Measures of Poverty among Fisher-Folks and Crop-Based Farming Households in Komenda Edina Eguafó Abriem (KEEA) Municipality of the Central Region, Ghana

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Abstract
This study was conducted to find out the extent of poverty and the relationship between poverty line and the socio-economic determinants of poverty among fisher-folks and crop-based farmers in the Komenda Edina Eguafó Abriem Municipality in the Central Region of Ghana. The population for the study was 260 fisher-folk and crop-based farming households from which 200 households comprising 100 crop-based farmer households and 100 fisher-folk households formed the sample size. The simple random sampling technique was used in selecting the sample size. Data collection was done through documentary analysis, participatory rural appraisal and self-administered questionnaire with the aid of trained assistants. Descriptive statistical methods and regression analysis were used in analyzing data collected. From the results, income, education, health and the number of people in various occupations accounted for about 46.80 percent of the variances in poverty line. Also, poverty was found to be more intense among fisher-folk than among crop-based farmer households in the target communities. Based on the findings, it was recommended that more poverty alleviation interventions should be directed to fisher-folk than among the crop-based farmer households. Also more health facilities should be created in the fishing communities to improve the health status of the fisher-folks so as to improve their health status and thus empower them to work harder, acquire more income and eventually reduce poverty.

Keywords: Poverty, Households, Fisher-Folks, Crop-Based

Introduction
KEEA which the focus of this study is situated in the Central Region of Ghana on the coast of Gulf of Guinea. It is bounded at the west by the Greater Accra Region of Ghana. Specifically, KEEA is located on latitude 5° 05′ North 15° North and longitude 1° 20′ West and 1° 40′ West. KEEA is dominated by fishing and farming activities, with industries and trade on a small scale. The KEEA Municipality as shown in Figure 1 is bordered on the north by Twifo-Hemang-Lower Denkyira District. On the south, it shares a boundary with the Atlantic Ocean. Cape Coast Municipality borders KEEA on the east. The western side is flanked by the Mpo hur West District of the Western Region. There are 156 settlements in the district; with Elmina as their district capital.
Ghana is known to be one of the countries with a large number of poor people in the world today even though it is currently ranked as a middle income country (World Bank Report, 2011). According to The World Bank Report (2011), Ghana is a poor country where one out of every three persons cannot afford the basic necessities of life and 30% of its people are in abject poverty. Life in rural Ghana is known to be characterized by various levels of poverty. Central Region, a predominantly rural area in Ghana; for example, has been identified as one of the poorest regions even though, poverty seems to be declining in the region in recent times (Ghana Statistical Service, 2008). On a poverty line of GHS288.47, Central Region was ranked the ninth among the ten regions of Ghana in 1991/92. In 1998/99, the poverty situation in the region worsened, making it the fourth poorest in Ghana. In 2005/06, the poverty situation improved; thus bringing the region to the seventh position on a higher poverty line of GHS 370.89 (Ghana Statistical Service, 2007).

Several factors have been noted for creating this level of poverty situations in Ghana. For instance, at a national level, about 46% of those identified as poor are from households where food crop cultivation is their main economic activity (Ghana Statistical Service, 2007). The economically active male population constitutes about 65% of the labour force in the KEEA Municipality. About 48% of the total population in the district engages in agricultural activities. This involves 50% of the female population, aged 15 years and above. About 35% of the economically active female population also engage in trading. The municipality contributes about 15% of the country's total fish output. Major crop-producing areas in the district are Agona, Birease, Dwabor, Ayensudo, Kissi, Dominase, KwaMeta and Simiw. Large tracts of coconut trees have been attacked by Cape St Paul Wilt - a devastating virus disease of landrace coconut (Ghana Statistical Service, 2007 & 2008).

Figure 1 shows The KEEA Municipality in the Central Region of Ghana.
In addition to this, there has been a continuous decline in fish landings since 1995 due to many factors, notably the high cost of fishing inputs, unprotected and deteriorated landing beaches, unfavorable weather and the indiscriminate use of other unapproved fishing methods. Fish landed by the canoes and inshore fleet, is sold directly to the fishmongers who smoke the bulk of it with the rest being sun-dried or salted. Some of the fish is also sold directly to consumers at the landing sites. Even though, the peak season for fishing lies between June and September each year, and most of the fish is caught in the KEEA municipality is landed in Elmina alone, poor preservation methods deprive the fisher-folks of storing to meet domestic and commercial needs during the dry season (Ghana Statistical Service, 2007 and 2008). During the major fishing season for example, bumper catches are obtained, which lower prices and makes the fisher-folks no better economically. Also, most of the fish landed in KEEA Municipality is taken outside towns for selling. Information gathered from the fishing sector, suggests that the regular oversupply in the market forces prices down which affects the living conditions of fisher-folks during the lean season (KEEA, 2006).

**Statement of the Problem**

A major challenge to the progress of society in the Developing world is the issue of poverty (Behrman, 1990). According to the Ghana Statistical Service, (2011), even-though there is much evidence about efforts to reduce poverty among the rural people of Ghana and in general the rural people of KEEA in particular; it appears there is widespread of poverty among the fisher-folks and crop-based farmers in the district (Central Region Coordinating Council, 2009). About 46 % of those identified as poor in the KEEA Municipality are from households where crop-based farming and marine fishing are their main economic activities (Ghana Statistical Service, 2007). Also there is much evidence to suggest that many of the people in the fishing and crop-based farming communities in the KEEA municipality are characterized by high levels of poverty. However, there is no empirical evidence on which of the two main occupational groups in the KEEA municipality is poorer. Though, there is also no empirical evidence on the relationship between poverty and the factors that create or influence it, it seems poverty is predominant among these two main groups of people. It also appears that poverty is deeper among food crop farmers than among fisher-folks. Furthermore, what is creating the poverty among the crop-based farmers and the fisher-folks despite their active engagement in occupations they seem not to be focused onto. This could be so because even though a good poverty alleviation intervention may appear to be implemented, it seem not to take into account the relationships that exist between the factors that cause poverty among the various groups of people in the target community. Also it seems the intensity of poverty in the KEEA Municipalities an issue yet to be documented. It is therefore imperative to fill these gaps since they are essential in poverty policy decision making.

**Objectives of the Study**

The following are the objectives of the study.

1. To determine the intensity of poverty among fisher-folk and crop-based farming households in the KEEA Municipality in the Central Region of Ghana;

2. To establish the relationship between poverty line and the socio-economic determinants of poverty among poor fisher-folks and poor crop-based farming households in the KEEA Municipality in the Central Region of Ghana.
Research Questions
1. How intense is poverty among fisher-folks and poor crop-based farming households in the KEEA Municipality in the Central Region of Ghana?
2. What is the relationship between the poverty line and the socio-economic determinants of poverty among poor fisher-folk and poor crop-based farming households in the KEEA Municipality in the Central Region of Ghana?

Hypotheses
H_A - There is a significant relationship between poverty line and the socio-economic determinants of poverty among poor fisher-folks and poor crop-based farming households in the municipality.
H_O - There is no significant relationship between poverty line and the socio-economic determinants of poverty among the poor fisher-folks and poor crop-based farming households in the municipality.

Limitations of the Study
Poverty is a phenomenon that can change from time to time. The level of poverty today may change in years to come. Farmers identified as poor during the time of the study may not be poor in future times. The duration between the compilation of the findings of this study and the commencement of another research is sufficient to change the findings of the study. Coupled with this, the introduction of new interventions could also affect the poverty situation in the municipality positively. The inability of the farmers and fisher folks to keep good records on their activities and their unwillingness to volunteer information to third parties is a further limitation to this study. Further, some of the variables of the study are weather dependent and could influence the result of the study. For example improved rainfall pattern could improve food crop production hence reduce poverty. Also upwelling could induce bumper harvest of fish and increase incomes of fisher-folks hence reduce poverty within the season. These situations could improve food availability and increase the income of both crop-based farmers and fisher folks, make poverty figures and derivatives unstable and dynamic. These situations could therefore put much restriction on the level of argument one could advance on poverty reduction strategies.

Delimitations of the Study
This study is restricted to KEEA district of the Central Region along the coastal savannah belt and the immediate forest fringes. This region has been identified as one of the poor districts in Ghana. The study is also restricted to marine fisher-folks and crop-based farmers; the two main traditional occupations of the people in the KEEA Municipality.

Definition of terms
Poverty - A state of deprivation involving either material deprivation, lack of income and assets. It also involves physical weakness, malnutrition, sickness, disability, lack of strength, isolation, illiteracy, lack of access to education, resources, marginalization, discrimination and powerlessness.
Poverty line–The average of level of income deemed adequate in a particular community below which an individuals considered deprived.
Levels of poverty– Categories of poverty or the poor in a community (e.g. poor, moderately poor and very poor). The situation worsens as one progresses from poor to very poor. Very poor is worse relative to poor. The levels are community determined based on participatory approach.
Incidence of poverty - This is the proportion of a population whose income is below the poverty line, that is, the share of the population that cannot afford to buy a basic basket of goods. This is measured often as percentage of the total population.

Households - One or more people living in the same dwelling and share at meals or living accommodation, and may consist of a single family or some other grouping of people.

Methodology

Research Design
The study used the correlational research design because of its focus on the relationship between poverty line and the socioeconomic indicators of poverty among fisher-folks and crop-based farming households.

Population
The accessible population for this study was 260 fisher-folk and crop-based farming households. This was made up of 109(42%) and 151(58%) fisher-folks and crop-based farming households, respectively.

Sample Size
The sample size was 200. This was made up of 100 crop-based farming and 100 fisher-folk households. The 100 crop-based farming households were also made up of 50 poor and 50 very poor crop-based farming households. The same proportion was applied to the fisher-folk households.

Sampling Technique
The simple random sampling technique was used to select the 200 households as respondents for the study based on a lottery technique from both the crop-based farmers and fisher-folks. This served as the sample source to which the cross sectional survey instrument was administered. Simple random sampling according to Fraenkel and Wallen (2006), is used where a sample frame is available during a sampling process. Simple random technique allows every member of an accessible population to have an equal and independent chance of being selected into a sample.

Instrumentation
Data for the study was gathered through:

i. Documentary analysis: This involved the use of Consumer Price Index from the Ghana Statistical Service to compute poverty lines for the study area.

ii. Participatory wealth ranking: This is a method where communities define themselves who the poorest or the better-off are. It is a participatory poverty assessment method that uses the ratings of local reference groups concerning the relative poverty status of households in their community.

iii. Questionnaire in the form of open-ended and closed-ended items were used. This was sub-divided into five sections as follows:

Validity and Reliability
A pilot study was carried out at Twim- a fishing village and at Atietu; a crop-based farming community. These communities are near Winneba in the Central Region of Ghana. They had similar environmental, geographical and economic characteristics as that of the target
communities targeted for the study. The individual items on the questionnaire were validated by some senior members of the University of Cape Coast, Senior Members of the University of Education, Winneba, and other colleagues. Expert opinions were used to check the content validity of the questionnaire. The Cronbach Alpha coefficient was used to determine the reliability of the items after the pilot study. Cronbach Alpha coefficient produced a value of 0.75, rendering the research instrument reliable; as Pallant (2007), indicated that, Cronbach Alpha value of > 0.7 renders an instrument reliable for research.

Data Collection Procedure
Before data collection, familiarization visits were made to both the fishing and farming communities to explain to them the purpose of the study and to seek their support. Agreements were made on which days to collect data. Data from the fisher-folks were collected on non-fishing days to ensure that adequate number of the fisher-folks were met at home. Similarly, for the crop-based farmers, they were served during their free times to minimize interference with farming activities. Each data collection were done at the household levels, face to face, spanning a period of about one hour each. The entire data collection process took 53 days.

Analytical Framework
The framework for data analysis in this study was centered on three variables:

i) Intensity of poverty. The core variables for the analysis of intensity of poverty in this study are poverty line, incidence of poverty and levels of poverty because of the availability of data for their analysis, simplicity of understanding and interpretation.

ii) Relationship between poverty line and socio-economic determinants of poverty. Multiple regression analysis was also used to determine the existing relationship.

Poverty lines
The most current poverty lines available at the time of this study were the lower and higher poverty lines for year 2006. National and area-specific poverty lines are periodically released by the Ghana Statistical Service. For the purpose of this study, poverty lines for November 2009 were computed. Available information at the time of this study was Consumer Price Index (CPI) for Central Region – October 2009 (Ghana Statistical Service, 2010). The CPI measures the average percentage change of the general price levels in a country as experienced by consumers of a locality. In Ghana, the average price change is computed in due reference to the price levels in 2000 (Ghana Statistical Services, 2010).

Following Ghana Statistical Services procedures,

\[
\frac{CPI(2009) - CPI(2006)}{CPI(2006)} = X \text{ (Price change from 2006 to 2009)} \quad \text{(a)}
\]

According to Ghana Statistical Service (2006), if

i) Price change from 2006 to 2009 = X

ii) Lower poverty line (2009) = lower poverty line (2006) x (1+ X) \quad \text{(b)}

iii) Higher poverty line (2009) = higher poverty line (2006) x (1+X) \quad \text{(c)}

Future poverty lines are inflated on previous poverty lines based on the most recent CPI computed (Ghana Statistical Service, 2006).
(Assumption: Relationships (a), (b) and (c) of Ghana Statistical Service (2006) were used to compute the lower and higher poverty lines for the study area. Since the crop-based farmers and fisher-folks reside in the same area, it is assumed that they were affected by the same poverty lines).

Levels of poverty
Participatory wealth ranking approach was used to determine the levels of poverty. Key informants were tasked to identify all households in their communities and represent each household with a labeled card. The identification involved a participatory process where members of each target community prepared a list of households. All absentee crop-based farmers and fisher folks were excluded and households with heads on government pay rolls were also excluded as their poverty levels could not be ascertained. Members of the target communities agreed on the criteria used as a guide to rank households in the communities into different wealth categories. Table 1 was the criteria used in identifying the poor households.

Table 1: Well-being Assessment Criteria

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Very rich</th>
<th>Rich</th>
<th>Mod. Rich</th>
<th>Poor</th>
<th>Very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land ownership</td>
<td>Above 12 acres</td>
<td>Between (10-12)</td>
<td>Between (7-9)</td>
<td>Between (4-6)</td>
<td>Little(2-3 acres ) or no land</td>
</tr>
<tr>
<td>Ownership of farm implements</td>
<td>More than 3 cutlasses and hoes</td>
<td>At least 3 cutlasses and 3 hoes</td>
<td>At least 2 weeding hoes and 2 cutlasses</td>
<td>One old cutlass and a hoe</td>
<td>No new farm implement</td>
</tr>
<tr>
<td>Nature of house</td>
<td>House made of asbestos, plastered, concrete walls</td>
<td>House made of corrugated sheets, cement walls, not plaster</td>
<td>House made of poor tile roof and mud walls</td>
<td>House made of thatch with mud walls</td>
<td>House made of thatch in very poor condition and bamboo walls</td>
</tr>
<tr>
<td>Utensils</td>
<td>Unlimited cooking utensils</td>
<td>11-15 cooking utensils</td>
<td>7-10 cooking utensils</td>
<td>3-6 cooking utensil</td>
<td>1-2 cooking utensils</td>
</tr>
<tr>
<td>Food shortages</td>
<td>No food crisis ever</td>
<td>Food shortages during crisis</td>
<td>Food shortages of about 3-4 months</td>
<td>Food shortages of about 3-6 months</td>
<td>Live on hand to mouth (food shortages for up to 8 months.</td>
</tr>
</tbody>
</table>

Incidence of poverty
The following relationships were used to compute the incidence of poverty among the occupations in the households;
Incidence of poverty $I_1$ among fisher folks households $= \frac{Y_1 - X_{1x}}{Y_1} \times 100$ …..(d)
Incidence of poverty $I_2$ among crop-based farmer households = $\frac{Y_2 - X_2}{Y_2} \times 100 \quad \ldots \ldots \ldots (e)$

Where:

$Y_1$ = Total number of very rich, rich, moderately rich, poor and very poor fisher-folk households

$Y_2$ = Total number of very rich, rich, moderately rich, poor and very poor crop-based farmer households

$X_1$ = Total number of very rich, rich and moderately rich fisher-folk households;

$X_2$ = Total number of the very rich, rich and moderately rich crop-based farmer households

Results and Discussion

Intensity of poverty

The intensity of poverty was aggregated into levels of poverty, incidence of poverty and poverty line.

Levels of poverty

<table>
<thead>
<tr>
<th>Table 2: Participatory Wealth Ranking (Fisher-folk Households)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of very rich households</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>Abrobiano</td>
</tr>
<tr>
<td>Benu</td>
</tr>
<tr>
<td>Kafodzidzi</td>
</tr>
<tr>
<td>Ankwando</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

A total of 57 and 52 fisher-folk households (39% and 36%), respectively were identified as poor and very poor from a total of 146 fisher-folk households as shown in Table 2.

Wealth ranking of crop-based farmer households also produced results shown in Table 3.
Table 3: Participatory Wealth Ranking (Crop-based Farmer Households)

<table>
<thead>
<tr>
<th></th>
<th>No. of very rich households</th>
<th>No. of rich households</th>
<th>No. of moderately rich households</th>
<th>No. of poor households</th>
<th>No. of very poor households</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eguafio</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>24</td>
<td>22</td>
<td>60</td>
</tr>
<tr>
<td>Besease</td>
<td>1</td>
<td>8</td>
<td>15</td>
<td>26</td>
<td>27</td>
<td>77</td>
</tr>
<tr>
<td>Kisi</td>
<td>2</td>
<td>9</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>43</td>
</tr>
<tr>
<td>Ntranoa</td>
<td>4</td>
<td>10</td>
<td>13</td>
<td>22</td>
<td>10</td>
<td>59</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10(4%)</strong></td>
<td><strong>31(13%)</strong></td>
<td><strong>47(20%)</strong></td>
<td><strong>82(34%)</strong></td>
<td><strong>69(29%)</strong></td>
<td><strong>239(100%)</strong></td>
</tr>
</tbody>
</table>

A total of 239 crop-based farmer households were identified in the crop-based communities. The poor and very poor crop-based farmers numbered 82 and 69 (34% and 29%, respectively) as indicated in Table 3. Analytically, two levels of poverty (poor and very poor) were therefore evident in the target communities. According to Jeffries (1997) and Njeru and Enos (2002), participatory wealth ranking serves a better purpose in determining realistic poverty levels since it depends on active exchange of ideas among key informants in target communities such as in the current study.

**Poverty Lines for the Target Communities**

Using October 2009 Consumer Price Index (CPI) of Central Region released by the Ghana Statistical Service in November 2009 and relationships (a), (b) and (c) the lower poverty line for target communities as at October 2009 was estimated as (New Ghana Cedis) GHS 456.00 and the higher poverty line was also estimated as GHS586.00 for the period in the study area. Poverty line is a measure of the intensity of poverty according to The American Heritage Dictionary (2009), the Poverty lines is the minimum income level below which a person is officially considered to lack adequate subsistence and to be living in poverty. Poverty lines are cut-off points separating the poor from the non-poor. Ghana Statistical Service (2007) defined absolute poverty line as that monetary value of consumption necessary to satisfy minimum subsistence needs. The lower poverty line computed in Ghana by the Ghana Statistical Services was GHS70.00 allowing for non-food requirements. This suggested a higher poverty line of approximately GHS 90.00 per equivalent adult per year in Accra January 1999 prices. Morduch (1998) showed that this line represents roughly $1.00 a day. These lines are used as the overall baseline for determination of future poverty lines in Ghana (Ghana Statistical Service, 2000). The lower poverty line of GHS70.00 is used as an extreme poverty line. People who lie below this poverty line would not be able to meet their calorie requirement even if they spent their entire budget on food (Ghana Statistical Service, 2007).

Further to the initial poverty lines drawn by Ghana Statistical Services (2000), two nutritionally based poverty lines which anchored on calorie requirements were determined. Firstly, a lower poverty line of GHS288.47 per adult per year. This focused on what was needed to meet the nutritional requirements of household members. Individuals whose total expenditure fell below this line were considered to be in extreme poverty, since even if they allocated their entire budget to food, they would not be able to meet their minimum nutritional requirements. This poverty line was the equivalence of GHS70.00 line used in
1990/91 before being inflated with the 1999/2000 Consumer Price Index (CPI). This poverty line was 37.8 percent of mean consumption levels in 2005/2006 (Ghana Statistical Service, 2000). An upper poverty line of GHS370.89 per adult per year was determined in the same year. This incorporated both essential food and non-food consumption. Individuals consuming at levels above this could be considered able to purchase enough food to meet their nutritional requirements and be able to meet their basic non-food needs. This poverty line was equivalent to GHS90.00 used in 1990/91 poverty profile (Ghana Statistical Service, 2000), before being inflated with the 1999/2000 CPI. This line was 48.6 percent of the mean consumption levels in 2005/2006. The poverty lines of GHS70.00 and GHS90.00 were also used in the GLSS Round 5 but inflated with CPI provided by Ghana Statistical Service to January 2006 prices yielding poverty lines of GHS288.47 and GHS370.89. These poverty lines took account of price differentials between different localities. In local prices, the higher poverty line was translated to GHS370.89 Accra, GHS277.32 (Other Urban areas, GHS314.62 (Rural Coastal), GHS303.48 (Rural Forest) and GHS285.01 (Rural Savanna) (Ghana Statistical Services, 2007).

Incidence of Poverty (I) among Fisher-Folk Households
Using relationship (d) and results of the participatory wealth ranking, I of poverty among poor fisher folk households was 35.62 %. Using relationship (d) and results of the participatory wealth ranking, I of poverty among very poor fisher-folk households was 39.04 %.

Incidence of Poverty (I) among Crop-Based Farmer Households
Using relationship (e) and results of the participatory wealth ranking, I of poverty among poor crop–based farmer households was 34.31 %. Using relationship (e) and results of the participatory wealth ranking, I of poverty among very poor crop-based farmer households was 28.87 %. The wealth ranking exercise of this study shows the incidence of the poverty among poor fisher-folk households to be higher than the incidence among the very poor fisher-folk households. Similarly, the incidence among the poor crop-based farmer households was higher than the incidence among the very poor crop-based farmer households. The percentage of fisher-folk households whose incomes fell below the lower poverty line of GHS 456.00 was 35.62 % (about 36 out of every 100 households). Also, the percentage of crop based-farmer households whose incomes fell below the poverty line of GHS 456.00 was 28.87 % (about 29 out of every 100 households. The percentage of fisher-folk households whose income fell below the poverty line of GHS 586.00 was 39.04 %. Moreover, the percentage of crop-based farmer households whose incomes fell below the poverty line of GHS 586.00 was 34.31%. Poverty was therefore found to be more intense among the fisher-folks than among the crop-based farmers in the target communities. Ghana Statistical Service (2007) identified the incidence of poverty as an important index in measuring poverty. This is the proportion of a given population of individuals identified as poor. The higher the computed figure, the greater the need to give greater attention to the poorest. It takes account of the distribution of poverty among the poor; giving greater weight to the poorest of the poor.

Relationship between Poverty line and Socio Economic determinants of Poverty
In order to determine the relationship between poverty line and the socio-economic determinants of the poor, a linear equation of the form \( Y = b_0 + b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5+b_6X_6 \) was assumed. Where:
Y = poverty line;
b_0 = constant;
X_1 = education;
X_2 = health;
X_3 = land ownership;
X_4 = income;
X_5 = number of people in household and
X_6 = number in various occupations.

The initial regression analysis in Table 4 shows that land ownership (X_3) and number of people in household (X_5) were not significant (p>.05) in predicting poverty line (.375 and .125) respectively.

Table 4: Initial Regression Values

<table>
<thead>
<tr>
<th>Factors</th>
<th>Un-standardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
<th>95% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>(Constant)</td>
<td>449.352</td>
<td>28.482</td>
<td></td>
<td>15.777</td>
<td>.000</td>
</tr>
<tr>
<td>Health</td>
<td>-25.823</td>
<td>5.991</td>
<td>-.240</td>
<td>-4.310</td>
<td>.000</td>
</tr>
<tr>
<td>Income</td>
<td>-30.831</td>
<td>4.284</td>
<td>.397</td>
<td>-7.196</td>
<td>.000</td>
</tr>
<tr>
<td>No. in Household</td>
<td>-3.379</td>
<td>2.191</td>
<td>-.083</td>
<td>-1.542</td>
<td>.125</td>
</tr>
<tr>
<td>No.in various</td>
<td>32.195</td>
<td>6.969</td>
<td>.257</td>
<td>4.620</td>
<td>.000</td>
</tr>
<tr>
<td>Occupations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Poverty line. N=200

A non-significant value reduces the strength of the regression model’s ability to predict the outcome variable (Pallant, 2007). A revised regression model was therefore computed eliminating the non-significant variables from the original equation.

Revised Regression Model and Test of Significance of Combined Factors
Table 5 shows the Sig values for the revised regression model. In this case, all four variables (education, health income and occupation) were significant in predicting poverty line in the study (p<.05).
Table 5: Revised Regression Values

<table>
<thead>
<tr>
<th>Factors</th>
<th>Un-standardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig (p)</th>
<th>95% Confidence Interval for B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td>(Constant)</td>
<td>425.682</td>
<td>24.69</td>
<td>17.244</td>
<td>.000</td>
<td>376.9</td>
</tr>
<tr>
<td>Education</td>
<td>-5.918</td>
<td>1.796</td>
<td>-.176</td>
<td>-3.295</td>
<td>.001</td>
</tr>
<tr>
<td>Health</td>
<td>-28.331</td>
<td>5.831</td>
<td>-.263</td>
<td>-4.859</td>
<td>.000</td>
</tr>
<tr>
<td>Income</td>
<td>-30.695</td>
<td>4.283</td>
<td>-.396</td>
<td>-7.166</td>
<td>.000</td>
</tr>
<tr>
<td>No. in various occupations</td>
<td>31.374</td>
<td>6.829</td>
<td>.251</td>
<td>4.595</td>
<td>.000</td>
</tr>
</tbody>
</table>

Dependent Variable: Poverty line.

After eliminating the two non-significant predictors (land ownership and number of people in household), the revised model was of the form:

\[ Y = 425.68 + X_1(-.176) + X_2(-.263) + X_3(-.396) + X_4(.251); \]

\[ Y = \text{poverty line}; \]

\[ b_0 = \text{constant} \]

\[ X_1 = \text{education}; \]

\[ X_2 = \text{health}; \]

\[ X_3 = \text{income}; \]

\[ X_4 = \text{number in various occupations}. \]

The regression equation shows that poverty line decreases with improved educational level. The improvement in education at the household level would lead to a reduction in poverty line. Hanushek and Kimbo (2000) in their study on ‘Schooling, Labour Force Quality and Poverty’, argued that better education can translate into sustained growth which can reduce poverty drastically. The regression equation shows that poverty line would decrease if there is improvement in health delivery. To increase income therefore, the poor should step up the production of their crops and intensify the capture of fish. The sale of more of these products could lead to additional income to improve their well-being and reduce poverty. The regression equation further suggests a reduction in the number of fishing and crop-based farming so as to reduce poverty (i.e. increasing poverty line). Further, the equation suggests that; education, health and income exhibit negative relationship with poverty line; hence, an increase in them may lead to a reduction in poverty. The regression equation also shows a positive relationship with poverty line. Hence, a reduction in the number of people in the various occupations could reduce poverty in the study area. It is noteworthy that WHO, (1999) reiterates that education and health are two major factors that can reduce poverty among deprived communities.

Analysis of Variance (ANOVA) test of statistical significance of the regression model (Table 6) indicates that the regression test between poverty line as dependent variable and education, income, health and occupational levels as independent variables. The result was statistically significant (\( F = 42.85, p<.000 \)). Hence, the null hypothesis of no relationship between the dependent and the independent variables was rejected. The linear combination of the four predictors (income, education, health and occupation) significantly influenced poverty line.
With an F value of 42.85 the sample for the study was considered as truly emerging from the population as shown in Table 6.

Table 6: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>396592.547</td>
<td>4</td>
<td>99148.137</td>
<td>42.851</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>451185.104</td>
<td>195</td>
<td>2313.770</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>847777.652</td>
<td>199</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predictors: Occupation, Education, Health, Income

The regression model summary (Table 7) indicates the coefficient of determination as ($R^2 = .468$). This shows the extent to which the predictor variables (income, education, health and number in various occupations) collectively explain the outcome variable (poverty line). In this study therefore, income, education, health and number in various occupations accounted for about 46.80 percent of the variances in the poverty line.

Table 7: Summary of Regression Model

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.684</td>
<td>.468</td>
<td>.457</td>
<td>48.101</td>
</tr>
</tbody>
</table>

Dependent Variable: Poverty Line

Summary of Findings

Intensity of poverty
Two poverty levels were identified - very poor and poor categories. The incidence of poverty was higher among fisher folks than among crop-based farmer households. Poverty was therefore more intense among the fisher-folk households than among the crop–based farmer households. The lower and higher poverty lines at the time of the study were GHS 456.00 and GHS586.00 respectively. This high intensity of poverty among the fisher folks validates the findings of Rabi-ul-Awar (2006) in Sindh and Balochistan where a large number of fishers were found to be living in abject poverty than their crop-based counterparts. Similarly, Jason (2007) also described local fishermen in Archipelago - Philippines as having lifestyles characterized by higher intensities of poverty than their fellow crop-based farmers.

Relationship between Poverty and Socio Economic Determinants of Poverty
The regression equation shows that poverty line decreases with improved educational level. Thus, an improvement in education at the household level would lead to a reduction in poverty line. Hanushek and Kimbo (2000) in their study on Schooling, Labour Force Quality and Poverty also argued that better education can translate into sustained growth which can reduce poverty drastically. The regression equation further shows that poverty line would decrease if there is improvement in health delivery. Also, a reduction in the number of people in fishing and crop-based farming could reduce poverty in the target communities. With an
increase in education, health and income (which exhibit negative relationship with poverty line as shown by the regression equation); it is possible to reduce poverty. World Health Organization (1999) generally agreed that education and health are two major factors that can reduce poverty among deprived poor communities. In this study, it was observed that income, education, health and occupation collectively explained the outcome variable (poverty line) by accounting for about 46.80% of the variances in poverty line.

Conclusion
The fisher-folk households were found to be poorer than the crop-based farming households. This is depicted by the higher intensity of poverty among the fishers than among the crop-based farming households. Generally, two levels of poverty (poor and very poor) existed in the target communities among the fisher folks and crop-based farming households. There is apparently the need to intensify the implementation of poverty reduction strategies in all the target communities even though much attention is needed among the fishers than among the farming households. Poverty line in the target communities was found to be related to the extent of education among the household members, health status of members of the households, level of income among the households and the number of people engaged in either crop-based farming or fishing in the households.

Recommendations
1) More poverty alleviation interventions such as quick access to credit facilities from banks, skills development and training in the occupations engaged in by the fisher folks and crop-based farming households, should be directed to fisher-folk households in the target communities than among the crop-based farmer households. This could facilitate the alleviation of poverty among the target group.
2) Further, more health facilities should be created in the fishing communities to improve the health status of the fisher-folks. This will improve their health status and thus empower them to work harder, acquire more income and eventually reduce poverty.
3) More of the health facility creation efforts should be directed to the fisher-folks than to the crop-based farming communities.
4) Furthermore, informal and non-formal educational activities in the communities should be directed to communities of both occupations to acquire higher education, empower them to increase production and eventually reduce poverty.
5) Attention should be given to the fishing communities than to the crop-based communities in terms of provision of and distribution of all social amenities as poverty is more intense among the former than the later.
6) The extent of education needs improvement, more health facilities are required, income levels must be raised and the number of household members engaged in the occupations must be increased.

References


