which raises fishing income with subsequent reduction in poverty. The results of poverty profiling by educational status of the household heads showing that poverty decreases as educational level of the household heads increase conform with findings by Manson (1996), Cavendish (1999), Dercon and Krishnan (1998) FOS (1999; 2004), Bandala (2005), Etim (2007) and Kwaghe *et al.* (2009) who in their various studies found that poverty reduces with the increase in the years of schooling of the household head.

Table 5: Comparison of Poverty by Educational status of household head

Education	$P_o$	$P_1$	$P_2$	Contribution to		
				$P_o$	$P_1$	$P_2$
No formal Education	0.63	0.54	0.41	0.46	0.51	0.53
Primary Education	0.54	0.43	0.31	0.26	0.25	0.24
Secondary Education	0.33	0.28	0.18	0.18	0.16	0.14
Tertiary Education	0.18	0.12	0.09	0.10	0.08	0.09
All	0.59	0.40	0.16	1.00	1.00	1.00

### 3.6 Household size

As expected, poverty was highest among fishing households with relatively large households sizes. Fishing households were decomposed into 3 sub-groups viz: 1-5, 6-10 and 11-15 members (see Table 6). Whereas 33 percent of households with less than 5 members were poor, 67 percent of households with more than 10 members were impoverished. The contribution of 1-5 members sub-group to the whole group's poverty incidence is 9 percent whereas it is 38 and 53 percent for the 6-10 and 11-15 members sub-groups respectively. Results show that as the household size increases, the extent of poverty as well as their contribution to the whole group poverty also increases. The reason may be attributable to the fact that increased household size implies more dependants who rarely contribute to household income.

Findings are however synonymous with World Bank (1991), Lanjouw and Ravallion (1994), Schubert (1994) and, Dercon and Krishnan (1998), and Etim 2007 who in their various studies found that poverty increases with increase in the size of family members.

Table 6: Comparison of Poverty by household size

Household Size	$P_o$	$P_1$	$P_2$	Contribution to		
	$P_o$	$P_1$	$P_2$	$P_o$	$P_1$	$P_2$
1-5	0.33	0.1	0.10	0.09	0.08	0.07
6-10	0.50	0.29	0.26	0.38	0.32	0.34
11-15	0.67	0.60	0.58	0.53	0.60	0.59
All	0.59	0.40	0.16	1.00	1.00	1.00

### 4.0 Conclusion

The study showed that 59 percent of fishing households were impoverished; the proportion of expenditure shortfall from the poverty line was 0.40 and poorest of the poor constituted 16 percent of the sampled households. Findings revealed that poverty levels were higher among households headed by males. The findings further revealed that the age of household heads' and household size were directly related to the poverty status of the households in the study area. This implies that poverty was relatively higher among households headed by older persons and households with more dependants. On

the other hand, households years of formal education was inversely related to the poverty status of the fishing households. This means that poverty level among households headed by those with more years of formal education had lower profile of poverty.

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