Cocoa-Based Information and Knowledge Acceptability and Rural Poverty in the Eastern Region of Ghana

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Abstract

This study examines cocoa-based information and knowledge acceptability and rural household poverty in East Akim and Atiwa Districts in the Eastern Region of Ghana. Weighted mean score was used to rank the degree of acceptability of the cocoa-based information and knowledge. Foster Greer Thorbecke (FGT) poverty measures were used to access the poverty level of farmers. Cocoa production messages were well disseminated and acceptable to farmers with regards to attributes of practicability, user-friendliness, reliability and relevance. Cocoa marketing information was moderately disseminated whereas messages on cocoa financing as well as ICT were poorly disseminated. The study recommends that information and knowledge packaged for farmers should be realistic, practical and relevant to encourage high adoption to improve the lives of the rural farm families. Government, NGOs and private business organizations should implement programmes which aim at increasing the household income through access to production credit, ease of access to land for increased farm size and timely supply of farm input will go a long way to bail the farm households out of poverty.
Keywords: Cocoa Farmers, Information Acceptability, Rural Poverty, FGT, Eastern Region, Ghana.

Introduction

Cocoa is by far Ghana's most important crop. It dominates the agricultural sector and is a major source of income for approximately 800,000 farmers and many others engaged in trade, transportation, and processing of cocoa. Ghana's cocoa sector has staged an impressive recovery in recent years. Production has reached record highs of nearly 1 million metric tons. The level of socio-economic development in Ghana depends largely on the significant growth and development of the cocoa industry.   According to IFPRI (2008), significant growth and development of cocoa subsector will contribute to achieving the millennium development goal of halving the proportion of the national population living on less than a dollar a day by the year 2015.

Indeed, as the international consultancy firm, MASDAR (1998) noted in their comprehensive survey of the Ghana cocoa industry, it is a result of huge knowledge gaps that accounts for the high   disparities in yield   obtained on Ghana's own research farms (over 1000kg/ha) and on farmers farm. Again it observed that, it is for *social* (and less for economic) reasons that people keep growing cocoa.   Social factors have promoted the expansion of Ghanaian cocoa production, with families exploiting social ties to facilitate migration and geographical expansion of the crop (MASDAR, 1998; Hill, 1963; Okali, 1983). Information helps farmers to assemble all needed facts and thus be in the position to make informed decisions about their farms. Any study that therefore enhances understanding of the social conditions under which cocoa production is organized and how informational needs of both old and new farmers are met through the existing information channels and sources would hopefully be contributing to the perpetuation of the 'golden pod' – as cocoa is referred to in Ghana.

The central theme of this study from the forgoing is the understanding of the concept of information and how it influences farmers' knowledge about the crop, technologies associated with it and subsequent acceptance and practice in raising the income status of farmers in the country.

The outcome of this study would help to define priorities of research and facilitate resource allocation among programs, guide researchers and those involved in technology transfer to have a better understanding of the way new technologies are assimilated and diffused into farming communities, and show evidence that clients benefit from the research products. Furthermore, examining poverty within the cocoa subsector would pave way for the recognition of efforts by policy makers and, if given attention and farmers empowered, would enhance their productivity. This study would provide information on the incidence of poverty amongst farmers in the selected cocoa growing areas. It is believed that information provided will help sharpen policies and programmes aimed at alleviating the level of poverty among cocoa farmers.

2.0 Conceptual Framework and Literature review

2.1 The Concept of Cocoa Based Knowledge and Information System

The farmer is assumed to be an actor in a cocoa-based knowledge and information system (AKIS) which includes researchers, extensionists, input dealers, policy makers, and licensed buying companies. Such a proposition is plausible because the AKIS framework could be used to study a sector of the agricultural economy (Röling and Engel, 1991). But the system credentials could only be revealed after evaluation of the extent to which its components interact to achieve synergy. It is suggested that information and knowledge are important concepts that influence cocoa farmers and their decision-making behaviour. Farmers receive information from various sources which may raise their awareness of developments in the cocoa production system. Awareness may lead to knowledge accumulation which in turn may challenge already held construct concerning technologies associated with cocoa. Farmers' acceptance of innovative practices and information from actors of AKIS, all things being equal, could lead to increased output, productivity and incomes hence poverty reduction. This study used the conceptual framework shown in figure 1.

Fig 1.0   Overview of the study's conceptual framework of AKIS
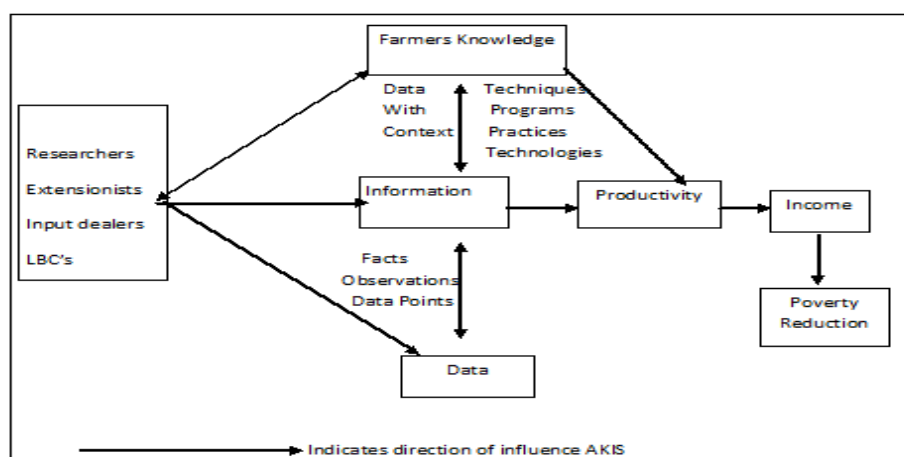
Source: developed by author, 2010-2011

2.2 Literature review

Intensity of Adoption of Technology

Intensity of adoption refers to the number of technologies practiced by the same farmer. The intensity of adoption of different technologies is measured by a variable that represents the breadth of technology use within a particular stage of production. Saha *et al*. (1994) recognized that producers' adoption intensity is conditional on their knowledge of the new technology and on their decision to adopt. They found that larger and more educated operators are likely to adopt more intensively. Abadi Ghadim (2000) conducted a study that comes close to implementing and estimating a complete set of risk impacts related to adoption. Results showed that some determinants of the decision to adopt the innovation are different from those that determine the decision regarding the intensity of adoption. Firms that employ a wide range of advanced technologies - adoption intensity - have mastered a larger skill set and are hypothesized to have shorter adoption lags than those using only one or two technologies (Baldwin and Rafiquzzaman, 1998).

Direct and Indirect Effects of Agricultural Innovation/Knowledge on Poverty

Agricultural innovation can contribute to poverty reduction through both direct and indirect effects. The relative importance of each of these will be largely determined by the speed with which households adopt new technologies relative to others, by the condition of the household as net food buyer or seller, by the degree of market liberalization that conditions whether the particular products is tradable or non-tradable, and by the institutions and incentives facing farmers (Berdegué and Escober, 2001).

According to Berdegué et al. (2001) in the last decades, there have been profound changes in the systems of incentives affecting farmers; market liberalization has become a dominant trend in many developing countries; and urbanization and the growth of the non-farm economies have moved many former agricultural households to a position as net food buyers. Hence, there are large changes in the relative importance of direct and indirect effects of agricultural innovation on poverty, as compared to what was observed during the days of the Green Revolution. Understanding these changes is of fundamental importance in designing public policies that seek to enhance the contribution of agricultural knowledge and information systems to poverty reduction.

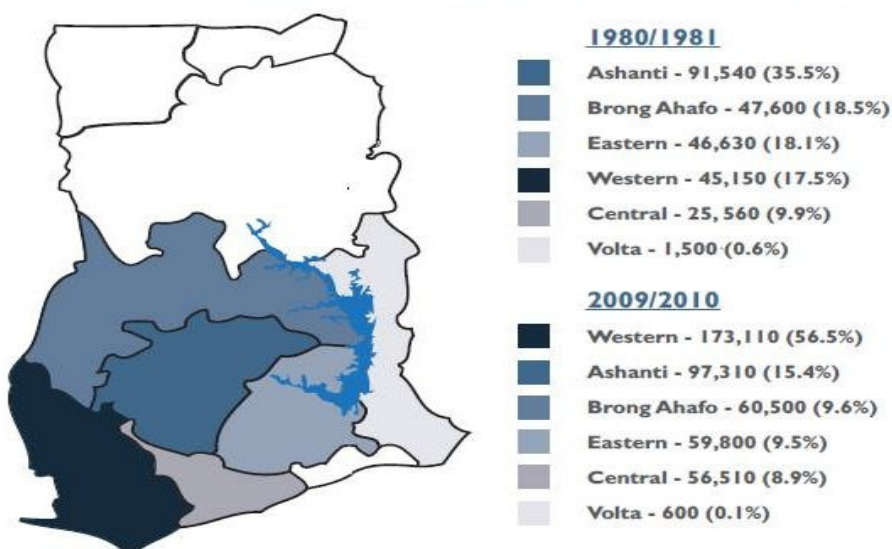**Role of cocoa in household incomes and poverty status**

The national poverty rate in Ghana has fallen from 51.7 in 1991/92 and 39.5 percent in 1998/1999 to 28.5 percent in 2005/2006. Both rural and urban poverty declined by about 10 percentage points, to 10.8 and 39.2 percent, respectively. Poverty among cocoa farmers has also declined significantly, and cocoa growth has been more pro-poor than growth in other sectors. While the poverty rate used to be 60.1 percent among cocoa farmers in 1991/92, it has declined significantly and is now 23.9 percent, or 112,000 cocoa-farming households (Coulombe and Wodon 2007).
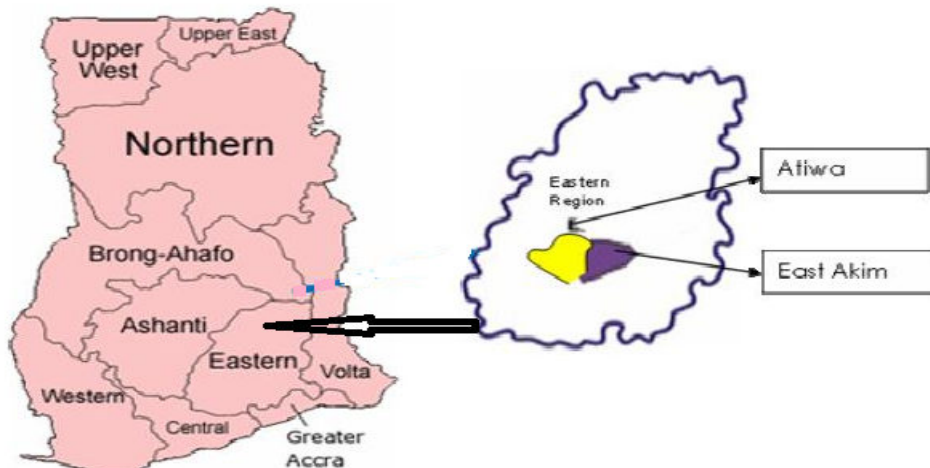
3.0 Methodology

3.1 Study area

The choice of the Eastern Region is purposive; farmers are relatively more accessible to the researcher. Though cocoa in the region has been devastated over the years by the swollen shoot virus disease, it remains critical to national output as it possesses the best soils and environmental conditions for cocoa production (Cocoa Research Institute of Ghana, (CRIG), 1987). The districts of Atiwa and East Akim cocoa production amounted to 9.5% of the regional output during the 2009/10 cocoa season. Despite being the point of introduction of the crop in 1879 (Okali, 1983; Hill, 1963), its relevance as a cocoa production area in Ghana cannot be glossed over as it ranked third and fourth in terms of cocoa production during the 1980/81 and 2009/10 operational year. This is depicted in figure 2.

Figure 2.0: Cocoa production by Region, 1980/81 vs. 2009/10

1980/1981

Ashanti - 91,540 (35.5%)
Brong Ahafo - 47,600 (18.5%)
Eastern - 46,630 (18.1%)
Western - 45,150 (17.5%)
Central - 25,560 (9.9%)
Volta - 1,500 (0.6%)

2009/2010

Western - 173,110 (56.5%)
Ashanti - 97,310 (15.4%)
Brong Ahafo - 60,500 (9.6%)
Eastern - 59,800 (9.5%)
Central - 56,510 (8.9%)
Volta - 600 (0.1%)

Source: COCOBOD (2010)

Figure 3.0: Map of Ghana Showing Atiwa and East Akim Districts in Eastern Region

Source: Baah et al (2003)

3.2 Sampling technique

Primary data was collected by administering questionnaires to cocoa farmers in the Atiwa and East Akim Districts of the Eastern Region. Eastern Region was selected purposively as the study area because extension agents as well as the farmers are relatively more accessible by the researcher. Though cocoa in the region has been devastated over the years by the swollen shoot virus disease, it remains critical to national output as it possesses the best soils and environmental conditions for cocoa production (Cocoa Research Institute of Ghana, (CRIG), 1987). Using simple random sampling, five (5) operational areas were selected from each district   and with the help of the community extension agents   in the area, thirty (30) cocoa farmers were selected at random making a total of 300 farmers as respondents.   The two districts were selected because East Akim is where the Cocoa Research Institute of Ghana (CRIG) is located whiles Atiwa is more closer to (CRIG) than the other districts. There is therefore a high probability that farmers in those districts will get knowledge from researchers to improve upon their cocoa production. Simple random sampling procedure was used due to the homogeneity of farmers. Broadly, all the farmers face the same weather, market and soil conditions. The selected communities in Atiwa district include Anyinam, Abakoase, Kwabeng, Adasawase, and Subrisu. In the East Akim districts, communities selected were Old Tafo, Osiem, Bunso, Apedwa and Ettokrom. The data were collected in two stages. Firstly, farmers were asked to list the cocoa based information, messages they have heard and these were categorized into five main groups. In the second stage, the identified information or messages heard and practiced were presented to the farmers to indicate the degree of acceptability.

3.3 Method of data analysis

3.3.1 Cocoa information disseminated and level of acceptability by farmers

Literature was reviewed and cocoa-based messages were categorized into main groups. Farmers were made to specify which cocoa messages they have heard and how acceptable they find these messages with regards to attributes such as practicability, user friendliness, result-orientation, reliability and relevance of those messages.
  Furthermore, the degree of acceptability of cocoa-based message was weighted. The weight of 0 was given to not acceptable at all, 0.25 for little acceptable, 0.50 for somewhat acceptable, 0.75 for acceptable and 1.00 for extremely acceptable. Analysis of data was carried out using frequencies, percentages and weighted mean score to rank the degree of acceptability of the message by the farmers.

3.3.2 Rural household poverty among farm families

Micro-determinants of Household Expenditure data

The following explains briefly how total household expenditure was computed, based on data collected from the surveys.

Total monthly expenditure consists of nine (9) expenditure components:

1. Food and Beverage, (Consumption expenditure on food item)
2. Alcohol and Tobacco, (Consumption expenditure on non food items)
3. Clothing and Footwear, (Consumption on non food items)
4. Housing and Utility, (Rental value of the dwelling occupied by household)
5. Household goods, transport operation and services,
6. Medical care and health expenses,
7. Transport and communication,
8. Recreation and education,
9. Miscellaneous goods and services

In order to collect information, household representatives were asked to specify the value for their household expenditure on food items and the value of foodstuffs produced and consumed. Expenditure on nonfood items as well as expenditure on health, education and utility expenditure were also collected. In some cases, employees may also receive goods and services from their employer in addition to their wages. Such payments were also considered as expenditure and were added to consumption expenditure.
  Finally, the monthly rental value of housing also makes up a large portion of expenditure and is added to the expenditure of households. Summing up the above consumption expenditures yields a good measure of household welfare. The real total expenditure is then divided by household size to obtain real per capita household expenditure. Input- output data such as cocoa output, cost of inputs, income from outputs; labour input in man days were also collected.

3.3.3 Poverty Analysis

The analysis of poverty was based on P-alpha (Pa) measure proposed by Foster, Greer and Thorbecke (FGT) 1984. The use of FGT class of measure requires the definition of poverty line, which will be calculated on the basis of disaggregated data on expenditure.

4.1. The Foster, Greer and Thorbecke (FGT) technique

There are two broad issues in the measurement of poverty. These are the establishment of a poverty line and the

choice of an index to measure poverty. In addition to the selection of a poverty line, an appropriate poverty measure must reflect three basic elements, namely: the incidence, the intensity/depth and severity. The incidence is measured by the number of people in the total population living below the poverty line, while the poverty intensity/depth is reflected in the extent to which the per capita expenditure of the poor falls below the poverty line. A class of poverty indices that appears to meet the aforementioned requirements in a step-wise fashion is suggested by Foster-Greer and Thorbecke (1984), and endorsed by the World Bank (1993). FGT takes the form:

$$P_{\alpha_t} = \frac{1}{n} \sum_{i=1}^{q} \left[\frac{Z - Y_i}{Z} \right]^{\alpha} \tag{1}$$

Where   z = the poverty line, q = the number of individuals below poverty line. n = the total number of individuals in reference population, Yi = the per capital expenditure of households, and α = the degree of aversion and takes on the values 0, 1, 2.

In this case, Z is the poverty line value and Y_{pi} is the expenditure of the ith poor groups of persons, n is the total population, n* is the proportion of respondents with expenditure below the poverty line and q_i is number of persons in the ith group below the poverty line. The analysis of poverty status using FGT measure of poverty involves the ranking of per capita expenditure in ascending order of magnitude such that $Y_{1i} < Y_{2i} < Y_{qi} < Z_i < Y_{(q+1)i} < \ldots < Y_{ni}$

This class of poverty measure is flexible in two ways. First, n is a policy parameter that can be varied to approximately reflect poverty "aversion"; and second, the P_n class of poverty indexes is sub-group decomposable.

In particular, when n = 0, $P_o = q/n = H$

where H is the head-count ratio, that is, the proportion of total income receiving units below the poverty line. When n = 1 the poverty measure becomes the poverty-gap index (PG)

$$P_n\text{-}^1 = PG = \frac{1}{n} \sum_{i=1}^{q} \left[\frac{Z - Y_i}{Z} \right]^{\alpha} = HI \tag{2}$$

$$\text{Where } I = \frac{1}{q} \sum_{i=1}^{q} \left[\frac{Z - Y_i}{Z} \right] = HI \tag{3}$$

is the income gap ratio. I is the mean of the poverty gaps expressed as a portion of the poverty line. This measure is insensitive to income distribution among the poor hence, to reflect the degree of inequality or severity of poverty among the poor, a greater weight has to be given to the poorest income–earning units and this is achieved by assigning values that are greater than 1 to n.

When n = 2, the squared poverty gap index (SPG) is generated given by

$$P_n\text{-}^2 = SPG = \frac{1}{n} \sum_{i=1}^{q} \left[\frac{Z - Y_i}{Z} \right]^2 \tag{4}$$

3.2.4 Poverty line.

This is a predetermined and well-defined standard of income or value of consumption. In the study, the poverty line was based on the expenditure of the households. A relative approach was used in which a household was defined as poor relative to others in the same society or economy.

Model specification: The poverty line in the area was derived from Mean per Capita Household Expenditure (MCHE) as:

Per capita household expenditure = $\frac{\text{THME}}{\text{HS}}$ (5)

Where: THME = The total household monthly expenditure (x), HS = The household size

The Mean Per Capita Expenditure (MPCE) for all respondents was determined as the ratio of total per capita Expenditure for all households to total number of households as follows:

MPCHE = $\frac{\text{TPCE}}{\text{TNH}}$ where: TPCE = Total per capita expenditure for all households, TNH = Total number of

households

Thus, the category of poverty line was given as**: Extremely poor**: Those spending <1/3 of the poverty line, **Moderately poor**: Those spending between 1/3 and 2/3 of poverty line**, Poor**: Those spending between 2/3 and the poverty line and **Non poor**: those spending above the poverty line.

4.0 Results and Discussion
4.1 Types of Information and Knowledge disseminated to Cocoa Farmers
Table 1 shows the distribution of the types of information disseminated to cocoa farmers by various actors in the cocoa-based AKIS chain. Actors or stakeholders in the chain include researchers, extension workers, informal groups, farmers and other related organizations that matter in cocoa-based information dissemination.

The information is disseminated to the farmers on cocoa production, cocoa marketing, cocoa processing, cocoa financing and cocoa communication and technology (ICT). Majority (98.7%) of the farmers heard information on shade management while 98% heard something on the blackpod disease (*anonom*), capsids (*akate*) and on the control of weeds and mistletoes (*nkranpan*). Farmers (95.7%) commended actors of cocoa-based information for passing messages on the cocoa swollen shoot virus disease (*kookosasabro*). Additionally, 91.7% and 90.7% of the farmers received information on harvesting, fermentation, drying of cocoa and fertilizer application, respectively. About 89.0% of the farmers also received information on the production and distribution of improved planting materials while education on cultivation systems giving priority to human health and environment had the least (82.7%). This implies that messages on cocoa production were well disseminated by the actors of cocoa-based AKIS (extension agents, researchers, input dealers, etc).These messages are being practiced by most of the farmers and they find it acceptable and useful in running their day to day farm work.

Furthermore, about 94.3% of the farmers received information on increase in cocoa producer prices while 76.7% of the farmers know something on government policies (taxation, subsidy, financing) regarding cocoa production. This was followed by 57.7% of the farmers having information on update on prices of farm inputs disseminated to them. This gives an indication that information on cocoa marketing was moderately disseminated. Table 1 also revealed that messages on cocoa financing as well as ICT were poorly disseminated. It is certain that some of the disseminators of cocoa-based information and knowledge do not have the requisite capacity, logistics and even the knowledge in these particular spheres of cocoa-based message. This explains why at the village level, farmers are still cultivating on small scales due partly to lack of credit avenues to expand their farms. This has weakened their innovative-drive and self-confidence.

4.2 Acceptance of Cocoa-Based Information and Knowledge Messages by the Farmers
Data in table 2 show the acceptability of cocoa-based messages by the farmers. Shade management ranked highest with a weighted mean score (WMS) of 92.7. This is closely followed by the blackpod disease and capsids (*Akate*) 91.6, and the control of weeds and mistletoe (parasitic climbing trees). Update on prices of cocoa farm inputs ranked least with a weighed mean score of (43.2). By implication, cocoa farmers find acceptable in terms of the practicability, reliability, user friendliness and relevance of these messages. It further implies that these messages are helping the farmers achieve meaningful result in their cocoa farming activities. The result also showed that farmers were favourably exposed to messages that are on cocoa production.

Even though the other types of cocoa-based messages such as those on cocoa marketing, financing, processing and ICT were disseminated to the farmers, their level of acceptability in terms of the attributes of practicability, reliability, user friendliness and relevance is insignificant in contributing to the welfare of their farming activities, hence the low acceptability by the farmers.

4.3 Poverty Situation of Farmers in the Study Area
The Foster, Greer and Thorbecke model employed in this study for measuring poverty requires the definition of a poverty line. The international poverty line based on the 2009 Human Development Report of US$ 1.25 per day per person is adopted for this study. This translates to GH¢ 57.11 per month at the exchange rate of GH¢1.523 per dollar (the prevailing rate during the period of the survey). Thus, any farm household whose per capita income per month falls below GH¢ 57.11 is considered poor.

The estimated headcount ratio (Po) is 32.0% implying that about 32.0% of the respondents in the study area are poor. Comparing it with the regional poverty incidence of 15% (2005/2006) and the incidence of poverty among rural forest area of about 27.7% (2005/2006), it appears that household poverty among the 300 farmers is higher than the regional poverty trend and locality poverty trend (GSS, 2007). Given the natural poverty line GH¢ 57.11 per month, the poverty gap (P1), which is the mean distance of the income of poor household from the poverty line or how far below the poverty line, the poor lie , was 22.5% for the respondents in the study area. This gives approximately GH¢13 below the poverty line. Intensity or severity of poverty (P2) which is average distance between the poverty line and the individual's income was 18% amongst the cocoa farmers.

Table 3: Consumption measures per month, 2011

MTHME	Mean HH Size	MPCE (household basis)	MPCE(individual basis)
671.73	6.25	123.336	19.86

Source: Calculated from survey data   MTHME = Mean Total Household Monthly Expenditure MPCE = Capital Expenditure

The farmers are further classified into four poverty levels on the basis of their consumption expenditure and related to their acceptance of information disseminated to them. Those whose consumption expenditure fall below one third of the poverty line that is, GH¢ 19.04 are considered "very poor"; those whose consumption expenditure fall between 1/3 and 2/3 of the poverty line (GH¢ 19.04 - GH¢ 38.07) are termed "moderately poor", those whose consumption expenditure fall between 2/3 of the poverty line and the poverty line (GH¢ 38.07 - GH¢ 57.11) are considered as "poor". Those whose consumption expenditure is greater than the poverty line GH¢ 57.11 per month are considered as "non-poor". The result of the classification of poverty based on the level of acceptance of cocoa-based information is presented in Table 4.

  Table 4 shows that majority (67.4%) who have high acceptance level of information are non-poor while 32.6% are poor. This is followed by 52.1% and 40.7% of farmers being non poor for quite high and moderate acceptance of cocoa-based information respectively.

About 83.3% and 96.7% of the farmers who have low and no acceptance level of information respectively are poor. This implies that once farmers accept information, practice and sustain them, it helps them to enhance production, income and reduce their poverty levels. This finding supports the research by McQuail (1983), the World Bank, (2004), and LEISA, (2002) which reports that information and knowledge are essential for farmers to respond successfully to the opportunities and challenges. Furthermore, it corroborates Narayam *et al.*, (2000) work which give evidence that poverty involves not only the lack of the necessities of material well-being but the denial of opportunities for living a tolerable life. Life can be deprived of knowledge and communication, which can rob of dignity, confidence and self-respect of man.

5. Conclusion

The main focus of this work was to examine farmers' knowledge and information acceptability and rural household poverty. Information heard by cocoa farmers was categorized into cocoa production, cocoa marketing, cocoa processing, cocoa financing and on cocoa communication and technology (ICT). Messages on cocoa production were well disseminated by the actors of cocoa-based AKIS (extension agents, researchers, input dealers, etc).These messages are being practiced by most of the farmers and they find it acceptable and useful in running their day to day farm work. Cocoa-based information in the category of cocoa marketing was moderately disseminated whereas messages on cocoa financing as well as ICT were poorly disseminated. It is certain that some of the disseminators of cocoa-based information and knowledge do not have the requisite capacity, logistics and even the knowledge in the latter of the cocoa-based message category. Farmers' inability to look for adequate information on cocoa cultivation using ICT has made them more dependent on extension agents and other stakeholders that matter. This has weakened their innovative-drive and self-confidence. It remains a fact that, ICTs holds a wide scope for effective extension outreach, a particular tool for isolated areas. In this light, it would be appropriate if disseminators of cocoa-based knowledge and information equipped themselves well in the area of ICT to be able to discharge their work well to the benefit of farmers. The result shows that the headcount ratio (Po) is 32.0% implying that about 32.0% of the respondents in the area were poor. This is closer to CIA World Factbook publications (2007) which state that over 28.5% of Ghanaians live below the international income poverty line of US$1.25 per day. Additionally, it is shown in the results that farmers who have high level of information and knowledge acceptance from the actors of the AKIS chain are non poor whiles those with low acceptance show to be poor. This implies that, once farmers accept information, practice and sustain them, it helps them to enhance production, income and reduce their poverty levels.

6. Recommendations

It is recommended that information and knowledge packaged for farmers should be realistic, practical and relevant enough to encourage high adoption which would intend improve the lives of the rural farm families. The provision of cocoa-based messages on cocoa marketing, financing, processing and ICT to the farmers should be intensified in terms of the attributes of practicability, reliability, user friendliness and relevance.

The 32.0% poverty incidence among cocoa farmers in the study area calls for the need to increase the income of the respondents by increasing government support for the cocoa sub-sector in the district through the provision

of more subsidies on major inputs used by the respondents. Poverty alleviation packages for cocoa farmers should also include provision of credit facilities for the respondents. The facilitation of this would be best implemented through the many cooperatives that the farmers belong to.

Additionally, rural nonfarm employment opportunities should be encouraged to enable the households diversify their income bases. This will enable them engage in other income activities to support the income generated. This is because household income has direct bearing on level of wellbeing as well as poverty. Any measure aimed at increasing the household income such as access to production credit, ease of access to land for increased farm size and timely supply of farm input will go a long way to bail the farm households out of poverty.

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Table 1: Distribution of farmers by the information of Cocoa-based messages heard

Message	Frequency	Percentage
Cocoa Production Message		
The Swollen Shoot Virus Disease(Kooko sasabro)	287	95.7
The Blackpod Disease(anonom) and Capsid (Akate)	294	98
Shade Management	296	98.7
Control of weeds and Parasite climbing Trees(nkranpan)	294	98
Production and distribution of improved planting materials	267	89
Fertilizer application	272	90.7
Harvesting, Fermentation and Drying of cocoa	275	91.7
Promotion of cultivation systems giving priority to human health and environment	248	82.7
Cocoa Marketing Message		
Update on cocoa producer prices	287	95.7
Government policies (taxation, subsidy, financing) in regards to cocoa production	230	76.7
Update on prices of cocoa farm inputs	173	57.7
Cocoa Processing Message		
New uses for cocoa and cocoa by-products	163	54.3
The development of a true-value added system in the cocoa chain, to producer to consumer to improve quality for better enumeration for producers	21	7
Cocoa Financing Message		
Source of credit for farmers to expand their farm	40	13.3
Interest on credit and terms for repayment	103	34.3
Cocoa ICT Message		
The use of the internet to access and exchange Information and Knowledge	4	1.3
The use of mobile phones to access and exchange Information and Knowledge	4	1.3
Accessing Information and Knowledge through the Newspapers	18	6
The use of radio in accessing cocoa information	210	70

Source: Compiled from survey data 2010-2011

Table 2: Distribution of farmers by the acceptability of cocoa-based messages

Cocoa-Based Messages	*Weighted Mean Score*
Shade management	92.4
The Blackpod Disease(anonom) and Capsid(Akate)	91.6
Control of weeds and Parasite climbing Trees(nkranpan)	90.1
The Swollen Shoot Virus Disease (Kooko sasabro)	88.8
Update on cocoa producer prices	87.3
Harvesting, fermentation and drying of cocoa	84
Fertilizer application	82.8
Production and distribution of improved planting materials	80.8
Promotion of cultivation systems giving priority to human health and environment	73.2
Government policies (taxation, subsidy, financing) in regards to cocoa production	66
The use of the radio in accessing cocoa-based information	58
Update on prices of cocoa farm inputs	43.2

Source: Compiled from survey data, 2010-2011

Table 4: Cross tabulation showing the distribution of Poverty based on Acceptance of cocoa-based information by the respondents

			Levels of Poverty							
	All		**Extremely Poor**		**Moderately poor**		**Poor**		**Non Poor**	
Levels of Acceptance	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
High	144	48	5	3.47	14	9.72	28	19.44	97	67.36
Quite high Acceptable	48	16	5	10.42	7	14.58	11	22.9	25	52.1
Moderately acceptable	54	18	10	18.52	7	12.96	15	27.78	22	40.74
Low acceptable	24	8	8	33.33	6	25	6	25	4	16.67
Not acceptable	30	10	11	36.67	8	26.67	10	33.33	1	3.33
Total	300	100								

Source: Computed from survey data, 2010-2011   Note: The level of acceptance was based on the weighted mean score. A weighted mean score of 80-100 is considered high acceptance level, 60-80 quite high acceptable, 40-60 moderately acceptable level, 20-40 low acceptable and 0-20 not acceptable level.