

COMPARATIVE ANALYSIS OF POVERTY INCIDENCE AND PATTERNS IN THE FOREST AND SAVANNA ZONES OF GHANA

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ABSTRACT

This paper uses two sets of Living Standards Surveys to determine poverty incidence and patterns within the different ecological zones of Ghana. To ascertain changes in the standards of living of households, the headcount, poverty gap index, Foster, Greer and Thorbecke (FGT) class of indices and the Sen's index were employed to measure the incidence and intensity of poverty and the effects of various household characteristics on the standard of living of the household. The results show that the incidence of extreme poverty increased between the two survey periods. The poor who were mostly found in the rural areas were involved basically in forestry and agriculture-related activities and across levels of the education system they had little or no education. Poverty incidence was also higher in the Northern Savanna area compared to the Forest area, Coastal and Northern Savanna areas.

Keywords: Poverty incidence, standard of living, ecological zone, household characteristics, Ghana

INTRODUCTION

Ghana covers an area of approximately of 239,540 km² with a total population of about 24.2 million (based on the 2010 Population Census), thus giving a population density of about 102 persons km⁻². The population growth is about 2.4, while the fertility rate is between 5.0 and 6.0. About 45% of the population is below the age of 15 years. Almost 60% of the population live in rural communities and the remaining living in urban centres. Agriculture is the most widespread occupation in Ghana with over 60% of the working class population being farmers.

The forestry sector plays an important role in the socio-economic development of the country and was ranked 4th to Minerals, Tourism and Cocoa in Ghana's export earnings in 2009. In the year 2010,

the timber industry earned about €175 million from the export of wood and wood products. It also provided direct employment to over 100,000 people and indirect employment to over 2.5 million Ghanaians. In addition, the forests constitute a priceless ecological heritage, protecting land and water resources, controlling floods, warding off wind erosion, storing and recycling carbon and providing habitats for wildlife, as well as a rich stock of valuable genetic resources.

The dependence on forests by local communities is quite high in Ghana. For example, well over 60% of Ghana's forest has been destroyed in the search for agricultural land, firewood, minerals, and logging for timber. In view of the heavy dependence of local communities on forest resources, one of the most important sectorial

issues is the 'poverty-forest resource depletion cycle' in Ghana. This situation has come about as a result of the fact that the majority of Ghanaians, especially rural dwellers are dependent on lands and forest resources for their livelihood. Rural population, including forest fringe communities, accounts for about 68% of Ghana's population and about 50% of rural inhabitants are poor. The continued over-exploitation of forest resources together with poor public service and resource management systems have combined to keep forest fringe households, and communities, in persistent poverty.

This study therefore aims at establishing the pattern of poverty in the three main ecological zones, namely; the Coastal Savanna, Forest and Northern Savanna areas of the country. Such a study is important because Ghana is characterised by an enormous extent of poverty, inequality and material deprivation as evidenced by a per capita Gross National Product (GNP) of around U.S. \$380 (2004). The Human Development Index (HDI) for Ghana (0.532), which gives the country a rank of 136 out of 177 countries further, establishes the fact that poverty is widespread in Ghana. The high incidence of poverty given by the results of the first and second rounds of the Ghana Living Standards Survey (GLSS 1 and 2), indicate that poverty is very much prevalent in the country, accounting for about 43% of all Ghanaians (GSS, 1999) and that those in the rural areas are generally poorer than those in the urban areas (Asenso-Okyere *et al.*, 1992) with much of the difference being the direct result of low productivity and poorly functioning markets for agricultural outputs.

Poverty in Ghana also has a gender dimension. Women experience greater poverty. Gender disparities exist with respect to access to education, productive assets such as land and credit, and are marginally represented in decision-making. Socio-cultural factors continue to

perpetuate the gender inequities in access to and use of services. Nationally, poverty in Ghana is characterised by low income, malnutrition, ill health, illiteracy, and insecurity. There is also a sense of powerlessness and isolation (ISSER, 1993). In order to better understand the incidence of poverty in societies, absolute poverty measures that define the segment of the population that are unable to secure the minimum basic needs for human survival (Serageldin, 1989) has been studied. Such studies (Chenery *et al.*, 1974; Belquele and Van de Hoeven, 1980) have noted that poverty is far more than economic but a condition of life that is characterised by malnutrition, inadequate shelter, illiteracy, diseases and limited access to basic housing services (e.g. water, electricity). The implication is that every society, except those where everyone receives exactly the same income, has poverty.

Consequently, the reduction of poverty has been an integral part of Ghana's national development policy i.e., Ghana Vision 2020, Ghana Poverty Reduction Strategy (GPRS1), 2001-2004 and Growth and poverty Reduction Strategy (GPRS II) 2005-2008. Towards this end, the strategy for poverty reduction which was developed over the years, lays emphasis on economic growth, integrated rural development, the expansion of employment opportunities for the urban poor, and improved access by the urban and rural poor to basic public services (education, health, water, sanitation and family planning services).

The important question now is whether this strategy has resulted in improvements in living standards among the vast majority of Ghanaians in the different ecological zones. Using two comparable data sets, from surveys conducted in 1992/93 and in 1998/99 by Ghana Statistical Service, (GSS), this paper seeks to examine that question. To examine this broad question of how standards of living have changed over the period 1991-1999, the objectives of this paper is

therefore to evaluate the effects of various household characteristics on the standard of living of the household; to determine the distribution of poverty among socio-demographic groups and to measure indices of poverty in the different ecological zones. It is important however, to note that there are no easy measures of poverty and for most empirical work attempts are made to measure absolute poverty using lines and related concepts (ISSER, 1993). The measures of absolute poverty used in this study therefore include the headcount measure, the poverty gap measure, the Sen's index and the Foster, Greer and Thorbecke (FGT) class of indices. To measure poverty this paper considers using five poverty lines – the threshold below which one is considered to be poor; and to construct a set of indices to measure the intensity of poverty suffered by those below the lines.

MATERIALS AND METHODS

Study Area and Source of Data

The study area is the entire country, while the study population is all households within 500 selected communities within the three major ecological zones of the country, namely the Coastal Savanna, Forest and Northern Savanna areas (Figure 1). The ecological zones are mainly influenced by the soil type and rainfall distribution pattern. About 34% of the sampled population live in the Coastal Savanna area (Greater Accra region, Volta region and Central region), 40% in the Forest area (Ashanti region, Western region, Eastern region and Brong-Ahafo region) and 26% in the Northern Savanna area (Upper-West region, Upper-East region and Northern region).

A nationally representative secondary data from two Ghana Living Standards Surveys (GLSS) conducted by Ghana Statistical Service, (GSS) in 1991/92 (GLSS3) and 1998/99 (GLSS4) were used for this study. Whereas GLSS3 had a sample

size of 4552 households, GLSS4 had a sample size of 5998 households. The households for GLSS3 were selected from approximately 200 enumeration areas (EA) selected from the 1984 national census. The census enumeration areas were stratified by urban/rural and the three ecological zones. The GLSS4 survey data however, incorporates 300 enumeration areas (EA) selected from the 1984 national census.

In establishing the pattern of poverty within the three ecological zones, the study identified some general characteristics of households covering aspects such as demographic, economic and social characteristics and determined their effect on living standards of households. Household characteristics that we analysed include age and sex of household head, marital status, household size, highest educational level and occupation.

Levels of standard of living need to be examined within the context of a household's demographic characteristics, because characteristics like age and sex structure of the household determine the number of productive persons and therefore a household's income level. They also determine the income level needed to ensure a satisfactory living standard for each member. Moreover, since many demographic characteristics such as household size are not expected to change significantly over short periods, examining such characteristics provides insights into the robustness (validity) of the data. Even though the convention is to use 65 years and above, for the purpose of this work a cut-off point of 60 years is used since the retiring age is 60 years in Ghana.

Poverty is a phenomenon arising at the level of households and is usually classified under two broad categories, namely poor and non-poor. The division of the population into two such broad categories may conceal important gradations within each group.

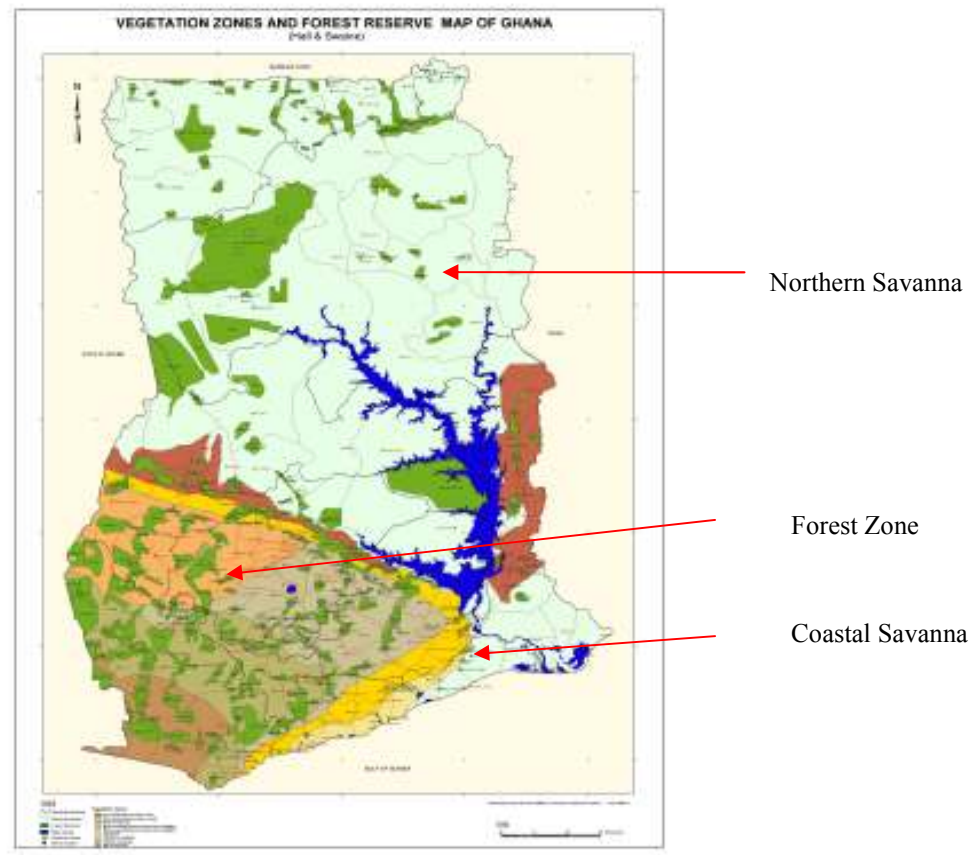


Figure 1: Map of Ghana showing the three major ecological zones of the Country, namely Coastal Savanna, Forest and Northern Savanna areas

Perhaps a richer way of analyzing poverty is to classify households according to their relative position in the overall distribution of income (or consumption), by dividing-up the population into income (or consumption) quintiles. This study, therefore classified households into five consumption expenditure quintile groups, with

one representing the poorest, and five representing the wealthiest quintiles. This is because the division of the sample data into quintile groups is more informative than a simple comparison between the characteristics of poor and non-poor households. GLSS categorizes the five quintiles as 'poorest', 'poor', 'middle', 'richer' and 'richest'.

The five consumption expenditure quintile groups are:

1. The poorest 20% of the sampled population, i.e. $0\% \leq y_i \leq 20\%$ category belonging to the lowest quintile.
2. The next poorest 20% households, i.e. $21\% \leq y_i \leq 40\%$ category, belonging to a group which is richer than the lowest quintile but poorer than the other three quintiles.
3. Households within the $41\% \leq y_i \leq 60\%$ category, belonging to a group which is richer than the two lowest quintiles but poorer than the top two quintiles.
4. Households within the $61\% \leq y_i \leq 80\%$ category, which is a group directly below the richest quintile.
5. The highest quintile made up of the richest $81\% \leq y_i \leq 100\%$ of households. Where “ y_i ” represents total consumption expenditure.

The main measure of the standard of living is per adult equivalent household income/expenditure, which adjusts household income/expenditure by the scale and composition of adjusted household size. Total household expenditure is the main monetary measure used in this paper. A simple per capita adjustment to the measure of total expenditure, to take account of the fact that households vary greatly in size was made (i.e., Per capita expenditure was computed as: total consumption expenditure divided by household size).

In addition, five levels of poverty lines (one-third of mean per capita expenditure per annum, half of mean per capita expenditure per annum, two-thirds of mean per capita expenditure per annum, five-sixths of mean per capita expenditure per annum and the mean per capita expenditure per annum) were computed and related to the different poverty indices. For each index, the contribution

to national, rural and urban poverty was also calculated.

Statistical Analysis

The Statistical Analysis System (SAS) was used for data analysis. Absolute poverty measures were estimated and preliminary statistics (frequencies) of the variables were also computed. The absolute poverty measures used in this study consider exclusively the well-being of those who are defined as poor, thereby suggesting that the condition of the poor only, and not of the overall society, is important. The measures and formulae of absolute poverty used in this analysis are as follows:

- (i) Headcount measure (Booth, 1889,

$$\text{Rowntree, 1901): } P_0 = \frac{q}{n}$$

- (ii) Poverty gap measure (Blockwood and

$$\text{Lynch, 1994): } P_1 = \left(\frac{q}{n} \right) \left(\frac{z - \mu_p}{z} \right)$$

- (iii) Sen's index (Sen 1976, Ravallion 1992): $S = H [I + (1-I) G_p]$

- (iv) Class of indices outlined by Foster *et al.*

$$(1984): P_\alpha = \frac{1}{n} \sum_{i=1}^q \left(\frac{z - y_i}{z} \right)^\alpha$$

Where q = number of people below the poverty line, n = population size, z = poverty line, μ_p = mean income of the poor, $H = q/n$, $I = \sum (z - y_i / qz)$; G_p = Gini coefficient among the poor, y_i = standard of living measure and $\alpha = 0, 1$ and 2 (parameter reflecting the weight placed on the living standards of the poorest among the poor).

RESULTS

Poverty Levels and Indices

The P_α indices (Tables 1 and 2) capture the most important dimensions of aggregate poverty and depict the pattern of poverty in Ghana in relation to five poverty lines. The incidence of poverty (Head count index) at the mean level of poverty line for rural communities increased from 0.683 in 1991/1992 to 0.73 in 1998/1999 (Table 1), while that for urban communities decreased from 0.539 in 1991/1992 to 0.463 in 1998/1999 (Table 3).

This indicates that poverty worsened among the rural population. At the national level, the percentage of the population who can be defined as poor relative to the mean level of the poverty line is 63% for both 1991/92 and 1998/99 (Tables 1 and 2). The mean level of poverty line for 1998/1999 which amounted to GH¢412.64 was 5 times higher than that of 1991/92. This may be attributed to the higher inflation rate of 36% in 1991/1992 compared to 29% in 1998/1999.

Table 1: Poverty measures at different levels of the poverty line, 1991/1992

Poverty Indices	Levels of Poverty Line				
	One-Third GH¢25.01	Half GH¢37.52	Two-Thirds GH¢50.03	Five-Sixth GH¢62.53	MEAN GH¢75.04
Headcount index ($\alpha=0$)					
National	0.084	0.215	0.374	0.514	0.633
Rural	0.098	0.246	0.419	0.565	0.683
Urban	0.057	0.157	0.291	0.420	0.539
Poverty gap index ($\alpha=1$)					
National	0.024	0.065	0.123	0.188	0.252
Rural	0.028	0.075	0.140	0.211	0.280
Urban	0.019	0.046	0.091	0.144	0.200
Poverty gap index of the poor (P1/P0)					
National	0.292	0.301	0.329	0.365	0.398
Rural	0.281	0.303	0.334	0.374	0.410
Urban	0.326	0.294	0.314	0.343	0.371
Distribution Sensitive index ($\alpha=2$)					
National	0.012	0.030	0.058	0.093	0.132
Rural	0.013	0.034	0.066	0.106	0.149
Urban	0.010	0.022	0.043	0.070	0.101
Sen's index					
National	0.031	0.084	0.161	0.243	0.325
Rural	0.034	0.094	0.178	0.266	0.354
Urban	0.020	0.058	0.116	0.183	0.254

Source: Computed from the Ghana Living Standards Survey 1991/1992.

Table 2: Poverty measures at different levels of the poverty line, 1998/1999

Poverty Indices	Levels of Poverty Line				
	One-Third GH¢137.55	Half GH¢206.32	Two-Thirds GH¢275.09	Five-Sixth GH¢343.86	MEAN GH¢412.64
Headcount index ($\alpha=0$)					
National	0.130	0.269	0.408	0.533	0.632
Rural	0.166	0.336	0.493	0.630	0.730
Urban	0.068	0.155	0.262	0.364	0.463
Poverty gap index ($\alpha=1$)					
National	0.038	0.091	0.153	0.217	0.278
Rural	0.048	0.115	0.190	0.265	0.335
Urban	0.022	0.051	0.090	0.135	0.181
Poverty gap index of the poor (P1/P0)					
National	0.296	0.339	0.376	0.408	0.440
Rural	0.290	0.342	0.386	0.420	0.458
Urban	0.320	0.327	0.343	0.370	0.391
Distribution Sensitive index ($\alpha=2$)					
National	0.017	0.044	0.079	0.117	0.158
Rural	0.020	0.055	0.098	0.145	0.193
Urban	0.010	0.025	0.045	0.069	0.096
Sen's index					
National	0.055	0.122	0.201	0.283	0.358
Rural	0.066	0.149	0.241	0.338	0.424
Urban	0.025	0.061	0.109	0.162	0.220

Source: Computed from the Ghana Living Standards Survey 1998/1999.

The corresponding figure for one-third of mean per capita expenditure level of the poverty line was 8.4% and 13% for 1991/92 and 1998/99 respectively. This indicates that a higher percentage of people were within the lower poverty line group in 1998/99 compared to 1991/92 (Tables 1 and 2). This further suggests that extreme poverty has increased over the years. On the other hand the poverty gap index of the poor (P1/P0) which is also known as the income gap ratio indicated that the rural poor have an average standard of living 41% and 45.8% below the mean level of the poverty line in the country in

1991/92 and 1998/99 respectively (Tables 1 and 2).

The poverty gap index ($\alpha=1$) follows a similar pattern as the headcount index. The mean levels of poverty line for the poverty gap index were 25% and 28% in 1991/92 and 1998/99 respectively. However, the one-third poverty gap index in 1991/92 and 1998/99 suggest that up to 4% of the population in the country are extremely poor (Tables 1 and 2). There was an increase in the percentage of poor people over the five levels of poverty lines in the two survey results, with

generally higher percentages in 1998/99 compared to 1991/92 (Tables 1 and 2). Therefore results of the poverty gap index for the country seem to have marginally deteriorated in 1998/99 compared to 1991/92. The percentage of poor people was also up to 2 times higher in the rural areas than in the urban areas. This might probably be due to the fact that people in the rural areas are illiterates, have poor nutrition, low incomes, inadequate shelter, and low health standards and are insecure and this affect their productivity and quality of life.

Taking the distribution sensitive index into account, 13% and 16% of the total population in 1991/92 and 1998/99 respectively are at the mean level of poverty line (Tables 1 and 2). This indicates that generally, the incidence of poverty was similar for the two periods. The general trend of distribution sensitivity index over the levels of poverty lines was similar to that of the headcount and poverty gap indices. Comparison of the Sen's index also suggests that extreme poverty increased over time, accounting for about 3% in 1991/92 and 6% in 1998/99 at the one-third level of the poverty line (Tables 1 and 2). Generally, the percentage of people who were poor increased with increasing level of the poverty line over the two periods.

Poverty Across Ecological Zones

Extreme poverty incidence for rural communities in the Coastal Savanna and Forest Zones was lower in 1998/1999 compared to 1991/1992 (Figure 2). On the other hand, poverty incidence for rural and urban communities in the Northern Savanna Zone increased slightly between 1991/1992 and 1998/1999 (Figure 2). In both years, more than 50% of the population of rural areas in the Northern Savanna Zone was classified as extremely poor. This suggests increases in the depth of poverty in these areas. However, the incidence of poverty for urban areas in the three

ecological zones was similar for the two periods under consideration.

The income gap ratio, which is the proportion by which the average consumption level of poor households falls below the poverty line, gives some indication of just how intense poverty has been in Ghana (Figure 3). Income gap ratio for urban communities in the Coastal Savanna and Forest Zone was higher in 1998/1999 compared to 1991/1992. However, it was lower for urban communities in the Northern Savanna Zone in 1998/1999 compared to 1991/1992. In contrast, the income gap ratio for rural communities in the Coastal Savanna and Forest Zone declined between 1991/1992 and 1998/1999. The income gap ratio was however higher for the rural communities in the Northern Savanna Zone in 1998/1999 compared to 1991/1992. This shows that a greater percentage of the poor people live in the Northern Savanna areas compared to the Coastal Savanna and Forest Zones. This might be due primarily to the fact that, people in the Northern Savanna are predominantly less formally educated and more engaged in forestry and agriculture-related self-employment activities than the other areas.

In the Coastal Savanna Zone a higher percentage of people were in the richest quintile (24.5%) compared to 14.3% for the poorest quintile in 1991/1992. A similar trend was observed for 1998/1999 (Table 3). For the Northern Savanna Zone, the percentage of people in the poorest quintile group (38.2%) was more than 5.7 times higher than the percentage of people in the highest quintile group. The situation for 1998/1999 was similar to that of 1991/1992 (Table 3). Results of both the 1991/92 and 1998/99 surveys indicate that poverty was more prevalent in the Northern Savanna Zone followed by the Forest Zone. The Coastal Savanna had the lowest prevalence of poverty among the three ecological zones. The Northern Savanna and Forest Zones have a greater

number of forest reserves and other natural resources, including forests, minerals than the Coastal Savanna but this zone has a lower standard of living probably because of a higher percentage of educated people and a higher percentage of available jobs in the Professional, Clerical and Business sectors of the economy.

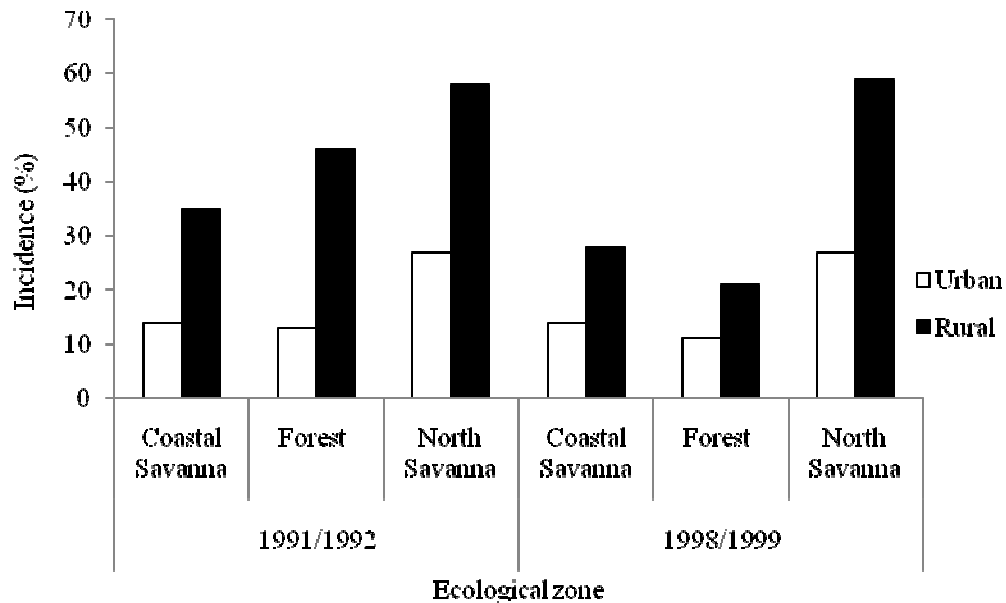


Figure 2: Extreme poverty incidence (P0) by ecological zone, 1991/1992 and 1998/1999 (Poverty line = GH¢70.00)

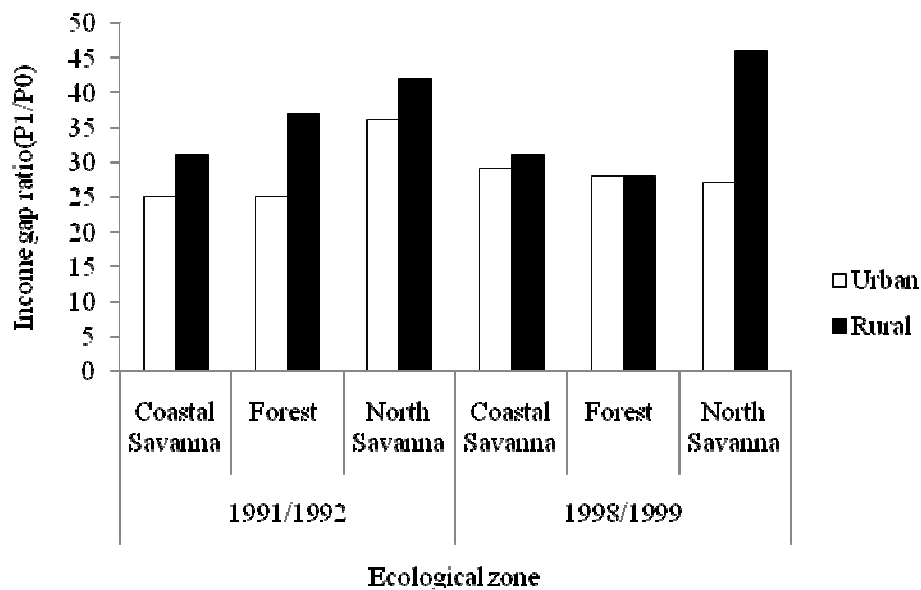


Figure 3: Income gap ratios (P1/ P0) by ecological zone, 1991/1992 and 1998/1999 (Poverty line = GH¢90.00)

Table 3: Total consumption expenditure (Quintiles) in the Coastal Savanna, Forest and Northern Savanna Zones

Zone	All	Quintiles (total consumption expenditure)					Frequency
		Up to 20%	21-40%	41-60%	61-80%	81-100%	
1991/1992							
Coastal Savanna	33.49	14.25	19.57	22.05	19.62	24.51	7,650
Forest	40.19	26.69	22.32	18.86	17.26	14.87	9,179
Northern Savanna	26.32	38.16	23.75	18.13	13.31	6.65	6,012
1998/1999							
Coastal Savanna	33.98	9.89	12.76	14.86	20.39	42.10	10,709
Forest	45.71	11.76	18.95	21.39	21.52	26.38	14,408
Northern Savanna	20.31	40.72	20.27	15.26	13.46	10.28	6,402

Household Characteristics and Poverty

A large percentage of the population, i.e. between 54% and 63% in 1991/91 and 1998/99 respectively, is engaged fully in forestry and agriculture-related ventures. However, the proportion of household members engaged in farming and other forms of forestry and agriculture-related employment falls sharply with the standard of living quintile, from 32% in the lowest quintile to 9% in the highest quintile group in 1991/92 and from 26% to 16% respectively in 1998/99. On the other hand, the proportion of those engaged in professional, clerical, business and labourer & other employment rises slowly with the quintile (Tables 4 and 5). This indicates that forestry and agriculture-dependent households are more likely to be poor compared to households with other sources of income.

The two surveys conducted in 1991/1992 and 1998/1999, show that almost twice as many people live in the rural areas (62-63%) compared to the urban areas (37-38%). Generally, about 14% of the urban population were in the lowest expenditure quintile group, while more than twice as many people in the rural areas were in the lowest expenditure quintile group (Tables 4 and 5). This indicates that poverty maybe almost twice as serious in the rural areas compared to the urban areas. The results of the study also show that the percentage of the urban population increases as the standard of living increases and the percentage of the rural population decreases as the standard of living increases (Tables 4 and 5). This indicates that a greater percentage of the poor live in rural areas. Results of both the 1991/92 and 1998/99 surveys indicate that 41% and 46% respectively of the population live in households whose members have no education at all. A further 30 and 16% live in households whose members have only primary education. In 1991/92 only 7% of the population had secondary and tertiary education, while in 1998/99 a slightly higher population of

12% had higher than a secondary education. The results indicate that educational levels of household members are negatively correlated with poverty. Education is generally considered the key to improved living standards of the poor. Households whose members have relatively high levels of education are almost always better off in terms of higher standards of living. Education is therefore an important determinant of household living standards. The highest living standard quintile groups had the highest proportion of people with better education. It was observed that the relationship between education and standard of living in 1991/92 was similar to that of 1998/99 (Tables 4 and 5). This indicates that there was probably no significant improvement in the general standard of education between 1991/92 and 1998/99.

In 1991/92, the percentage of young dependent people (<15 years) decreased with increasing standard of living, while the percentage of adult dependent people (>60 years) in the different standard of living quintiles were similar. However, in 1998/99 the percentage of both dependent groups (<15 years and >60 years) increased with increasing standard of living (Tables 4 and 5). A similar situation was observed in 1991/92 where the percentage of people who are economically active decreased with increasing standard of living, while in 1998/99 the percentage of economically active people increased with increasing standard of living. These results indicate an improvement in the standard of living of the dependent and independent groups in the period between the two surveys.

Table 4: Characteristics of Households by quintile of the standard of living measure, 1991/92

Household Characteristic	All	Quintiles (total consumption expenditure)					Frequency
		Up to 20%	21-40%	41-60%	61-80%	81-100%	
Locality							
Urban	37.01	13.92	17.89	21.14	20.50	26.55	8453
Rural	62.99	32.37	24.06	18.91	14.96	9.70	14388
Age							
< 15	45.90	30.25	24.17	20.20	16.08	9.30	10484
15-60	48.89	21.83	19.95	19.30	17.67	21.25	11166
61 and over	5.21	18.98	17.80	19.73	18.98	24.52	1191
Sex							
Male	49.12	25.66	21.04	19.14	16.55	17.60	11220
Female	50.88	25.43	22.49	20.31	17.45	14.33	11621
Marital Status							
Married	52.64	23.16	20.75	19.28	18.05	18.77	6478
Not Married	47.36	19.69	18.48	19.42	17.46	24.94	5829
Household size							
Small (1-3)	23.39	4.94	9.79	16.32	23.59	45.36	5342
Medium (4-6)	39.92	22.72	25.72	22.43	19.24	9.89	9118
Large (over 6)	36.69	41.74	25.13	18.98	10.39	3.76	8381
Highest level of Education							
None	41.26	33.80	23.10	18.67	15.67	8.76	8576
Primary (1-6)	29.98	25.00	25.29	21.16	17.28	11.26	6232
Middle/JSS (7-10)	21.26	15.34	16.33	20.02	19.75	28.55	4420
Secondary (11-17)	6.78	9.01	12.92	17.10	18.67	42.30	1409
Tertiary (18-25)	0.72	1.34	5.37	9.40	11.41	72.48	149
Occupation							
Professional	4.20	7.85	8.36	15.02	17.58	51.19	586
Clerical	2.76	3.37	7.51	14.25	21.76	53.11	386
Business	14.63	14.15	18.55	22.76	20.80	23.74	2043
Agriculture	63.49	31.79	24.40	19.18	15.69	8.94	8864
Labourer & other	14.92	13.06	16.95	19.49	20.98	29.52	2083

Source: Computed from GLSS3

Table 5: Characteristics of Households by quintile of the standard of living measure, 1998/99

Household Characteristic	All	Quintiles (total consumption expenditure)					Frequency
		Up to 20%	21-40%	41-60%	61-80%	81-100%	
Locality							
Urban	38.25	6.09	9.56	14.02	22.07	48.26	12056
Rural	61.75	23.77	21.79	20.35	17.91	16.18	19463
Age							
< 15	43.31	18.83	18.75	19.18	19.29	23.95	13652
15-60	50.53	15.60	15.97	17.04	19.55	31.84	16257
61 and over	6.15	15.78	14.96	16.40	20.53	32.34	1610
Sex							
Male	48.41	18.16	16.84	17.28	19.22	28.50	15258
Female	51.59	15.93	17.37	18.54	19.76	28.41	16261
Marital Status							
Married	39.51	18.23	16.77	16.56	19.76	28.67	7059
Not Married	60.49	13.91	15.27	17.24	19.59	34.00	10808
Household size							
Small (1-3)	26.55	4.80	6.42	11.00	19.86	57.92	8369
Medium (4-6)	43.71	16.46	18.86	19.45	22.15	23.07	13776
Large (over 6)	29.74	28.71	24.10	21.10	15.28	10.06	9374
Highest level of Education							
None	45.89	17.74	19.07	21.10	19.45	22.64	11073
Primary (1-6)	16.32	12.95	17.83	19.89	21.67	27.66	3937
Middle/JSS (7-10)	26.13	8.53	13.51	17.91	21.82	38.22	6305
Secondary (11-17)	7.48	4.54	6.26	10.19	15.61	63.40	1806
Tertiary (18-25)	4.18	3.67	9.52	10.02	20.44	56.35	1008
Occupation							
Professional	4.15	2.47	6.32	10.32	24.96	55.93	649
Clerical	2.41	0.53	6.10	6.90	12.47	74.01	377
Business	19.11	5.42	10.24	14.76	21.93	47.64	2987
Agriculture	54.18	26.29	21.24	19.61	16.98	15.89	8471
Labourer & other	20.15	5.81	10.22	13.75	21.52	48.70	3150

Source: Computed from GLSS4

Considering the gender of household members, women form a greater proportion of the population. However, the standard of living of males and females did not differ in both 1991/92 and 1998/99. A study of the data indicates further that a higher proportion of both males and females had a relatively higher standard of living in 1998/1999 than 1991/1992 (Tables 4 and 5). This might probably be due to the fact that overall poverty rates improved (i.e. poverty fell 12 percentage points from 51.7% to 39.5% between 1991/1992 and 1998/1999).

With a greater proportion (52 –60%) of the sampled population in the married category, it may seem that married folks in Ghana have a higher standard of living than those who are not married. However, there were no perceptible differences between the standard of living of married and un-married people (Tables 4 and 5). This might probably be due to the fact that the majority of people who are gainfully employed are men, unlike in the developed countries where both the male and female population are gainfully employed and are therefore able to support their families.

Households belonging to higher expenditure quintiles had fewer members than those in the lower expenditure quintiles in both 1991/92 and 1998/99 (Tables 4 and 5). In this study, it was observed that only up to 23% of households have up to 3 members. This indicates that generally household sizes are quite large in Ghana. The impact of large sized households on poverty appears to be very strong and since a larger proportion of the sample live in rural areas, it is obvious that the poor who live mostly in rural areas are very much disadvantaged because of their large-sized households.

DISCUSSIONS

Poverty Patterns

The incidence of extreme poverty remains very high in the country with more than one-third of the Ghanaian population being unable to meet their basic nutrition needs, even if they devoted their entire budget to food. Even though, the level of poverty is relatively high, the standard of living actually improved between 1991/92 and 1998/99. A study conducted by the World Bank in 1995 also observed a similar diminishing trend of incidence of poverty in the country between 1988 and 1992. The World Bank (1995) study further noticed that the reduction in poverty status was accompanied by significant improvement in social indicators. For example, infant mortality decreased from 77 to 66 per 1000 live births, child mortality decreased from 84 to 57 per 1000, malnutrition rate decreased from 31% to 26% and total fertility rate decreased from 6.4% to 5.5%.

There was virtually no change in the general poverty situation of the country between 1991/92 and 1998/99 using headcount index. Canagarajah *et al.* (1998) however, noted a 15% decrease in poverty incidence between 1988 and 1992 for Ghana attributed mainly to an increase in mean expenditure per capita. The lack of any perceptible changes in poverty incidence between the period 1991/92 and 1998/99 may probably be due to the fact that the relatively high inflation rate 25% (BOG, 2000) during the period may have eroded any gains made by the corresponding increase in mean expenditure per capita.

Poverty remains a serious and extensive problem for over 30% of the population (UNDP Human Development Report, 1991) with up to 4% of the population in the country living in abject poverty. These trends are similar for Cote d'Ivoire (Ainsworth and Munoz, 1986; Grootaert, 1986; Glewwe, 1987, 1990) and much of the total area

covered by Sub-Saharan Africa where poverty is an endogenous problem. An assessment using the poverty gap index of the poor showed that over 50% of the population were below the lowest two levels of poverty lines.

The poverty status of the country, as outlined by the poverty gap index, improved between 1991/92 and 1998/99 with generally lower percentages in 1998/99 compared to 1991/92. The marginal improvement in the poverty levels may be due to increased access to education, health facilities, electricity and treated water at the rural level. It is therefore not surprising that the most substantial decrease in poverty status was that of the rural areas. These results are further supported by Canagarajah *et al.* (1998), who noticed that improvement in inequality in the rural areas of Ghana contributed substantially, over 30%, to the overall poverty reduction in the country between 1988 and 1992. Canagarajah *et al.* (1998) also noted that the rural areas performed much better over the period 1988 and 1992, both in terms of mean income and expenditure per capita and its distribution. These studies show that in order to substantially reduce the incidence of poverty in the country, the government should probably focus on the rural areas where a unit input of resources tends to give much high returns on investments as far as reduction of the incidence of poverty is concerned.

The locality-specific poverty indices also indicate that the incidence of poverty is significantly higher in rural areas than in urban areas, at all five levels of the poverty line showing an evidence of an urban-rural differential in poverty at all levels of the poverty line, both in terms of incidence and depth. Generally, households in the rural areas are much more likely to be poorer than those in the urban areas and poverty in Ghana is overwhelmingly a rural phenomenon. Artkinson (1987) showed for a number of countries that the poverty deficit curves (given by the areas under

the poverty incidence curves) show higher poverty in rural areas up to about three times the urban poverty line. Ravallion and Bidani (1994) in a review of the poverty profile of Indonesia further acknowledged that rural poverty was much higher in incidence, depth and severity than urban poverty. The reasons assigned for this phenomenon, which are similar to those observed in Ghana, include differences in the relation between food energy intake and total spending between rural and urban areas.

Apart from differences between rural and urban areas, the location of residence was also found to influence the incidence of poverty. For example it was observed in this study and a study by GSS (1999) that poverty differences between regions and locations are significantly different even within rural and urban areas. Kakwani (1989) also observed in Cote d'Ivoire that the incidence of poverty was significantly different among regions. The improvement in the standard of living observed between the period 1991/1992 and 1998/1999 was not spread over the whole spectrum of the population but was skewed in favour of a few people in the higher income bracket due to higher income inequality. A similar observation was made by the UNDP, Human Development Report (1991), which further cautions that in spite of the progress that Ghana has made, poverty remains a serious and extensive problem for over 30% of the population, with a per capita expenditure of less than US\$25 a month.

Poverty Status in the Different Ecological Zones

Whereas the percentage of people in the Coastal Savanna and Forest Zones increases proportionately with the quintiles, the percentage of people in the Northern Savanna areas decrease as the quintiles increases (Table 4). This shows that a greater percentage of poor people live in the

Northern Savanna zones compared to the Forest and Coastal Savanna Zone. Thus a higher percentage of the people in the Northern Savanna zone which covers the drier two-thirds of the country were found to be relatively poor compared to Forest zone and Coastal Savanna areas. According to GSS (1995), poverty is greatest in the rural Savanna Zone with a poverty incidence of 72%.

The study further noted that forestry and agriculture-dependent households were amongst the poorest and these are mainly in the rural areas. Rural poverty is reflected in poor nutrition, inadequate shelter and low health standards. These, in turn, affect the productivity of the rural poor, their health and quality of life. Most of the poor people in the county are unable to meet their basic nutritional needs, even if they devoted their entire budget to food (GSS, 1995). In order to increase income levels the rural poor have in the past converted large tracts of virgin forest to cocoa and food crop production. Thus by 1980 virgin forest had all but disappeared in the country and by that time well over 60% of Ghana's forest had been destroyed. Logging and cocoa production were most responsible for the loss of closed forests until the mid-1960s (Baytas and Rezvani, 1993). The principal sources of more recent deforestation in Ghana, however, have been wildfire, chainsaw lumbering, shifting cultivation and fuel wood harvests, all of which are driven mostly by poverty. Fuel wood consumption, which grew sharply after 1970, reached 906 cubic meters per capita per annum by 1983, one of the world's highest (Gillis, 1988 cited in Baytas and Rezvani, 1993).

For many of the rural poor, the dependence on forest and savanna resources is a function of their poverty, because they lack better alternatives (Arnold and Townsend, 1998). A survey by Townsend (1995) in the more heavily forested zone in southern Ghana, where the survey covered

a wider range of activities and participants, found that 10% of the rural population was gaining some income from forest product activities for their livelihood (Townson, 1995).

The continued over-exploitation of forest and savanna resources together with poor public service and resource management systems have combined to keep forest fringe households, and communities, in persistent poverty. The phenomenon has been described as the "poverty-resource depletion cycle" (Cleaver and Schreiber, 1994; Leonard, 1989). However, Fisher (2002) does not hold the same view and notes that the assumption that exploitation of forests by rural people is a major cause of forest degradation is very questionable and points out that there are many examples of communities regulating use to conserve forests in order to gain benefits. Contributing to this poverty-forest debate, Dayananda (2002) indicated that there is no solid evidence to substantiate that poverty alone can cause environmental degradation. He noted that it could be reasonably argued that poverty attributes to resource degradation, but poverty alone does not cause this.

Arnold and Bird (1999) also highlighted on this poverty-forest debate and indicated that citing poverty, as a blanket underlying cause of deforestation is inaccurate, particularly since reduction in forest cover and quality is not the prerogative of developing countries alone. He noted that, micro-level studies have illustrated that poverty may result in a shortage of options forcing people to clear forest cover in order to gain access to land for cultivation or to use natural resources in an unsustainable manner, but they also demonstrate that poor people can and do invest considerable time and resources in forest management.

However, a study by Kaosa-ard (1995), seem to suggest that deforestation is not simply a result of

population pressure and poverty. The study which was conducted in three villages near forests in Northern Thailand suggests that the wealthy in fact extract forest resources at a higher rate than do the poor (Kanchanaphan and Kaosa-ard, 1995, cited in Kaosa-ard, 1995). According to Kaosa-ard (1995), policies and institutions that fail to give the right incentives to the right interest groups are central to the many problems of deforestation in developing countries.

Relationship between Household Characteristics and Poverty

Certain categories of people within both the rural and urban population in both 1991/92 and 1998/99 had relatively low standards of living. These low income groups include young and old dependent people, poorly educated people, those engaged in forestry and agriculture-related employment and people who have large-sized households. Coulombe and McKay, (1996) have also identified low education with poverty. Most of these low-income groups also live in areas, which lack electricity and have no treated water.

The age and sex composition of a household is one of the main factors determining its consumption level as well as its level of productivity. A household that consists of more children and aged persons is likely to be less productive than one that has more of its members in the economically active group (15-60 years). The consumption needs of such households tend to be higher in relation to their resources that are often limited; these households are therefore likely to be poorer than those households containing a higher proportion of economically active persons. Surprisingly, gender of household head did not significantly influence poverty, Although, it is widely believed that the gender of the household head significantly influences household poverty (Psacharopoulos *et al.*, 1992; Morada *et al.*, (2001) more specifically that households headed

by women are poorer than those headed by men, the World Bank, (2000) reports the lack of gender differences in poverty rates in most regions of the world, especially the Middle East.

CONCLUSIONS AND RECOMMENDATIONS

The study observed that locality has an effect on the incidence of poverty. Rural households were found to be poor compared to urban households and generally rural poor households had lower standards of living compared to the urban poor. It was further noted that a higher percentage of the people in the Northern Savanna zone, which covers the drier two-thirds of the country, were relatively poorer compared to the Forest and Coastal Savanna Zones. For all the three ecological zones, it was noted that forestry and agriculture-dependent households were amongst the poorest in the country and these are mainly in the rural areas.

The study noted that much of the differences in living standards among the different ecological zones sections of the population are the direct result of low productivity and poorly functioning markets for forestry and agriculture-related outputs. It is therefore recommended that:

1. Policy incentives aimed at improving forestry and agriculture-related productivity, especially in rural communities, must be central to any Government initiatives aimed at poverty reduction in Ghana.
2. Programmes should be introduced to reduce gender disparities in the distribution of income.
3. Future studies should address the problem of social and economic inequalities among the different ecological zones and between rural and urban communities.

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