FOREST PLANTATION DEVELOPMENT AND POVERTY ALLEVIATION: THE CASE OF SELECTED COMMUNITIES IN THE ASANTE AKIM SOUTH DISTRICT, GHANA

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DECLARATION

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ABSTRACT

The Expanded Plantation Program launched in 2010 is a reforestation and poverty reduction strategy being implemented in forest fringe communities across various districts in Ghana. Under the program, beneficiaries are paid a monthly wage to plant trees and are also allowed to cultivate food crop in between the planted trees. This study evaluates the contribution of the program towards poverty alleviation in the Asante Akim South district in the Ashanti region of Ghana. The study was embedded in the DFID Sustainable Livelihood Framework and presents the viewpoint of 80 beneficiaries which were randomly selected from four communities in the study district and from officials implementing the program. The mixed methods study design was adopted for this study. Semi-structured interviews, questionnaire and participatory observation were the tools used in gathering data whereas with the aid of SPSS and Excel, statistical tools such as linear regression, frequencies and percentages were used in analyzing the quantitative data. Content analysis was used in analyzing the qualitative data. Results from the study established a strong positive correlation between beneficiaries' total monthly income and the monthly income from the program. Using the minimum wage of GHC5.24 (2013), none of the beneficiaries were found to be poor. In addition, an average land size of one (1) ha was transferred to beneficiaries to plant trees and food crops. Food crops were cultivated on an average total land area of 280 Ha between 2010 and 2012. This improved food availability at the household and district level. Access to land for cultivating food crops was identified gsThe most important factor promoting the program while inadequate and delay in payment of monthly wages were also identified as the factors hindering the implementation of-theprogram. The study recommends that the wages paid to beneficiaries should be increased and paid promptly and the program extended over a long period of time as it contributes significantly to the livelihood ofthe poor in the study area.

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Lists of acronyms and abbreviations

MDGs Millennium Development Goals FFCs

Forest Fringe Communities

FAO Food and Agricultural Organization CPF

Collaborative Partnership on Forest ECG

Forestry Commission of Ghana

FRA Global Forest Resources Assessment

IUCN International Union for the Conservation of Nature

NFPDP National Forest Plantation Development Program

MTS Modified Taungya System HIPC Highly

Indebted Poor Countries

GSS Ghana Statistical Service

NDPC National Development Planning Commission

AASD Asante Akim South District DFID Department for

International Development MLF Ministry of Lands and

Forestry

CFMU Collaborative Forest Management Unit

FUG Forest User Group

IFAD International Fund for Agricultural bevelopment

WFP World Food Programme

SLF Sustainable Livelihood Framework

SLA Sßlstainable LivsIil•eæs-Approach

EGD Focus Group Discussion

EGL Ecotech Ghana Limited

CIFOR Center for Internation al Forestry Research

DEDICATION

I dedicate this work to my dear 'Grand mum', Madam Tawiah Larsey for her enormous sacrifices towards my upbringing.

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CHAPTER ONE

BACKGROUND TO THE STUDY

1.1: General Background

Poverty has become a major global developmental challenge and a social canker. It has thus caught the attention of everyone including governments and development partners across the globe culminating into various strategies aimed at alleviating the plight of the poor. In the year 2000, the United Nations Millennium Declaration was embraced by the world's frontrunners at the Millennium Summit of the United Nations. This captured the goals of the international community for the new century and spoke of a world united by common values and striving with renewed determination to achieve peace and decent standards of living for every man, woman and child. Derived from this Millennium Declaration were eight Millennium Development Goals [MDGs] aimed at transforming the face of global development cooperation. The MDGs aim to eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women, reduce child mortality, improve maternal health, combat HIV/AIDS, malaria and other diseases, ensure environmental sustainability, and develop global partnerships for development.

Global poverty measured at the $1.25 a day poverty line has been decreasing since the 1980s. The share of population living on less than $1.25 a day fell almost 10 percentage points from 1980, to 43 percent, in 1990 and then fell about 20 percentage points between 1990 and 2008 (World Bank, 2012). The number of people living in extreme poverty fell from 1.9 billion in 1990 to about 1.3 billion in 2008 (World Bank, 2012). This substantial reduction in extreme poverty over the past quarter century, however, camouflages large regional differences.

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The poverty situation in developing countries has also witnessed sharp decline since 1990. New poverty estimates published by the World Bank (2012) revealed that 1.4 billion people in the developing world (one in four) were living on less than US$ 1.25 a day in 2005, down from 1.9 billion (one in two) in 1981. Poverty in developing countries, though declining, is still endemic in rural areas where majority of the people have low and irregular incomes, poor health conditions and low educational level among others. To eradicate extreme poverty and hunger at the regional level various approaches have thus been adopted over the years including the basic needs approach, the human development approach, sustainable livelihood approach, women empowerment approach, and welfare approach inter alia.

Forests are crucial for the sustenance and existence of life on earth especially for the rural poor in forest fringe communities [FFCs]. One out of four of the world's poor depend directly or indirectly on forests for their livelihood (World Bank, 2000). Forests provide particular benefits to an estimated 1.6 billion people of the most disadvantaged rural and dry lands populations (World Bank, 2003, Collaborative Partnership on Forest [CPF], 2012).

According to the World Bank (2004), forests provide direct support to 90 percent of the world's 1.2 billion poorest people and to nearly half of the 2.8 billion people who live on US$2 or less per day. The value of direct benefits to the poor from forests is estimated at $ 130 billion per year and the global value of the environmental services provided by forests is still unknown butån the>ge-o$-trillions of dollars, plus additional value that is added downstream (CPF, 2012). Moreover, Forestry provides more than 10 million real jobs in developing countries (Poschen, 2002).

Notwithstanding the benefits of forest and forestry to the livelihoods of the poor, the high rate of deforestation is a major concern affecting the benefits derived from forest. The rate of deforestation and loss of forest from natural causes, though reducing in recent times, remain ominous. Globally, around 13 million hectares of forests were converted to other uses or lost through natural causes each year between 2000 and 2010 (FAO, 201 Oa).

Ghana's forest cover which was approximately 8.2 million hectares by the turn of the 18th century has also reduced considerably to about 1.2 million hectares (Forestry Commission of Ghana [FCG], 2012a). This situation has been attributed to the rapid rate ofdeforestation estimated to be about 65,000 hectares annually (FCG, 2012a). Recent report by the FAO (2010b) estimates Ghana's deforestation rate to be 135,395 hectares per annum which makes the situation a threatening one. In addressing the alarming rate of deforestation, significant progress has been made in developing forest policies, laws, and national forest programs all over the globe. According to (FAO, 2010a), in their Global Forest Resources Assessment [FRA] Report, some 76 countries have issued or updated their forest policy statements since 2000, whiles 69 countries — primarily in Europe and Africa are also reported to have enacted or amended their current forest laws since 2005.

Sungsuwan-Patanavaniah (1992) concluded that any attempt to halt deforestation and to accelerate reforestation must deal with poverty first or at the very least, concurrently. However, most of the forest policies enacted over the years have until recently focused mainly on forest preservati»nd-censervation overlooking the important role forest play in alleviating poverty.

Forests and forestry play an important role in alleviating poverty worldwide in two senses. First, they serve a vital safety net function, helping rural people avoid poverty, or helping

those who are poor to mitigate their plight. Second, forests have untapped potential to actually lift some rural people out of poverty (Sunderlin et al, 2004).

According to Marfo (2000), forest degradation and rural poverty can be attributed to Ghana's forest policy, with particular reference to ownership and management of forests estates. Secure tenure and access rights as well as good governance are often prerequisites to successful interventions to reduce poverty. Over the years policies aimed at managing and conserving forest and tree resources in Ghana marginalized the local people in FFCs. Forests were solely managed by the government in trust for the people. This empowered government and alienated rural farmers from their forestlands, which consequently exacerbated rural poverty (Marfo, 2000).

Reforestation which refers to the establishment of artificial forest involving replacement of tree crops by a new and different tree crops (International Union for the Conservation of Nature [IUCNI, 1996) has in recent times gained much attention as a remedial measure for recovering degraded forest and providing livelihood opportunities in FFCs. Besides, the opportunity to trade carbon sequestered in trees has also led to an upsurge in reforestation efforts particularly the establishment of forest plantation in developing countries including Ghana. The process of establishing forest plantation provides direct and indirect employment oþportunitie¥gpoorinFFCs. This leads to the generation of income for beneficiaries.

Additionally the opportunity to grow food crops in between the trees until their maturity contributes to household food security of beneficiaries engaged in the establishment of forest plantation.

The sale of food crops also add to the income stream of beneficiaries resulting in increased income and the ability to access basic needs including food, shelter and clothing. Increased

income can also results in improved health conditions of beneficiary households and increase the ease to access educational facilities thereby improving the general wellbeing of beneficiary households.

Given the important role forest and forestry play in alleviating the plight of the people in FFCs, forestry policies, programs and legislation are becoming more closely associated to broader goals. In 2001 , the National Forest Plantation Development Program was launched by the Government of Ghana aimed at encouraging the development of a sustainable forest resource base that would satisfy future demand for industrial timber and enhance environmental quality. The NFPDP also had the objective of generating employment as a means for poverty reduction (FCG, 2008). The NFPDP is currently being implemented under three main strategies and five components. These strategies includes, the Modified Taungya System (MTS) which involved the establishment of plantations by the Forest Service Division (FSD) in partnership with farmers; the second strategy utilizes hired labour and contract supervisors to establish industrial plantations; the third strategy involves the re degr>foxesereserve lands by the Forest Commission to private entities after vetting and endorsing their reforestation and business plan.

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The five components NFPDP include the Naturally Nurtured Tree Plantation, the Private Tree Plantation, the Commercial Plantations, the Highly Indebted Poor Countries (HIPC) Plantations and Modified Taungya System.

In 2010, the NFPDP was re-launched as the Expanded Plantation Program [EPP] to expand the coverage of the program to cover the establishment and maintenance of plantations outside Forest Reserves on private lands. In addition, the objective under the EPP was expanded to include positioning the program to secure carbon credits and payment for environmental services (FCG, 2011). Specifically the objectives ofthe EPP are: to generate employment as a means to reduce poverty; to restore the degraded forest cover of Ghana; to improve environmental quality and provide an avenue for the country to tap into the emerging benefits from the climate change markets for carbon sequestration and payment for ecosystem services; to reduce wood deficits situation in the country and to increase the production of food crops and thereby contribute to food security.

1.2: Problem Statement

The overall poverty rate of Ghana has declined significantly from a high rate of 51.7% in 1991/92 to 28.5% in 2005/06. Similarly, the proportion of the population living below the extreme poverty line declined from 36.5% to 18.2% over the same period against the 2015 target of 19% (Ghana Statistical Service [GSS], 2008). This makes Ghana the first country in Sub-Saharan Africa to have achieved the target of halving the proportion of population in extreme poverty well ahead of the target date (MDG Report, 2013, National Development Planning Commission [NDPC] et al, 2010). Regardless of this substantial

of the
decline in poverty at the national level, poverty is still pervasive in rural Ghana including the FFCs in the Asante Akim South District [AASD].

Approximately, 86 per cent poor in Ghana reside in rural area with food crop farmers been the poorest (GSS, 2008).

Agriculture is the major employment avenue in the AASD accounting for 75% of the total labour force in the district (AASD, 2010). Majority of the people in the AASD are peasant farmers growing food and cash crops with limited opportunities to engage in other viable employment opportunities. The seasonality of agriculture in the district does not ensure consistent and regular source of income for the local people in the AASD. There is also difficulty in acquiring land for farming purposes (AASD, 2010). The recent erratic weather patterns resulting in low crop productivity exacerbate the low income situation of the local people in the AASD. The low income situation coupled with limited basic community services like education, water supply, sanitation, health facilities, good roads and opportunities for personal advancement make poverty manifest itself district-wide in the AASD (AASD, 2010). In view of this, most households in the district can neither send their children to school nor access the limited amenities available. Excessive deforestation and bush burning are also among the problems confronting the AASD (AASD, 2010).

Given the high rate of deforestation coupled with the low income of the local people in Ghana' s high forest zones including the AASD, the NFPDP was launched in 2001. In 2010, the EPP was launched which saw the introduction of the private sector in the development of forest plantation. The focus of the EPP changed from the Modified Taungya System [MTS] wherefarmers engaged-ia-theTrogram were entitled to a 40%

of the share on the maturity of the planted forest to the system where farmers are paid a monthly wage based on work done with no future share in the planted forest under the EPP. Beneficiaries of the EPP are also permitted to cultivate food crops in between the planted trees till their maturity.

The coverage program was also expanded to cover the establishment and maintenance of plantations outside Forest Reserves on private lands.

Studies have been conducted on the MTS and its contribution to sustainable livelihoods and poverty reduction (See Adjei and Eshun, 2013, Ledger 2009). There are however, no studies on the EPP and its contribution to sustainable livelihood development and poverty reduction. Moreover, after three years of implementing the EPP, its capacity to contribute to sustainable livelihood and poverty reduction among households in FFCs calls for monitoring and evaluation. This study was therefore conducted to fill this gap in knowledge and to contribute to knowledge. The concern of this study was therefore to evaluate the EPP as a strategy to generate employment as a means of poverty reduction and to increase food crop production to contribute to household food security. The study seeks to find answers to the following key questions; what are the contributions of the program to the income of beneficiaries? How does the program contribute to the living conditions of beneficiaries? How does the program contribute to household food security in the district? How sustainable is the program and the gains made by beneficiaries? What are the factors affecting the implementation of the program?

1.3: Objectives

The general objective of this study was to evaluate the EPP as a strategy for poverty alleviation in selected communities in the Asante Akim South District.

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The specifiç_objectives wey_g-io-;———

1. examine the contribution of the program to the income of beneficiaries in the selected communities within the AASD

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2. examine the contribution of the program to the living conditions of beneficiaries in the selected communities within the AASD
3. examine the contribution of the program to household food security in the selected communities within the AASD
4. examine the sustainability of the program and the gains made by beneficiaries in the selected communities within the AASD
5. assess the factors that affect the implementation of the program in the selected communities within the AASD

1.4: Hypothesis/Proposition

This study was guided by the following hypothesis/propositions

1.41 Hypothesis

Ho: there is no statistically significant relationship between the monthly income derived from the program and the total income of beneficiaries

HI : there is statistically significant relationship between the monthly income derived from the program and the total income of beneficiaries

1.4.2 Propositions

1. The program contributes to household food security
2. The program as a strategy for reducing pòverty is not sustainable.

1.5: Justification of the Study

Conceptually_this study brA1gs4e--the-fore an in-depth understanding of the relationship between forest plantation development and poverty alleviation in Ghana and the world at large. Forest plantation development has gained much attention recently given the high rate of deforestation and its consequent effects at the regional and global level.

More so, the carbon market aimed at fighting global climate change has also boosted forest plantation development. The effects of deforestation and the opportunity to earn carbon credit from carbon sequestered in trees have encouraged forest plantation development globally but more especially in developing countries including Ghana where there is high rate of deforestation. Much is however not known on how the growing trends in forest plantation development affects the poor in FFC where most of the forest plantations are cultivated. This study therefore provides more insight and bring to the fore the relationship that exist between forest plantation development and poverty alleviation.

At the international level, this study will enable governments, non-governmental organizations and development partners including the World Bank, FAO, Department for International Development [DFID] etc. and other stakeholders in the forestry sector make informed decisions in the formulation and implementation of forestry policies to alleviate poverty.

At the national level the information gathered through this study will enable the Forestry Commission, other forestry stakeholders and the government of Ghana at large to address the challenges hindering the implementation of the forest plantation development program as a strategy to create employment for rural povèrty reduction and to increase food crop production to contribute to household food security.

At the grass rooflevel, this study will enable the voice of the poor in FFCs to be heard. The poor will be given the opportunity to describe their state of wellbeing and factors that affect their livelihood and income and how the program has assisted them in meeting their needs, improving their income and general wellbeing.

Furthermore, this study will add to the existing knowledge on the contributions of national forestry program on the livelihoods of the rural poor in FFCs and provide the empirical foundation for further research.

1.6: Organization of Study

For analytical purposes and easy understanding of issues raised, the study was divided into five chapters. Each chapter focused on a series of themes. Chapter one is the introductory part of the research. It provides information on the main theme of the study which highlights on the statement of the problem, objectives, hypothesis/propositions, and significance and relevance ofthe study. Chapter two looks at the review of related literature and the theoretical framework that guides the study. Major contributions made by researchers on forest governance and concept of poverty and the nexus between them were reviewed in this chapter. The DFID Sustainable Livelihood Framework was also adapted as the framework within which this study was embedded. Chapter three looks at the methodology of the study. The study area as well as the methods used in undertaking the study was clearly defined in this chapter. Chapter four presents the analysis and presentation of the findings of the study. The findings were presented based on the objectives of the specific objectives of the study. The last chapter presents the summary of the entire study. The conclusions and recommendations of the study were also presented in this chapter.

CHAPTER TWO

LITERATURE REVIEW

2.1: Introduction

The purpose of this chapter is to place the research in an intellectual perspective by reviewing the major contributions made by researchers on forest governance and concept

of poverty and the nexus between them. It reveals the various ideas and opinions communicated through research on the concept of poverty and forestry over the years. These ideas were reviewed and presented in three main sections. The first major section considers the broad concept of forest governance. The second section concentrates on the concept, definitions and measurements of poverty. Furthermore a review of the poverty trends in Ghana in the last decade was also undertaken. Finally, the third section focuses on the nexus that exist between forestry and poverty alleviation.

2.2: Forest Governance

The concept of governance, and particularly good governance, has become an important factor in international development discourse since the late 1980s, including discourse regarding forests (Larson and Petkova, 2011). Governance has a variety of meanings, and what is 'good' is susceptible to wide interpretation. In some definitions, governance refers primarily to government; in others, to relations bètween the state and society (Larson and Petkova, 2011). According to the World Bank (2006), governance is 'the traditions and institutions by which authority in a country is exercised'; legality, legitimacy and participation are key attribytss-of-the--rules and processes associated with governance. Larson and Petkova (2011) also defines governance to be "who makes decisions and how decisions are made, from national to local scale, including formal and informal institutions and rules, power relations and practices of decision making".

Forest governance is hence a comprehensive term that can from time to time be used to mean different concepts. It may be understood as the ways in which officials and institutions (both formal and informal) acquire and exercise authority in managing the resources to sustain and improve their economic productivity, environmental values and

the welfare and quality of life for those whose livelihoods depend on the sector (ContrerasHermosilla, 2011).

The Center for International Forestry Research (CIFOR, 2012) defines forest governance as the way in which decisions about forests are made, who is responsible, how the power is distributed and how they are held accountable. It covers forest-related decision-making processes and institutions, at local, regional, national and international levels. This definition brings to the fore the concept of "accountability" which is very vital in governance. Forest governance arrangements determine how the central questions regarding forests, livelihoods and sustainability have been answered to date. These questions include which forests should be used for what and by whom, and what strategies will be adopted, if any, to stop or slow deforestation and forest degradation and to enhance carbon stocks. Good governance of forest therefore implies effective government institutions and an enabling framework for the main actors in this process to operate in harmony, in order to achieve economic efficiency, social equity, improved environmental quality and more sustainable forest management (FAO, 2001).

The history offorest management-in-Ghana dates back to 1906 when legislations were enacted to control the felling of commercial tree species and the adoption of the first Forest Policy in 1948.

This wide range of forest policies have impacted on forest resources and have guided the creation of permanent forest estates, protection of water supplies and maintenance of favourable conditions for agricultural crops (Ministry of Lands and Forestry [MLF] 1994). Until 1994 when the Forest and Wildlife Policy was enacted, forest policies and legislations enacted in Ghana neglected the important role of FFCs in ensuring sustainable forest management (Ahenkan and Boon, 2010). According to Asante (2005), the central

concern of these policies were not the sake ofindigenous communities, but to preserve the economic benefits from timber that forests brought, as well as to reconcile the competing land and forest demands of farmers and loggers. This strengthened the forestry departments [FL)] at the expense of the local FFCs.

Marfo (2000) admitted this, by commenting that the role of FD was strengthened over the years eventually cutting out local involvement in forest management. The poor in FFCs did not benefit from the forest as all forest lands were vested and controlled by the government on behalf of the people. The 1994 policy focused on the involvement of all stakeholders for efficient management of the forest resources. The FD created the Collaborative Forest Management Unit (CFMU) to develop the potential for local people' s involvement in every aspect of integrated high forest management including timber production, environmental protection and bio-diversity conservation, provision of a fair share of revenue from the forests to stakeholders and access to Non Timber Forest Products [NTFP's] for domestic use on a sustainable basis. The policy shifts interest by moving forest control from government to private-sector ____ncerns—and co require FD to give greater opportunities to indigenous populations (IUCN, 1996).

Subsequent forest policies and legislation including the NFPDP have taken into consideration the participation of FFCs especially the poor in sustainable forest management. This can be attributed to the growing call for participation of the poor in all sectors of the economy and in matters that relates to their wellbeing.

2.3: Definition and Measurements of Poverty

2.3.1 Concept and Definitions ofPoverty

Conceptually distinctions have been made between Absolute and Relative definitions of poverty although in practice most approaches involve a mixture of the two. Absolute poverty is sometimes claimed to be an objective, even a scientific definition of poverty. It is based on the notion of subsistence. Subsistence is the minimum needed to sustain life, and so being below subsistence is to be experiencing absolute poverty because one does not have enough to live on (Alcock, 2006).

According to a UN declaration that resulted from the World Summit on Social Development in Copenhagen in 1995, Absolute poverty is "a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to services. Gordon (2008), further dèfines absolute poverty as the absence of any two of the following eight basic needs; food, safe drinking water, sanitation facilities, health, shelter, education and information.

Absolute poverty is contrasted with relative poverty which is considered as a more subjective or social standard in that it explicitly recognizes that some element ofjudgment is involved in determining poverty levels.

is required because a relaive of is oa a comparison between the standard of of people who ze po« and the standard of livit8 of othermembers of society who •e usully involving some measure of the standard of the of s•xiety in which poverty is t*ing studied (Alcoa. 2006). Relative poverty is concepanlized as &pnvation of ecommic that ue rquired for dignified participation in (Reitsma-Street and Townsend, 1996:106).which is, in turn. for only physical well-being but also

psychological and social w•being (Labonte, 1993; Wilkinson, 1996; and Kennedy, 1997). According to such definitions. the degree of deprivation that prevents from dignified gnrticipation in society is determined in relation to societal norms. As deprivation of economic increases, the less able are to participate in in a manner that is consistent with x»cietal norms. Relative definitions assume that poverty is intrinsically tied to unequal distribution of income, or income inequality (Ross et al, 1994). Rising rates of relative poverty mean that increasing proportions of people are unable to engage in and feel part of life in their communities (Wilkinson, 1996). In summary, relative rxwerty is related to both material and social deprivation.

In recent times, the complex or the participatory approach which takes into account the multidimensional nature of poverty has been ädopted in defining poverty. With this complex approach. the poor themselves are engaged in the definition ofpoverty. According to a man from Adaboya. Ghana. "Poverty is like heat: you cannot see it, you only feel it: so to ktxyw you have to go through it (World Bank. 1999 cited in World Bank 2000). Orshansky, an outstanding authority in the field of poverty also commented that "poverty. like beauty, lies in the eye of the be-holder" (Orshansky, 1969).

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Poverty is a relative concept and defies a single definition therefore a range of definitions exist, influenced by different disciplinary approaches and ideologies. Before 1970 poverty was largely defined in economic terms as a lack of income or gross national product per capital. The concept of basic needs (including access to certain consumer goods as well as to collective goods (such as education and health services), and broader element of well — being also evolved in the 1970s. This approach of defining poverty was partially

abandoned and a more general interpretation of well-being gained ground in the 1980's. During these period people's ability to perform various functions and to develop and deploy their capabilities was considered to be a critical dimension of poverty. It was also recognized that poverty is a relative concept that is intimately connected with political, moral and cultural values in a given society.

In the 1990s poverty and the processes that leads to poverty were conceived as multi—dimensional (economic, political, social, ecological, cultural) and highly context — specific.

The poor are no longer considered to be a homogenous group (Ashley and Carney (1999). The multi-dimensional approach to defining poverty still exists till date. Robert Chambers defined poverty as lack of physical necessities, assets and income. To him poverty includes, but is more than, being income-poor and can be distinguished from other dimensions of deprivation such as physical weakness, isolation, vulnerability and powerlessness with which it interacts (Chambers, 1983).

Moreover, the AWrld Bank*s-Poverty as a pronounced deprivation of well-being related to lack of material income or consumption, low levels of education and health, vulnerability and exposure to risk, and voicelessness and powerlessness" (World Bank, 2001).

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This to the view that is indeed multidinxnsional. Adjei et al. (2011) oa the other hu•d. considers poverty based on meats ıpproach as bi-dimcnsioaaL nxy consida income dimension on he one handand the knowledge dimension on other huø; whereas the effects of poverty are rather multi-dimensional including social exclusion. poor nutrition, poor health, lack of rx•table water, lack of decision making powers etc. They thus defined poverty to mean the lack of basic means for attaining the social, environmental, cultural, economic and political needs and wants of life (Adjei et al

2011).

23.2: Measurement of Poverty

Poverty is defined to enable researches and policies makers measure its extent within and across societies to ensure attention is focused on developing policies to ameliorate it where it is widespread. This however has resulted in various definitions of poverty and thus difficulties and disagreement in measuring poverty. Expenditure (consumption) and incomes has been identified as measures of poverty however in recent times non-monetary indicators such as level of education, health conditions inter alia have also been used as measures of poverty.

Maxwell (1999) points out that objective income or consumption measures of poverty depicts the extent of poverty at national level andcan be aggregated internationally. For analysis and detailed planning, however, more qualitative measures and participatory approached will the most appropriate. According to Coudouel et al (2002), the poverty measure itself is a statistical function translates the comparison of the indicator of household well-being and the chosen poverty line into one aggregate number for the popuúion as a whole or a population subgroup.

There are three common measures of poverty. These include the incidence of poverty (headcount index), the poverty gap and squared poverty gap. The incidence of poverty

(headcount index) is the share of the population whose income or consumption is below the poverty line, that is, the share of the population that cannot afford to buy a basic basket of goods. An analyst using several poverty lines, say, one for poverty and one for extreme poverty, can estimate the incidence of both poverty and extreme poverty. Similarly, for nonmonetary indicators the incidence of poverty measures the share of the population that does not reach the defined threshold (for instance, the percentage of the population with less than three years of education). The headcount index is by far, the most widely used measure of poverty because it is simple to construct and easy to understand. Some weaknesses have however been identified with it. Firstly, the headcount index does not take the intensity of poverty into account. Secondly, it does not indicate how poor the poor are, and hence does not change if people below the poverty line become poorer.

The depth of poverty (poverty gap) provides information regarding how far off households are from the poverty line. This measure captures the mean aggregate income or consumption shortfall relative to the poverty line across the whole population. It is obtained by adding up all the shortfalls of the poor (assuming that the non - poor have a shortfall of zero) and dividing the total by the population. In other words, it estimates the total resources needed to bring all the poor to the level of the poverty line (divided by the number of individuals in the population). This measure can also be used for nonmonetary indicators, provided that tbggneasure of>d.istanee is meaningful.

The poverty severity (squared poverty gap) on the other hand takes into account not only the distance separating the poor from the poverty line (the poverty gap), but also the inequality among the poor. That is, a higher weight is placed on those households further away from the poverty line. As for the poverty gap measure, limitations apply for some of the non-monetary indicators.

23.3: Poverty trends in Ghana in the Last Decade

In defining and measuring poverty, two distinctions are made between two poverty lines, the upper and lower poverty lines. The lower poverty line is the level of income needed to meet the basic nutritional needs of household therefore individuals whose income fall below this line are considered extremely poor. It is assumed that individuals whose standard of living falls below the lower poverty line would not be able to meet the calorie requirements even if they spent their entire income on food. On the other hand, individuals whose incomes are above the upper poverty line can be considered to be able to meet their nutritional requirements and as well satisfy their basic non-food needs.

Poverty in Ghana is not evenly distributed across the country. The poverty trend of Ghana has experience significant changes over the past three decades. The overall poverty rate of Ghana has declined significantly from a high rate of 51.7 per cent in 1991/92 to 28.5 per cent in 2005/06. Similarly, the proportion of the population living below the extreme poverty line declined from 36.5% to 18.2% over the same period against the 2015 target of 19% (GSS, 2008). This makes Ghana the first country in Sub-Saharan Africa to have achieved the target of halvir¥_the-pçeportion of population in extreme poverty well ahead of the target date (NDPC et al, 2010:9).

Even though there has been significant decline in poverty at the national level, regional, occupational and gender disparities exist with poverty still endemic at the rural areas. Approximately, 86 per cent of the poor reside in rural areas (GSS, 2008).

Geographically, the three northern regions of Ghana record the highest rate of poverty situation in Ghana harbouring an estimated 85 per cent. Rural poverty is particularly widespread in the dry savannah region that covers roughly two thirds of Ghana's northern territory. Unlike the south, where there are two seasons for growing food crops, the

northern plains are drought-prone and people have fewer economic opportunities. While Ghana's overall poverty rate has declined, the three regions in the north have only seen marginal decreases. Poverty rates in these regions tend to be two to three times the national average, and chronic food insecurity remains a critical challenge (International Fund for Agricultural Development [IFAD], 2013). The poverty trend of Ghana like most countries shows that poverty has a woman face, that is, most of the poor in Ghana are women (GSS, 2008). This may be attributed to a number of reasons including the fact that women are in the majority in terms of Ghana's population. Also, women especially in the northern part of Ghana where poverty prevalence is high, are marginalized and restricted from holding assets particularly land. This however is changing with the recent increase in women empowerment and educational activities by NGOs' in the north (Kyei, 2008).

2.4: Contribution of Forest to Poverty Alleviation

Over the past few years there has been a growing interest in the role that forests play in supporting the poor, in reducing their vulnerability to economic and environmental shocks, and in reducing poverty itself.

FAO (2003) emphasize that forest can help in important ways to reduce food insecurity, alleviate poverty , improve the sustainability of agricultural production and enhance the environment in which many impoverished rural people live all over the developing world. Forests have an important role to play in alleviating poverty worldwide in two senses. First, they serve a vital safety net function, helping rural people avoid poverty, or helping those who are poor to mitigate their plight. Second, forests have untapped potential to actually lift some rural people out of poverty (Sunderlin et al, 2004). According to Dubois (2002), forest contributes to poverty alleviation through three main channels namely the

securing of subsistence needs, increasing of income and better access to capital assets / more bargaining power for the poor.

According to Warner (2000 cited in Dubois, 2002), the role of forest in increasing the income of the rural poor comes in various forms including the following: through employment in formal forest industries, and more importantly, in small informal forestrelated businesses; as a complement to other sources of income (mainly farm income), and for several forest products, often a part-time basis and along seasonal patterns; indirectly, as a source of inputs for non-forest income-generating products (e.g. source of fertility for agricultural products or fodder for livestock).

In contrast to the views of forest contributing to the alleviation of poverty, Sayer (2005) argues that "forests are indeed important for the poor people but forest based activities do not often provi@ethe shortest'_ÿl.l.te-eut-of poverty". Wunder (2001) also added that "forest may sustain poor people and help them survive but degrading and converting forests may also be an important but not always 'unsustainable 'pathway out of their poverty".

He further added that there may be fewer 'win-win' synergies between national forest conservation and poverty alleviation. Differentiating poverty at two different levels, that is macro and micro level, he argued that, at the micro level of forested areas, reduced poverty can cause either more or less deforestation whiles at the macro level, less poverty also has an ambiguous effect on forest, but in the initial stages ofthe forest transition, higher income is likely to fuel crop-land demand and forest conversion. For the reverse causality, the potential for forest tends to be limited. He concluded that in most settings, natural forest tends to have little comparative advantage for poverty, especially compared to their great

land-use competitor, agriculture. In cases where people are prevented from diversification, forest products actually turn from 'safety nets' into poverty traps (Browder, 1992, Newmann and Hirsch, 2000 cited in Wunder (2001)). In discussing the policy implications of his work, Wunder (2001) acknowledge that in "some cases, forest can definitely alleviate poverty for specific groups and regions at the subnational level, implying that the scale of analysis is also quite important". He further mentioned that historical cases from the northern hemisphere (Canada, Sweden, and Finland) suggest that forestry-led poverty reduction is possible.

2.5: Household Food Security

The World Food Summit (1996) defined food secùrity as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life". Ghana's Ministry of Food and Agriculture defines food security as good, quality nutritious food, hygienicayypackaged a»ailr.actively presented, available in sufficient quantities all year round and located at the appropriate places at affordable prices.

Universally, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences. Food security is therefore built on three pillars:

- Food availability: sufficient quantities of food available on a consistent basis.
- Food access: having sufficient resources to obtain appropriate foods for a nutritious diet.
- Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation

Households are food secure when they have year-round access to the amount and variety of safe foods their members need to lead active and healthy lives. At the household level, food security refers to the ability of the household to secure, either from its own production or through purchases, adequate food for meeting the dietary needs of all members of the household (FAO, 201 Oc).

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About 1.2 million people, representing 5 percent of Ghana's population, are food insecure. Thirty four percent (34%) of the population are in Upper West region, followed by Upper East with 15% and Northern region with 10%, amounting to approximately 453 ,000 people

(World Food Program [WFP], 2009).

2.6: Program Sustainability

The term sustainability has been variously defined by different institutions and development scholar§] The JEAĐ-Stratëgic Framework 2007-2010 (IFAD, 2007) defined sustainability as ensuring that the institutions supported through projects and the benefits realized are maintained and continue after the end of the project. IFAD's Office of Evaluation adds to this definition by considering resource flows.

It acknowledges that assessment of sustainability entails determining "whether the results of the project will be sustained in the medium or even longer term without continued external assistance". It further expands on the concept of program sustainability by distinguishing among several factors that either contribute to or detract from the long-term impact of IFAD interventions (IFAD, 2006 cited in TANGO International, 2009). Among project participants, the understanding of sustainability is most often centered on the continuation of production gains and increased income streams (TANGO International, 2008a). Alternatively, government counterparts defined sustainability as sustained funding

and government takeover of the services provided by supported projects, as well as a continued flow of capital and credit into rural areas (TANGO International, 2008b).

Thomas and Thomas (1999) also defined sustainability as the ability of the system to perpetuate itself using locally appropriate strategies (mission), which are predetermined by the governance of the system, who would like to see the system continue until its goals (vision) are fulfilled. To them sustainability is a long-term concept, which addresses the citizens' central concerns and values, looking into the future, and strengthening a community's ability to deal with change.

In addition , sustainability develops processes for finding common ground, striving to benefit all members of the community, emphasizing citizen involvement, improving accountability, developing a vision for the future, keeping track of the progress, and meeting the basic resource eggdsr—-———

TANGO International (2009), identified four main dimensions of sustainability. These include:

1. Institutional sustainability: where functional institutions will be self-sustaining after the project ends. Most institutions established in the course of project remain nonfunctional after the end of a project. To ensure sustainability therefore, mechanisms must be in place to ensure institutions function and are self-sustaining after the end of a project.
2. Household and community resilience: resilient communities are readily able to anticipate and adapt to change through clear decision-making processes, collaboration, and management ofresources internal and external to the community. In addition to promoting interventions that increase household income and assets, it is important to create a situation in which households and

communities are able to handle dynamic and unexpected changes without collapsing.

3. Environmental sustainability: an environmentally sustainable system must maintain a stable resource base, avoid overexploitation of renewable resources and preserve biodiversity.
4. Structural change: the structural dimensions of poverty are addressed through the empowerment of poor and marginalized rural households. It involves empowering poor individuals and marginalized rural hòuseholds to overcome poverty through the use of marketable skills and access to social services.

Other dimensions ofsustaingbility-eamalso be identified including; political sustainability — government commitment, an enabling policy environment, stakeholder interests, strong lobby groups and political influence/pressure; social sustainability — social support and acceptability, community commitment, social cohesion;

ownership — whether or not communities, local government and households accept and own the outcomes of the project in ways that are sustainable; institutional sustainability — institutional support, policy implementation, staffing, recurrent budgets; economic and financial sustainability — resilience to economic shocks, financial viability, reduced household vulnerability and increased capacity to cope with risk/shocks; technical sustainability — technical soundness, appropriate solutions, technical training for operations and maintenance, access to and cost of spare parts and repairs; environmental sustainability — projects' positive/negative contributions to soil and water preservation and management, resilience to external environmental shocks.

There are a number of factors that has the potential to influence the sustainability of any program including the EPP. Table 2.1 gives a summary of some of the factors that affect the sustainability of a program from the various components of a program system.

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Table 2.1 Factors influencing sustainability ofprojects

Components of the system	Factors influencing sustainability
Organization as a whole	• Institution building Developing organizational values Developing self-reliance
Policies	Developing need related policies Developing strategies manageable within available resources ■ Participation of all stake-holders in developing vision, mission and objectives Developing policies congruent with national plans Transparency of policies &strategies
Leadership	Personality of the leader Transparency in communications Technical skill High motivation Supervisory ability

Financial	• Optimal use of resources • Ensuring cost effective and cost beneficial interventions • Availability of financial resources
Interventions	Training • Research • Coverage/Quality Monitoring/ Evaluation Awareness
Phase out	• Attitude change in the community Permanency of the 'vision' & 'mission' of the program 1 e •ssemination of policies to all stake holders Proven methods of interventions Rapport with the community and the clients Well established administrative system

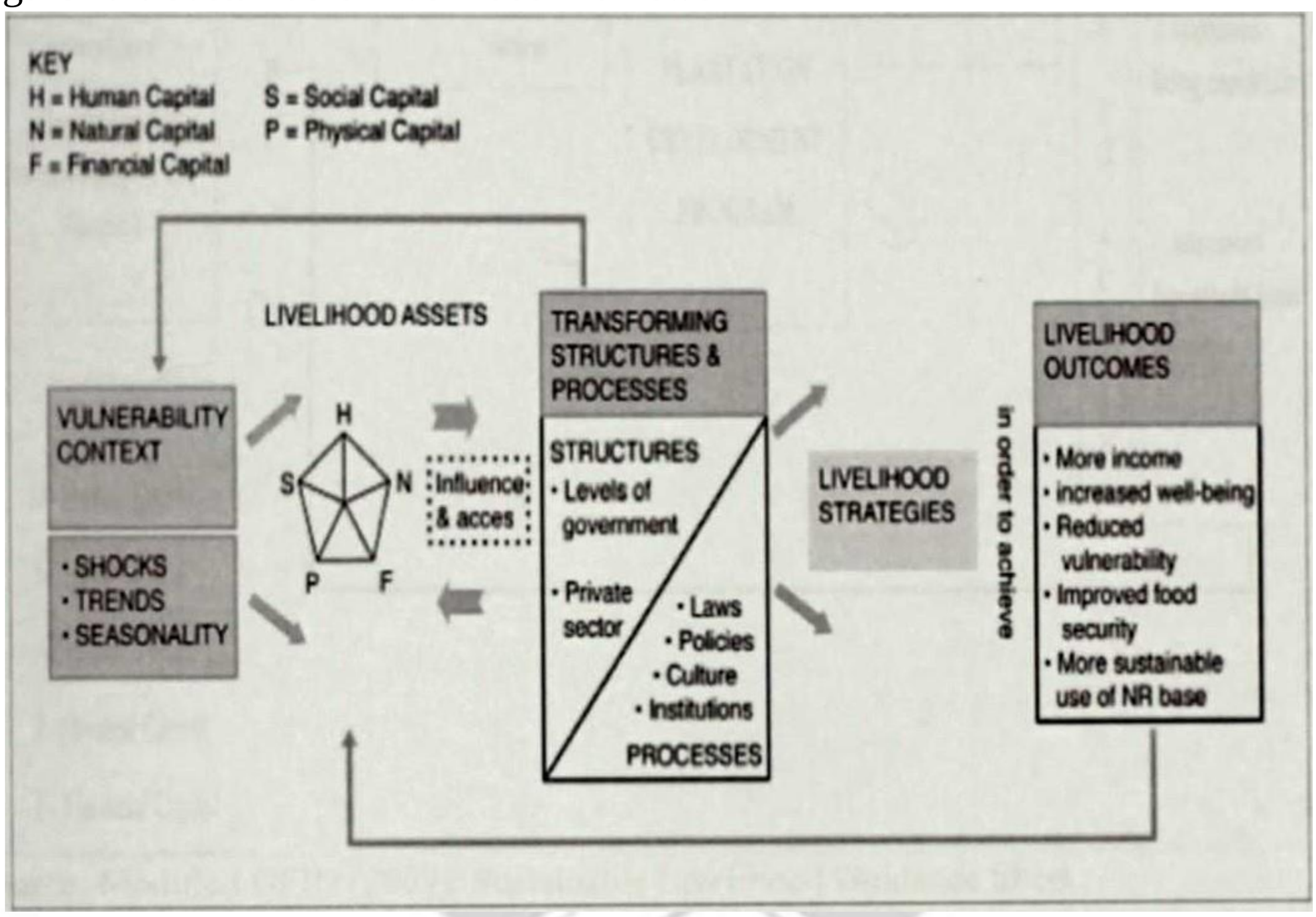
Source: Adapted from Thomas and Thomas (1999)

2.7: Conceptual Framework

The availability and sustainability of livelihoods are crucial to the living conditions and thus the poverty situation in FFCs. To understand the linkages between the forest plantation program under the EPP and poverty alleviation, the DFID Sustainable Livelihood

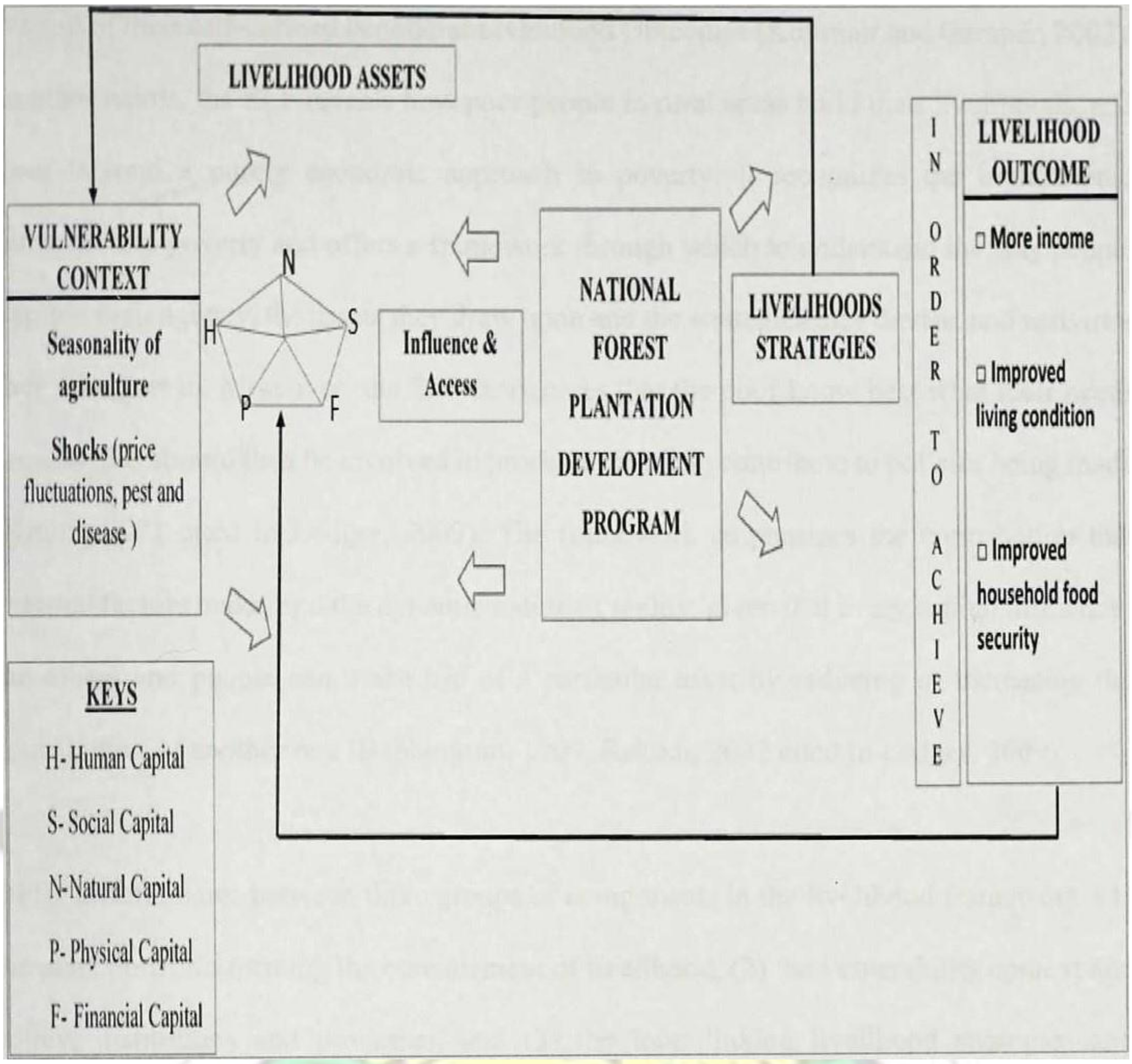
Framework (SLFJ shown in Fig 2.1 was adopted and modified (see figure 2.2).

Figure 2. l: Sustainable Livelihood Framework



Source: DFID (2009): Sustainable Livelihood Guidance Sheet

Figure 2.2: Modified Sustainable Livelihood Framework.



Source: Modified DFID (2009): Sustainable Livelihood Guidance Sheet

The SLF forms the core of the Sustainable Livelihoods Approach [SLA] and serves as an instrument for the investigation of poor people's livelihoods, whilst visualizing the main factors of influence (Kollmair and Gamper, 2002). In its simplest form, the framework depicts stakeholders as operating in a context of vulnerability, within which they have access to certain assets. These gain their meaning and value through the prevailing social, institutional and organizational environment (transforming structures and processes).

This context decisively influences the Livelihood Strategies that are open to people in pursuit of their self-defined beneficial Livelihood Outcomes (Kollmair and Gamper, 2002). In other words, the SLF reveals how poor people in rural areas build their livelihoods, and goes beyond a purely economic approach to poverty. It recognizes the multifaceted dimension to poverty and offers a framework through which to understand the way people express their agency, the assets they draw upon and the strategies they devise, and activities they take part in. Moreover, the SLF recognizes that the poor know best what their needs are and thus should thus be involved in processes that can contribute to policies being made (Krantz 2001 cited in Ledger, 2009). The framework emphasizes the contribution that external factors make, and the dynamic nature of reality, given that every capital influences the others and people can make use of a particular asset by reducing or increasing the contribution of another one (Bebbington, 1999, Rakodi, 2002 cited in Ledger, 2009).

DFID differentiates between three groups of components in the livelihood framework: (1) the asset portfolio forming the core element of livelihood, (2) the vulnerability context and policy, institutions and processes, and (3) the loop linking livelihood strategies and livelihood outcomes. The definitions and relationships of these three core components of the SLF and how it relates to my study are reviewed below.

2.7.1: The asset portfolioforming the core elemênt of livelihood

The central theme of the Livelihood Approach is people and brings to the fore the fact that people depend on a variety of assets or capitals to realize their self-defined aims and aspirations. The ST F recognygs-fi¥e-main assets or capitals that contribute immeasurably to the livelihoods of people. These are Natural, Social, Economic, Human and Physical capitals.

Natural capital is the term used for the natural resource stocks from which resource flows and services (such as land, water, forests, air quality, biodiversity degree and rate of

change, etc.) useful for livelihoods are derived (Kollmair and Gamper, 2002). In FFC, livelihoods are built nearly entirely on the use of local natural resources, be it from farming, forestry, chainsaw operations, charcoal production, or hunting and gathering (Marfo et al., 2002 cited in Ledger, 2009). Almost the entire membership ofthe study area depends on natural capitals for their livelihood. Peasant farming happens to be the major occupation in the study area while a considerable number of people also depend on forest and forest products and forestry for their livelihoods.

According to the Department for International Development , human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives" (DFID, 2000). Human capital is an essential capital as it determines to a greater extent how the other assets (natural, social, economic and physical) can be utilized judiciously to achieve the maximum livelihood outcomes. This capital varies from one community to the other as well as from one household to the other taking into consideration the household size, skill levels, leadership potential, health status, income level, availability of social infrastructure such as schools etc.

In the context of the SLA, the term "social capital" is taken to mean the social resources upon which people draw in yeki-ng-fortheir livelihood outcomes, such as networks and connectedness, that increase people's trust and ability to cooperate or membership in more formalized groups and their systems of rules, norms and sanctions.

For the most deprived, social capital often represents a place of refuge in mitigating the effects of shocks or lacks in other capitals through informal networks (Kollmair and Gamper, 2002).

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods, such as affordable transport, secure shelter and buildings, adequate water supply and sanitation, clean, affordable energy and access to information. Its influence on the sustainability of a livelihood system is best fit for representation through the notion of opportunity costs or 'trade-offs', as a poor infrastructure can preclude education, access to health services and income generation. Since infrastructure can be very expensive, not only its physical presence is important, but as well the pricing and secure disposition for the poorest groups of society must be considered (Kollmair and Gamper, 2002).

"Financial capital" denotes the financial resources that people use to achieve their livelihood objectives and it comprises the important availability of cash or equivalent that enables people to adopt different livelihood strategies. Two main sources of financial capital can be identified: Available stocks comprising cash, bank deposits or liquid assets such as livestock and jewelry, not having liabilities attached and usually independent on third parties. Regular inflows of money comprišing labour income, pensions, or other transfers from the state, and remittances, which are mostly dependent on others and need to be reliable.

Among the five categories of assets, financial capital is probably the most versatile as it can be converted into other types of capital or it can be used for direct achievement of livelihood outcomes (e.g. purchasing of food to reduce food insecurity).

Financial capital is however, the least available capital to the poor making other capital important substitute (Kollmair and Gamper, 2002). In the study area, most of the people lacks the two main sources of financial capital thus the expanded NFPDP aims to improve the livelihoods of the people which will in turn facilitate the generation of financial capital.

2.7.2: The vulnerability context andpolicy, institutions and processes

The vulnerability context forms the external environment in which people exist and gain importance through direct impacts upon people's asset status (Devereux, 2001). It consists of shocks and seasonality. The shocks context include the diseases and pests attack on farm produce and livestock, natural disasters and hazards such as flooding and bush fires; economic shocks such as price fluctuations (agricultural produce and implements, forest or tree products); conflicts over access to forests experienced by the poor in FFCs. The seasonality context in this study includes the seasonality of agriculture and prices of produce. Most of the people in the study area are poor due to the seasonality of agriculture and its consequent effects.

2.7.3: Transforming Structures and Processes

Transforming structures and processes embodies the institutions, organization, policies and legislation that influence livelihoods. These structures and processes play significant role and operate at all levels and effectively determine access, terms of exchange between different types of capital and returns to any giveñ livelihood strategy (Shankland, 2000; Keeley, 2001 cited in Kollmair and Gamper, 2002). In the context of this research the structures include the Ministry of Lands and Natural Resources (responsible for the formulation of_policies and>slaciens of Ghana's land, forest, wildlife and mineral resources); the Forestry Commission (implementing body of the program through the District Forest Service Division);

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Ecotech Services Limited (private organization in charge of recruiting and planting of trees); organized seedlings producers inter alia. The non-existence of a well-structured and functioning structures often constitute an impediment to sustainable development and

makes simple asset creation difficult in the case of adverse structures impeding access to apply a certain livelihood strategy.

Complementary to structures, processes constitute the "software" determining the way in which structures and individuals operate and interact. There are many types of overlapping and conflicting processes operating at a variety of levels. Important processes for livelihoods are for instance policies, legislation and institutions, but also culture and power relations. They may serve as incentives for people to make choices, they may be responsible for access to assets or they may enable stakeholders to transform and substitute one type of asset through another (Kollmair and Gamper, 2002). Transforming structures and processes occupy a central position in the framework and directly feedback to the vulnerability context, while influencing and determining ecological or economic trends through political structures, while mitigating or enforcing effects of shocks or keeping seasonality under control through working market structures; or they can restrict people's choice of livelihood strategies (e.g. caste system) and may thus be a direct impact on livelihood outcomes

(Kollmair and Gamper, 2002).

2.7.4: The loop linking livelihood strategies and livelihood outcomes

Livelihood strategies comprise the range and combination of activities and choices that people undertake in order to achieve their livelihood goals. Carney (1998) defines a livelihood as "the capabilities, assets (including both material and social resources) and activities required for a means of living".

The livelihood strategies of people are dynamic as they combine various activities to meet their numerous needs at different times (peak and lean seasons etc.) and on different geographical or economical levels. Livelihood strategies may also differ from household to household. As can be viewed from the Conceptual Framework in Fig 2.2, the livelihood

strategies depend directly on the livelihood assets and the transforming structures and processes. Given the policies and institutions at place, a changing asset status may enhance or hinder other livelihood strategies. There is always competition for assets to improve one's livelihood thus it is difficult for everyone to achieve simultaneous improvements in their livelihoods. The poor are themselves a very heterogeneous group, placing different priorities in a finite and therefore highly disputed environment. Compromises are often indispensable (Kollmair and Gamper, 2002). Livelihood outcomes are the achievements of livelihood strategies, such as more income (e.g. cash), increased living conditions (e.g. improved health conditions, ease at meeting educational needs, improved household food security (e.g. increase in financial capital in order to buy food, enough food from forestry program). Livelihood Outcomes directly influence the assets and change dynamically their level offering a new starting point for other strategies and outcomes.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1: Introduction

This chapter entails the research methodology applied in this study. The general background of the study area was looked at in this chapter. In addition, the scope of the study, the research approach and design, the sampling methods and procedure, the sources of data and information, the instruments of data collection, how the data was analyzed and some ethical considerations of the study are looked at in this chapter.

3.2: Study Area Background

The Asante Akim South District is situated at the Eastern part of the Ashanti region (see Fig 3.1). Its eastern border forms part of the regional boundary dividing the Ashanti and Eastern regions. It covers a total surface area of about 1217.7 square kilometers (472.4 sq. miles) which form about five percent (5%) of the total area of the Ashanti region, and 0.5 percent of the total area of the country. The reliefofthe district is generally undulating with few hilly areas. It has uniformly high temperature throughout the year and falls within the moist semi-deciduous forest region where different species of tropical hard woods with high economic value are located (AASD, 2010).

Currently, the district has four forest reserves which cover a total of about 109.6 sq. km including, Formangsu, Prakow, Domi River and Mirasa Hills (AASD, 2010). According to the GSS (2012), the popu)Ati0R-of-the district for the 2010 Population and Housing Census was 117,245 comprising 57,951 males and 59,294 females. The district has an average household size of 4.9; with the average number of people per room being three (3)

(AASD, 2010).

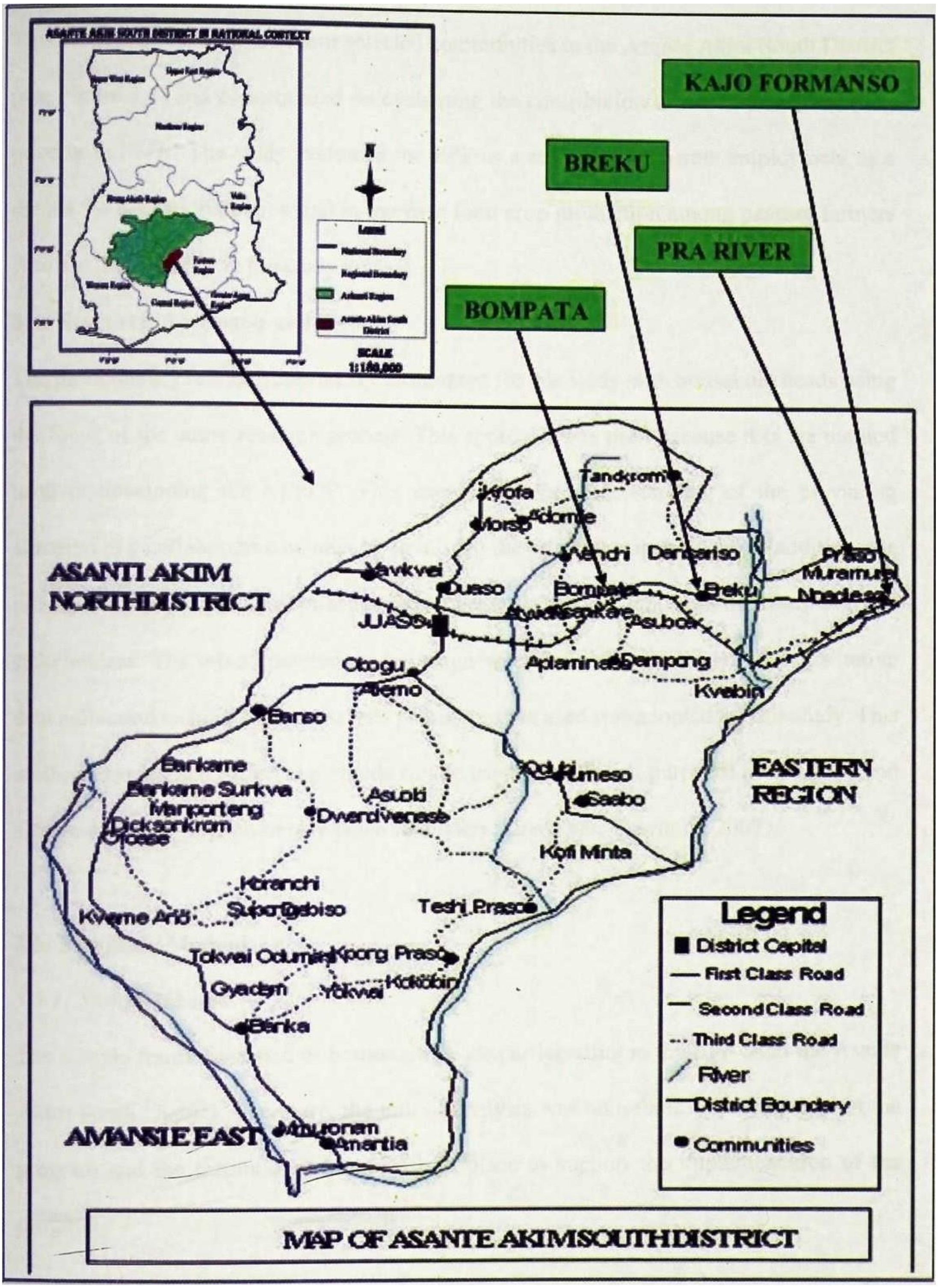
There is only one (1) hospital in the district, namely; Juaso government hospital with eight (8) health centers. The district has basic schools in almost all the communities with a total of three (3) senior secondary schools and one (1) vocational institute. There is limited accessibility to secondary schools as a result of inadequate boarding facilities (AASD, 2010).

Primarily, the economy of the district is based on agricultural production. According to the Department of Agriculture, farmers are mainly peasant farmers cultivating food crops

and cash crops. This means that, farmers produce very little to feed themselves and their family with only a few who have access to the market. Farmers receive very little returns from their produce which makes it difficult for them to meet their basic needs such as nutritious meals for their families, good shelters and decent clothing.

Inadequacy of basic infrastructure in the district is a factor to poverty manifestation. Basic community services like education, water supply, sanitation, health facilities, good roads and opportunities for personnel advancement make poverty manifest itself district-wide (AASD, 2010). About 70 percent of the roads in the district are untarred and in very poor state with some other roads networks not accessible. With the exception of portable water supply which the district have been able to provide to more than half its population, education and health infrastructure in the district are found in poor and devastation condition (AASD, 2010).

Figure 3.1: Map showing study areas



Source: Asante Akim South District, 2010

3.3: Scope of Study

This study was conducted in four selected communities in the Asante Akim South District (see Figure 3.1) and concentrated on evaluating the contribution of the EPP in alleviating poverty in FFCs. The study evaluated the EPP as a strategy to generate employment as a means for poverty reduction and to increase food crop production among peasant farmers who are the majority in the study areas.

3.4: Research Approach and Design

The participatory research approach was adopted for this study with household heads being the focus of the entire research process. This approach was used because it is the method used in developing the NFPDP. This streamlines the understanding of the prevailing situation in a collaborative manner by involving the relevant stakeholders. In addition, the principles of participatory approach ensured the collection of data from different levels of stakeholders. The mixed method study design whereby both quantitative and qualitative data collection techniques and analysis procedures are used was adopted for this study. This method ensures that different methods can be used for different purposes in the study and also enable triangulation to take place (Saunders, Lewis and Thornhill, 2007).

3.5: Sampling Method

3.5.1: Sample Frame

The sample frame consisted of household heads participating in the EPP from the Asante Akim South District. Therefore, the unit of analysis was household heads engaged in the program and the institutional framework in place to support the implementation of the program.

3.5.2: Sample selection and distribution

Probability and non-probability sampling methods were used in this study. The stratified random sampling, simple random sampling and the purposive sampling methods were the sampling methods specifically used for this study.

3.5.2.1 : Non Probability Sampling method

The Juaso Forest District (comprising the Asante Akim North, Asante Akim South, Ejisu Juabeng & Kwahu East political districts) was purposively selected for this study. Within the Juaso Forest District, the Asante Akim South political district was selected due to the proximity of its communities to degraded forest reserve within which the program was being implemented. Moreover, this district was among the most deprived district harbouring substantial number of poor people, thus accurate information with regards to poverty and forest plantation development can be ascertained. Furthermore, communities within this district were relatively easily accessible by transport which lessens the difficulty in gathering data and interacting with stakeholders. Key informants including managers of Ecotech Ghana Limited, District Forest Officers, and leaders in charge of field work at the study sites were also purposively selected to ascertain some of the information related to the formulation and implementation of the program.

3.5.22: Probability Sampling Methods

The operational areas within the AASD were divided into three strata based on the year the program started in each operational area (Refer to Table 3.1). The 2010 coupe (strata 1) was considered for further sampling since beneficiaries within this coupe have been on the program for aUeasta periodÃ_ty-o-and-a half years and can therefore bring out the detailed information searched for by the researcher with regards to the contribution of the program. The simple random technique was then adopted to select four communities (Pra

River, Breku, Kajo Fomanso and Bompata) out of the ten operational areas in the 2010 coupe.

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Table 3.1: Operational areas ofthe EPP in the Asante Akim South District

	OPERATIONAL AREAS		
	Strata 1 (2010 Coupe)	Strata 2 (2011 Coupe)	Strata 3 (2012 Coupe)
I	Gyadam	Gyadam	Bebome Ii
2	Odubi	Dwendenase	Abrewanpon Iv
3	Dwendwenase 1	Koikrom	Abrewanpon I
4	Dwendwenase 2	Tokwai-Asuboi	Mankara
5	Bankame	Dwenase	Krobomu
6	Bompata	Pra River	Dwendwenase
7	Kajo Fomanso	Kajo Fomanso	Pra River
8	Breku	Breku	Dadieso
9	Pra River		Onyimso
10	Tokwai		Tanokrom

Source: Ecotech Ghana Limited,2013

Proportional sampling method was further used to determine the exact number of households from which data was gathered in each of the operational areas. Furthermore, the simple random sampling technique was used to select the household heads from the list of household heads engaged in the program as the unit of analysis.

3.2.3.3: Sample Size Determination

A mathematical approach adopted from Gomez and Jones; (2010) was used to determine the sample size to be used for this study. .

$$n = \frac{N}{1 + Ne^2}$$

Using the mathematical formula above where n= sample size, N= Population size and e= level of precision with 50/o-múEïñTerror, 80 heads of households out of 98 heads of household were drawn from the four sampled operational areas using the simple random sampling technique for this study. Table 3.2 shows the sample size for each operational area computed using the proportional sampling method.

Table 3.2: Proportional sample size ofeach operational area

Operational Area	No. of household heads employed on the program	Proportional selected 2010	2011	2012	Total Sample
Pra River	20	10	26	56	(56/98*80) —46
Breku	10	13		23	(23/98•80) -18
Kajo Fomanso	7	10		17	(17/98•80) -14
Bompata	2			2	(2/98•80) - 2
Total	39	33	26	98	80

Source: Fieldwork, 2013

3.6: Sources of Data and Information

Both primary data and secondary information were gathered for the study. Primary data was gathered directly from the field from household heads engaged in the program and key informants including district forest officers, regional and district managers of Ecotech and field assistants. The primary data gathered included the bio data of respondents including their sex, age, educational background, marital status, size of households among others. The contributions of the program and issues regarding the sustainability of the program were also gathered. Factors affecting the implementation of the program were also gathered. Secondary information was also gathered from archives, documents, articles, journals, text books, internet sources etc. The secondary information gathered include forest policies implemented over the years in Ghana, information on the concept ofpoverty, its dimension and measurements, the contribution of forests and the relationship between forest and poverty, project sustainability issues and household food security issues inter alia.

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3.7: Instruments for Data Collection

Primary data was gathered through the use of questionnaires, semi-structured interview guides and participatory observation. The questionnaires administered contained both closed and open ended questions to elicit the needed information and to allow respondents to express their ideas. The questionnaire was divided into five main sections based on the objectives of the study to ensure easy data collection. The first section was made up of questions on the demographic characteristics of beneficiaries while the second section entailed questions regarding the contribution of the program to the living conditions of beneficiaries. The third and the fourth sections were questions on the contribution of the program to household food security and the sustainability of the program respectively. The last section considered the factors affecting the implementation of the program. Key informants interviews were also conducted with officers at the Forest Service Division and regional and district managers of Ecotech Ghana limited. Data from field/team leaders were also gathered.

3.8: Data collection procedure and experiences from the field

An introductory letter was obtained from the Head of Department of the Geography and Rural Development, Kwame Nkrumah University of Science and Technology, Kumasi. This enabled the researcher to collect data from the target population in the sampled communities. Prior to the data collection, a visit to the implementation bodies, that is, Ecotech Ghana Limited, the Forestry Commission (Head office), and the Juaso Forest Service Division was embark€a-ð7Éýihe researcher. The letter of introduction detailing the study title and purpose of the study was given to them to seek permission from them to carry out the study. This was followed by a preliminary field visit to the selected communities as a form of community entry.

The leaders of the communities and some beneficiaries were interxted with during this field visit.

Collection of data in the study communities started in March, 2013 and span over two months (March to April, 2013). The beneficiaries randomly selected from the sample frame were visited at their house and the questionnaires administered to them.

Some randomly selected beneficiaries refused to be part of the study after the consent form was read to them seeking their permission to be part of the subject. These beneficiaries were replaced with other beneficiaries randomly selected from the remaining sample frame. Therefore this did not affect the study in anyway.

Given the sampled communities were further apart from each other, the researcher had to finish the data collection procedure in one community before moving to the next and this delayed the data collection process. Most of the data collection exercise also ended late in the night given that during the day almost all the beneficiaries were on their farms which were further away from the towns. This notwithstanding did not affect the quality of the data collected in any way but rather gave the respondents the free will and enough time to reflect on some of the question before answering.

The institutional interview with officers at the Juaso Forest Service Division was a major challenge in the data collection process which affected the pace at which the data process was carried out. The officers reported to be very busy and had to cancel scheduled interview dates several times. The required information to support and clarify the quantitative data gathered from-the the beneficiaries were however gathered from the officers. Both the institutional and household data collection process was done by the researcher himself.

3.9: Data Analysis

Data collected was edited, coded and analyzed using both quantitative and qualitative techniques. Data gathered using closed ended questions were analyzed quantitatively with

the aid of the Statistical Package for Social Scientist (SPSS v 16) and Excel. Descriptive statistics including mean and frequencies were employed to summarize and display the findings of the study which are presented with the aid of tables and figures. Two-sample t test was conducted to establish the difference between the average total monthly income of beneficiaries before and after enrolling on the program. The hypothesis was tested using linear regression to ascertain the strength and significance of the relationship between the monthly income from the program and the total monthly income of beneficiaries. The open ended questions were also analyzed quantitatively. Consistent patterns or major themes were identified in the answers which were summarized and presented. The primary data gathered using the semi-structured interview guides were analyzed qualitatively by searching for patterns and major themes which were discussed in depth. The minimum wage defined as the amount of money a worker should earn to keep him/her surviving and in business (GSS, 2000) was adopted as the poverty line for measuring the income poverty level of beneficiaries of the program.

3.10: Ethical Consideration

Ethical considerations were of outmost importance in this study given that the study involved the interaction and gathering of information from household heads who serve as participants i!vghe study. Gat>ng-ofparticipants' state of wellbeing, financial standing as well as other personal information required the adherence of strict research ethics to avoid any effect or harm to participants. The study considered some broad ethical areas including voluntary participation, informed consent, confidentiality and anonymity.

The participants from whom the data was gathered for this study were not coerced or under pressure to participate in the study. The respondents were involved with a clear understanding that they were under no obligation to do so and that there will be no negative consequences for them if they do not assist in the study.

To confirm the voluntary participation, informed consent sheet stating who the researcher was, what the study is about and the desired outcomes and potential risk for being part of the study were read to participants (this was because most of them could not read) who agreed verbally and signed giving their consent to participate in the study. The informed consent sheet also assured participant of their individual confidentiality.

To ensure anonymity, participants ofthe study were randomly selected from the population of beneficiaries of the program. The identity of participants were not required neither was any clue given in the presentation of results to reveal the identity of any participant. This was to ensure the confidentiality of each participant. Permission was sought from all the appropriate institutions in charge of the implementation of the program before data was gathered to ensure no breach of ethical code of conduct.

CHAPTER FOUR

CONTRIBUTION OF THE EXPANDED PLANTATION PROGRAM TO POVERTY ALLEVIATION

4.1: Introduction

This chapter expounds the findings from the study communities on the contributions of the program to beneficiaries. The data gathered from the field were analyzed and presented with the aid of tables, diagrams and figures. The chapter is divided into four sections: the demographic characteristics ofbeneficiaries, the contribution ofthe program to the income, the living conditions and household food security of beneficiaries and factors affecting the implementation of the program.

4.2: Demographic characteristics of beneficiaries

Social, demographic and economic characteristics of households are closely associated with poverty and environmental issues therefore the demographic characteristics of beneficiaries were gathered. According to Ardayfio-Schandorf (2007), women in Ghana constitute 52% of the agricultural workforce and produce 70% of the subsistence crops. In addition, due to the gender structures and socio-cultural environment, women in rural areas lack access to and control of economic assets like land and credit. Poverty in rural Ghana also has a 'woman face', that is, women are among the most affected by poverty (GSS, 2008). Notwithstanding, majority of the people employed on the program were males. The study disclosed that the ratio of men to women on the program was about 3:1 respectively (A district manager of Ecotech Ghana Limited, 2013). Approximately, 69% of the beneficiaries were males while the remaining 31% were females. In Pra River, 71.7 % were males whiles only 28.3% were females.

Similar trend was also seen in Breku and Kajo Fomanso where 66.7% and 57.1% of the beneficiaries were males respectively with only 33.3% and 42.9% being females in each community respectively. In Bompata there were no females on the program. It was also noted that 85% of the beneficiaries were natives of the sampled communities with the remaining 15% being migrants (See Table 4.1).

Table 4.1: Demographic characteristics of beneficiaries

Demographic Characteristics	Pra River (N=14)		Kajo Fomanso (N=18)		Breku (N=2)		Bompata (N=80)		Total (N=46)	
Sex	N	%	N	%	N	%	N	%	N	%
Sex										

-Male	33	71.7	8	57.1	12	66.7	2	100	55	68.8	
-Female	13	28.3	6	42.9	6	33.3	0	0.0	25	31.2	
Total	46	100	14	100	18	100	2	100	80	100	
Age group											
26-35	12	26.1	3	21.4	3	3.8	0	0	18	22.5	Total
36-45	10	21.7	3	21.4	5	27.8	0	0	18	22.5	
46-55	11	23.9	7	50.0	4	22.2	1	50.0	23	28.8	Origin
56-60	8	17.4	1	7.1	6	33.3	1	50.0	16	20.0	
above 60	5	10.9	0						5	6.2	
Total	46	100	14	100	18	100	2	100	80	100	
Household Size											
I to 3	10	21.7	5	35.7	1	5.6	0	0	16	20.0	
4 to 6	14	30.4	4	28.6	3	16.7	0	0	21	26.2	
7 to 10	16	34.8	3	21.4	7	38.9	2	100	28	35.0	
Above 10	6	13.0	2	14.3	7	38.9	0	0	15	18.8	
Total	46	100	14	100	18	100	2	100	80	100	
Level of Education											
Primary	18	39.1	11	78.6	8	44.4	1	50.0	38	47.5	
No formal Education	13	28.3	3	21.4	8	44.4	1	50.0	25	31.3	
Junior High School	15	32.6	0	0.00	2	11.1	0	0.00	17	21.2	
	46	100	14	100	18	100	2	100	80	100	
Natives	41	89.1	13	92.9	13	72.2	1	50.0	68	85.0	
M)grants		10.9	1	7.1	5	27.8	1	50.0	12	15.0	
Total	46	100	14	100	18	100	2	100	80	100	

Source: Fieldwork,2013

Moreover, from Table 4.1, it can be observed that majority of the beneficiaries fall within the active working population. Twenty per cent (20%) of them falls within the 56 to 59 years age brackets which indicate the inclusion of the upper age limit of the population of the sampled communities in the program.

Table 4.2: Relationship between household size and poverty

		Poor	
Communities	Household Size	Frequency	Percentage
Pra River 1-3 3 23 4-6 5 38.5			
	7-10	2	15.5
	Above 10	3	23
	Total 13 100 Bompata 7-10 2 100		
	Total	2	100
Kajo Fomanso	4-6	1	100

	7-10		.0
	Above 10		
	Total	1	100
Breku	1-3		0
	4-6		
	7-10	2	66.7
	Above 10	1	33.3
	Total	3	100

Source: Fieldwork, 2013

Considerable evidence of a strong negative correlation between household size and consumption (orÅncome) per person in developing countries has been established by

scholars such as Visaria (1980), Sundrum (1990), Lipton and Ravillion (1994) and it is oftew concluded that people living in larger and (generally) younger households are typically poor.

As sboum in Table 4.2, out of total beneficiaries in Pra River •bo c•tsidered their current situation to be poor, 23% tx•useholds size of one to three with the remaining

77% having household sizes three. In Kajo Fomanso, the only beneficiary that considered his current situation to be poor also had household size úyve three. The same situation was also noticed in Breku where 66.7 % ofthe beneficiaries who considered their current situation to be poor had household sizes between to ten and the remaining

33.3% having household sizes above ten. In Bompata, the two beneficiaries ofthe program all had household sizes between seven and ten and they all considered their current situation to be poor.

Concerning the beneficiaries' educational background, 47.5% had their highest level of education to be primary (basic school). Also, a considerable percentage of 31.3% of them have had no formal education with the remaining 21.2% having attained Junior High School

(JHSI as their highest level of education. From Table 4.1 it can also be seen that only Pra River and Breku had beneficiaries with JHS as their highest level of education.

This indicates the low educational level of the beneficiaries.

4.3: Motivation for joining the program

The EPP is among the various reforestation efforts and poverty alleviation strategies being implemented at the district level across the country. Other poverty alleviation strategies include; the Local Enterprises and Skills Development Program tLESDEPJ, the Rural Enterprises Project ect [REP], Livelihood Empowerment Against Poverty (LEAP), Ghana Youth Employment and Entrepreneurial Development Agency IGYEEDAJ among others. Moreover, some plantation programs including the HIPC plantation, Private plantation programs and the Modified Taungya System plantations inter alia were ongoing in FFC across the country. The motivation for participating in the EPP was analyzed from the male and female perspectives in the various sampled communities.

Table 4.3: Motivationforjoining program

		Sex of Beneficiaries					
		Male		Female		Total	
Communities	Motivation						
PRA RIVER	Access to land(food crop)	6	18.2	10	76.9	11	34.7
	Livelihood (Income)	22	66.6	3	23.1	25	54.3
	Environmental Conservation	5	15.2	o	.0	5	11.0
	Total	33	100.0	13	100.0	46	100.0
KAJO FOMANSO	Access To Land(food crop)	5	62.5	4	66.6	9	64.3
	Livelihood (Income)	3	37.5	1	16.7	4	28.6
	Environmental Conservation	o	.0	1	16.7	1	7.1
	Total	8	100.0	6	100.0	14	100.0
BREKU	Access To Land (food crop)	8	66.7	5	83.4	13	72.2
	Livelihood (Income)	3	25.0	o	.0	3	16.6
	Environmental Conservation	1	8.3	o	.0	1	5.6

	Political Affiliation	o	.0	1	16.6	1	5.6
	Total	12	100.0	6	100.0	18	100.0
BOMPATA	Livelihood (Income)	1	50.0	o	0.0	1	50.0
	Environmental Conservation	1	50.0	o	0.0	1	50.0
	Total	2	100.0	o	0.0	2	100.0

Source: Fieldwork, 2013

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Livelihood (inconíe) opportunity, access to land with the opportunity to inter grow food crops, environmental and political considerations were identified from the study as the factors motivating the participation of beneficiaries on the program.

The study discloses that the livelihood (income) opportunity the program offers was the most important motivating factor in Pra River (54.3%), and Bompata (50%) while the most significant factor motivating engagement in the program in Kajo Formaso (64.3%) and Breku (72.2) was access to land with the opportunity to grow food crops. Majority of the beneficiaries had agriculture as their main source of income (Refer to Table 4.3). The challenges associated with agriculture such as low produce prices, seasonality of agriculture, access to land, pest and diseases among others resulting in low and inconsistent source of income accounts for most of the beneficiaries attributing their motivation for enrolling on the program to the livelihood/income opportunities and the access to land it offers.

A male and female dichotomy was very obvious regarding the motivation of beneficiaries to join the program. Whereas the male beneficiaries were motivated to join the program for the livelihood/income opportunities it provided, their female counterpart joined the program for access to land and the opportunity to grow food crop (Refer to Table 4.3). In the Ghanaian culture men are expected to provide the income for the upkeep of their household. This may explain why most of the men were motivated to join the program because of the livelihood (income) opportunities it offers. On the other hand, the women may have also

opted to join the program to ensure adequate food supply in their household since they are mostly in charge of food in the household.

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4.4: Contribution of program to income of beneficiaries

To understand the contribution of the program to the income of beneficiaries, the primary and secondary sources of income and the financial situation of beneficiaries from 2010, when they were engaged in the program to 2013 when the study was conducted was looked at critically. Also, the relationship between the income of beneficiaries before and after enrolling on the program and the significance of the total monthly income from the program to the total monthly income of beneficiaries were also discussed.

4.4.1: Sources ofIncome

People living in FFCs derive their income from several sources. These sources were primary or secondary and included farming, trading, plantations, artisanship, teaching etc.

Table 4.4: Sources of income

Income Sources	Pra River		Kajo Fomanso (N=14)		Breku (N=18)		Bompata		Total (N=80)	
Farming	23	50.0	11	78.6	14	77.8	2	100	50	62.5
Forest plantation	9	19.6	1	7.1	2	11.1	o	.0	12	15.0
Trading	7	15.2	2	14.3	2	11.1	o	.0	11	13.8
Artisan	4	8.7	o	o	o	o	o	0	4	5.0
Others	3	6.5	o	.0	o	.0	o	.0	3	3.7

Total	46	100	14	100	18	100	2	100	80	100	(N=46)
Secondary sources											
Forest plantation	44	95.6	13	92.9	16	88.1	2	100	75	93.8	
Remittances	1	2.2	1	7.1	o	o	o	o	2	2.50	
Trading	o	o	o	o	2	11.1	o	o	2	2.50	
Primary sources	N	%	N	%	N	%	N	%	N	%	
Artisan	1	2.2	o	o	o	o	o	o	1	1.20	
Total	46	100	14	100	18	100	2	100	80	100	

Source: Fieldwork, 2013

From Table 4.4, farming is the primary source of income for more than half (62%) of the beneficiaries whereas the _____ program serve as the main secondary source of income for 93.8% of the beneficiaries confirming the studies by Warner (2000 cited in Dubois, 2002) which

states that forest contributes to increasing the income of the rural poor as a complement to other sources of income (mainly farm income), often on part-time basis and along seasonal patterns. The program serves as the primary source of income for 15% of the total beneficiaries who prior to the implementation ofthe program were not actively engaged in any economic venture. This indicates the importance of the program to their livelihood. Trading, artisanship, teaching, driving, tailoring, remittances were among the other sources of income of beneficiaries. The incomes derived from the various sources are presented in Table 4.5.

Table 4.5: Descriptive statistics ofthe income of beneficiaries

Income	Mean	STD DEV	Min (GH¢)	Max (GH¢)		
Total monthly income from program (Wage + food crop sales)	229	111.33	92	229	111.33	92 592
Total monthly income from other sources				89.5	92.31	50 450

Total monthly income	318.6	209.64	142	1042

Source: Fieldwork, 2013

From Table 4.5, the study disclosed that a minimum of GH<50 was earned by beneficiaries as the total monthly income om other sources compared to a minimum of (31-1<92 earned fronvthe program at the end of the month.

The average monthly income earned from the program by beneficiaries was GI--I< 229 which was two times more than the average income of GHé 89.5 earned from other sources.

44.2: Income andfinancial situation ofbeneficiariesfrom 2010 to 2013

Since the inception of the program in 2010, there has been the transfer of natural (land) and financial (income) assets to beneficiaries. The researcher therefore seeks to understand the contribution of the financial asset transferred to beneficiaries from 2010 when they were engaged in the program to 2013, the year of the study.

Table 4.6: Financial situation of householdsfrom 2010 to 2013

Financial situation from 2010 to 2013	Pra River (N=46)		Kajo Fomanso (N=14)		Breku (N=18)		Bompata (N=2)		Total (N=80)	
							N	0/0		
Good	3	6.5	4	28.6	3	16.7	o	o	10	
Very good	43	93.5	10	71.4	15	83.3	2	100	70	87.6
Total		100		100	18	100	2	100	80	100

Source: Fieldwork, 2013

Data from the field indicates that approximately 88% of the beneficiaries perceived their financial situation from 2010 when they were engaged in the program to 2013, the time of the study, to be very good while the remaining 12.4% considered their financial situation to be good. Those who considered their financial situation over these years to be very good were those who earned more than the monthly wage as additional income from the program

and also had other income sources. Some of them nearly hundred per cent increment in their monthly income which was earned mainly from the sale of food crops from the plantation sites.

The remaining beneficiaries who considered their financial situation to be good over the years they have been employed were mainly beneficiaries who either engaged in the program as their only source ofincome or do not cultivate food crops in between the planted trees for resale. A two-sample t test was conducted to establish the difference between the average total monthly income of beneficiaries before and after enrolling on the program (Table 4.7).

Table 4.7: A verage total monthly Income ofbeneficiaries

Average total monthly income	Orbs	Mean	Std. Err.	Std. Dev.
Before	80	142.75	8.35	74.71
After	80	318.5	16.02	143.25
Diff	175.75	18.06		
t = 9.73.	**df = 158**	**Pr (T > t) = 0.001 ***		
diff = mean (Total income) - mean(income before)				

Source: Fieldwork, 2013

From Table 4.6, it can be observed that the average monthly income of beneficiaries changed from 142.75 at the beginning of the program to GH<318.5 after enrolling on the program. This shows an increase of GHé175.75 which was statistically significant given t (158) 9.73, P< 0.0005). To ascertain the percentage increase in beneficiaries' monthly income as a result ofthe program, a linear regression analysis was used to establish the strength and significance of the relationship between the total monthly income and the monthly income from the program as indicated in Table 4.8.

Table 4.8: Regression Statistics oftotal monthly and incomefrom the program

Multiple R	—R sq.	AdjastõWSq.	Coeff.	Constant	P-value
—0.76	0.58	0.58	0.984	93.15	0.001*

Source: Fieldwork, 2013 *0.05 significant level

As can be observed from Table 4.8, a statistically significant (r=.765, P< .005) strong positive correlation exist between the total monthly income and the monthly income derived from the program. Approximately 58.5 % of the change in total monthly income can be explained by the change in the monthly income derived from the program.

Using the regression equation Y = a+bx (Where y= total monthly income, b= coefficient (beta), x= income from plantation program a = constant (alpha)), the prediction equation is as follows: Y = 93.15 +.98x

From the regression equation it can be explained that if the income from the program increases by 1 , the total monthly income will increase by approximately GHé0.98. So for instance if the total income earned from the program is increased by GH<IOO, beneficiaries stand to gain additional income of 98.40. Also, it can be predicted from the equation that if the income from the program is zero, the total monthly income of beneficiaries will be GH<93.15. The implication for this model is that efforts aimed at increasing the returns from the program will go a long way to increase the total monthly income of beneficiaries.

The minimum wage was adopted as the poverty tine for measuring the income poverty situation of beneficiaries on the program. Using the minimum wage of GHC5.24 (2013) as the poverty line, the study reveals that none of the beneficiaries was below the poverty line of GHC104.8_per month. »twithscanding, approximately 24% of the beneficiaries considered themselves as poor with approximately 76% considering their current state of being as satisfactory.

Though income poverty do not portray the full picture of the poverty situation of an individual, the improved finances as a result of the monthly wages and income from food crops enjoyed by beneficiaries of the program makes them to consider their current state of

being as satisfactory. Some of the reasons given by beneficiaries for considering their current state of wellbeing as satisfactory were the ability to meet their daily basic needs, more especially, the access to food which they grow in between the planted trees. Inability to meet the needs of children, basic necessities of life such as clothing among others were some of the reasons beneficiaries who considered themselves as poor gave. Given that poverty is multi-dimensional and not limited to income poverty, other indicators specifically the health conditions and ease of meeting educational needs by beneficiaries were also looked at.

4.5: Contribution of program to the living conditions of beneficiaries

According to a UN declaration that resulted from the World Summit on Social Development in Copenhagen in 1995, absolute poverty is "a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. Hence to assess the contribution of the program towards alleviating poverty and improving the living conditions of beneficiaries, the ease of meeting household educational and health needs before and after enrolling on the program was considered.

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45.1: Contribution ofprogram to household educational needs

Ostergaard (1999) asserted that "Education is a means of overcoming poverty, increasing income, improving nutrition and health, reducing family size and not the least important, raising people's self-confidence and enriching the quality of their lives." The study

therefore considers the contribution of the program in assisting beneficiaries meet their household educational needs. The study unveils that 65% of the beneficiaries had all their children of school going age in school as at the time of the study with only insignificant proportions of seven (7%), having one (1) out of their total number of children of school going age in school. The remaining six (6%), and four (4%) of the beneficiaries also had three (3) and two (2) out of their total children of school going age in school respectively. Nearly 24% of the beneficiaries either had no child or had no child of school going age.

(Refer to Table 4.10)

Table 4.9: Cross tabulation of household school enrolment and sampled communities

Children of school going age in school	Pra River (N=18)		Kajo Fomanso (N=80)		Breku (N=46)		Bompata (N=14)		Total	
	N	%	N	%	N	%	N	%	N	%
All	29	63.0	7	50.0	16	88.9	o	o	52	65.0
1 out of total	o	o	1	7.1	o	o	o	o	1	7.1
2 out of total	2	4.3	1	7.1	o	o	o	o	3	3.8
3 out of total	2	4.3	2	14.3	1	5.6	o	o	5	6.2
Not Applicable	13	28.3	3	21.4	1	5.6	2	100	19	23.8
Total	46	100	14	100	18	100	2	100	80	100
Total	2									

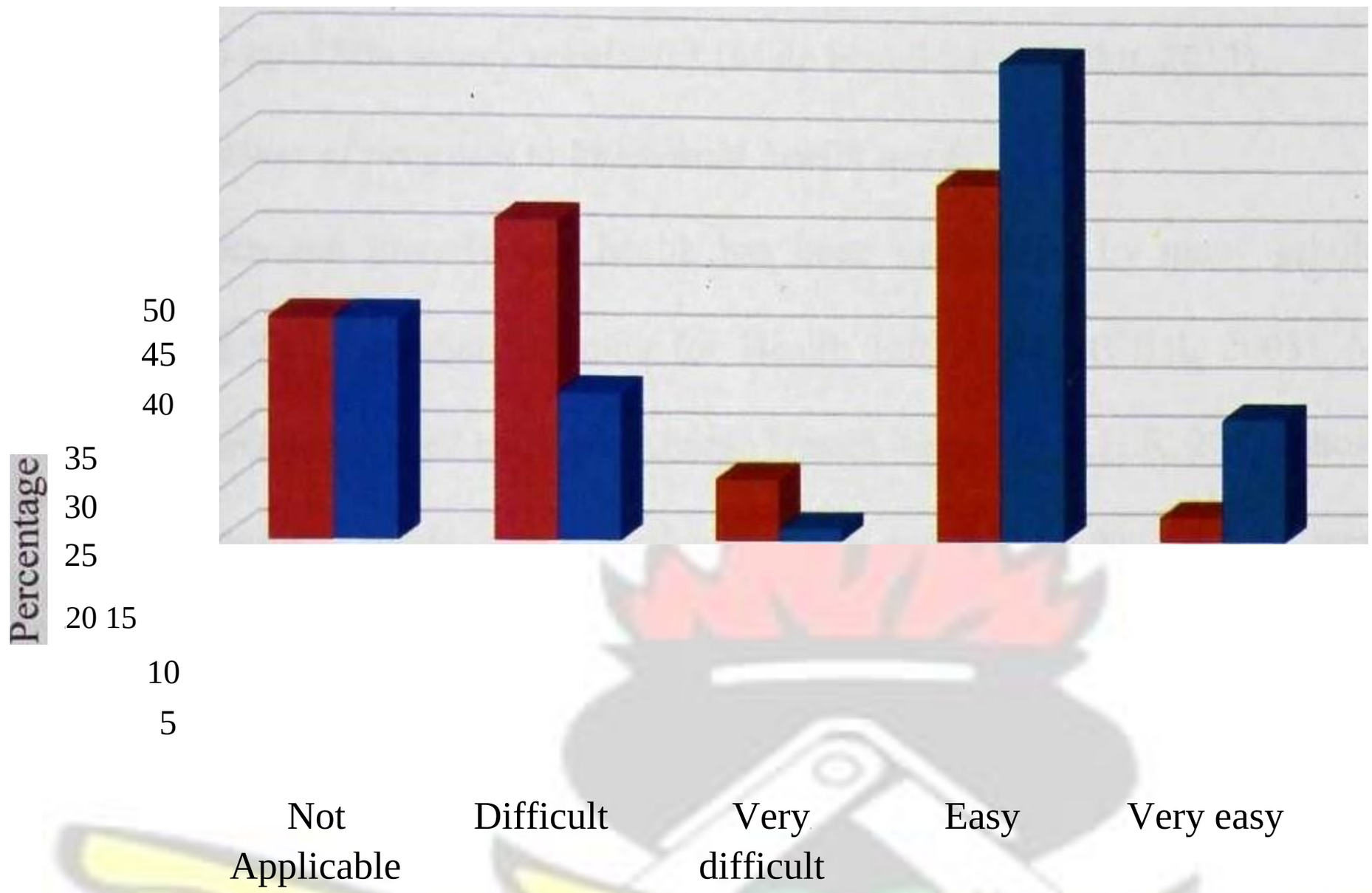
Source: Fieldwork, 2013

The fact that a high percentage of the beneficiaries had their children of school going age in school cannot be directly attributed to their engagement in the program however it can be inferred that the program may be a major contributing factor.

This is because the additional income earned from the program through monthly wages for work done and proceeds from the sale of crops inter grown in between trees can assist in providing the household educational needs of beneficiaries. To ascertain the contributing factor of the program on the educational needs of beneficiaries, the ease of meeting

household educational needs before and after the program was looked at.

Fig 4.1: The ease ofmeeting educational needs by households



- Before 22.5 32.5 6.25 36.25 2.5
- After 22.5 15 1.25 48.75 12.5

Source: Fieldwork, 2013

The data gathered revealed that there was slight difference between the ease of meeting educational needs before and after enrolling on the program by beneficiaries. Out of the total number of beneficiaries, 48.8% were able to meet their household educational needs easily after enrolling on the program compared to 36% before enrolling on the program. There was also fivyC50/o) increase in the total number of households who were able to meet their household's education need very easily after enrolling on the program. The beneficiaries who found it difficult meeting their household needs before enrolling on the program reduced by a little above half (from 32.5% t015.0%) after enrolling on the program.

Most of the beneficiaries attributed the ease with which they were able to meet their household educational needs to the support from the program specifically the additional

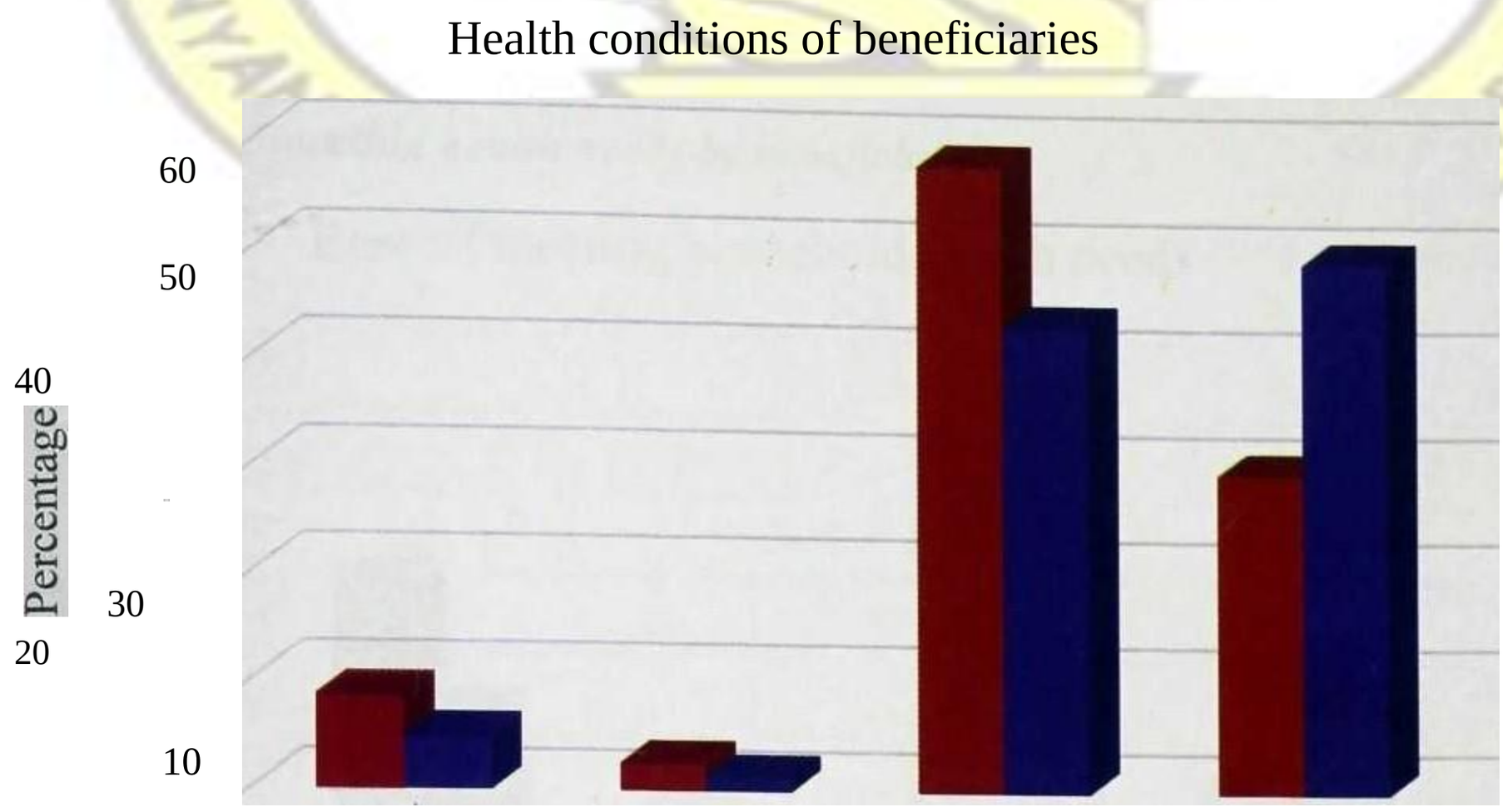
income from the program. A beneficiary attesting to the ease of meeting his household's educational needs expressed as follows:

"Before this program Ifound it difficult sending money to my ward at the senior high school level and getting the required books to enhance his study, however with the additional incomefrom the sale ofthe food cropsfrom the plantation site I am now able to send him money regularly " (Male beneficiary, Breku, 2013).

4.5.2: Contribution ofprogram to household health needs

Relationship between poverty and health has been established by many scholars and institution (see The Canadian Institute for Health Information (CIHI, 2003), Minkler, 1999). A research conducted by South African Health Report (S.A.H.R, 2001) showed that incidence of phthisis, lupus, acute rheumatic, fever and middle ear diseases were more common among the poor than the well-to-do. Minkler (1999) also pointed out that poverty is one of the most important risk factors to ill-health. He showed that people with annual incomes of less than US$ 10,000 have been determined to have more than three times the risk of dying in a given year than those who earn US$-30,000 in some parts of the United States of America.

Figure 4.2: The health conditions ofbeneficiaries



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	Poor	Very poor	Good	Very good
• Before	8.75	2.5	58.75	30
■After	5	1.25	43.75	50

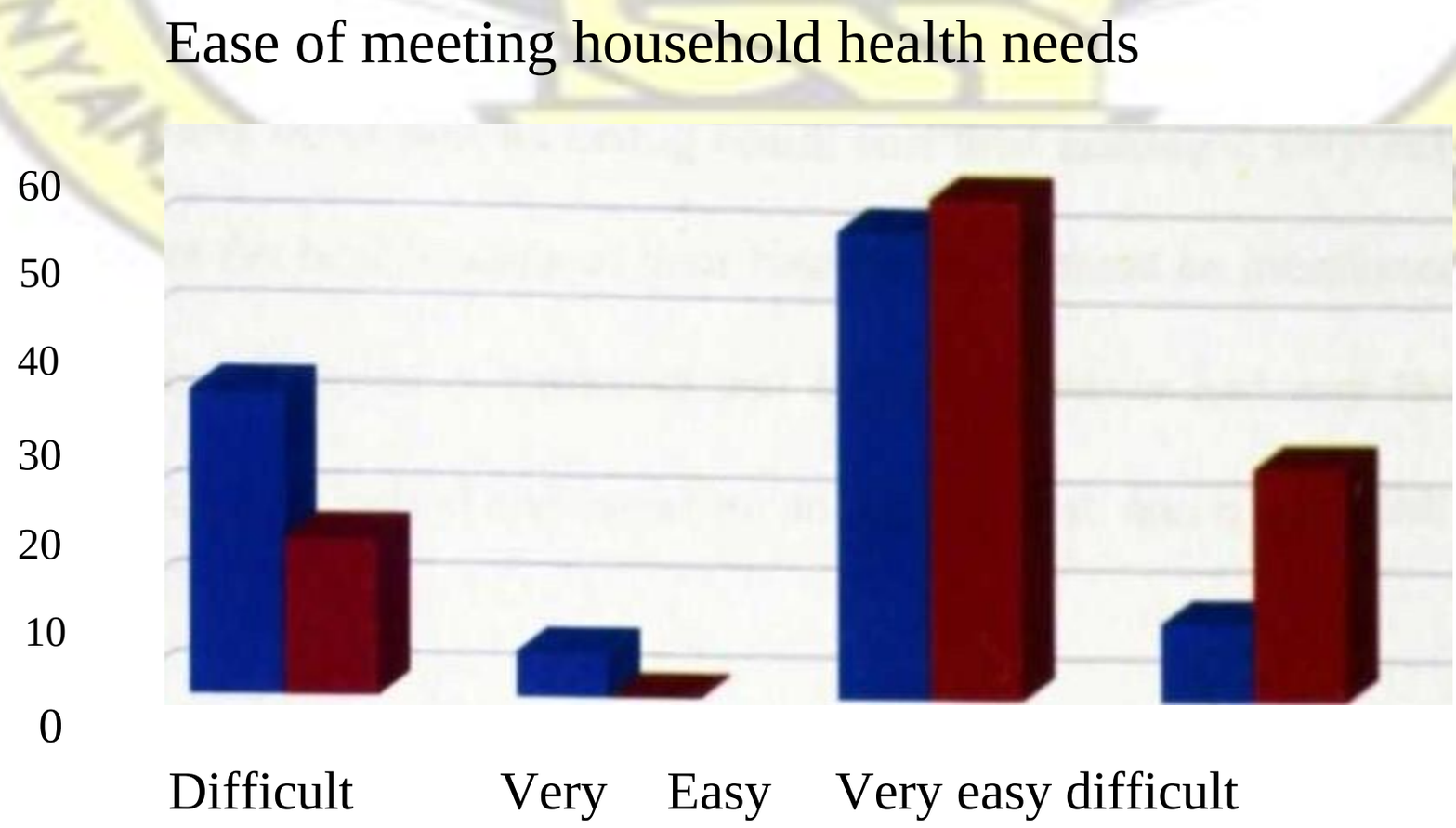
Source: Fieldwork, 2013

The beneficiaries were asked to rank their health condition on a four point Likert scale ranging from very good to very poor. Approximately, 60% of the beneficiaries considered their health condition to be good before enrolling on the program compared to 35% after enrolling on the program. In addition, half of the beneficiaries after enrolling on the program considered their health conditions to be very good as compared to only 30% before enrolling on the program. The data gathered also shows a reduction in the number of beneficiaries who considered their health conditions to be poor and very poor after enrolling on the program (Refer to Fig. 4.2).

Notwithstanding the myriad factors affecting the quality of health of an individual, the ease Of meetings such needs is a major factor, consequently beneficiaries were also asked to select from the four point Likert scale ranging from very difficult to very easy, their ease Of meeting their health needs before and after enrolling on the forest plantation program.

This enabled the researcher to establish relationship between the ease of meeting health needs and engagement in the forest plantation program as shossn in Fig. 43.

Fig. 4.3: Ease of meeting health needs by beneficiaries



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• Before	33.75	5	52.5	8.75
■After	17.5		56.25	26.25

Source: Fieldwork, 2013

The data gathered indicates that there was a reduction in the number of beneficiaries who found it difficult and very difficult meeting their household health needs after enrolling on program. Moreover, the number of beneficiaries who found it easy and very easy meeting their household health needs increased significantly. There was a slight increase (52.5% to 56.2%) in the beneficiaries who met their household health needs easily after enrolling on the program. The data gathered also revealed that there is a sharp increase in the beneficiaries who were able to meet their household health needs very easily after enrolling on the program. This resulted in-the-reduction of the beneficiaries who found it difficult meeting their household health needs before enrolling on the program by half. None ofthe beneficiaries found it very difficult meeting their household's health needs after enrolling on the program as can be seen from Fig. 4.3.

The ease of meeting household health needs by most beneficiaries can be ascribed to the increase in income from the monthly wages and sale of food crop inter grown between trees. More so, the provision of working material such as farm boots, cutlasses inter alia means that income previously channeled towards the purchase of these working materials can be used for settling other cost including health cost thus making it very easy for most beneficiaries to meet the health needs of their households. It must be mentioned here also that most of the beneficiaries commented that they have never had any major health challenge over a very long period and therefore do not spend so much on health care.

4.6: Contribution of program to household food security

One of the main objectives of the forest plantation development program is to achieve household food security which can simply be defined as the ability of a household to secure, either from its own production or through purchases, adequate food for meeting the dietary needs of all members of the household (FAO, 201 Oc). Key components of food security are the availability of sufficient quantities of food on a consistent basis and access to sufficient resources to obtain appropriate food for a nutritional diet. Accordingly the contribution of the program to food security was analyzed based on these key components.

According to Marfo et al. 2002, cited in Ledger, 2009), livelihoods are built nearly entirely on the use of local natural resources in FFCs. Land is an important natural asset that contributes to household food security; nevertheless access to this asset is a major challenge especially among the poor wþ_xesideilyrural areas. Webster (1990) also identifies scarcity of land as a major cause of poverty in the Third World economies.

Beneficiaries of the program had an average land size of one (l) Ha transferred to them for the cultivation of trees and growing of food crops in between the planted trees till their maturity. Access to land by beneficiaries of the program to grow food crops contributed to their household food security by increasing the availability of food at the household level. Some ofthe food crops grown by the beneficiaries included plantain, cocoyam, yarn, maize and vegetables (tomatoes, pepper, onions etc.). Data from the Ashanti Regional office Of the Forestry Commission reveals that an estimated total area of 281.77 ha in 2012, 344.40 ha in 2011 and 214.90 ha in 2010 were planted with food crops (FCG, 2012b) by beneficiaries of the Expanded Plantation Program in the Asante Akyim South district. The following were recorded in the sampled communities (See Table 4.10).

Table 4.10: Estimated total area planted withfood crops in sampled study communities

Sampled communities	Land cultivated between 2010 & 2012 (In Ha)

Pra River	85.5
Breku	46.5
Kajo Formaso	32.5
Bompata	4.0
Total	170.5

Source: Forestry Commission of Ghana (Ashanti Region), 2012b

In relation to other food crops, plantain occupies the highest percentage of land and constitutes 48% of the total crops grown by the beneficiaries. Plantain was grown by the entire beneficiaries of the program. This may be attributed to the fact that the branches of the plantain serves as shade for other crops grown as well as the planted trees. Maize and cocoyam constituted approximately 22% and 19% of the total food crops grown and were

grown by thirty seven (37) and thirty (32) beneficiaries of the program respectively. Yams and vegetables were grown by ten (10) and seven (7) beneficiaries and occupied constituted six (6%) and four (4%) respectively and nearly 12% and 9% ofthe total number of beneficiaries (See Table 4.12).

Table 4.11: Types offood crops grown by beneficiaries

Food Crop	Frequency	Percent
Plantain (in bundles)	80	48.19
Maize (in bags)	37	22.28
Cocoyam (in small basket)	32	19.28
Vegetables (in small basket)	7	4.22
Yam (tubers)	10	6.03
Total	166	100

Source: Fieldwork, 2013

Cassava which is a major food crop in Ghana was however not recommended for growth in between the trees, thus none of the beneficiaries cultivates it. Cassava was not recommended for growth in between trees because of its root system which may interrupt with the planted

trees. It was therefore obvious when some beneficiaries recommended that permission be granted by officials to grow them.

During the last harvesting season, beneficiaries of the program harvested an average of 42 bundles of plantain, two (2) bags of maize, three (3) small basket ofcocoyam, an half basket of vegetables (pepper, tomatoes etc.) and 17 tubers of yam per individual. A total of 3,340 bundles of plantain was harvested during the last harvest season with some beneficiaries harvesting a maxíinum of 300 bundles of plantain which was the most important crop grown by all the beneficiaries on the program. Maize was the second most important crop grown by all beneficiaries.

Approximately 83 bags of maize were harvested during the last harvest season by all the beneficiaries with individuals harvesting as much as seven (7) bags. In an approximate sum of 103 small baskets ofcocoyam and 22 small baskets of vegetables were harvested. Also, a total sum of 174 tubers of yarn was harvested (See Table 4.12).

Table 4.12: Quantities ofcrops grown by beneficiaries

Food crop	N	Minimum	Maximum	Total	Mean
Plantain (in bundles)	80	2	300	3340	41.75
Maize (in bags)	37	0.5	7	83	2.24
Cocoyam (in small basket)	33	0.5	30	102.5	3.11
Vegetables (in small basket)	7	2	5	22	3.14
Yam (tubers)	10	10	25	174	17.40

Source: Fieldwork, 2013

The data shown in Table 4.12 demonstrate the contribution of the program to food crop production. It brings to the fore the evidence that the program has indeed added to food crop production and thus household food security. It therefore confirms the work of Adjei and Eshun (2013) which concluded that the ability to grow food crops in between planted trees leads to increased food crop production among beneficiaries of decentralized nature governance system (the Modified Taungya System).

Approximately, 85% of the beneficiaries grew the food crops for both subsistence and for sale whiles another 14% grew the food crops for only subsistence. Only one respondent grew the food solely for sale. The study also revealed that none of the respondents has ever experienced food shortage si2gg-enrolling on the program. This speaks voluminously on the contribution of the program to household food security.

A female beneficiary of the program commenting on the contribution of the EPP to household food security indicated that:

> "Since Ijoined this program, my household has never had to purchasefood crops. Every food crop I need to sustain my household is directly derivedfrom the land allocated through the program " (Female beneficiary, Pra River, 2013).

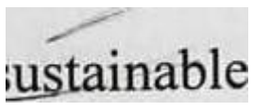
Another respondent in Breku remarked as follows;

> "Since I am able to sell some ofthe food crop I inter grow on the land allocated to me by the project, my household is now able to purchase other food items such as meat andfish to improve our diet" (Male beneficiary, Breku, 2013).

These comments indicates the general views expressed by other beneficiaries of the program with regards to the contribution of the EPP to food security at the household level.

4.7: Sustainability of the program

The term sustainability has been variously defined depending on the context it is used and in which profession it is used. For the purpose of this study sustainability was looked at through the lens of how the program can generate employment opportunities over long period of time and how the benefits accruing to beneficiaries on the program can be maintained long after the program has ended. The sustainability of the program was therefore considered from the perspective of individual beneficiaries and the officials in charge of implementing the program.

Approximately, 89% of the beneficiaries considered the program a 

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opportunity given the access to land and income from monthly wages and sale of food crops while the remaining 1 1 % do not consider the program as a sustainable livelihood opportunity.

It was observed that most of the people who considered Fogr•un a sugain*lc livelihood considers it in terms of the transfer of assets (land. seedlings. working tools etc.) md its employment generating capacity and not necessarily the sustainability of tžx benefits derived from the program.

Notwithstanding the fact that majority of the beneficiaries considered the program as a sustainable livelihood opportunity, none of them knew how long they will be employed on the program and how long the program itself will last. Data gathered from Ecotech Ghana Limited and the Juaso Forest District Office attests to the sustainability of the program.

According to a Director at EGL

> "the program is sustainable in terms of its employment generating capacity" (A Manager, Ecotech Ghana Limited, 2013).

It was explained that there are large portions ofdegraded forest land to ensure the continuity of the program over a long period of time. Notwithstanding, it was added that

> "the sustainability of the program was directly tied to the government in power. Given that the program is contract based and subject to annual renewal, a change in government may result in the abolishment of the program or change in its operations (A manager, Ecotech Ghana Limited, 2013).

This situation is very common in Ghana where a change in government results in a change or total abolishment of programs. The Juaso Forest District also confirms the large spans of degraded forest to ensure the sustainability of the program. It was indicated that: "The Juasoforest *district had vast degraded forest* land to ensure the sustainability

> ofthe program and with the extension ofthe program to cover offreserve lands the program can be sustained" (An officer, Juaso Forest Service Division, 2013).

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It was gleaned from the responses of the key informants that their idea of sustainability of the program was also limited to the implementation of the program and not necessarily the impacts of the program on the living conditions of the beneficiaries.

To establish whether the contributions from the program can be maintained even after the program has come to an end2 beneficiaries were asked if any form of training has been conducted by the key stakeholders on how to channel their gains from the project to other avenues to ensure maximum benefits. It was gathered that no such training has ever been conducted.

More so, the beneficiaries were asked whether they will be able to cope with their household needs after the program has come to end. Out of the total sampled beneficiaries 66% answered in the affirmative while the remaining 34% answered in the negative. Most of the people who answered in the affirmative attributed their response to the fact that they invest part of the income from the program in their own farms therefore they can rely on that when the program ends. Other reasons for answering in the affirmative included the perception of the program by beneficiaries as a secondary source of income and also the expectation of remittances. Those who answered they will not be able to meet their household needs attributed their reasons to the factthat the forest plantation was their sole source of income while others also attributed their response to the inability to access land to farm.

4.8: Factors affecting implementation of program

4.8.1 Factors promoting the implementation ofprogram

The opportunity to grow crops in between planted trees, supply of working material, favourable climatic conditions and team work were identified as the main factors promoting the implementation of the program from the perspective of beneficiaries.

Table 4.13 Factors promoting implementation ofprogram

Factors promoting program implementation	Frequency	Percentage
Opportunity to grow crops	75	68.20%
Supply of working materials	21	19.10%
Favourable climatic conditions	9	8.20%
Teamwork	5	4.500/0
Total	110	100.00%

Source: Fieldwork, 2013

From Table 4.14, the opportunity to grow food crops in between planted trees was seen as the most important factor with 68% of the beneficiaries agreeing to this. A little above 19% also selected the supply of working material as the second most important factors promoting implementation of the program. Beneficiaries were supplied with cutlasses, wellington boots inter alia in the discharge oftheir duties. These materials were also used by beneficiaries on their personal farms as well as the plantation sites; consequently this motivates most people to participate in the program. In addition, approximately eight (8)

per cent and five (5) per cent of the sampled beneficiaries considered favourable climatic condition and team work as the factors promoting the implementation of the program

respectively. From the perspe'!jye-o£.key stakeholders (Ecotech Ghana Limited and Juaso Forest Service Division), the availability of vast degraded forest lands and the drive to halt deforestation are the key factors promoting the implementation of the EPP.

4.8.2 Factors hindering the implementation ofprogram

The forest plantation program like any other national program is plague with some challenges. These challenges were looked at from the perspective of the major stakeholders

including Ecotech Ghana limited, the Juaso Forest Service Division and the beneficiaries of the program.

Table 4.14: Factors hindering the implementation ofprogram

Factors hindering the implementation of program	Frequency	Percentage
Inadequate wage/delay in payment	80	59.70
Delay in seedlings supply/Land allocation	39	29.10
Delay in provision of working materials	10	7.46
Poor supervision	5	3.74
Total	134	100

Source: Fieldwork, 2013

From the perspective of the beneficiaries as shown in Table 4.15, inadequate /delay in the payment of the monthly wages was recognized as the most significant factor hindering the implementation of the program. All the beneficiaries agreed to this challenge thus it constituted approximately 60% of the challenges affecting the implementation of the program. In an interview with a manager of EGL and a district forestry officer at Juaso, this challenge was also confirmed. A manager of EGL confirmed that:

> "the GhC4.60 per man-days given to beneficiaries is woefully inadequate and a disincentive to most people from engaging in the program especially in areas where the allocated land do not permit crop cultivation either due to land infertility orJ1igh elevation of land" (A manager, Ecotech Ghana Limited, 2013).

The delay in the payment of the monthly wages was also confirmed which was attributed to the delay in reimbursement by government.

It was mentioned that:

> "due to the delay in payment ofthe wages some beneficiaries on the program abandon the program whiles others are also not motivated to work hard',
>
> (An Officer, Forest Service Division, Juaso, 2013).

However the question to be asked here is whether the delay in reimbursement must affect payment given that the project contract enjoins the private companies in charge of implementing the program to pre-finance the project.

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Other challenge identified by both beneficiaries and Ecotech Ghana Limited is the delay in allocation of land and supply of seedlings for planting. Approximately 29% of the beneficiaries identified the delay in land allocation and seedling supply as factors affecting the implementation of the program. It was gathered that lands were allocated to beneficiaries mostly in the middle of the farming season when the rains had already started. This affects the farmers immensely since they depend on the rain for their crops. According to an officer at the Juaso Forest Service Division;

> "the delay in allocating land tofarmers on time is because ofthe delay in receiving order from the Forestry Commission head office in Accra. The program is not decentralized thus order must comefrom the head office to the district office before they can also allocate landfor surveying and demarcation (An Officer, Juaso Forest Service Division, 2013).

More so, the delay in delivering seedlings to beneficiaries was also a major challenge. It was mentioned_that;

> "There were times when farmers had to plant their crops before seedlings were given them to plant trees.
>
> This affects the spacing between one treeplant and the other with a highprobability that the tree plant cultivated can be cut off when weeding is done " (A manager, Ecotech Ghana Limited, 2013)

Delay in taking delivery of working material such as cutlasses, booths, overalls etc. was also considered by 7% of the total number of beneficiaries while 3% identified poor supervision as challenges confronting the smooth implementation of the program (See Table 4.13).

Furthermore, lack of logistics at the district forestry department and the employment of people with inadequate skills in forestry in the forest plantation development were considered major challenges. It was expressed that; "Lack oflogistics impedes reporting and monitoring ofthe progress ofwork done '

(An officer, Juaso Forest Service Division, 2013)

It was further observed that the presence of EGL was not much felt in the beneficiary communities. They had no physical structures (offices) at the district to be accessed by beneficiaries. More so, the district manager and the field assistants were the only representative of EGL on the field and given the vast distance from one reserve to the other, it was very difficult supervising the entire beneficiary communities regularly.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1: Introduction

This chapter presents a summary of the study and the conclusions based on which recommendation for future research and policy formulation is made. This chapter therefore comprises three main parts; summary, conclusion and recommendations.

5.2: Summary

There has been significant reduction in the overall poverty rates of Ghana over the last two decades. Nonetheless, poverty remains endemic in rural Ghana. Many strategies have therefore been employed aimed at reducing poverty. Among these strategies in recent times

is the development of forest plantation. Much is however not known on the contribution of forest plantation development to poverty alleviation. This study therefore evaluated the EPP to establish the synergy between poverty alleviation and forest plantation development. The specific objectives of this study were to examine the contribution of the program to: the income, the household food security and the living conditions of beneficiaries. The sustainability of the program and the gains made by beneficiaries and the factors that affect the implementation ofthe program in the selected communities within the AASD were also examined.

To achieve these objectives household heads engaged in the program, the district and regional managers of EcotecÞQ_hana-Lim1•ted, District Forest Officers were considered as units of analysis. Four communities namely Pra River, Breku, Kajo Fomanso and Bompata were randomly selected as the operational areas from which data was gathered. Eighty (80) household heads in addition to forestry officers at the Juaso Forest Service Division, district and regional managers of Ecotech Ghana Limited as well as one field assistant were selected for the study.

The tools used for data collection included questionnaires, participatory observation and semi-structured interview guides. Descriptive statistics such as descriptives and frequencies were employed to summarize and display the findings of the study which were presented with the aid of tables and figures. Two-sample t test and linear regression were also employed to establish relationships. Qualitative data were also analyzed by searching for patterns and major themes which were discussed in depth and used to support the quantitative data.

5.3: Summary of major findings

5.3.1 Contribution ofprogram to income ofbeneficiaries

The average monthly income of beneficiaries changed from 142.75 to GH<318.50 (a difference of GH<175.75) after enrolling on the program. This was attributed to the additional income earned from the sale of food crops inter grown in between planted trees and the monthly wages paid for work done on the plantation. The study also established a strong positive correlation between the total monthly income and the monthly income from the program which was statistically significant. It was found out that approximately 58.5% of the change in total monthly income earned by beneficiaries was explained by the change in the monthlyincome derÿgd-fronvthe program. Moreover, it was unveiled that an increase in the income of beneficiaries of the program by GH<I will amount to approximately GHé0.98 in the total monthly income of beneficiaries.

Using the minimum wage of GHC5.24 (2013) as the poverty line, the study reveals that none of the beneficiaries was below the poverty line of GHC104.8 per month. Notwithstanding this, almost 24% of the beneficiaries considered themselves as poor with approximately 76% considering their current state of being as satisfactory.

5.3.2: Contribution to the educational needs of beneficiaries

The study reveals that 65% of the total number of beneficiaries had all their children of school going age in school as at the time of the study. A slight difference was also observed between the ease of meeting households' educational needs before and after enrolling on the program by beneficiaries. The total number of beneficiaries who were able to meet their household educational needs easily after enrolling on the program were 48.8% compared to 36% before enrolling on the program. There was also an increase of in the total number beneficiaries who were able to meet their households' educational needs very easily after enrolling on the program by five (5%). In addition the total number of beneficiaries who found it difficult meeting their households' educational needs before enrolling on the program reduced from 32.5% to 15.0% after enrolling on the program. This was attributed to the additional income support from the program

5.3.3: Contribution to the Health needs of beneficiaries

The study found out that approximately 60% ofthe total number of beneficiaries considered their health condition to be good before enrollingson the program. This however reduced by almost half after enrolling on the program. The number of beneficiaries who considered their health conditions to be very good on the other hand increased with enrolment on the program.

Moreover, the data gathered showed a reduction in the total number of beneficiaries who considered their health conditions to be poor and very poor after enrolling on the program.

Furthermore, none of the beneficiaries found it very difficult meeting their household's health needs after enrolling on the program. There was also a reduction by half of the total number of beneficiaries who found it difficult meeting their household's health need after enrolling on the program. In addition, significant increase in the total number of beneficiaries who found it easy and very easy meeting their household's health needs was observed from the data gathered.

5.3.4 Contribution ofprogram tofood crop production and householdfood security

The study revealed that the program played an important role in the food crop production of beneficiaries thereby contributing immensely to household food security. An average land size of 1 ha was transferred to beneficiaries for planting trees and also inter-growing their food crops. Given the transfer of land for inter growing food crops; the study indicated that none of the households engaged in the program has ever witnessed any food shortage. Food crops grown by beneficiaries included plantain, maize, cocoyam, yam and vegetables e.g. tomatoes, pepper among others. Plantain was the main crop grown by all beneficiaries followed by maize. An estimated total area of 281.77 ha in 2012, 344.40 ha in 2011 and

214.90 ha in 2010 were planted with food crops by beneficiaries in the study district (Forestry Commission, 2012b). Eighty five per cent (85%) of the beneficiaries grow food crops for both subsistence and for sale. Another 15% of the beneficiaries inter grew food crops for only subsistence with only one of the beneficiary inter growing the food crop for sales only.

5.3.5: Sustainability of the pgggza»a——

The study discovered that approximately 89% of the total sampled beneficiaries considered the program a sustainable livelihood opportunity. This was also confirmed by the key stakeholders (Ecotech Ghana Limited and Juaso Forest Service Division).

It was however observed that the forest plantation program in general was considered sustainable with regards to the available degraded forest lands.

5.3.6: Factors promoting implementation ofprogram

The opportunity to grow food crops in between planted trees, supply of working material, favourable climatic conditions and team work were identified as the main factors promoting the implementation of the program with the opportunity to inter grow food crops as the most important factors from the perspective of the beneficiaries. From the perspective of key stakeholders (Ecotech Ghana Limited and Juaso Forest Service Division), the availability of vast degraded forest land and the high quest to arrest deforestation are key factors promoting the implementation of the program.

5. 3.7: Factors hindering implementation ofprogram

From the study, it was gathered that inadequate/ delay in payment of monthly wages, delay in allocation of land/supply of seedlings for planting, the delay in delivering seedlings to beneficiaries, the delay in taking delivery of working material such as cutlasses, booths, overalls inter alia and poor supervision were the main challenges confronting the implementation of the program from the perspective of the beneficiaries. Inadequate/ delay in payment of wages was regarded as the most challenging situation by all the total sampled beneficiaries followed by delay in allocation of land/supply of seedlings for planting.

From the perspective of Ecotech Ghana limited, inadequate wages per daily work done was identified as a major disincentive affecting the implementation of the program. More so, the delay in renewing contr>annually and the delay in reimbursement of funds were considered major factors hindering the program implementation. The delay in renewing the

mandate feeds into a chain of events which consequently affect the implementation of the program.

From the viewpoint of the Juaso Forest Service Division, lack of adequate logistics is a major factor hindering the implementation of the program of the program as it hinders monitoring and reporting on the program. Also, the employment of people with inadequate skills in forestry was considered a hindrance in the implementation to the program.

5.4 Conclusions

The study demonstrates the immense contribution of the EPP to the income and living conditions of beneficiaries. The study placed in the context of the sustainable livelihood framework reveals a sustainable livelihood outcome (increased income, improved living conditions and improved household food security) for beneficiaries. Increased income was derived from the monthly wages and income from the sale of food crops by beneficiaries of the program. It was evidenced from the study that the monthly income from the program contributes significantly to the total monthly income of beneficiaries thus the null hypothesis was not rejected.

Furthermore, it was drawn from the study that the beneficiaries enjoyed increased living conditions. Majority of the beneficiaries were able to meet their household's educational and health needs more easily with their participation on the program. None of the beneficiaries had their children of school going age out of school during the study.

Moreover, the food crop production under the program improved household food security of beneficiaries. It was drawn from the study that participation in the program resulted in none of the beneficiaries having had any food shortage since enrolling on the program.

Natural (land), Financial (income) and Social (opportunity to work in group) assets were transferred to beneficiaries.

It was therefore evidenced from the study that the EPP is a sustainable livelihood opportunity. Notwithstanding, the gains from the program cannot be said to be sustainable because measures were not in place to ensure the sustainability of the gains from the program when it comes to an end. There has never been any training among beneficiaries in maintaining their benefits from the program. In addition, the program is on contract basis thus it is subject to changes or abrupt end with change of government which may affect its sustainability.

Given the foregoing discussion, the study concludes that Forest plantation development program that actively involve local people contributes immensely to sustainable livelihood and poverty reduction

5.5 Recommendation

The study reveals the important role the program is playing in improving the general wellbeing of the beneficiaries thus it is recommended that measures be put in place to ensure the continuity of the program over a long period of time. The Forestry Commission must encourage and increase the participatory role of the local people in the Asante Akyim south district in forest management activities.

Furthermore, the study recommends that Ecotech Ghana Limited increase the monthly wages paid to beneficiaries and this should be paid in good time to sustain the interest of beneficiaries inthe program.

Also, it was observed from the study that the beneficiaries of the program have never had any form of training with regards to the maintenance of the benefits from the program.

Given that the program aimed at alleviating poverty through employment generation, it is recommended that the District Assembly train beneficiaries to manage and maximize their benefits from the program. The beneficiaries must be trained on how to utilize their increased income from the program in other viable economic activities since they cannot be promised the flow of income from the program forever.

Moreover, it was observed that the off reserve aspect of the program was not functional at the studied communities. All the plantations were planted on degraded forest land belonging to the Forest Service Division. It is therefore recommended that, the Forestry Commission must direct more efforts at encouraging the participation of private landowners in off reserve areas. This will increase the land available for cultivation which will go a long way to ensure the generation of employment opportunities over a long period of time in off reserve areas.

Additionally, one of the major challenges identified as confronting the program was the delay in allocating land and seedlings to beneficiaries. To curb this challenge it is recommended that the renewal of contracts must be done on time. The Ministry of Lands and Natural Resources may also consider signing a long term contract with implementing bodies. Inspection of project must also be undertaken on time to ensure prompt payment of the private contractor. This will also translate in the prompt payment of beneficiaries on the program.

Besides, it is recommended that adequate logistics must be made available to the Forest Service Division Office solely for the plantation development program.
This will ensure efficient monitoring and reporting on the program which will promote the implementation of the program.

Finally, further research must be conducted to understand the long term impact of the program on the income and living conditions ofbeneficiaries. This will give a broader view of how forest plantation development translates into poverty alleviation.

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APPENDIXES

APPENDIX 1

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF GEOGRAPHY AND RURAL DEVELOPMENT

TOPIC: FOREST PLANTATION DEVELOPMENT AND POVERTY ALLEVIATION: THE CASE OF SELECTED COMMUNITIES IN THE ASANTE AKIM SOUTH DISTRICT, GHANA

HOUSEHOLD QUESTIONNAIRE STUDY AREA:

STUDY DATE:

Demographic Characteristics

1	Age of respondent? 25years [ ] 26-35 years [ ] 36-45 years [ ] 46-55 years [ ] 56-65 years [ ] 66+ years [ ]	2	Level of Education? None [I Primary [ ] JHS [l SHS [l Tertiary [I Vocational/Technical Other (specify).....	7	Origin? Native Migrant. I
				8	If migrant: Home town .....

3	Gender? Male [ ] Female [J	4	Household size? 1-3 [1 b) 4-6 [l 7-9 [l d) 10+ [J		District ..... Years settled .....
5	Marital Status? Married Single Widow/widower [ ] Divorced Separated	6	Number of household involved in plantation scheme? 1-2 [1 c)3-5 [1 6-8 [] d) 8+ [I	9	If migrant, reasons for migrating: a. Family [ ] b. Job prospect [I c. other (specify). . . . .

Contribution of forest plantation to the living condition of beneficiary

10	What is the main reason why you got involved in the plantation programme? Access tv-land/food crop Livelihood/income Environmental preservation Other (specify). ...	11	Primary Source of Income Farming [ ] Hunting [ ] Trading [ ] Food vending [ ] Forest plantation[..... Remittances Other specify.	12	Secondary Source of Income Farming [Hunting [J Trading Food vending [Artisan [Forest plantation [J Remittances Other specify. .. ..

14	What was your Total Estimated Monthly Income before enrolling on the programme? g..	16	How would you describe the financial situation of your household over the past two year? Very Good [ ] Good Same [ ] Worsening [Reasons.... . . . .
15	What is your current Monthly wage from Plantation¢..... Total Estimated Income from plantation crop yieldsg... . . . Estimated income from other income sources:¢..... Total g.		
17	How would you describe the current financial situation of your household? Very poor [ ] b) Poor [ ] c) Not poor[ ] Reasons....	18	How would you describe the health condition of your household before and after enrolling on the programme Before After

	…… ……		Poor [ ] Poor Very Poor [ ] Very Poor Good [ ] Good VeryGood[] Very good [ ]
19	How would you describe the ease of meeting your household health needs financially before and after enrolling on the programme Before After Difficult [ ] Difficult Very Difficult[] Very Difficult [ ] Easy [ ] Easy Very Easy [ ] Very Easy	20	How many of your children of school going age are enrolled in school? All 1 out of total 2 out of the total 3 out of total None Others (Specify)……
21	How would you describe the ease of meeting your household educational needs financially before and after enrolling on the programme Before After Difficult Difficult Very Difficult [ ] Very Difficult [ ] Easy 1] Easy Very Easy Very Easy		

Contribution of forest plantation to Household food security of beneficiary

22	What is the total land size allocated to you? .....ha	23	What types of crop are inter-grown with tree? (Multiple responses apply) Plantain [ ] b).Maize [ ] c) Cocoyam [ ] d) Vegetables [ ] Others specify). .. . .……..
24	Are these crops of choice or suggested by FSD officers/Ecotech Officials a) By choice [ ] b) suggested by FSD		
25	If you answer b to question 24, what would have been your preferred choice of crops?	26	What is the purpose of the crops intergrown with trees? For Sale [ ] b) For Subsistence [ ] c) Both [ ]
27	Has your household experienced food shortage since enrolling on the plantation scheme? Yes [ ] b) No [ ]	29	What was the total crop yield of your household during the last Harvest season? Plantain:(large/small bundles) Maize: bags Cocoyam: bags Vegetables bags Others (specify)...…….
28	If Yes to question 27, what accounted for this shortage? Lack of income to purchase food Crop failure Inadequate crop yield Lack of access to farm land for farming Others (specify).... …….		

Sustainability of the forest plantation programme

30	Were you part of the Modified Taungya System (MTS)? Yes [ ]	31	Do you prefer the monthly wages earned on this programme to the future Benefit Share in plantation after maturity under the MTS? Yes [ ] Explain answer..... ....
32	How long have been employed on this programme? One year Two years Three years		
33	Do you kyww how long you will be employed-on this programme? Yes [ ] No t]	34	If you answer Yes to Question 34, how long will you be employed on this programme? a) One year [ ] b) Two years [ ] c) Three years [ ] c) Four years and above [ ]

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35	Have you undergone any form of training to Improve your capacity in managing your risks? Yes [ ] Reasons	36	Do you consider the forest plantation programme a sustainable livelihood opportunity? Yes [ ] No t] Reasons ....
37	Will you be able to cope when the program come to end Yes [ ] Reasons		....

Factors affecting implementation of programme

38	What factors in your opinion hinders the implementation ofthe programme? (Multiple responses apply) Inadequate/Delay in Wages payment [Delay in land allocation/seed provision Delay in provision of working materials Inadequate supervision [ ] Lack of Periodic Training [ ] Laying off of workers _____	39	What will you recommend for the sustainability of the programme? ....

APPENDIX 2

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF GEOGRAPHY AND RURAL DEVELOPMENT

TOPIC: FOREST PLANTATION DEVELOPMENT AND POVERTY ALLEVIATION: THE CASE OF SELECTED COMMUNITIES IN THE ASANTE AKIM SOUTH DISTRICT, GHANA

INTERVIEW GUIDE (ECOTECH)

Date _____ Name of organization.....

Position in the Organization. . .....

Level of Education.....

What role does your organization play in the implementation of the programme?

_____

What factors are considered in employing people for the programme?

Poverty situation [ ]Gender

Ethnicity/Natives[ ]

What is the ratio of man to women employed on the programmed?

More men to women

More women to men

Equal number of men and women [I

In your opinion, do you consider the programme to be contributing to the reduction of poverty in this_area?

Yes [l b) No

Explain how the programme is reducing poverty or otherwise?

_____

What do you see as the contribution ofthe programme to the living condition of the people?

Income..

.....

Food crop..

.....

Health....

.....

Education..

.....

Are the contributions of the programme to the living conditions of beneficiaries

sustainable? Yes b. No

If Yes [No. Explain.

_____

What measures are in place to ensure the smooth implementation of the programme?

What are the challenges confronting the implementation of the programme?

Is there an exit plan for this project?

What measures are in place to ensure the gains made by beneficiaries of this programme are maintained?

APPENDIX 3

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF GEOGRAPHY AND RURAL DEVELOPMENT

TOPIC: FOREST PLANTATION DEVELOPMENT AND POVERTY ALLEVIATION: THE CASE OF SELECTED COMMUNITIES IN THE ASANTE AKIM SOUTH DISTRICT, GHANA

INTERVIEW GUIDE (Forest Service Division)

Date . _____ Name of organization.....

Position in the Organization.....

Level of Education.....

Kindly brief me on the expanded forest plantation programme in your district (year started, modalities etc)

What role does your organization play in the implementation of the programme?

_____

What is your opinion on the programme as a strategy for poverty reduction?

_____

_____

In your opinion, do you consider the programme to be contributing to the reduction of poverty in this area?

Yes [ ] b) No

What do you see as the contribution of the programme to the living condition of the people?

.....

Income Food crop

.....

Health

.....

Education

.....

Are the contributions of the programme to the living conditions of beneficiaries sustainable? Yes b. No

If Yes [No. Explain.

_____

_____

What measures are in place to ensure the smooth implementation of the programme?

_____

What are the challenges confronting the implementation of the programme?

_____

_____

In your opinion, is the programme sustainable?

Yes No

Reasons..... .....

Does the FSD have enough lands to ensure the sustainability ofthe programme in terms of creating more opportunities?

_____

.....

What account for the delay in the allocation of lands and seedlings for farmers?

_____

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