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PARTICIPATION OF THE YOUTH IN AGRICULTURE AS A LIVELIHOOD ACTIVITY: THE ROLE OF THE BLOCK FARM PROGRAMME IN THE TECHIMAN MUNICIPAL ASSEMBLY OF THE BRONG AHAFO REGION, GHANA

BY

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DECLARATION

I hereby declare that this thesis is my own research. All works consulted has been dully acknowledged.

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DEDICATION

This piece of work is dedicated to the late Professor Kwadwo Asenso Okyere for his role in restructuring my proposal and research instrument. Kwadwo, may your soul rest in peace.

I also dedicate this thesis to the memory of my late untie who passed on during fieldwork for this study. Tonwiah Jimah (AKA Maame) may your soul rest in peace.

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ABSTRACT

The study sought to explore the role of block farming in attracting and retaining the youth in farming. The study was conducted in the Techiman Municipal Area and it examined the motivations and participation of farmers, the inputs accessed and profitability of block farming. One hundred and ten (110) farmers in block farming participated in the study. It emerged that income rather than employment is the most important motivation for participation in the programme. All 110 farmers were in farming before enrolling onto the programme. The inputs accessed include fertilizer, seed, agrochemicals and extension services. Most farmers rely on their own land, arrange for mechanisation services and access informal market services. The study concludes that targeting of youth and new farmers to replace the aging farmer population through block farming was poor. The study recommends greater commitment from both government and implementers to ensure that targeted groups benefit from interventions if agricultural programmes such as block farming are to achieve required objectives. Secondly, a more holistic approach should be adopted if agricultural programmes are to make significant improvement in productivity, improve well-being of farmers and make farming attractive to the youth. Supporting farmers with only fertilizer, seed, and agrochemical and extension services is not adequate. Support should be scaled up to include irrigation services, cash support for manual operations, agricultural mechanisation, storage infrastructure, guaranteed prices and market information. These will help cushion farmers to withstand risk and uncertainty associated with farming. The study also recommends a follow up on youth farmers who participated in block farming to ascertain if they have remained in farming and how they are using farming to improve their livelihoods.

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ACRONYMS

AEA	Agricultural Extension Agent
AGSSIP	Agricultural Services Sub-Sector Improvement Project
AMSEC	Agricultural Mechanisation Service Enterprise Centres
APR	Annual Progress report
AU	African Union
CAADP	Comprehensive Africa Agricultural Development Programme
CBS	Central Bureau of Statistics
CCI	Complementary Community Investment
CCT	Conditional Cash Transfer
CYFD	Child Youth Family Development
DADU	District Agricultural Development Unit
DFID	Department for International Development
ECA	Economic Commission of Africa
ECOWAS	Economic Community of West African States
ECOWAP	ECOWAS Agricultural Policy
ERP	Economic Recovery Programme
FAC	Future Agricultures Consortium
FAO	Food and Agriculture Organisation
FARNPAN	Food Agriculture and National Resources Policy Analysis Network
FASDEP	Food and Agricultural Sector Development Policy
FOB	Free on Board
FSP	Food Security Programme
GDP	Gross Domestic product

GOG	Government of Ghana
GLSS	Ghana Living Standards Survey
GPRS	Ghana Poverty Reduction Strategy
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
GYEEDA	Ghana Youth Employment and Entrepreneurial Development Agency
HABP	Household Asset Building Programme
HSRC	Human Sciences Research Council
IDS	Institute of Development Studies
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Centre
IFPRI	International Food Policy Research Institute
ILO	International Labour Organisation
ISSER	Institute of Statistical, Social and Economic Research
LBC	Licensed Buying Companies
LEAP	Livelihoods Empowerment Against Poverty
MADU	Municipal Agricultural Development Office
MDGs	Millennium Development Goals
METASIP	Medium Term Agriculture Sector Investment Plan
MIJARC[1]	International Movement for Catholic Agricultural and Rural Youth
MOFA	Ministry of Food and Agriculture

[1] Mouvement International de la Jeunesse Agricole et Rurale Catholique

MOTI	Ministry of Trade and Industry
MOU	Memorandum of Understanding
MPCU	Municipal Planning and Coordinating Unit
MTDP	Medium Term Development Plan
MTS	Machine Tractor Studies
MYS	Ministry of Youth and Sports
NAADS	National Agricultural Advisory Services
NAFCO	National Food and Buffer Stock Company
NCCR	National Centres of Competence in Research
NDPC	National Development Planning Commission
NSPS	National Social Protection Strategy
NYEP	National Youth and Employment Programme
NYP	National Youth Policy
OECD	Organisation for Economic Cooperation and Development
OSSAYEP	Osun State Agricultural Youth Empowerment Programme
PAMSCAD	Programme of Action to Mitigate the Social Cost of Adjustment
PRSP	Poverty Reduction Strategy Paper
PSNP	Productive Safety Net Programme
RADU	Regional Agricultural Development Unit
SACCO	Savings and Credit Cooperatives
SAP	Structural Adjustment Programme
SG	Sasakawa Global
SME	Small Scale Enterprises

SRID	Statistics, Research and Information Directorate
SSA	Sub Saharan Africa
STEP	Skill Training and Employment Placement
TMA	Techiman Municipal Assembly
UN	United Nations
UNIDO	United Nations Development Organisation
VIP	Village Infrastructure Project
WHO	World Health Organisation
YIAP	Youth in Agriculture Programme

CHAPTER ONE

INTRODUCTION

1.0 Background

While there is an increasing concern on global unemployment, youth unemployment is probably more important especially when recent looming negative political, social and economic consequences are attributed to continuing worsening livelihoods of the youth (Bennell, 2007; GOG/MYS, 2013). Globally, unemployment is about 12.6 percent (ILO, 2013). In the case of Ghana, unemployment is about 10.6 percent (ISSER, 2011) and 16 percent of the youth between 15-24 years are unemployed (ILO, 2012; Baffour-Awuah, 2013). The reasons for youth unemployment include globalisation, development in information and communication technology as well as advanced technology resulting in capital intensive rather than labour intensive approach to development (Juma, 2007). The ILO (2012) summarises the main factors increasing youth unemployment in Africa to include a growing mismatch between economic growth and employment generation; poor quality of education, training and skills development; lack of comprehensive population policies to reduce population growth; continued reliance on unprocessed raw materials exports and dependence on the agricultural sector.

Youth unemployment in Ghana has been a concern since the 1960s (Hodge, 1964). Among the factors associated with increasing youth unemployment in Ghana are increasing population and the inability of the public sector to provide jobs for the youth, a passive approach to employment and job creation and capital intensive interventions in sectors such as mining with less impact on employment generation when compared to labour intensive

sectors or labour intensive techniques in growing sectors such as agriculture (Baah-Boateng, 2004).

Attempts at reducing youth unemployment in Ghana dates backs to pre-independence period when efforts were made to provide employment for the youth through a youth employment service and setting up of vocational training centres (Hodge, 1964). Following political crises in 1957 due to lack of work for young migrants into Accra, a national workers brigade scheme was established. The objectives of the brigade scheme included providing useful employment to people unable to secure either formal apprenticeship or steady employment and to create an opportunity for the youth to provide patriotic service in the national development agenda. Targeting unemployed men and women between the ages of 15 to 45 years, the scheme provided jobs to 8,281 people by December 1958 and 10,250 by end of 1959 (Hodge, 1964). In 1960 the orientation of the scheme changed from an emergency relief for general unemployment towards agricultural development with focus on production of food stuffs through the development of large agricultural settlements. With the reorientation, young people were to be taught modern farming methods and supporting young men and women with mechanical equipment such as tractors, generators and block farming machines. Young farmers were to be assisted by placing them in cooperatives, with basic tools and seeds, land to work and farm machinery (Hodge 1964). Following the overthrow of the Nkrumah government and the increasing expenditure of the scheme as compared to its contribution to total agricultural production, the scheme became unpopular with successive government (CBS, 1966).

There have been various interventions to provide jobs for the youth within the last three (3) decades. In 1980, an Act of Parliament, Act 1980 instituted a compulsory national service for every Ghanaian attaining the age of 18 years before pursuing tertiary education (Republic of Ghana, 1980). In 1987, a restructuring of the educational system with emphasis on technical education was pursued. In 2001, government conducted a registration of unemployed and underemployed youth which revealed 230,000 new entrants into the Ghanaian labour market every year (Amankrah, n.d). A Skill Training and Employment Placement (STEP) was introduced and trained unemployed youth were supported with micro financing to set up their own businesses. In 2006, a National Youth and Employment Programme (NYEP) was established. The principal aim of NYEP was to empower the youth with employable skills, create job opportunities for the youth and instil in the youth self-discipline, good morals, and patriotism to contribute meaningfully to national development. The modules of the NYEP included youth in security services (including community protection, youth in fire prevention, and youth in immigration), youth in agri-business, youth in health extension, youth in waste and sanitation, youth in paid internship, youth in community teaching assistants, youth in technical skills development, youth in eco-brigade, youth in information, communication and technology and youth in road maintenance. The NYEP targeted creating 500,000 jobs between 2006 and 2012. From 2005 to 2008, a total of 332,578 youth registered for the programme and 108,403 representing 34 percent (table 1a in appendix I) actually enrolled on the programme (GOG/MYS, 2011). The NYEP renamed the Ghana Youth Employment and Entrepreneurial Development Agency (GYEEDA) failed to address the problem of youth unemployment for various reasons including lack of initial capital, ineffective trade

associations, weak access to markets and poor recovery of service and inputs to youth farmers (Devereux and Cipryk, 2009; GOG/MYS, 2011). In 2015, a Youth Employment Agency has been established with a core mandate to develop, coordinate, supervise and facilitate the creation of jobs for the youth and reduce youth unemployment in particular and general unemployment in Ghana.

Notwithstanding these recent efforts, unemployment in general and youth unemployment in particular continues to increase (GOG/MYS, 2013) and this has led to a rethinking on reducing youth unemployment with increasing concern on using agriculture to provide jobs for the youth (IDS, 2012; FANRPAN, 2012).

1.1 The Youth and Livelihoods in Agriculture

Recent descriptions of the youth tend to focus on age descriptions because young people are spending more time in education leading to extending the age of first marriage and entry into the labour market (White, 2012). The youth include people between the age bracket of 15-35 years in Africa (Africa Union, 2006). The youth constitute about 20 percent of the population of Africa and a third of the population in Sub Sahara Africa (Garcia and Fares, 2008). In the case of Ghana, the youth population increased from 1.1 million in 1960 to 3.5 million in 2000. By 2010, 4.93 million, almost 23 percent of the population of Ghana were youth (Baffour-Awuah, 2013). While this growing youth population of Africa and for that matter Ghana is perhaps an abundant asset and a window of opportunity of the continent, a large proportion are unemployed or under-employed and

yet apparently not prepared to engage in agriculture as a livelihood activity (Garcia and Fares, 2008).

The term livelihood is simply a means of gaining a living (Chambers and Conway, 1991) and comprises of the natural, physical, human, financial goods and social capital that determine rural families´ livelihood and well-being (Ellis, 2000). A livelihood is jointly determined by the assets available, access to and use of the assets and activities pursued to achieve a desired outcome (Ellis, 1999). For this study, a livelihood comprises of what people do to earn a living, the resources used; the risk factors that people may encounter in the use of resources to earn a living; and the policy and institutional context that might either hinder or facilitate a household or individual's attempt to pursue a livelihood (Ellis and Allison, 2004).

Agriculture remains an important livelihood option in Ghana and the sector possesses an untapped potential to provide job opportunities for unemployed youth only if it is made more dynamic and appealing (IDS, 2012). This underscores the need for African countries to pay special attention to the relationship between the youth and agriculture (IDS, 2012; FANRPAN, 2012). Brooks et al (2013) emphasises the role of agriculture in reducing youth unemployment and that the sector has the potential to create jobs both directly and indirectly for the youth. They identify four basic pathways to youth employment in agriculture namely 'full-time employment on existing family holdings; full-time employment on new farms; sale of services and part-time farming; and wage work on agricultural farms'. The full-time employment on existing family holdings comprises of young people from farm families with no alternative option than agriculture. They simply

add up to the family labour for farming hoping to inherit land for farming in the near future. In this pathway young people may have land for farming but not capital and skills required if they are to aspire into higher valued farming to improve on their livelihoods (Brooks et al, 2013).

The second pathway comprises of young people who may be on full time employment on non-family farms lands. They may access land within their communities or relocate. This category may be able to cultivate larger farms than those on family farms and may reap more benefits. In either scenario, the possible challenges they encounter include start-up capital perhaps for renting of land and resettling and also extension services (Brooks et al, 2013).

The third pathway is the sale of services pathway comprising of part-time young farmers who may either combine non-farm enterprises with their farm holdings or contributing to farm family operations. They may be engaged in small businesses such as trading in agricultural produce, agro chemical sales and transport services. Such young farmers require capital and skills as well (Brooks et al, 2013).

The fourth pathway, the wage work comprises of young farmers who opts to provide hired labour services on large commercial farms rather than engaging on own farming business. This is a labour-based livelihood comprising of small landholders and landless rural households who derive livelihoods by selling their labour (Brooks et al, 2013).

All four pathways emphasise the importance of different combinations of land, capital and skills. Land is the most important resource in agricultural production (Seini, 2002) However, access to this important resource is a constraint to all population subgroups especially young people (Garcia and Fares, 2008). In a study of family values, land sales and agricultural commodification in Ghana, Amanor (2006) notes it is increasingly difficult for the youth to gain access to family land to engage into farming. Increasing scarcity of land in the wake of commercialisation of agriculture and increasing benefits accruing from share cropping is transforming traditional modes of land transfer such that land owners are opting for contractual arrangements such as share cropping with their children and nephews rather than offering them land by virtue of being next of kin (Amanor, 2006).

Access to other key productive assets with the potential to discourage the youth to take up farming in Ghana and Sub-Sahara Africa at large include limited access to financing, low yields and high post-harvest losses (GOG/MOFA, 2008). Access to finance remains a dominant constraint for small scale enterprises (Aryeetey, 1998). Aside from farming not being an attractive sector to lend out money, the cost of borrowing remains a challenge to small holder farmers including the youth due to high interest rates (ISSER, 2012). Low yield from farming is another constraining factor. The Ministry of Food and Agriculture estimates average yields for major crops to be about 30 to 50 percent of achievable yields (Assuming-Brempong et al, 2011). The sources of the low yield include poor input use such as use of recycled seed, non-use of fertiliser or use of inputs in unrecommended quantities and reliance on rainfed agriculture (Asiedu et al, 2001; Jimah, 2011). This constraint of low yield is exacerbated by high post-harvest losses of about 20-30 percent

for cereals and legumes and about 20-50 percent for other crops (GOG/MOFA, 2009). Such poor yields are a disincentive to engage in farming.

While emphasising the importance of different combinations of land, capital, skills and yield, Naamwintome and Bagson (2013) notes the importance of control of resources and income from farming as essential motivations for the youth to remain in farming in the Upper West Region of Ghana. That the youth play an enormous role in providing family labour for farming and families with many youth have a high potential farm input. However, the youth expressed their willingness to migrate. As much as 83 percent, majority being youths (60%) cites lack of control of farm produce largely because they are not family heads. Seventeen (17) percent indicated declining food crop yields and the opportunity to access diverse livelihood sources as the motivations to migrate.

Behind all the constraining factors is the lack of empathy from relations of youth as parents do not want their children to engage in agriculture. For example cocoa farmers in Ghana reported that they do not want their children with even basic education to venture into farming. Rather they prefer them to continue their education and pick up good jobs in the cities so that they can remit them periodically and build houses for them (Asenso-Okyere, 2011).

1.2 Problem Statement

Youth participation in agriculture has remained low despite various initiatives to entice them to take up agriculture (Benin et al, 2012; Akpan, 2010). Pursuing livelihood options

in agriculture to encourage the youth to take up agriculture as a livelihood vocation have been explored in Ghana in the past under a brigade scheme strategy. The scheme was abolished for various reasons including a mismatch between expenditure and contribution to total agricultural production. In about four (4) decades after abolishing the brigade scheme, the use of agriculture to provide livelihood opportunities for unemployed youth has resurfaced with the name Block Farm Programme.

The block farm concept is a method of farming that comprises of bringing farmers within a specific agricultural location to plant similar crops and thereby simplifying crop management practices. It encourages the adoption of modern practices including the use of agricultural inputs and equipment in order to produce high-quality crops for both household consumption and market (Wade, 2015). The block farming concept was introduced in Ghana in 2009 with the aim of increasing production of specific crops with the choice of crops for an agricultural location based on comparative advantage. It is to put farmers on a contiguous land, provide farming inputs and deliver technical advice to farmers at lower transaction costs (GOG/MOFA, nd).

In 2011, using a focus group approach in 64 communities from 32 agricultural operational areas in 16 districts across four broad agro ecological zones of Ghana, the Ministry of Food and Agriculture conducted an evaluation of the programme. The study assessed the effectiveness and efficiency of the programme, how it compares with other farming models, the benefits and challenges of implementation, linkages with other MOFA initiatives and financial viability of the programme. The study concluded that less than 10

percent of the farmers were youth and this suggests poor youth participation in block farming and perhaps agriculture in general.

A consequence of the low participation of the youth in agriculture is worsening youth unemployment (Bennell, 2007; GOG/MYS, 2013). It is also reported that Ghana is witnessing an aging farmer population with an average age of the farmer pegged at 55 years when life expectancy is between 55-60 years (GOG/MOFA, 2008; GOG/MOFA, 2009; GOG/MOFA, 2010). As 30 percent of the entire labour force of SSA and for that matter Ghana are young people aged 15-24 years (Bennell, 2007), attracting the youth into farming will help address the aging farmer population and propel Ghana as it seeks to promote agricultural-led development to sustain the middle income status and also willing to allocate 10 percent of budgets to agriculture (GHANA ECOWAP/CAADP COMPACT, 2009).

In addition to a recommendation for more research for a better understanding of the motivations of the youth with respect to agriculture as a way of life (Benin et al, 2012), both the Food and Agriculture Sector Development Policy II (FASDEP II) and National Youth Policy of Ghana emphasise the need to attract the youth into agriculture. The implementation of the Block Farm Programme is tailored towards this objective. It is therefore worrying that less than 10 percent of the youth are participating in block farming. It is against this background that the study explores the role of block farming to attract and sustain the youth into farming to improve their livelihoods.

1.3 Objective of the Study

The study is guided by one broad objective and three sub objectives.

The broad objective of the study is:

To explore the role of the Block Farm Programme in attracting and retaining the youth in farming to improve their livelihoods?

The sub objectives of the study are,

i. *To explore the motivation and participation of farmers in block farming in the Techiman Municipal Area;*
ii. *To examine the role of block farming in increasing access to and use of resources for farming in the Techiman Municipal Area;*
iii. *To assess the profitability of block farming to improve the livelihood and wellbeing of farmers.*

1.4 Relevance of Study

The relevance of the present study is twofold. The first relates to contribution to science and includes adding knowledge to the literature on youth and livelihood in agriculture. The study adds evidence on the motivation of the youth to engage in farming and taking up farming as a lifetime vocation. It also adds knowledge on how agriculture base interventions could be used to provide livelihoods to reduce youth unemployment and halting the looming negative political, social and economic consequences attributed to continuing worsening youth livelihoods (Bennell, 2007; GOG/MYS, 2013). The study also provides insights for enhancing the implementation of the youth in agriculture programme especially the Block Farm Programme and by so doing help in addressing the problem of

an aging farmer population which is a threat to improving food security and incomes from farming to enhance Ghana's lower middle income status.

1.5 Structure of Thesis

The thesis is organised in six chapters. Chapter one which is the introductory chapter include the background of the study, youth and livelihood in agriculture, the problem statement, the objective of study and relevance of the study. Chapter two focuses on the youth in agriculture programme and block farming. Chapter three is on literature review and it also discusses interventions to reduce risk and vulnerability of agriculture including social protection, agricultural input subsidies and credit and contract farming. Chapter four presents the methodology while chapter five focuses on analyses and discussion of results. Chapter six is the summary, conclusions and recommendations.

CHAPTER TWO

YOUTH IN AGRICULTURE AND BLOCK FARMING IN GHANA

2.0 Introduction

The chapter comprises of four sections. The first describes two policy frameworks in Ghana that emphasise youth participation in agriculture. The second outlines the components of the Youth in Agriculture Programme (YIAP). The third is devoted to the Block Farm Programme with focus on the objective and targets of the programme, the structures and processes of implementation. The fourth is on other initiatives being implemented by the Ministry of Food and Agriculture to complement the Block Farm Programme.

2.1 Policy on Youth and Agriculture in Ghana

Two recent policies in Ghana that emphasise youth participation in agriculture and support the implementation of the Block Farm Programme are the Food and Agriculture Sector Development Policy (FASDEP) II and the National Youth Policy of Ghana. The Food and Agriculture Sector Development Policy II is the broad policy of the Ministry of Food and Agriculture to guide development and interventions in the agricultural sector. The policy identifies the challenge of an aging farmer population and that the agricultural sector is unable to attract the youth. The policy recommends for measures to attract the youth who have received technical training in agriculture through increased access to financial and mechanised services, technology, land and mentoring of the youth by established agribusinesses especially for those engaged in high value markets (GOG/MOFA, 2008). While the policy aims at attracting the youth with technical training in agriculture, interest

rather than technical training in agriculture is important if the youth are to be attracted to farming.

The National Youth Policy of Ghana is the policy framework for youth activities with a vision to empower the youth of Ghana to contribute to national development. A key component of the policy is developing of strategies to attract the youth in the informal sector into agriculture (MYS, 2010). The policy notes the need to develop more strategic interventions and approaches to attract the youth into agriculture including promoting participation of the youth in modern agriculture as a viable career opportunity and as an economic and business option. The policy envisages that increasing access to resources for participation in agriculture will entice the youth into modern agriculture and this will enhance increase in agricultural productivity to ensure food security, provide employment for a majority of Ghana's population and contributes immensely to the health and well-being of the people of Ghana (MYS, 2010).

2.2 Youth in Agriculture Programme

The broad aim of the Youth in Agriculture Programme (YIAP) is to attract the youth into agriculture as a lifetime vocation (GOG/MOFA, 2011). The core objectives of the YIAP are

> *'make the youth to accept farming as a commercial business venture; generate appreciable income to meet farmer domestic and personal needs; improve the living standards of the youth through better income; motivate the youth to stay in the rural areas as inputs will be delivered at their farm gates on credit and interest free bases; stimulate rural development spurred on by the youth; produce enough food crops, meat and fish using modern methods thus contributing to national development' (GOG/MOFA, 2011, page 5).*

The YIAP has four components namely youth in livestock farming, youth in aquaculture farming, youth in agribusiness and youth in crop farming also known as the Block Farm Programme.

2.2.1 Youth in Livestock Farming

The objective of the youth in livestock farming is to provide livelihood for 12,000 youth in livestock production including poultry, pigs, sheep, goats, grass cutter and cattle rearing and increase meat production to enhance the nutrition needs of the country. Youth in livestock farming are put in groups of 10 and trained in agri-business techniques and livestock management. They are provided with startup package of livestock including support to construct improved and recommended livestock housing, livestock breeds, feed and extension services on livestock management. The conditions to participate in the livestock component include being a youth and expressing interest by submitting an application and signing an undertaking to abide by project processes. The loan period for the startup package ranges from 2-3 years (GOG/MOFA, 2011).

2.2.2 Youth in Aquaculture Farming

The objective of the youth in aquaculture farming is to provide livelihood for 3,265 youth in gainful employment and improve fish supply in rural areas, provide off-season income-generating activities through water resources utilization over a 3-year period. Unlike the livestock component that implementation targets all 10 regions, the youth in aquaculture farming targets regions with aquaculture potential and include 45 districts from the Western, Volta, Ashanti, Brong Ahafo and Greater Accra regions. The startup package of the aquaculture component include support to construct fish pond, cage development and management, fingerlings and extension services on feed and technical services including fish health management, fish farm record keeping, fish icing, processing and marketing. To participate in the programme, a farmer signs a form that specifies repayment of startup package over a maximum of a 2-year period (GOG/MOFA, 2011).

2.2.3 Youth in Agribusiness

The objective of the agribusiness component is to add value to agricultural raw materials through agro processing and marketing. Youth to be engaged in this component will be trained on how to process and sell agricultural produce. Similar to other components, youth engaged in the agribusiness will be provided with required inputs for a specific agribusiness on credit (GOG/MOFA, 2011).

2.3 The Block Farm Programme

The aim of the Block Farm Programme is to attract the youth into farming as an employment avenue and help curb an aging farmer population; stimulate the youth to stay

in the rural areas and help reduce rural urban migration; to engage large tracts of land for agricultural production to enhance the food security needs of Ghana (GOG/MOFA, 2011). The objectives of the programme include generating employment for 545,565 farmers by 2012 (GOG/MOFA, n.d). The Block Farm Programme was launched in 2009 in 39 districts in six (6) regions namely Northern, Upper East, Upper West, Brong Ahafo, Ashanti and Central regions and the targeted crops were maize, rice and soya beans. From 2010, the programme was implemented in all 10 administrative regions and the targeted crops were scaled up to include other crops based on the suitability of crops to particular locations. Table 2.1 illustrates targeted crops and targeted acreages.

Table 2.1: Summary on Area, Production, Costs, Revenue and Employment Generation of Block Farm Programme (2010-2012)

Crop	Area (Ha)	Cost (GH¢)	Production (Mt)	Revenue (GH¢)
Maize Grain	34,398.0	35,181,480.6	103,194.0	56,461,860.0
Maize Seed	4,332.0	4,445,542.6	7,364.4	10,743,973.3
Rice Grain	37,164.0	44,836,871.1	148,656.0	101,669,731.0
Rice Seed	4,990.0	6,034,256.7	19,960.0	21,829,420.0
Soya Bean	15,834.0	10,032,840.0	31,668.0	27,723,072.0
Sorghum	4,005.0	1,586,062.5	5,006.3	7,540,517.2
Tomato	4,750.0	8,848,576.8	95,000.0	2,464,578,108.0
Onion	3,640.0	76,880,000.0	163,000.0	7,994,000,000.0
TOTAL	109,113.0	187,845,630.4	573,848.7	10,684,546,681.5

Source: MOFA (n.d)

Between 2009 and 2013, a total of 180,750 hectares have been cultivated under block farming engaging 277, 250 farmers. Table 2.2 illustrates farmer engagement in block farming from 2009 to 2013 in terms of area cultivated and number of farmers by gender.

Table 2.2: Area Cultivated and Youth Engaged in Block Farming in Ghana (2009-2013)

Year	Area (Ha)/Yr	No. of youth	Male	Female
2009	11,000.00	47,000	39,950	7,050
2010	47,000.00	80,000	60,000	20,000
2011	52,750.00	81,150	64,092	17,059
2012	45,000.00	45,600	31,920	13,680
2013	25,000	23,500	16,450	7,050
Total	180,750.00	277,250.00	212,412.00	64,839.00

Source: Adapted from a presentation by the National Coordinator, YIAP, 2015

2.3.1 Structures and Processes of Implementation

The key implementation structures of the programme include a National Youth in Agriculture Programme office as well as regional and district implementation committees. Regional Agricultural Development Units (RADU) and the District Agriculture Development Units (DADU) are tasked to identify and arrange for large tracts of lands in the regions and districts for the production of selected commodities in which those regions and districts have comparative advantage. They are also to arrange for tractor services for ploughing the lands and allocate the ploughed lands to beneficiaries in organised groups with acreages ranging from 0.5 to 4 hectares. Additionally, RADUs and DADUs are to draw plans and schedules of operations and also prepare crop budgets (GOG/MOFA, 2010). The Ministry of Food and Agriculture also provides extension services through agricultural extension agents (AEAs) and interest free input support including certified seed, fertilisers and agro chemicals as input credit to be repaid either in cash or kind after harvest.

To participate in the programme, a farmer is required to express interest through an application to his or her district directorate of agriculture. The planned exit strategy for a

beneficiary is three (3) years. A farmer who is able to continue repaying his/her debts with YIAP will be allowed to participate in the programme for a maximum of three (3) years when he/she shall graduate from the block farm to look for his or her own land and expand the farm beyond four (4) hectares (GOG/MOFA, 2010). The farmer is to be encouraged to open a bank account with an agricultural inclined bank. The YIAP links graduated farmers to appropriate service providers and banks such as the agricultural development bank, Standbic bank and input dealers. The YIAP also monitors farmers who graduate from the programme in order to draw from their knowledge and experience for new farmers on the programme (GOG/MOFA, 2011).

2.4 Complementary Initiatives to Block Farming

As part of the agenda on agriculture led growth in the drive to reducing poverty and sustaining middle income status, the Ministry of Food and Agriculture is also implementing three other initiatives that will lessen the constraints and attract the youth into farming. These are the Agricultural Mechanisation Service Enterprise Centres (AMSEC), the fertiliser subsidy and National Food and Buffer Stock Company (NAFCO).

2.4.1 Agricultural Mechanisation Service Enterprise Centres (AMSEC)

As part of government efforts to increase access to agricultural machinery in order to increase agricultural productivity, government introduced Agricultural Mechanisation Service Enterprise Centres with a core objective of assisting the private sector to acquire machinery and provide agricultural mechanisation services to farmers (Benin et al, 2012). Government imports tractors with matching implements, absorbs one third (1/3rd) of the

FOB price and sells to farmers on hire purchase. Eighty-nine (89) Agricultural Mechanisation Service Enterprise Centres has been established in Ghana (Benin et al, 2012) and government's targets establishing and fully equipping at least one Agricultural Mechanisation Service Enterprise Centres in all 170 Metropolitan, Municipal and District Assemblies (MOFA APR, 2009; MOFA APR, 2010). The linkage between the Agricultural Mechanisation Service Enterprise Centres programme and block farming is District Agricultural Development Units will hire the services of Agricultural Mechanisation Services Enterprises Centres to plough block farm lands.

2.4.2 Fertiliser Subsidy Programme

In order to enhance increase in fertiliser use as a measure to increase food production, the Government of Ghana in 2008 introduced a fertiliser subsidy of between 40-50 per cent. In 2008 and 2009, the subsidy took the form of coupons known as the voucher programme. Upon receipt of a voucher, a farmer added the amount specified on the voucher to redeem fertiliser from the nearest fertiliser outlet. Following lessons learnt from the 2008 and 2009 programme, including problems with targeting, administrative cost and time spent by MOFA staff on the subsidy programme, the coupon system was replaced with a 'waybill system' in 2010. Under the 'Waybill system' government absorbs port handling charges, loading and transport costs as well as agents' commission to the fertiliser companies to arrive at prices that are affordable to small scale farmers (Benin et al, 2012). A total of 43,176 metric tons and 72,795 metric tons in 2008 and 2009 fertiliser were subsidized respectively. Under the waybill system in 2010 a total of 91,244 metric tons were subsidized with 18 percent allocated to block farming as illustrated in table 2.3

Table 2.3: Use of 2010 Subsidised Fertiliser

Farmer Description	Quantity in MT	Percentage
Sold directly to farmers	72,891	78.9
Sold to block farm	16,597	18.2
Sold to cotton farmers through MOTI.	1,756	1.9

Source: MOFA APR, 2010

The implementation of the subsidy program has increased access to fertiliser. It is reported that in 2008, the number of permanent agricultural input outlets increased by 15 percent and this increase has been associated with the subsidy program. Farmers also feel the distances to dealer points to purchase fertiliser have reduced (MOFA APR, 2009). The role of the fertiliser subsidy in creating a conducive environment for attraction of the youth in farming is reported in the Sissala East and West districts of the Upper West region of Ghana (Naamwintome and Bagson, 2013).

2.4.3 National Food and Buffer Stock Company (NAFCO)

The need for a mechanism to absorb excess produce during bumper harvest and creating market avenues for farmers emerged during a parliamentary debate on the 2009 budget. The Government of Ghana was urged to develop a plan to deal with bumper harvest and create more market avenues for farmers to sell their produce to avoid wastage. In 2010 budget, the minister of finance indicated government was going to establish a buffer stock management agency,

> '…*A Buffer Stock Management Agency will be established, which will have the responsibility of holding food security buffer stocks and intervening in the markets to ensure that competitive prices are paid to farmers at all times (GOG/MOFEP, 2010. page 68).*

In March 2010, the National Food and Buffer Stock Company was established and incorporated under the Companies code of Ghana 1963, Act 179 (Registration No: CA-72,140) as a component of the Ministry of Food and Agriculture broad objective on food security and emergency preparedness. It is wholly owned by the Government of Ghana and its core objective is to mop up excess produce as a strategy to ensure price stabilisation (Benin et al, 2012). In 2009 for example, the national maize production was 1,619,600 metric tons as against demand of 1,197,000 metric tons suggesting a surplus of 422,600 metric tons (SRID, 2009). The National Food and Buffer Stock Company is to mop up such excess food supply and release it into the market at appropriate times to ensure continuous food supply and therefore the stabilisation of food prices. The linkage between the National Food and Buffer Stock Company and block farming is to receive in-kind payment of credit from farmers, mob up excess produce due to block farming and help in stabilisation of prices of farm produce.

The anticipation is that the block farm programme will draw on these other MOFA interventions—the Agricultural Mechanisation Service Enterprise Centres program is expected to provide tractor services for land preparation, the fertiliser subsidy program will provide subsidised fertiliser while the National Food and Buffer Stock Company will serves as ready market, absorb excess farm produce, stabilise prices and also provide

warehouse services for in kind payment from block farms. The complementary initiatives will also increase access to inputs for farming and enhance continued participation of the youth when they graduate from block farming.

CHAPTER THREE

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

3.0 Introduction

The literature review is organised in four sections. The first is on review of literature on state-led interventions to support agriculture with focus on agricultural programmes as social protection interventions. The section also includes a review of other state led interventions including input subsidy, input credit, output price support and the creation of an enabling environment for effective and efficient delivery of agricultural services. The second focuses on review of literature on a non-state led alternative such as community farming. The third is on agricultural contracting and outgrower schemes. The fourth outlines the sustainable livelihood framework adapted for the study.

3.1 Agricultural Programmes as Social Protection Interventions

Social protection maybe described as a strategy to strengthening households and individual resilience to adverse events and shocks (Farrington et al, 2004). There are two types of social protection namely the 'residualist' or 'safety net' and livelihood improving social protection (Farrington et al, 2004). The former focusses on social assistance to vulnerable groups and the latter comprises of social protection tailored to improving livelihoods. Livelihood improving social protection includes activities designed to help poor people manage stress and shocks and stimulate livelihood development and growth through stimulating asset accumulation, reduce inefficiencies from risk and directly protecting poor people's livelihoods (Farrington et al, 2004; Dorward et al, 2006). In sub-Saharan Africa, social protection interventions were to protect vulnerable groups from the harmful

impact of structural adjustment policies (Donward, 2007) but now takes several forms including social security, emergency relief, social transfers, cash or food for work and livelihood promotion' interventions (Devereux and Cipryk, 2009).

Evidence from Ghana shows both 'safety net' and growth related social protection interventions implemented in Ghana. In a study on Agriculture and Social Protection in Ghana, Al-Hassan and Poulton (2009) identifies 'safety net' interventions implemented in Ghana to include food aid, direct feeding projects, maternal and child health activities, take-home rations for girls, general relief for disaster victims and vulnerable groups and the Programme of Action to Mitigate the Social Cost of Adjustment (PAMSCAD). On the other hand, agricultural livelihood improving social protection interventions implemented in Ghana include Ghana IFAD initiatives for improved and diversified sustainable livelihoods for rural poor dependent on marginal lands, provision of micro-credit, small dams for dry season farming and land conservation to enhance resource base of vulnerable groups in Northern Ghana (Al-Hassan and Poulton, 2009).

A recent social protection intervention in Ghana is the Livelihoods Empowerment Against Poverty (LEAP). The LEAP is a component of the National Social Protection Strategy (NSPS) being implemented by Ministry of Gender, Children and Social Protection. The LEAP is a 'safety net' social protection intervention because it is a cash transfer programme targeting vulnerable groups with the desire to ensure their increased access to education and healthcare so as to break inter-generational poverty cycles. However, about

half of LEAP beneficiaries are subsistence farmers and fisher folk and this suggests use of LEAP funds to finance agricultural production (Al-Hassan and Poulton, 2009).

The link between social protection and agriculture has been observed elsewhere. Evidence from Ethiopia and Mexico emphasises the positive impact of combining social protection schemes and agricultural development programmes. In Ethiopia both 'safety net' and livelihood improving social protection are being pursued under the Ethiopia Food Security Programme (FSP). The Ethiopia FSP comprises of four components namely a Resettlement Programme, Household Asset Building Programe (HABP), Productive Safety Net Programme (PSNP) and a Complementary Community Investment (CCI). The resettlement programme and the household asset building program (HABP) are directly related to improving farming (FAO, 2013). The Resettlement programme targets chronically food insecure households to attain food security through support with fertile farmlands, seed, oxen, hand tools and food ration for a period of eight months to farmers willing to engage in farming. The programme also includes improving access to settlement schemes to essential infrastructures such as clean water, health post and access roads.

Similarly, the household asset building programe (HABP) aims to improve food security and comprises of improving technology including providing extension package, crop and livestock inputs, moisture conservation and utilization, natural resource development and training. The FSP also offer support for diversified livelihood options through additional income generating activities and provision of market information. Almost seven (7) million beneficiaries from eight regions and 319 food insecure districts are benefiting from the

FSP. An important characteristic of the Ethiopian FSP is an exit strategy. A yearly assessment is done and a beneficiary household exits from the program upon transiting from food insecurity to food security.

In Mexico, Nehring (2012) identifies two policy streams of offering assistance to poor people in rural Mexico namely social protection through *Oportunidades* and credit for agricultural production (PROCAMPO) (Nehring, 2012). The *Oportunidades* is a conditional cash transfer (CCT) introduced in 1997 largely to offset effects of macroeconomic policies. Though a 'safety net', the *Oportunidades* also targets rural poor (landless or smallholders) to boost subsistence production and increasing agricultural production. Over 20 percent of the population of Mexico benefited from the programme and about 97 percent are poor rural households dependent on agriculture for their livelihood. Nehring (2012) attributes this achievement to the identification of potential beneficiaries before the take-off the programme (Nehring, 2012).

The PROCAMPO on the other hand is a direct transfer and offers direct assistance for agriculture activities based on crop acreage. It is a production subsidy in which a per hectare payment is made to producers to increase access to and use of inputs to allow such farmers transit from cultivation of staples crops to cash crop exports. Unlike the *Oportunidades*, the PROCAMPO did not have a specific target population beyond those who own land and this Nehring (2012) argues the PROCAMPO did not target poor people. PROCAMPO use of land meant rural landless and for that matter majority of poor rural household are left out. As noted, only 13 percent of the farms in the country have land

larger than 5 hectares, yet they received 43 percent of the programme's total payments. Also the focus of PROCAMPO on cash crops also meant that farmers who cultivated traditional crops were not covered under the programme.

The above state led social protection interventions have characteristics similar to the Block Farm Programme. Similar to the Block Farm Programme, the Resettlement Programme and HABP of the Ethiopian Food Security Programme are to support increasing access to farmlands, farm inputs including seed, farm equipment and extension. The *Oportunidades* implemented in Mexico provided input support and extension to smallholder farmers. Similar to the Block Farm Programme, all interventions have an exit strategy. However, as Nehring (2012) observed using only cash and land-based transfers to supporting smallholder agriculture is not adequate to alleviate poverty. Cash transfer will increase the number and ability of consumers to purchase agricultural produce thereby increasing market access for rural producers. However, the lack of credit, increased labour inputs and the high cost of inputs for new crops remain obstacles to poor rural household and young people who will want to venture into agriculture as a life time vocation (Nehring, 2012).

3.1.2 Agricultural Input Subsidies and Price Support Interventions

Agricultural input subsidies have been implemented across SSA including Ghana as a strategy to improving productivity. Agricultural input subsidies may be described as livelihood improving social protection programmes because they seek to enhance access to inputs and hence reduce food production deficits rather than bridging consumption deficits as is the case of food aid or cash transfers (Devereux and Cipryk, 2009).

The commonest input subsidy implemented across SSA is fertiliser subsidies (Kherallah et al, 2002). Studies have recognised the importance of chemical fertiliser use in increasing agricultural productivity and that substantial growth in mineral fertiliser is not only a prerequisite to achieving increase agricultural productivity in SSA, but then lack of adequate plant nutrients impedes the profitability of other technologies. A World Bank report identifies low fertiliser use as a major factor responsible for the lagging growth in agricultural productivity in Africa relative to other regions (World Bank, 2006). It is for this reasons that African governments at a Fertiliser Summit in Abuja declared to increase fertiliser use from 8 kg/ha to 50 kg/ha by 2015 (IFDC, 2008). In Ghana, the most recent fertiliser subsidy is the 2008 nationwide fertiliser subsidy of about 40-50 percent introduced to enable farmers' access to the input. The objective was to increase fertiliser use from 8kg/ha to 20kg/ha (Benin et al, 2012) in order to enhance agricultural production. Nagy and Edun (2002) report of a fertiliser subsidy of about 82 percent in Nigeria in 1990. The subsidy was abolished in 1997 and 1998 but reintroduced in 1999, 2001 and 2002. Evidence from Malawi suggest a 100 percent fertiliser subsidy from 1998 to about 2004 when Malawi implemented a Starter Pack and Targeted Input programs (Dorward et al, 2008).

Related to fertiliser subsidies are agricultural credit subsidies used to support poor household to use agriculture to build their livelihoods. Credit subsidies consist of interest free and low interest loans to farmers in cash or in the form of inputs. In Ghana, Al-Hassan and Poulton, (2009) identifies the Sasakawa Global 2000 (SG 2000) programme

implemented between 1986 and 1989 as a credit subsidy. The objective of SG 2000 was to promote integrated maize packages for smallholder farmers. It targeted promoting maize production in the southern and central parts of Ghana and sorghum in the drier north. Using field demonstrations of 0.5ha or 1.2 acres, farmers were provided a recommended package of fertiliser, improved seed, and in some cases, pesticides for post-harvest grain storage on credit. Unlike the Block Farm Programme with separate unit established for its implementation, the SG 2000 was implemented by the Agricultural Extension Services Directorate of the Ministry of Food and Agriculture. The project started with 40 farmers. By 1989, the number of farmers increased to 15,000 on 76,000 plots and maize yields more than doubled. However, the programme encountered challenges including poor loan recovery. For example loan recovery dropped from 90 percent to 44 percent between 1986 and 1989. Another challenge was the poor selection of poor and vulnerable farmers to participate in the programme largely because the programme was based on credit and managed by extension officers (Al-Hassan and Poulton, 2009).

The SG 2000 was re-designed in 1990/1991. Following the re-design was scaling down of demonstration plots to 5000 and diversification of crops to include rice, cassava and cowpea. Efforts were also made to re-orient the programme towards engaging the private sector as an exit strategy including engaging the Agricultural Development Bank for credit instead of public funds; input dealers for distribution of inputs instead of extension staff. However, the reorientation coincided with major policy shifts in input distribution and pricing, financial market liberalisation and these affected the transition from public to private input marketing (Al-Hassan and Poulton, 2009).

Elsewhere in Uganda, both input subsidies and cash credit are used under the National Agricultural Advisory Service (NAADS). The National Agricultural Advisory Service is a 25-year public- private-partnership programme designed to improve extension to farmers from marginalised households including the youth, women and the physically challenged in Uganda. Initially designed to build the capacity of marginalised farmers to form and operate farmer associations to demand advisory services and adopt improved technologies and practices, NAADS was revised in 2008 to include distribution of free inputs including seed and fertiliser. The package also included capacity building in financial literacy skills that enabled beneficiaries to access formal and semi-formal credit (Geoffrey et al, 2013). An evaluation on the impact of the NAADS program showed a decline in participation of the priority group of marginalised households. The reasons for the low participation of marginalised households included prejudice, lack of awareness and nepotism (Geoffrey et al, 2013). The study concluded that the impact of the programme on farm-household technology adoption, productivity and output commercialisation was weak. Given the support with high-quality inputs and good agronomic practices, yields obtained by NAADS households for all crops were below the expected yield. The study attributes this to late disbursement of funds by Uganda Ministry of Finance to NAADS for implementers which led to delay in the procurement and distribution of inputs to farmers. The study recommends that instead of giving out physical inputs, NAADS should instead work with micro-finance institutions to increase household access to credit at timely and affordable rates, ensure steady and adequate rather than intermittent and inadequate input support. The study also recommends for early disbursement of funds for agricultural activities (Geoffrey et al, 2013).

Yet another alternative is output price support which could be described as a policy option to increase farm gate prices of output as a measure to induce farmers to increase productivity. Unlike input subsidies, output price support raises returns to all factors of production such that farmers are not induced to use inefficient input combinations. Output price support provides farmers a wider choice than input subsidies which limit choices of famers especially when specific crops are targeted (Crawford et al, 2006).

While input subsidies, input credit and output price support have the potential to motivate the youth venture into farming, it is important to note that the availability of inputs, market information, provision of needed infrastructure including access to land, irrigation, transport and storage infrastructure, guaranteed prices and protection against risk and effective and efficient private sector in the provision of agricultural services is probably more important (Crawford et al, 2006). Collective farming in Soviet agriculture illustrates the complementary role of input subsidy, output price support and provision of required infrastructure in attracting the youth to farming.

Collectivisation of agriculture may be associated with socialist agricultural systems of *Sovkhozy'* and '*Kolkhozy'* that emerged in Soviet agriculture in the 1920s and extended to all Soviet constituent republics by 1933[1]. The *Sovkhozy'* and '*Kolkhozy'* were initiated in Soviet agriculture to boost agricultural production through the organisation of land and labour into large-scale collective farms. While the *sovkhozy* is essentially state farms characterized by salaried workers, the *Kolkhozy* is a collective farm organised as a

[1] http://www.infoplease.com/encyclopedia/science/collective-farm-in-soviet-union.html#ixzz2gjgWiQM5

productive cooperative that dominated Soviet agriculture between 1930 and 1991. Following a revolution in 1917, land in Soviet Union was nationalised and this reduced land rights of peasants to usufruct rights. Farmers were organised around voluntary collective farms on state own land and farm holdings were largely run as a joint enterprise. Farmers were provided with input credit and given a quota to produce. Their income therefore depended on profits after paying off the input credit received (Mead, 1986). Similar to Agricultural Mechanisation Services Enterprise Centres set up to complement block farming, Machine Tractor Stations were set up as a measure to provide scarce tractor services to farmers. The provision of mechanization services to collective farms through the Machine Tractor Stations enhanced the Soviet government ability to control collective farms (Mead, 1986). By 1928, the voluntary approach in participation in collective farming was changed to a forcibly approach with government forcibly confiscating peasants' land, tools, and animals and all family farms were replaced with collective farms. By this, the state decided what crops are to be produced; prices for farm produce and could authoritatively make a requisition for farm produce from collective farms. Following reforms in 1958, government abolished state authoritative requisition of farm produce under collective farming and replaced it with direct state purchases at higher prices. An income guarantee system was instituted and by 1969 a social insurance was put in place for farmers. By 1970s, as an incentive to increase production, collective farmers were assured profits on various commodities.

3.2 Community Farming

Contrary to government supported strategies, Gupta and Parida (2013) illustrate community initiative to use farming to build the livelihood of poor landless farmers in Tumajore, a small village under Hemgir Block of Sundargarh District of Orissa in India. Farming is the major livelihood activity in Tumajore, yet access to land, agro inputs and market are key constraining factors limiting the ability of the people including the youth to use farming to build their livelihoods. Facilitated by a local nongovernmental organisation, Centre for Youth and Social Development (CYSD), the community farming programme comprises of small groups of marginal and landless farmers coming together to access cultivable waste lands or under-utilized lands either on lease or pooling land of individual farmers into a contiguous land. Relying on the people's interest as social capital, farmers contributed labour for land clearance, land development, land plotting, constructing water channel for irrigation and fencing the area while the programme provided technical support including land access, water and crop management, irrigation equipment use and maintenance, capacity building on social mobilization and group management. CYSD also provided market access by linking farmers with local traders (Gupta and Parida, 2013).

3.3 Agricultural Contracting and Outgrower Schemes

Agricultural Contracting and Outgrower Schemes are other alternatives to state-led interventions to improve agricultural production. In a study of linking smallholders to markets in Ghana, Al-Hassan et al (2006) report of linkages that are similar to the block farming approach including informal contracts between traders and farmers, market specification contracts and resource providing contracts. Market specification contracts

specify price, quantity and quality of product that will be delivered at some future date, production management contract specifies price, quantity and quality and also dictates the production process (Al-Hassan et al, 2006). With resource providing contract, the buyer provides all or part of the inputs to be used in producing the output to ensure that output meets desired quality standard (Al-Hassan et al, 2006). The study identifies examples of these agricultural contracts in Ghana including the Tongu fruits, The Integrated Tamale Fruit Company, Citrus Outgrowers in Akim Oda, and Darko Farms poultry outgrower experiment in the poultry industry. Key issues in the outgrower arrangement included signed written agreement spelling the role of the parties, in this case the companies and the farmers. The companies provided input support including seedlings, fertiliser and other agro inputs and technical services whilst the farmers provide labour and other crop maintenance services to maintain the farms. The companies serve as source of market for the outgrower produce (Al-Hassan et al, 2006).

The above review illustrates the important role of improving access to productive resources for farming if the youth are to be encouraged to venture into farming as a lifetime vocation. The Ghana brigade scheme and youth specific interventions (in chapter one), the Block Farm Programme (in chapter two), both state and non-state interventions and alternatives all emphasise the important role of improving access to productive resources for farming. The block farm strategy as mentioned earlier is to improve access to productive resources in the quest to improve agricultural productivity, attract the youth and marginalised groups into farming and help curb an aging farmer population. To examine the role of the Block Farm Programme in attracting and retaining the youth into farming to improve their

livelihoods, the study finds the sustainable livelihood framework tool suitable for analysis of the role of the block farming in increasing access to productive resources, in reducing vulnerability of participating farmers to natural and changing economic trends and increasing productivity of farmers that will translate into higher incomes and motivate the youth to take up farming as a lifetime vocation. In the next section is an illustration of the block farm strategy in the context of the sustainable livelihood framework.

3.4 The Sustainable Livelihood Framework

The sustainable livelihood framework is a tool to improve the understanding of livelihoods, particularly the livelihoods of the poor (DFID, 1999). The framework is about the way of thinking about the objectives, scope, and priorities pursued for the purpose of development and associated opportunities and constraints. In its simplest form, the sustainable livelihood framework views people as operating in a context of vulnerability within which they have access to certain assets or poverty reducing factors (DFID, 1999). A livelihood is considered sustainable when it can cope with and recover from stresses and shocks, when it is able to maintain or enhance the capabilities and assets both now and in the future without undermining the natural resource base" (Chambers and Conway, 1991; Carney et al, 1999: Morse et al, 2009).

In a review on the livelihood approach, Carney et al (1999) report that the livelihood approach of four international organisations namely CARE International, Department for International Development (DFID), OXFAM and the United Nations Development Programme (UNDP) are based on the definition of Chambers and Conway (1991). Carney

et al (1999) is of the view that core to the livelihood approach of CARE International is the interaction between an individual's capabilities and access to both tangible and intangible assets namely human, social and economic assets. That the focus of CARE's approach is increasing income or employment and food security and the existence of economic activities. The approach of DFID is promoting sustainable livelihood and include providing better access to assets; supporting effective functioning of processes and institutions to enhance access to assets. Carney et al (1999) report that the focus of DFID's approach includes access to assets and transforming structures and processes with emphasis on human, social, natural, physical and financial assets. OXFAM uses the sustainable livelihood approach in planning and assessment of projects and programmes on economic, social and environmental resources (Carney et al (1999). The focus of OXFAM approach is enhancing capabilities, equity, working towards ensuring links between policy changes and livelihood empowerment. Similar to DFID, OXFAM's emphasis is access to human, social, natural, physical and financial assets. The sustainable livelihood approach of the UNDP is tailored towards poverty, governance and environment with focus on agriculture and natural resource. The focus of UNDP livelihood approach is analysis of strengths, assets and coping/adaptive strategies. The UNDP approach similarly focus on increase access to human, social, natural, physical and economic assets (Carney et al, 1999).

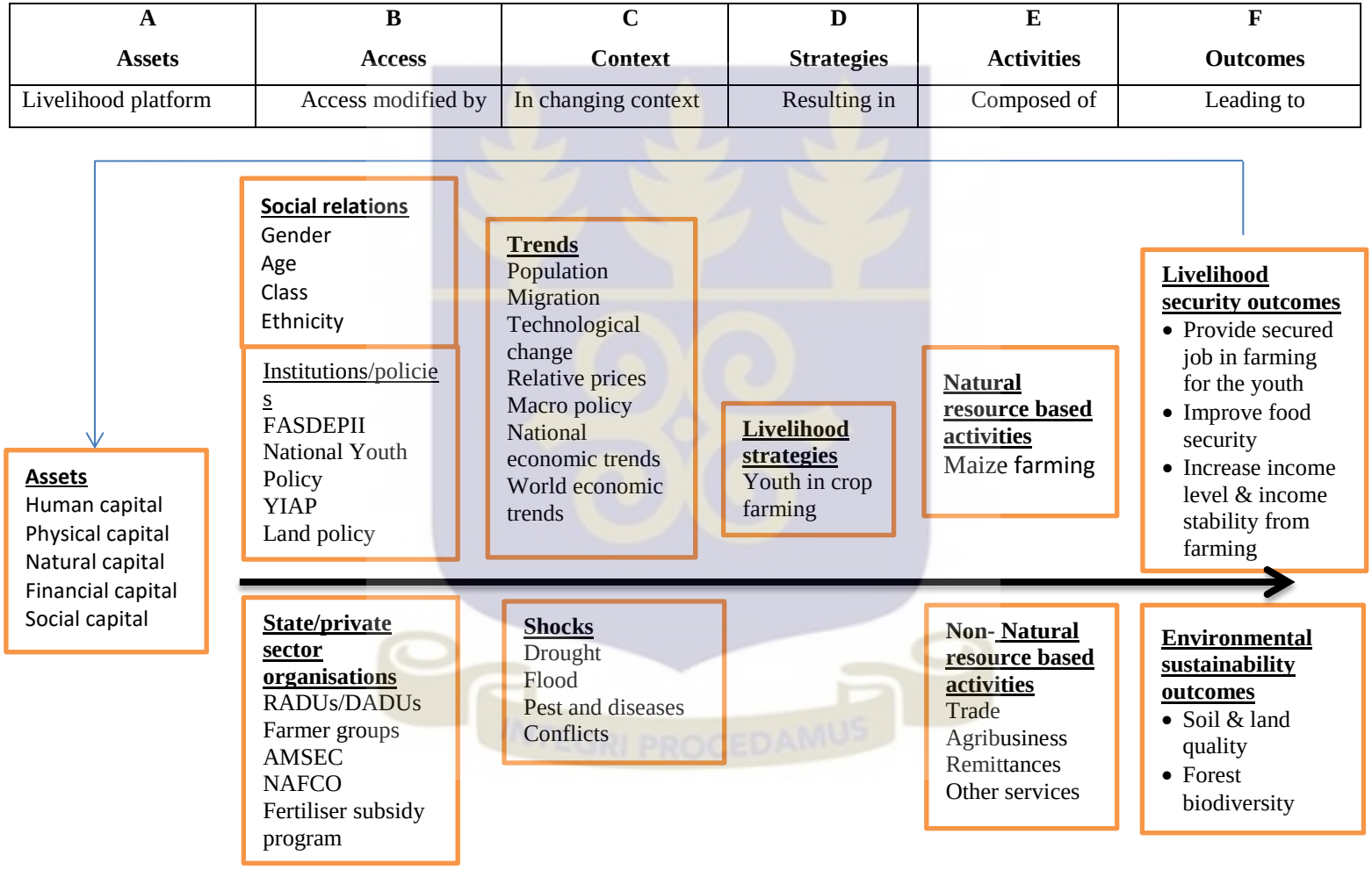
Notwithstanding the approaches outlined above, this study finds the livelihood framework of Ellis (2000) suitable for analysing an agriculture and natural resource base programme such as the Block Farm Programme. The livelihood framework of Ellis (2000) is for micro

policy analysis of rural livelihoods[2]. This makes the framework suitable for analyses on the role of a programme designed to improve rural livelihoods including making the youth to accept farming as a commercial business venture, motivate the youth to stay in the rural areas and stimulate rural development (see chapter 2).

The sustainable livelihood framework of Ellis (2000) illustrates six (6) broad components namely livelihood assets component, access to livelihood assets, the context in which an individual access livelihood assets, the livelihood strategy adopted and the activities to be undertaken, in this case block farming and the desired outcomes of the livelihood strategy. By the design of the Block Farm Programme, all six (6) components are relevant in the implementation of the programme. Figure 3.1 outlines the Block Farm Programme in the context of the sustainable livelihood framework.

[2] http://www.cefims.ac.uk/cedeppap/116_web_unit/page_13.htm

Figure 3.1: The Sustainable Livelihood Framework



Source: Adapted from Ellis (2000)

The asset component illustrates the assets options available to individuals and comprises of five (5) livelihood assets namely human capital, physical capital, natural capital, financial capital and social capital. The human capital portfolio constitute the skills, education or knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies to achieve their livelihood objectives. The physical capital comprises of basic infrastructure and producer goods needed to support livelihoods such as affordable transport and storage infrastructure for farm produce, agricultural machinery, irrigation infrastructure, affordable energy and access to information. Natural capital comprises of land while the financial capital constitute the financial resources required to achieve livelihood objectives such as availability of cash or its equivalent that enable people to adopt different livelihood strategies. Finally, the social capital portfolio constitute the social resources that people use in seeking for their livelihood outcomes and include membership of formal groups or organisations, mutual assistance, networks and connectedness (DFID, 1999; Ellis, 2000; Kollmair and Gamper, 2002).

As a natural resource base activity, all five (5) livelihood assets are required if block farming is to achieve its desired outcomes of reducing youth unemployment through providing jobs in farming for the youth, improve food security and increase income. The five (5) livelihood assets of the framework are key factors for participation in farming and access to these assets constitutes an important component of the Block Farm Programme. The programme identifies young people vulnerability to access required inputs including access to land (natural assets) for farming, financing (financial assets) to purchase agricultural inputs and employ modern technology to increase productivity. In terms of the social capital, the interest of farmers expressed by applying to the agricultural directorate,

bringing farmers together to work on block farms is anticipated to enhance not only farmer to farmer extension on a block farm, but they will also collaborate to access other services for agricultural development including sharing of information on market prices and teaming up to negotiate for high prices for their farm produce.

The access component focus on issues that may modify access to livelihood assets and include the social relations of an individual such as gender, age, class and ethnicity and state institutions and policies established to facilitate access to the resources. All four demographic characteristic may affect ones access to resources for farming. The policy and programme of implementation of block farming outlined in chapter two is to facilitate access to and use of livelihood assets and minimize the effect of these social relations and external factors that have the potential to constrain the youth access to and use of livelihood assets. FASDEP II, National Youth Policy, Land policy, organisations and programmes have been instituted to facilitate and improve access to livelihood assets including the provision of interest free input credit to farmers. Additionally, complementary initiatives including the establishment of agricultural mechanisation service enterprise centres, the fertiliser subsidy programme and National Buffer Stock Company have been established to provide the institutional framework for the Block Farm Programme.

The focus of the third component is the changing context in which individual's access these resources to secure their livelihoods including changing trends in the economy, population, migration and technological changes on the one hand and natural shocks including drought or floods, pest and disease attack on the other. These changes are equally

important for a farm base livelihood activity such as block farming as such changes or shocks may influences output and prices and for that matter profits from block farming and hence the sustainability of the programme.

The livelihood outcomes of the framework are similarly related to the objectives of block farming. In the context of the framework, income does not necessary refers to monetary income but also household food security. Increase in income level and income stability both between and within seasons and reducing the degree of risk are important if farming is to become a secured job for the youth. The objectives of block farming as mentioned earlier include generating appreciable income to meet farmers' domestic and personal needs, improving the living standards of the youth through better income and producing enough food crops for national development. While effective extension delivery from the AEAs will increase technology use and reduce unit cost of extension, effective extension delivery will also ensure sustainable use of the natural environment including less soil pollution and destruction of biodiversity.

The sustainable livelihood framework has six (6) core concepts namely, a livelihood activity should be 'people-centred'; a livelihood activity should be 'holistic'; a livelihood activity should be 'dynamic'; a livelihood activity should 'build on strengths'; a livelihood activity should 'identify and bridge gaps at both macro and micro levels'; and a livelihood activity should be sustainable (DFID, 1999; Ellis, 2000; Kollmair and Gamper, 2002). By the design of the Block Farm Programme, this study finds these core concepts of the framework especially a 'people centred', a 'holistic' 'dynamic' and 'sustainability'

relevant to the block farm strategy. The programme's focus is to encourage unemployed youth to take up farming as a life time activity and could be described as 'people centred'. The design of the block farm may also be described as adopting a 'holistic' approach. In addition to arranging for land and ploughing the land, the programme also provides interest free input credit through supporting farmers with inputs including fertiliser, seed and agrochemicals. The flexibility in choice of crop based on suitability of location suggests the programme is 'dynamic'. In terms of sustainability, as farmers graduate from the Block Farm Programme, the complementary initiatives established (see chapter two) will increase access to and use of resources provided under the Block Farm Programme to enhance their participation in farming. The YIAP will continue to monitor the activities of farmers who will graduate from the programme and also link them to financial institutions to access financial resources for post block farming activities (GOG/MOFA, 2011). Additionally, government is developing a land policy that will ease access to land to the youth who will graduate from the block farming to set up their own farms (GOG/MOFA, 2006).

It is also important to mention that poor people use multiple strategies and activities to secure their livelihoods (Ellis, 1999). As Acharya (2000) noted, rural people use four pathways to secure their livelihoods namely production-based livelihood comprising of small and marginal farmers who rely on production on small pieces of land to gain their livelihoods. Secondly, there is labour-based livelihood comprising rural households who derive livelihoods by selling their labour. Thirdly, exchange or market based livelihood comprises of farmers who rely on selling of surplus food and non-food agricultural products or non-farm goods to earn their livelihoods; and transfer-based livelihood

consisting of households who depend on transfers from the government or other social organisations for their livelihoods. Ellis (1999) emphasises the use of multiple strategies to secure rural livelihoods and describes livelihood diversification to comprise of the process by which households construct a diverse portfolio of activities and social support capabilities for survival in order to improve their standard of living. For rural livelihoods, farming remains an important option and this emphasises the use of the block farm strategy to provide jobs for the youth. With all four (4) components of the YIAP targeting the youth, this suggests the intention to provide a diversified livelihood options for the youth in the agricultural sector.

In using the framework as a tool for analysis, the focus is on livelihood assets portfolio, access to livelihood assets and livelihood outcome components of the framework. The study employs the variables of social relations namely age, ethnicity and class in this case education and more importantly the concept of access to examine access to and use of four key livelihood assets for farming namely access to and use of land; access to and use of farm machinery such as tractor services for land preparation and postharvest operations; access to and use of agro inputs such as fertiliser, certified seed and agro chemicals; and access to market and high prices for farm produce. The study adopts the core concepts of "people centred, holistic, dynamic and sustainability" in the analyses and discussion of results. The study also employs the livelihood outcome of increasing income using profitability of block farming.

CHAPTER FOUR

METHODOLOGY

4.0 Introduction

The chapter comprises of three sections. The first is on the study area and include location and size of the study area, the demographic, physical and socio-economic characteristics of the study area. The second is on data collection and sampling technique adopted. The third is on the methods of analyses used.

4.1 Study Area

The study was undertaken in the Techiman Municipal Area of the Brong Ahafo region of Ghana. The Brong Ahafo region is made up of seven (7) Municipalities including Techiman Municipal Assembly and twenty-two (22) Districts Assemblies. The Techiman Municipal Area was established by Legislative Instrument (L.I. 1472) of 1989 as a district assembly and later upgraded into a Municipal Assembly under Legislative Instrument (L.I. 1799) of 2004. In 2012, under Legislative Instrument (LI 2096) the Techiman North District Assembly was carved out from the then Techiman Municipal Assembly (TMA, 2013). However, the implementation of the Block Farm Programme in both 2011 and 2012 were implemented by the Techiman Municipal Assembly Agricultural Office. For this reason and in this report, Techiman Municipal Area is used and it represents both the Techiman North District and Techiman Municipal Area.

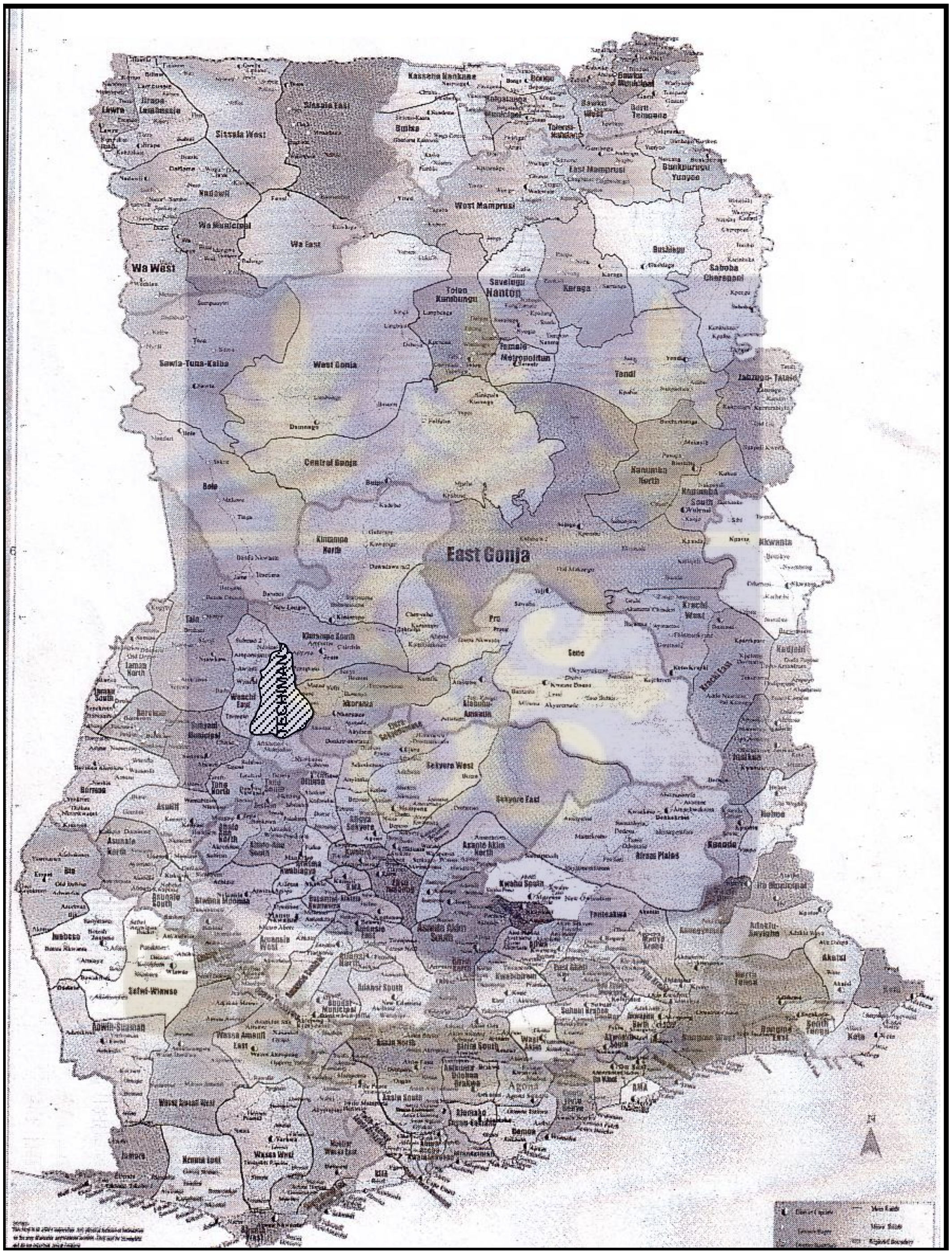
Three factors influenced the choice of the Brong Ahafo region and Techiman Municipal Area. Techiman Municipal Area is one of the 39 piloted districts of the Block Farm

Programme in 2009. The Municipal Area is not only located in the maize belt which is one of the key crops of the Block Farm Programme but the municipality also has all four special initiatives of the Ministry of Food and Agriculture namely the Block Farm Programme, Agricultural Mechanisation Service Enterprise Centres (AMSECs), the nationwide Fertiliser Subsidy Programme and the National Food and Buffer Stock Company (NAFCO).

4.1.1 Location and Size of Study Area

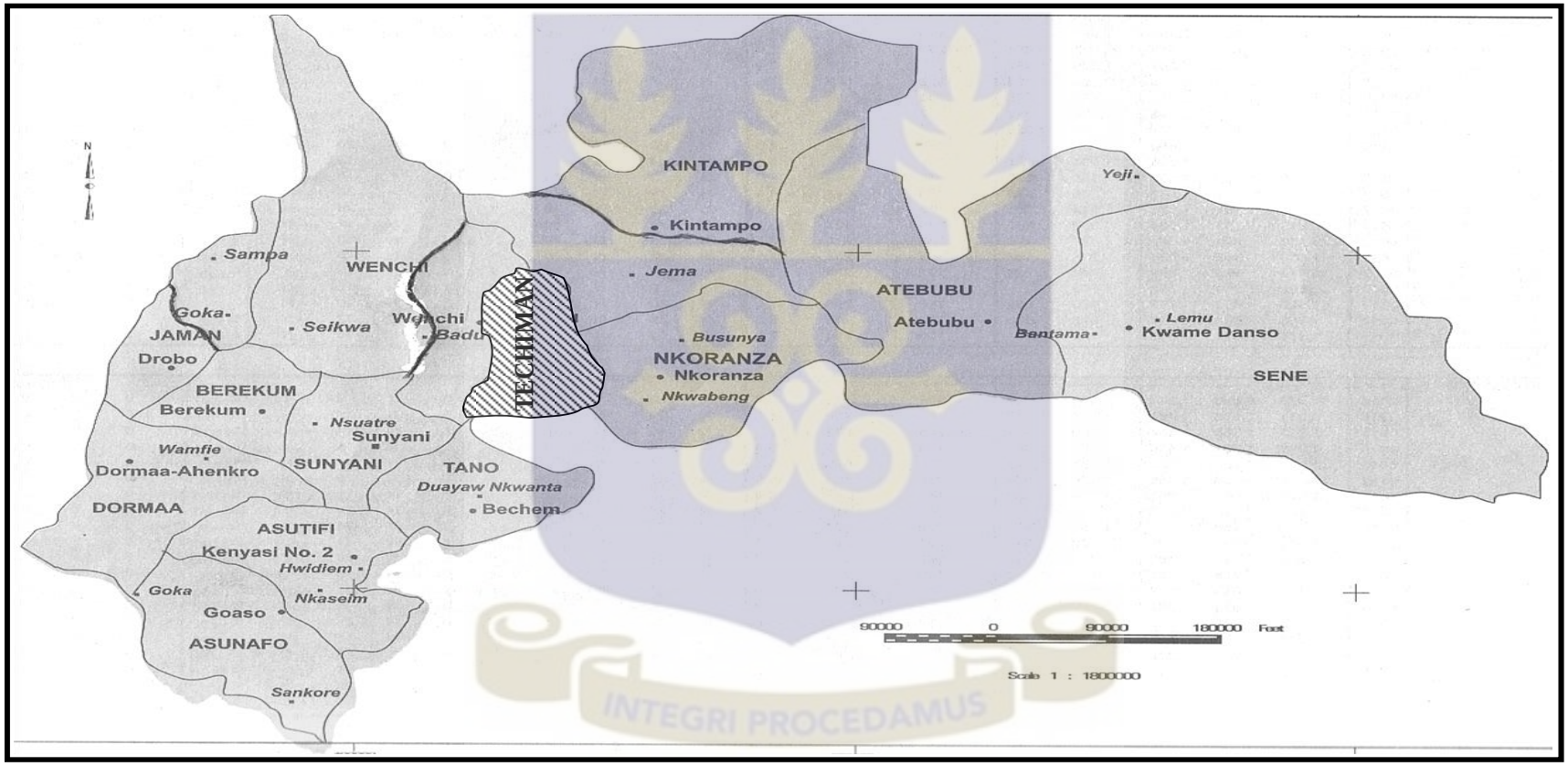
Techiman Municipal Area is situated in the central part of Brong Ahafo Region and lies between longitudes $1^0$49` east and $2^0$30` West and latitude $8^0$00` North and $7^0$35` South. It shares common boundaries with four other districts; three in Brong Ahafo Region and one in the Ashanti region. The Wenchi Municipal Assembly lie to the northwest, Kintampo South District lies to the northeast, Nkoranza South District to the southeast and Offinso-North District (in the Ashanti Region) to the south. It covers an area of 669.7km^2 representing approximately 1.69 percent of the surface area of Brong Ahafo region (TMA, 2013). Figure 4.1 and 4.2 shows the location of the study area in the national and regional context.

Figure 4.1: Map of Techiman Municipal Area in National Context



Source: TMA, 2009

Figure 4.2: Map of Techiman Municipal Area in Regional Context



Source: TMA, 2009

4.1.2 Demographic Characteristics

The Techiman Municipal Area is witnessing significant increases in population and urbanization. Between 2000 and 2010, the population of the Techiman Municipal Area increased from 174,600 to 206,856 with an inter censual growth of 15.6 % and a population density of over 309 persons/Km^2 (GSS, 2012). Over fifty-five (55) percent of the population is within the 15-64 years age bracket and age groups under 15 years and 65 and above constitute the remaining 45 percent. Fifty-one (51) percent of the population are females and the remaining 49 percent are males (TMA, 2013).

The ethnic diversity of the municipality include over 40 ethnic groups with the predominant ethnic groups being Akan (64.4 %), followed by the Mole Dagbon (23.3%), Grusi (4.9%), Guan (1.9%), Ewe (1.4%), Mende (1.4%). The native Brongs constitute about 75 percent of the Akan group. There is a traditional council comprising of twenty eight (28) divisional chiefs including the Omanhene of Techiman municipality (TMA, 2009).

4.1.3 Physical Characteristics

Agro ecologically, the Techiman Municipal Area is in the transitional zone. It experiences both semi-equatorial and tropical conventional or savannah climates marked by moderate to heavy rainfall. Major rains start from April to July and the minor season is from September to October with a mean annual rainfall ranging between 1260mm and 1660mm (TMA, 2009). The main vegetation zones are the guinea-savannah woodland, located in the northwest, the semi-deciduous zone in the south and the transitional zone which

stretches from the southeast and west up to the north of the Municipality. Soils types in the municipality can be grouped into three namely, the Damango-Murugu-Tanoso associations, the Bediesi-Bejua associations and the Kumasi-Offin association (TMA, 2009).

4.1.4 Socio-economic Activities

The dominant economic activity is agriculture. The predominant agricultural activity is crop cultivation. The average farm size is below two (2) hectares (TMA, 2009). The major crops as reported by the Ministry of Food and Agriculture are maize, cassava, yams, cocoyam, plantain, groundnut and cowpea (GOG/MOFA, 2012). Vegetables such as tomatoes, garden eggs, onions and okro as well as cash crops such as cashew and mango are also cultivated. Both mono cropping and intercropping are practiced and some farmers intercrop maize with tomatoes. Crop cultivation is largely rain-fed with some small scale irrigation practiced at Tanoso Irrigation Project (TMA, 2009). While few people are involved in poultry rearing, animal husbandry is not an important economic activity in the municipality. Trading also constitute an important economic activity because of the Techiman market (TMA, 2013).

4.2 Data Collection and Sampling

Both primary and secondary data were collected for the study. With regards to primary data, unlike the evaluation of the Block Farm Programme by the Ministry of Food and Agriculture that used focus group discussion, this study used individual interviewing of

farmers in block farming in the 2011 and 2012 farming seasons in the Techiman Municipal Area. A questionnaire was developed (Appendix 5) and pretested before fieldwork was conducted. Ten field assistants assisted in data collection. Qualitative data for the study included consultations with staff of the Youth in Agriculture Programme (YIAP), interviewing of four (4) AEAs and the Block Farm Programme desk officer of the Techiman Municipal Agricultural Office. Informal interactions with farmers and maize traders were also held. The instrument used for qualitative data collection was opened ended questions handed over to implementers of the Techiman Municipal Agricultural Office. Secondary data included data from the Statistics, Research and Information Division (SRID) of the Ministry of Food and Agriculture. Review of programme documents and reports and relevant literature was also conducted.

4.2.2 Sampling Technique and Sampling

The sample for the study is farmers who benefited in the 2011 and 2012 seasons because the Techiman Municipal Agricultural Office was unable to provide the list of farmers for 2009 and 2010. The study adopted a multi-stage sampling technique. In 2011, there were 74 farmers from 10 communities. Seven (7) communities were added in 2012 and number of farmers was 125. Table 4.1 illustrates the number of farmers in block farming by season and communities in the 2011 and 2012 seasons.

Table: 4.1 Number of farmers in 2011 and 2012 Block Farming in Techiman Municipal Area

Year/Season	No. of farmers	Number of communities
No. of farmers in 2011	74	10
No. of farmers in 2012	125	17

Source: MADU, 2013

From Table 4.1, a total of 199 farmers were registered for block farming from the 17 communities in the 2011 and 2012 seasons. The study was unable to include all 199 farmers from the 17 communities. About 80 percent of the farmers were from 10 communities from the Techiman South Municipality and the remaining 20 percent from seven (7) communities in the Techiman North District. A clustering and multistage sampling was therefore adopted not only to reduce cost and time but also to ensure that the spread of farmers in the study area is taken into consideration in sampling (Gilbert, 2001).

The first stage of sampling was done by clustering the communities into Techiman South Municipality and Techiman North District. In the second stage of sampling, 10 communities were randomly selected taking into consideration the number of farmers from the two clusters. Seven (7) communities were randomly selected from the 10 communities of the Techiman South Municipality and three from the Techiman North District. In the 10 selected communities were a total of 148 farmers who participated in either 2011 and 2012 seasons or both. The 148 farmers constituted the sample for the study. Table 4.2 presents the list of communities, the number of farmers from each sampled community and the number of sampled farmers who participated in the study.

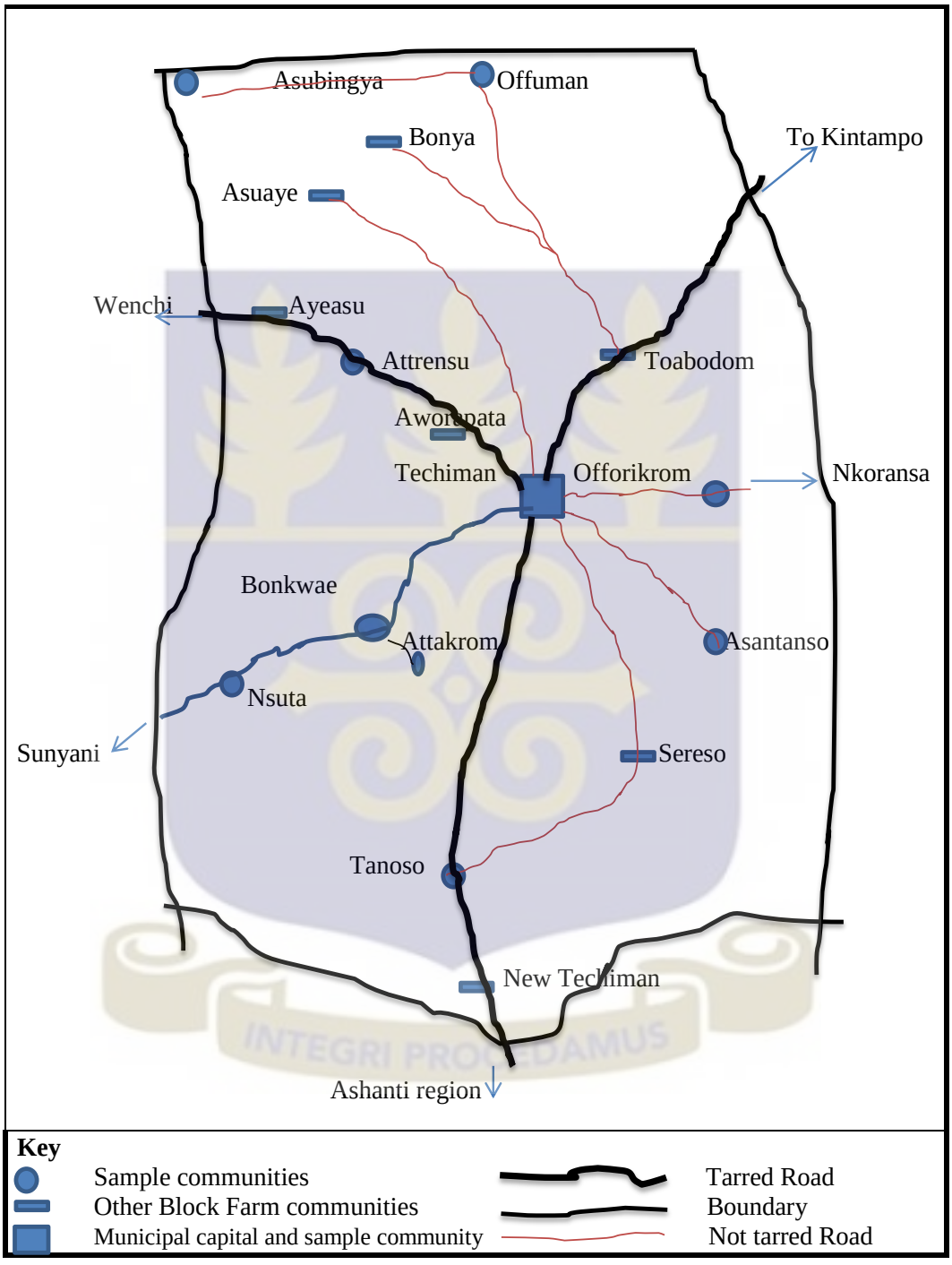
Table 4.2: Sampled Communities for the Study (2011 and 2012)

Name of sampled community	District	Number of farmers	
		Target	Number reached
Offuman	Techiman North	14	10
Asubingya	Techiman North	7	3
Atrensu	Techiman North	7	5
Asantaso	Techiman South	33	23
Bonkwae	Techiman South	12	7
Attakrom	Techiman South	9	7
Tanoso	Techiman South	33	31
Offorikrom	Techiman South	16	14
Nsuta	Techiman South	7	5
Techiman	Techiman South	10	5
Total		**148**	**110**

Source: Fieldwork, May/June, 2013

Of the 148 farmers, 110 were interviewed because some farmers had relocated and could not be reached. A sketch map of the study area showing block farm communities and sampled communities is illustrated in Figure 4.3.

Figure 4.3: Sketch map of Techiman Municipal Area Showing Block Farm Communities



In appendix 4 is a map of the study area showing population distribution and location of settlements.

4.3 Method of Analysis

Stata was the main tool for quantitative data analyses. Descriptive statistics, frequency tables, bar and pie charts are used in illustration of findings. Chi square tests using 'Likelihood ratio chi square test' were conducted. In qualitative data analyses, coding of data and organising the data around issues on inputs provided, quality of inputs, timing on input delivery, loan repayment, length of stay in block farming and income from farming was done.

For objective one, '*To explore the motivation and participation of farmers in block farming in the Techiman Municipal Area'*, the study conducts analyses on characteristics of farmers using descriptive statistics, frequencies tables and bar charts. Similarly, bar charts are used for analyses on the motivations for engaging in block farming and participation of farmers while frequencies are used for analyses on the channel used to enrol onto block farming and the mode of enrolment into block farming.

For objective two, '*To examine the role of block farming in increasing access to and use of resources for farming in the Techiman municipal area'*, the focus is on access to and use of four productive resources for farming namely land, agricultural machinery and appropriate technology, fertiliser, seed and agrochemical use and access to market. On access to land, the analyses use a pie chart, bar graph and frequencies to illustrate the sources of land accessed for block farming. On access to and use of machinery and farm equipment, descriptive statistics and frequencies are used. Using both primary and secondary data, bar charts and frequencies were used for analyses on access to and use of

fertiliser, seed and agrochemical and access to market and higher prices for farm produce. The 'likelihood ratio chi test' was employed to test price of maize by NAFCO and other sources of market.

For objective three, '*To assess the profitability of block farming to improve the livelihood and wellbeing of farmers'*, the focus is *a*nalyses on profitability and productivity of block farming using descriptive statistics and graphs. On improving productivity, the study use secondary data and descriptive statistics to compare yields from block farming to obtainable yields in Ghana and the Techiman municipal area. Chi square analyses were used to test the statistical significance in differences in yields and profits obtained by different categories of farmers. Qualitative analyses were employed using farmers responses on farming as a secured source of income.

CHAPTER FIVE

ANALYSES AND DISCUSSION OF RESULTS

5.0 Introduction

The chapter comprises of four sections. The first is on the demographic and educational characteristics of farmers involved in the study. The second broadly discusses the motivation and participation of farmers in block farming. The third examines the provision of resources for farming and the fourth assesses the profitability of block farming.

5.1 Demographic and Educational Characteristics of Farmers in Block Farming

In all 110 farmers were involved in the study. The ages of farmers range between 25-69 years. Table 5.1 illustrates the demographic characteristics of the farmers.

Table 5.1: Demographic characteristics of farmers

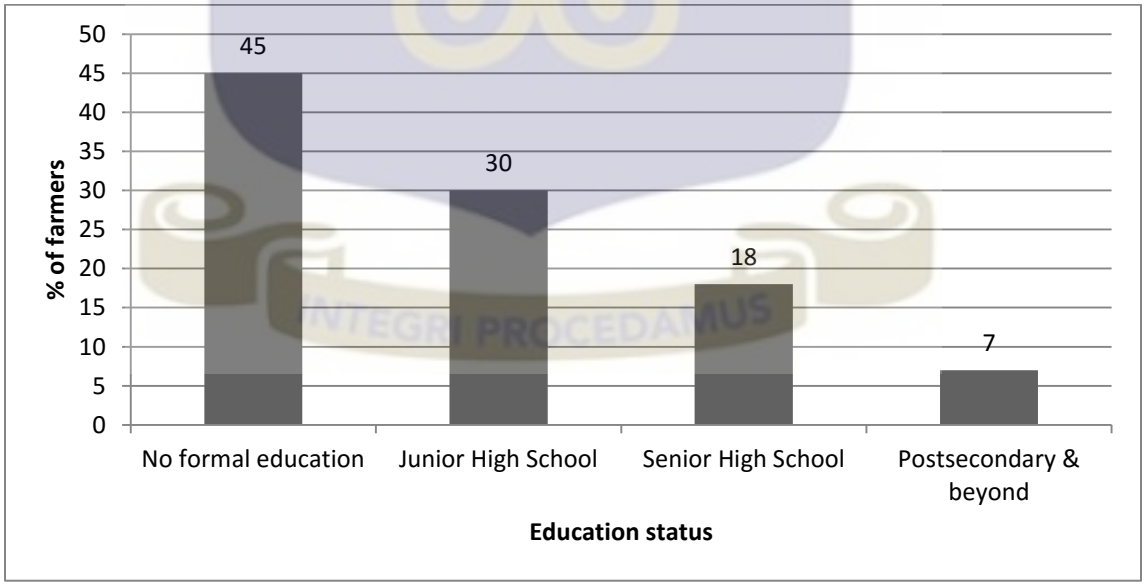
Characteristics	Frequency	Percentage
Age brackets of farmers		
25-35	20	18
36-45	36	33
46-55	38	35
56-65	14	13
66^{+}	2	2
Gender		
Male	98	89
Female	12	11
Marital status		
Married	98	89
Not Married	3	3
Divorced/separated/Widow/widower	9	8
Ethnicity		
Bono	53	48
Other Akan	11	10
Dagarti	25	23
Other ethnic groups	21	19

Source: Fieldwork, May/June 2013

About 18 percent of the farmers are within the youth age bracket of 15-35 years. This suggests over 80 percent of the farmers are not youth. The programme is therefore missing the target group of youth farmers. Forty-eight percent (48%) of the farmers are Bono Akan, the dominant ethnic group of the Brong Ahafo region. Forty-two percent (42%) comprise of Dagartis, Dagombas, Kosasis and Mossis. The Techiman Municipal Area could therefore be described as a destination of migrant farmers from Northern Ghana (TMA, 2009). Also eighty-nine (89) percent of the farmers are married and 63 percent reported their spouses are in farming as well. This suggests farming constitutes a major source of livelihood for almost a third of the farmers surveyed.

In terms of educational status, 55 percent of the farmers have formal education as Figure 5.1 illustrates.

Figure 5.1: Educational Status of Farmers



Source: Fieldwork, May/June 2013

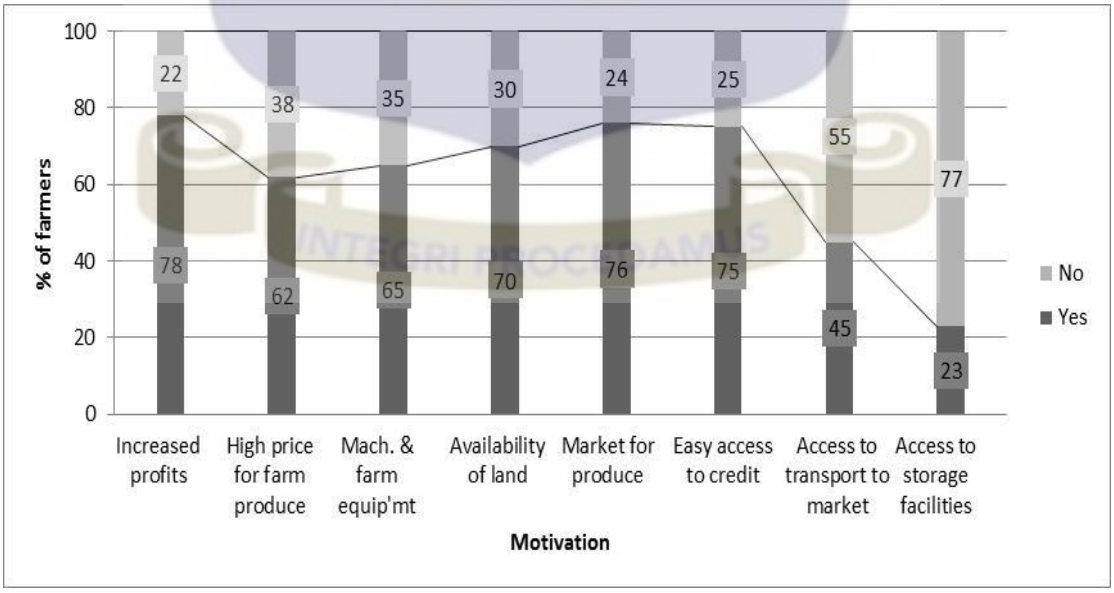
Of the 55 percent with formal education, only seven (7) percent have beyond senior high school education and this indicates low level of education of farmers in block farming in the Techiman municipal area.

5.2 Motivation and Participation of Farmers in Block Farming

5.2.1 Motivation to Take up Farming as a Lifetime Vocation

This section explores the motivations to take up farming as a lifetime vocation and finds that increase profits from farming followed by ready market and access to credit are the most important motivations to take up farming as a lifetime vocation. Almost 80 percent of the farmers reported income, ready market and access to credit as a motivation to take up farming as a lifetime vocation. Over 60 percent cites availability of land, access to farm machinery and high prices for farm produce as motivations to take up farming as a lifetime vocation. Figure 5.2 illustrates the motivations to take up farming as a lifetime vocation.

Figure 5.2: Motivation to Take up Farming as a Lifetime Vocation

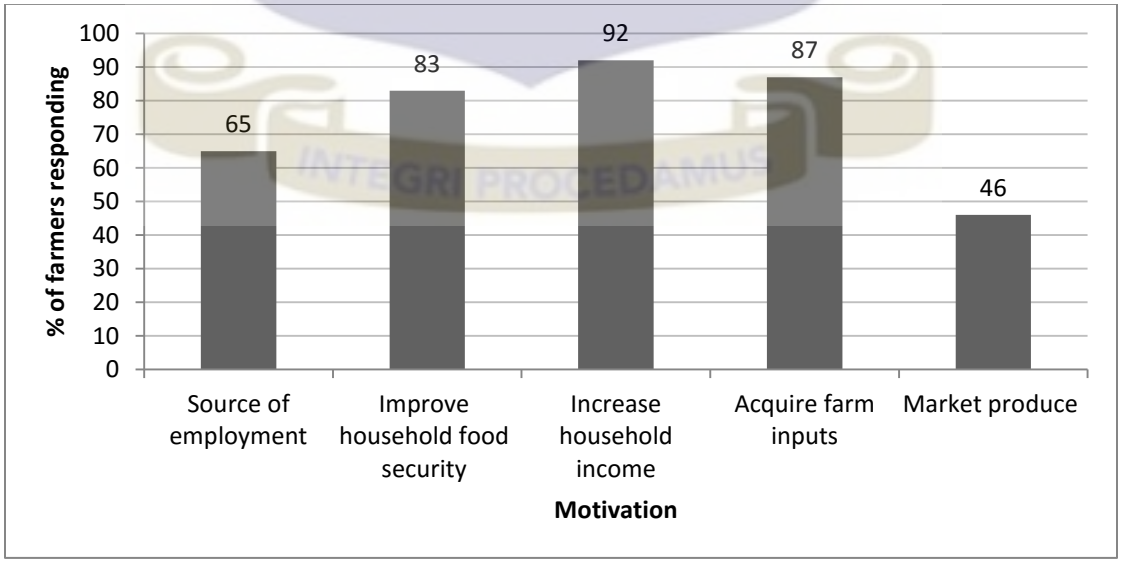


Source: Fieldwork, May/June 2013

From Figure 5.2, access to storage and transport are not important motivations to the farmers surveyed. Less than 50 percent of the farmers reported that improving access to storage infrastructure and transport especially the former are a motivation to take up farming as a lifetime vocation. Farmers access the services of traders either from their community or from Techiman. These traders do not only act as buyers but also offer some prefinancing for services not provided under the Block Farm Programme including credit for hiring labour, shelling and transport of maize. Some farmers will store their maize on the farm undehusked. They inform traders from whom they have accessed some credit who will arrange and pay for shelling and transport of the maize.

The motivations to take up farming as a lifetime vocation are similar to the motivations for enrolling onto block farming. The most important motivation for enrolling onto block farming is income (92%) followed by acquisition of inputs for farming (87%) and food security (83%). Figure 5.3 illustrates the motivations for enrolling onto block farming.

Figure 5.3 Motivations for Enrolling onto Block Farming



Source: Fieldwork, May/June 2013

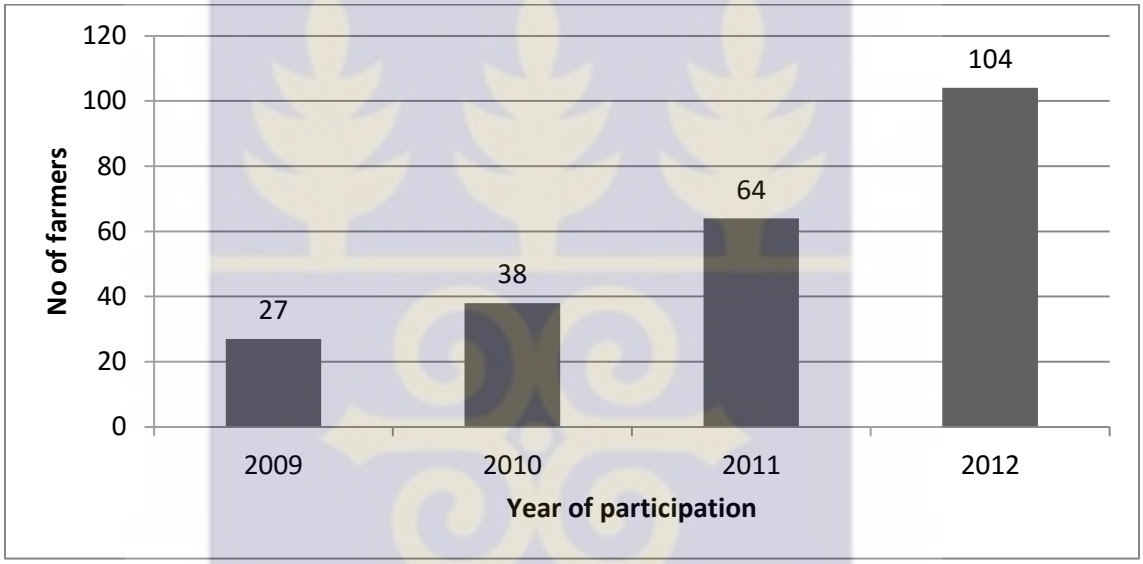
Both Figure 5.2 and 5.3 illustrate income or profits rather than employment as the most important motivation to engage in farming. Similar findings have been reported in SSA. In Nigeria, a study on the Osun State Agricultural Youth Empowerment Programme (OSSAYEP) finds that only 11 percent of 70 farmers involved in the study considered participation in OSSAYEP as an employment benefit. Rather a monthly allowance provided by the programme is more important as a third (33%) considered the financial benefit as a source of income (Ogunremi et al., 2012). In Ghana, Benin et al (2012) also report that income rather than employment is the most important reason for enrolling onto block farming.

Farmers consider income or profits because earning higher income or profits will enhance their ability to provide basic needs of the family namely food, shelter, clothing and protection. There is a correlation between employment and income (Benin et al, 2012) and the youth will anticipate earning an income from farming as an employment option However, the youth will not engage in farming merely because they are unemployed and seeking for a job. Rather they will consider the potential of farming to generate the needed income to fulfil their aspirations. Farming therefore needs to be perceived as a secured and appreciable source of generating income to be able to attract the youth. This underscores the importance of profitability of farming if a farm base vocation is to be used to provide jobs for the youth.

5.2.2 Participation of Farmers in Block Farming

Participation of farmers' in block farming may be described as increasing in the study area from 2009 to 2012. Of the 110 farmers, 58 and 96 percent participated in block farming in 2011 and 2012 respectively. Twenty-seven (27) farmers participated in block farming in 2009 and 38 in 2010 as Figure 5.4 illustrates.

Figure 5.4 Participation in Block Farming (2009-2012)



Source: Fieldwork, May/June 2013

Contrary to the programme design that a farmer will graduate after 3-years of participation, the study finds continued participation of farmers in the programme for more than 3-years. For example, for the 27 farmers that were involved in block farming at its inception in 2009 in the Techiman municipal area, 21 were involved in the programme in 2010, 23 were involved in 2011 and 26 in 2012.

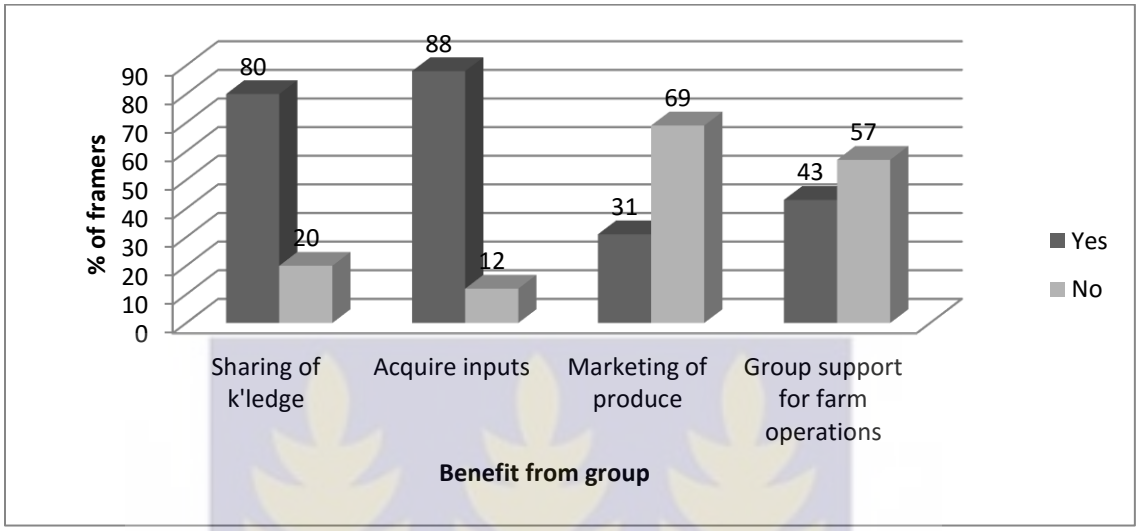
While farmers may participate in the programme for more than the stipulated 3-years, they may not continuously enroll on the programme over a 3-year period. Between 2009 and 2011, no farmer continuously enrolled in block farming over the 3-year period. From 2010-

2012, fourteen (14) farmers were continuously registered in block farming. The study finds that non participation in block farming is not due to graduation from block farming. For example, 46 farmers that did not participate in 2011 reported they 'did not apply' to participate in block farming, two (2) farmers that did not participate in 2012, reported they 'did not apply' as well. However, interactions with implementers revealed non participation was largely due to nonpayment of loans.

The most common channel used to enrol onto block farming is through agricultural extension agents (AEAs). Over 80 percent of farmers reported they enrolled onto the programme through their AEAs. AEAs created awareness on the programme and interested farmers expressed interest to participate by either applying as a group or on individual bases. Forty-six (46) percent of the farmers enrolled as groups and the remaining 54 percent enrolled as individuals.

Using farmer group strategy has been a method employed by MOFA and used in various interventions including Agricultural Services Sub-Sector Improvement Project (AGSSIP) and Village Infrastructure Project (VIP). The core objective of group strategy is to reach many farmers as possible to build their capacity to improve access to inputs, access market information and negotiate for good prices. All four (4) components of the YIAP emphasise use of group strategy. The study therefore explores the benefits from enrolling onto block farming in a group and finds acquisition of inputs and knowledge sharing as important benefits as Figure 5.5 illustrates.

Figure 5.5: Benefits of Participating in a Group



Source: Fieldwork, May/June 2013

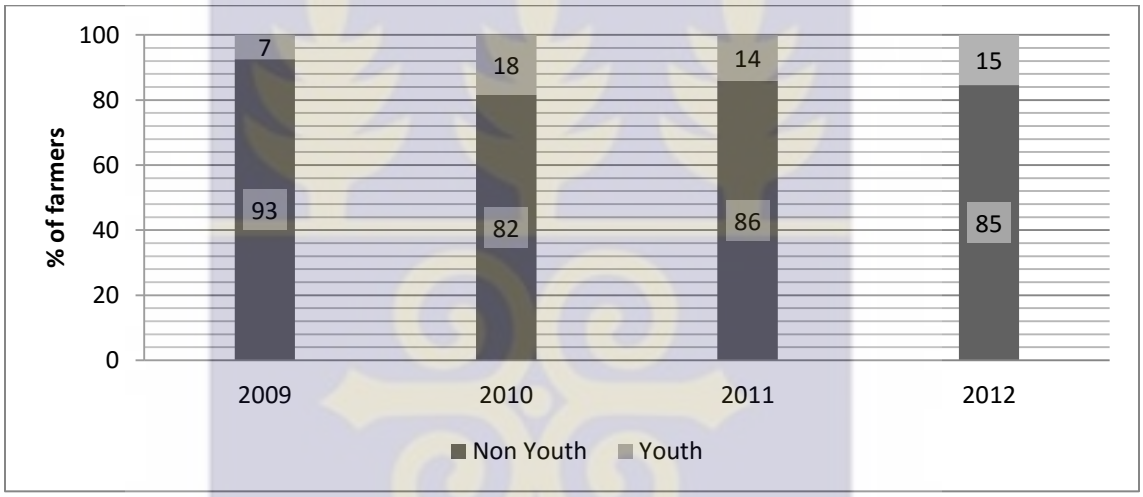
Figure 5.5 suggests over 50 percent of farmers enrolled in groups in the Techiman municipal area acted individually in marketing of farm produce and group support for farm operations suggesting farmers in block farming enjoy limited benefits of the group strategy.

5.2.3 Targeting of Youth Farmers

The target for the block farm programme was to benefit a total of 545,565 farmers particularly the numerous unemployed youth who live in rural areas between 2010 and 2012 (GOG/MOFA, n.d). A total of 253,750 farmers representing 46.5 percent were engaged in block farming by 2012 (GOG/MOFA, n.d) and 277,250 by 2013 (Mahama, 2015). This represents 51 percent of the target and suggests the programme was only able to achieve about half of its target. The Block Farm Programme has therefore missed the planned target of generating jobs in farming for 545,565 farmers. It is also important to mention that while the YIAP reports all 277,250 farmers are youth farmers (Table 2.2), there are more non-youth in block farming in the Techiman Municipal Area. Only 18

percent of farmers involved in the study were between the youth age bracket of 15-35 years. The average age of farmers in the study is 45 years. For the few youth farmers, the average age is 32 years, almost the upper limit of the youth age bracket. Figure 5.6 illustrates poor targeting of youth in block farming in the Techiman Municipal Area between 2009 and 2012.

Figure 5.6 Youth and Non-youth Farmers in Block farming in Techiman Municipal Area (2009-2012)



Source: Fieldwork, May/June 2013

Less than 20 percent of the farmers in block farming from 2009 to 2012 are youth. The Block Farm Programme is therefore missing its target of encouraging the youth to take up farming as a lifetime vocation in the Techiman Municipal Area. It also suggests Government of Ghana is missing its broad aim of using block farming to provide jobs for the youth, encourage the youth to stay in the rural areas to stimulate rural development and help curb Ghana's aging farmer population.

The study attributes the low participation of the youth in block farming in the Techiman Municipal Area to three factors. The inability of the Techiman Municipal Agricultural

Office to access large tracts of land for block farming is an important reason for low participation of the youth in block farming. The Municipal Agricultural Office reported it intended to engage the youth who returned from Libya due to the Libyan crises in block farming in 2011 but was unable to do so because they could not access land.

A second factor is the emphasis on loan recovery. Agricultural Extension Agents are rewarded for being able to recover input credit in the Techiman Municipal Agricultural Office. For this reason, the youth who AEAs consider as inexperienced and under performers are perceived as a risky group to be able to produce and pay back loans. Meanwhile, comparing yield obtained by youth farmers (1. 8 tons/ha) to yield obtained by non-youth farmers (1.97 tons/ha) (Figure 5.13), a likelihood ratio chi square test reveals a P-value of 0.7. This implies the difference between yield obtained by the youth and non-youth is not statistically significant. This suggests the difference in yield between the youth and non-youth farmers is by chance, perhaps due to differences in number of youth (20 farmers) and non youth farmers (90 farmers).

A third factor is poor targeting of credit programmes managed by government. Not only were beneficiaries largely non-youth farmers but staff of the Techiman Municipal Agricultural Office were beneficiaries of block farming. Poor targeting was identified as one of the key problems of the Brigade scheme with employees of scheme being Convention People Party loyalist (Hodge, 1964). As mentioned in chapter three, the management of SG 2000 by extension officers led to poor selection of vulnerable farmers to participate in the programme (Al-Hassan and Poulton, 2009).

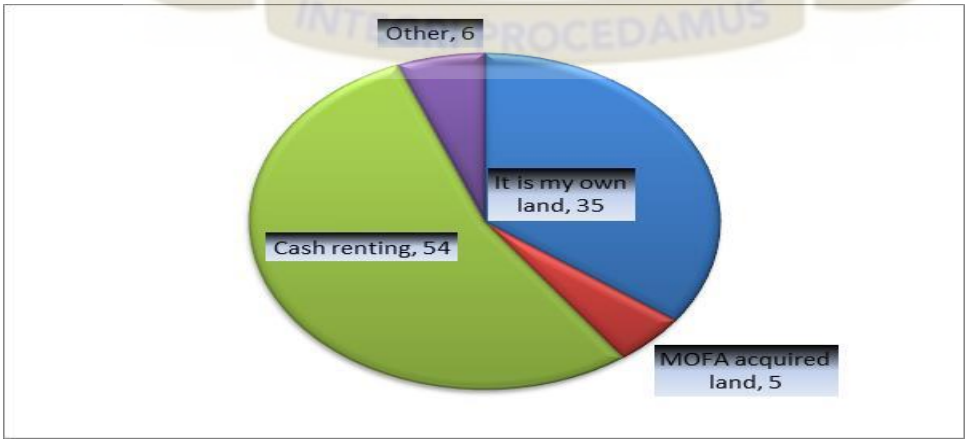
5.3 Improve Access to and Use of Resources for Farming

The block farm programme is designed to improve access to and use of inputs and lessen the constraints associated with young people disinterest in farming. This section discusses the role of block farming in improving access to four key resources for farming namely land, machinery and farm equipment, fertiliser, seed and agro chemical, market and higher prices for farm produce.

5.3.1 Improve Access to and Use of Land for Farming

Over 70 percent of the farmers identify the availability of land as a motivation to take up farming as a lifetime vocation (Figure 5.2) and this emphasises the important role of land in farming. Tasking District Agricultural Development Units to acquire lands, plough and allocate to farmers will improve access to land (GOG/MOFA, 2011) and enable farmers without access to have access to land for block farming. However, provision of land by the implementing agency to farmers to participate in block farming was poor. Only five (5) percent of the farmers used land from Techiman municipal agricultural office for block farming as Figure 5.7 illustrates.

Figure 5.7: Source of Land for Block Farming

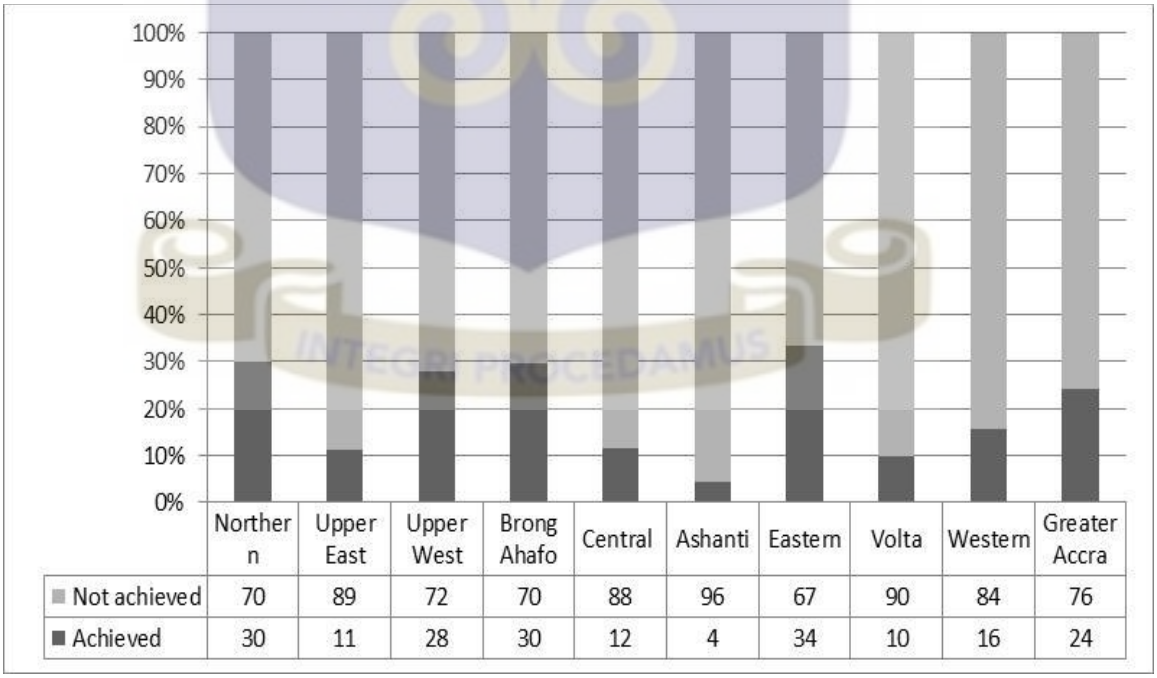


Source: Fieldwork, May/June 2013

Figure 5.7 also indicates most farmers rely on their own land and rented land for block farming. The difficulty of MOFA to access large tracts of land for block farming also manifest in less farmers (46%) participating in block farming as a group. Also group farmers cultivate lesser acreages. The average area cultivated per farmers is 1.9 hectares and the average area per farmer enrolled as group is 1.7 hectares while the average acreage cultivated by individual farmers is 2.1 hectares.

Data from the Ministry of Food and Agriculture confirm the inability of the ministry to access land for block farming. For the 2010 season for example, the ministry targeted 150,300 hectares of land for block farming but achieved only 23 percent of the target. Figure 5.8 illustrates regional targets and actual land accessed for block farming in 2010.

Figure 5.8 Regional Distribution of Targeted and Actual for Land for Block Farming in 2010



	Northern	Upper East	Upper West	Brong Ahafo	Central	Ashanti	Eastern	Volta	Western	Greater Accra
Not achieved	70	89	72	70	88	96	67	90	84	76
Achieved	30	11	28	30	12	4	34	10	16	24

Source: Data from YIAP, 2013

Land accessed for block farming for all 10 regions was less than 35 percent of target for each region. It is only in the Eastern region that about a third (34%) of the target for land for block farming was accessed. In the study area, about 30 percent of targeted land was accessed for block farming.

The dominant mode of access to land for farming is inheritance. However, land renting is common in the area with both indigenes and migrants accessing land for agriculture by renting. A third of farmers (33%) that relied on rented land were natives of Bono. The average cost of renting land for farming is about 57 Ghana cedis per hectare for a 2-years rental period. It could therefore be argued that the option of renting land for farming exist for the youth who will want to venture into farming. However, a short land rental period of less than 10 years does not ensure security of tenure and this discourages the youth to venture into farming as a lifetime vocation. Also short land rental period limits investment in land to restore soil fertility and cultivation of perennial crop that has the potential to retain block farm participants in farming as a lifetime vocation (Jimah, 2011).

The challenge of accessing large tracts of land manifest in individual rather than block farms and this negates the objectives of the programme to improve extension delivery and also farmer to farmer extension within a block farm. The study traces the inability of district offices to access large tracts of land for block farming to land tenure system in Ghana. Contrary to implementation of collective farming in which the Soviet Government control land administration, in Ghana, the dominant land tenure arrangement is the customary land tenure system with 78 percent of the land owned by individuals and families, communities

represented by stools, skins and tendamba (Mend and De Meijere, 2006; Kasanga, 2003; Blocher, 2006; Arko-Adjei et al. 2009).

5.3.2 Improve Access to and Use of Machinery and Farm Equipment for Farming

About 65 percent of the farmers acknowledge the important role of access to appropriate machinery in farming and for that matter a motivational factor to attract the youth into farming (Figure 5.2). Meanwhile access to appropriate machinery for farming under block farming is appalling. Contrary to programme design to provide ploughing services, farmers in the northern sector of the study area (now Techiman North District) where tractor use for land preparation is common arrange and pay for tractor services for land preparation. Twenty-eight (28) farmers rented tractor services for land preparation and only three (3) reported accessing ploughing services from an AMSEC service provider. The common mechanisation service used in maize farming is shelling and about 68 percent report accessing shelling services for maize.

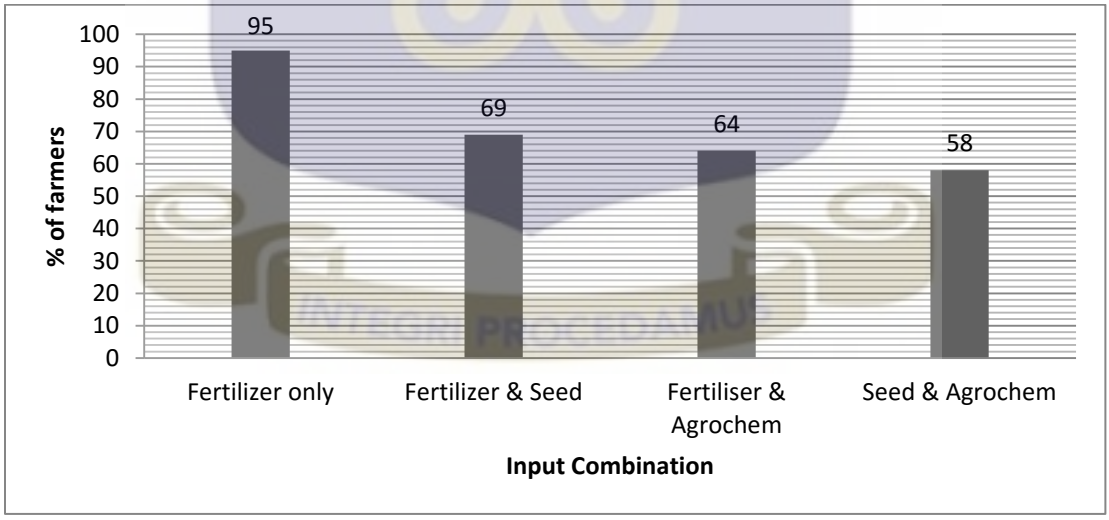
Similar to collective farming in Soviet agriculture where Machine Tractor Stations (MTS) were set up to provide tractor services to farmers, the establishment of Agricultural Mechanisation Service Enterprises Centres (AMSECs) is to complement the block farm programme by increasing access to mechanisation services. Two of such AMSECs are within the study area, two in neighbouring Nkoransa North District and Wenchi Municipal Assembly. However, these AMSECs have limited capacity to provide mechanisation services. The AMSECs only have tractors with matching implementers to provide basic services including ploughing, harrowing, carting and shelling (Benin et al, 2012).

Important operations such as planting, fertiliser application, harvesting, drying and cleaning operations remain manual activities. Similar to OSSAYEP in Nigeria, the Block Farm Programme has not improved use of machinery to reduce drudgery associated with farming.

5.3.3 Improve Access to and Use of Fertiliser, Extension Services and Other Inputs for Farming

The inputs received from the Ministry of Food and Agriculture for block farming include both hardware and software inputs. The software component input support comprises of extension services. The average extension service visit to farmers by an AEA in the 2011 and 2012 seasons is five (5). The hardware inputs are fertiliser, seed and agrochemicals and Figure 5.9 illustrates access to and use of the inputs in the 2011 and 2012 seasons.

Figure 5.9: Input Combination Accessed for Block Farming (2011-2012)



Source: Fieldwork, May/June 2013

Figure 5.9 shows the actual number of surveyed farmers and the input combinations accessed under block farming. The most accessed input was fertiliser. A few farmers from the Offuman operational area who were captured as beneficiaries of block farming reported

they never accessed any input. Similar to the problem of low quality and late delivery of inputs in government supported agricultural interventions identified under NAADS (Geoffrey et al, 2013), some farmers declined to access seed and agrochemical for block farming due to low quality and untimely supply of the inputs. For example a farmer reported declining to use certified seed provided by Techiman Municipal Agriculture Office because of previous experience with bad seed. He said,

> *'...I used seed from agric two years ago..., it was not good...germination was poor...I have to hire labour to do refilling so I now use my own seed' ...,(Offu01, 60 years, 28th May, Offuman)*

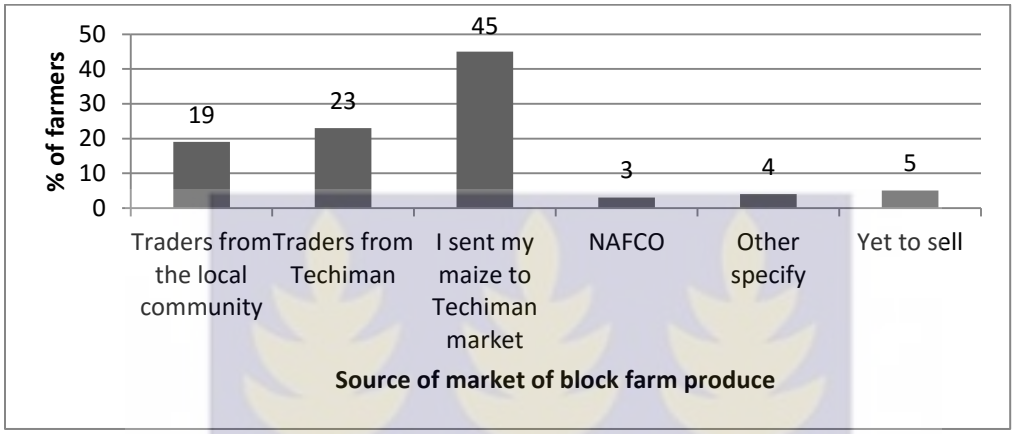
Reports from MOFA corroborate the problem of poor seed supply and late delivery of inputs for block farming. For example the ministry notes the untimely supply of seeds – rice and maize and in some cases supply of seed mixed with varieties of the same crop (GOG/MOFA, 2010). In the case of fertiliser, block farming fertiliser is delayed by late launching of fertiliser subsidy program such that some district offices received compound fertiliser for the 2010 programme when crops were seven weeks old (GOG/MOFA, 2011).

5.3.4 Improve Access to Market and Higher Prices for Farm Produce

A National Food and Buffer Stock Company (NAFCO) was established to complement the Block Farm Programme by providing access to market. This notwithstanding informal market actors remain the key source of market for farmers in block farming. As much as 87 percent of the farmers surveyed used informal market actors from the local communities and Techiman. Figure 5.10 depicts that less than five (5) percent of the farmers surveyed

reported selling their produce to NAFCO which was established to improve access to market.

Figure 5.10: Major buyer of maize from block farmers (2011-2012)



Source: Fieldwork, May/June 2013

From Figure 5.10, NAFCO services in the marketing of farm produce are the least. NAFCO contracts Licensed Buying Companies and deals with 73 Licensed Buying Companies[3]. License Buying Companies buy maize from farmers, clean and dry it to reduce moisture content and transport it to NAFCO warehouse. A post-harvest committee set up by the Ministry of Food and Agriculture determines the farm gate price with the aim to protect and provide farmers guarantee and secured income. In the price build up, the committee considers the production cost and adds a 10 percent profit margin. In 2012 season, the committee recommended that the farm gate price for a 50kg of maize should be 35 Ghana cedis. Table 5.3 illustrates NAFCO price build up for maize.

[3] http://mofa.gov.gh/site/?page_id=11395

Table 5.2: NAFCO Price Build up for Maize Grain-2011 -2012 (50kg of maize)

No.	Cost	Unit cost (GH¢)	Total cost (GH¢)
1	Cost of maize	22.5	22.5
2	Bagging, sewing and handling at farm-gate	1.5	1.5
3	Sacks	1	1
4	Transport to drying site	0.5	0.5
5	Drying	4	4
6	NAFCO sack	0.5	0.5
7	Bagging and sewing	1.5	1.5
8	Transport to NAFCO Depot	0.5	0.5
Sub Total			**32**
Margin			**3**
Total			**35**

Source: NAFCO (Available at http://mofa.gov.gh/site/?page_id=11395)

From Table 5.2, the price for a 100kg of maize to be paid to License Buying Companies is 70 Ghana cedis for the 2012 season and this include a profit margin of six (6) Ghana cedis. Taking out the profit margin, it implies a 64 Ghana cedis for a 100kg bag. The average price offered by non-NAFCO sources of market namely traders from the local community, traders from Techiman and farmers who transported their maize to Techiman to sell is 59 Ghana cedis for a 100kg bag of maize. Focussing on the price received by farmers, License Buying Companies price is five (5) Ghana cedis higher than prices from non-NAFCO sources of market (GH¢64 - GH¢59= GH¢5). However, a Likelihood ratio chi square test on price from the two sources reveals a P-value of 0.936 (Appendix 3) implying price from farmers who sold to NAFCO through License Buying Companies and prices offered by non-NAFCO sources of market are not statistically significant. The National Food and Buffer Stock Company is therefore not offering attractive prices to farmers. The anticipated stabilisation function of NAFCO to protect farmers from seasonal changes in prices that

will affect profitability and make farming not a secured source of income for the youth has not been achieved.

The discussion in this section illustrates block farming has increased access to fertiliser, seed, agrochemical and extension services but not land, mechanisation and marketing of farm produce. The study refers to four (4) core concepts of the sustainable livelihood framework namely 'holistic', 'people centred', 'dynamic' and 'sustainability' (Ellis, 2000) and argues that block farming is limited in the four concepts of a livelihood strategy.

Of the five (5) livelihood assets, the provision of physical capital and natural capital was poor. The Techiman Municipal Agricultural Office is unable to access large tracts of land for block farming. Only five percent of farmers used land provided the Techiman Municipal Agricultural Office. About three (3) percent of the farmers surveyed accessed tractors services from Agricultural Mechanisation Service Enterprise Centres services or sold their produce through Licensed Buying Companies of the National Food and Buffer Stock Company. For example, the average cost of production of maize for farmers involved in the study is about 786 Ghana cedis per hectare and the inputs farmers accessed from the programme (fertiliser both NPK and SOA, herbicides and seed) is less than 50 percent of total cost implying that over half of the total cost is borne by the farmer. Land preparation (including clearing and ploughing) services which are not provided under block farming constitute about 17 per of the total cost of production. Block farming is therefore not 'holistic' because it does not provide farmers with adequate resources for farming

including increasing access to land, technology for land preparation to reduce drudgery, affordable transport and storage to incentivise the youth into farming.

Secondly, emphasis on recovery of resources is making block farming recovery of resources centred. About 45 percent of the farmers in the Techiman Municipal Area have not repaid their loans to the Municipal Agricultural Office. Similar recovery challenges have been reported by the ministry as illustrated in table 5.3

Table 5.3: Block Farming Investment and Recoveries in Ghana (2009-2011)

Year	GOG Funding (GH¢)	% Recoveries
2009	80,000,000.00	45.00
2010	15,000,000.00	60.90
2011	10,400,000.00	56.00

Source: Adapted from a Presentation by the coordinator, YIAP, 2013

Table 5.3 illustrates recovery improved from 45 to 56 percent between 2009 and 2011. However, the margins of recovery are low given the investments and competing demands for resources for other programmes of the Ministry of Food and Agriculture. Initially recovery of loans under the 2009 programme was wholly in kind. For example in the case of maize, recovery was largely three (3) bags per acre (110kg per bag because of high moisture content) of maize. Due to farmers reluctance to pay in kind where market value of maize is higher than the cost of the loan received, MOFA introduced cash recovery in 2010 (GOG/MOFA, 2010) so that farmers could sell maize and pay the cost of input in cash. The introduction of cash payment option increased recovery to about 61 percent in 2010 but reduced to 56 percent in 2011.

Interactions with staff of Techiman municipal agricultural office confirms the emphasis on recovery and that continued participation in block farming is tied to repayment of loans. In Tanoso Agricultural Operational Area for example, an AEA reported dropping a group of beneficiaries because of defaulting in loan repayment. In table 5.4 are remarks from district officers emphasising the importance attached to recovery.

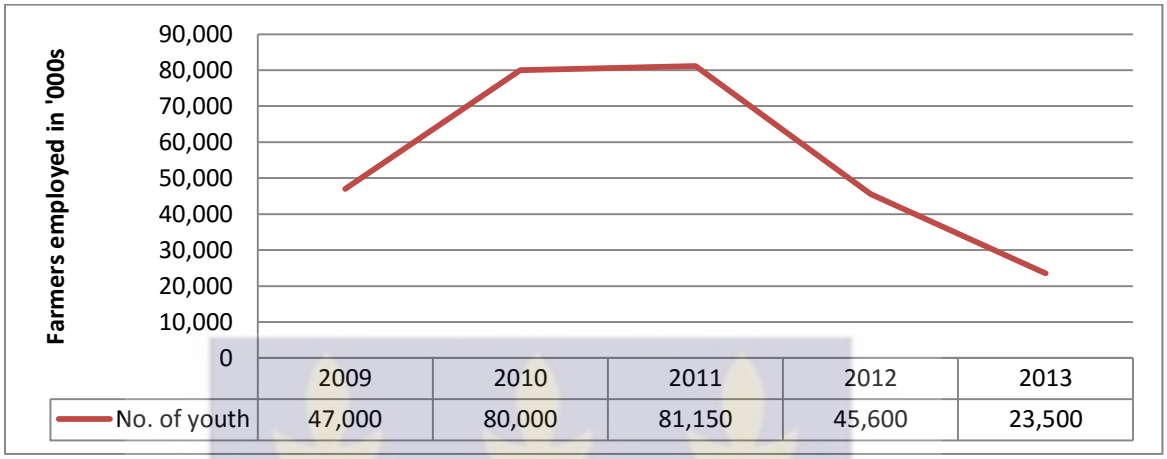
Table 5.4: Remarks from District Officers on Recovery of Loans

Designation of staff	**For what reasons will a beneficiary be dropped from the block farming?**	**How long are farmers expected to stay on the Block Farm?**
DAO	*Inability to pay for loan granted in the form of input credit without any good reasons*	*So long as the they settle loans promptly and abide by the good agricultural practices recommended by the AEA or supervising officer*
AEA	*Non payment of loan received or delay in recovery*	*As long as they payback, they are entitled to the next season inputs*
AEA	*When a farmer fails to pay back the credit ... meanwhile the harvest was good, ...when the farmer fails to use the inputs for farming,* *...for example if a farmer diverts the inputs...,*	*So long as the policy exist*

Source: Fieldwork, May/June 2013

As mentioned earlier, AEAs are rewarded for being able to recover input credit in the Techiman Municipal Agricultural Office. Also, a report from the YIAP supports emphasis on recovery. Using data from the YIAP (table 2.2), Figure 5.11 illustrates a reduction in participation in block farming largely due to non-payment of input credit.

Figure 5.11: Farmers Employed in Block Farm Programme in Ghana (2009-2013)



Source: Based on data from Mahama, 2013 (table 2.2)

From Figure 5.11, between 2009 and 2010, there was an enormous increase in farmers from 47,000 to 80,000, an increase that could be attributed to enthusiasm on the part of implementers to engage more farmers on the programme. The increment continued between 2010 and 2011 but marginally from 80,000 to 81,150. Between 2011 and 2012, there was almost a 44 percent reduction in the number of farmers and this is largely attributed to non-payment of loans. Most of the farmers that did not participate in the 2011 and 2012 seasons (a total of 48 farmers) cited 'did not apply' as the reason for not participating in block farming. However, this evidence from the YIAP and staff of the Techiman municipal agricultural office suggest increasing default in repayment of input credit is the important reason for non-participation in block farming in the 2011 and 2012 seasons.

It is true that poor recovery of loans is a challenge to the programme's sustainability. However, attaching so much emphasis on recovery of loans is making block farming to be recovery of resources centred and not 'people centred'. This has the potential of defeating

the objective of using block farming to attract and retain the youth in farming and thereby undermining the primary objective of promoting youth employment. Additionally, the emphasis on recovery also manifest in the inability of farmers to continuously participate in block farming for the stipulated 3-years to access interest free inputs to improve productivity which could progressively increase their interest to take up farming as a lifetime vocation.

Thirdly, it could be argued that the Block Farm Programme in the Techiman Municipal Area is not 'dynamic' because maize is the sole crop cultivated under the Block Farm Programme in the 2011 and 2012 seasons. The Techiman Municipal Agricultural Office reports they initially included crops such as tomatoes but due to the perishability and marketing difficulties, recovery was poor for which reason the office restricted participation in the programme to only maize production. Maize is an important cereal in Ghana in terms of the area of cultivation and total cereal production. Maize accounts for 74 percent of the total cereals (maize, rice, sorghum and millet) (Onumah and Coulter, 2000; Akowuah et al. 2012) is one of the five staple crops identified in FASDEP II for development for the attainment of food security in Ghana. The Techiman Municipal Area is within the maize belt of Ghana and maize is the most important crop in terms of land allocation in the crop portfolio of farmers (Table 2a-c in Appendix 2). It is cultivated over two seasons and over 80 percent of produce is sold (IFPRI, 2007). Maize is therefore largely a cash crop in the Techiman Municipal Area and as such increase in productivity of maize will translate to increasing profit. However, limiting block farming crop to only

maize in the Techiman Municipal Area implies farmers have only one option and are unable to cultivate other crops even if these crops attract higher prices.

It could also be argued that block farming is not adequately preparing farmers to be able to access inputs on their own when they graduate from the programme to retain them in farming. As part of the exit strategy is to link farmers to financial institutions to access credit. Farmers in the programme rarely keep records of their farm activities. Yet record keeping is important if farmers are to be able to access formal sector credit for a farm business. Building capacity of beneficiaries in basic numeracy and literacy skills that has the potential to improve the ability of farmers to access formal sector or semi-formal credit for farm operations is not included in the block farming package. As illustrated in chapter three, NAADS used literacy training to build the capacity of beneficiaries to access formal sector credit (Geoffrey et al., 2013) and 21 percent of beneficiaries of OSSAYEP indicated the programme increased their knowledge on record keeping (Ogunremi et al., 2012). The block farming package does not include training of farmers in basic numeracy and literacy skills or mobilising resources within their locality to finance farm operations. This suggests farmers in the Block Farm Programme may revert to traditional practices of farming or at worse leave the sector after graduation because they will not be able to access fertiliser, seed and agrochemical.

5.4 Improving the Livelihood of Farmers

Higher profits from block farming will improve the well-being of farmers and enhance their ability to provide basic needs of the family thereby improving their livelihoods. The livelihood outcomes as stated in the framework in chapter three are to provide secured job

in farming for the youth, improve food security and increase income level and income stability from farming. The analyses and discussion in section 5.1-3 illustrate that the ability of the Block Farm Programme to provide jobs for the youth is poor because less than 20 percent of the farmers surveyed are youth. Figure 5.3 illustrates increase in household income and household food security are the most important reasons for enrolling onto block farming and increase profits is the most important motivation for the youth to take up farming as a lifetime vocation (Figure 5.2). While income does not necessary refers to monetary income but also household food security, the focus of this section is income using profitability of maize farming and not food security.

It is common practice for farmers to consider only cost of tradable inputs in estimating cost of production (Benin et al, 2012). However, because the motive is to entice the youth to accept and take up farming as a commercial business, ascertaining the actual cost of production is important. In assessing the profitability of block farming, the possible profit from block farming is compared to profits from non-block farming where non-block farming refers to no block farming input support. In doing this, analyses of the cost of farm operations from preharvest to post harvest and revenues were conducted. Analyses on cost and revenues for block farming included the cost of the most accessed inputs combination under block farming (use of fertilizer and certified seed) and revenue using the average yield obtained and price per 100kg of maize. In the case of non-block farming, the cost of production and revenue does not include cost of the most accessed input combination under block farming and the revenue is based on possible yield obtained in a non-block situation. Using block farming input support for 104 farmers in the 2012 minor season, Table 5.5

compares profit from block farming to profit from non-block farming in maize cultivation in the Techiman Municipal Area.

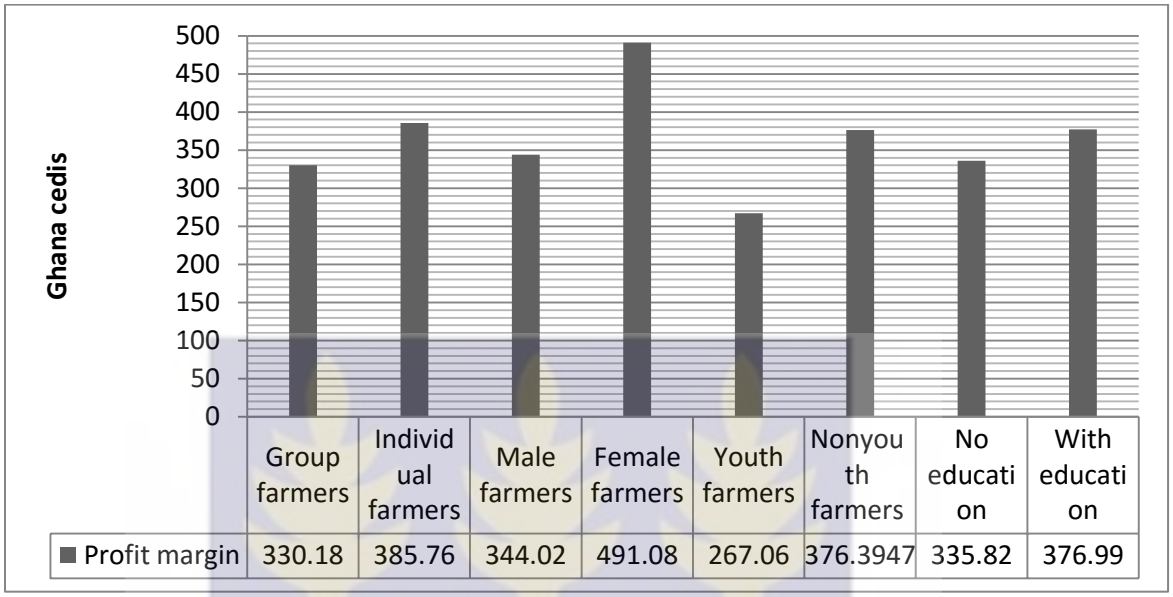
Table 5.5: Analyses on Profitability of Block Farming of Maize Cultivation in the Techiman Municipal Area in 2012

Type of farm operation	Average cost/Ha in Ghana cedis	
	Block farming	Non-block farming
Labor for land clearing	87.62	87.62
Land ploughing	43.94	43.94
Land harrowing	0.00	0.00
Agrochemical use	41.99	41.99
Labour for planting	56.93	56.93
Labour for first fertiliser application	34.16	na
Labour for second fertiliser application	33.86	na
Labour for first weeding	44.70	44.70
Labour for second weeding	24.53	24.53
Labour for harvest-slashing/gathering	42.09	42.09
Shelling & other harvest cost	33.36	33.36
Transportation of inputs & output	12.90	12.90
Tradable inputs: NPK	187.10	na
Tradable inputs: SOA	83.96	na
Tradable inputs: Seeds	31.21	na
Land rent (Ha)	28.02	28.02
Total cost	**786.37**	**416.09**
Output: Number of bags Ha	19.46	11.21
Output in bag of 100kg	58.63	58.63
Total Revenue	**1140.94**	**657.24**
Profit	**354.57**	**241.15**

Source: Fieldwork, May/June 2013. n/a-not applicable

From Table 5.5, profit from block farming is about 30 percent higher than profits from non-block farming. Generating average profits by farmer category using stata, Figure 5.12 illustrates the average profits by farmer category.

Figure 5.12: Profitability by Farmer Category



Source: Fieldwork, May/June 2013

Figure 5.12 illustrates differences in profits between various categories of farmers. The differences in profit were tested using the 'likelihood ratio chi-square test' and the results show that the difference in profit between group farmers and individual farmers is statistically significant. The difference in profit between farmers with education and farmers without education is statistically significant as well. Table 5.6 shows the results of the likelihood ratio chi-square test.

Table 5.6: Chi square Test on Profits by Farmer Category

Variable	Degree of freedom	Chi2 statistic	P-Value
Mode of enrollment farmer (Group/individual)	99	138.2831	0.006
Gender of farmer	99	67.4435	0.994
Age of farmer (youth & non-youth)	99	86.5266	0.810
Level of education of farmer (No education and with education	99	136.1581	0.008

Source: Fieldwork, May/June 2013

The differences in profit by the gender of a farmer and the age bracket of the farmer are not statistically significant. This implies the differences observed in profit with regards to

the gender and age of the farmer might have occurred by chance, perhaps due to differences in number of observations (see Table 5.1).

While profit from block farming is higher than non-block farming profits, an average profit of Three Hundred and Fifty-Four Ghana cedis, Fifty-Seven Ghana pesewas (GH¢ 354.57) is not enough motivation to attract and retain the youth in farming as a lifetime vocation. Comparing wages from a non-farm job using the daily wage from offering hired labour services for construction work (also known as 'motar work'), the latter will be more beneficial than engaging in farming (Table 5.7). The minor season maize cropping is of 4-month duration (August-November) (IFPRI, 2007). Using a minimum wage for 2013 of about five Ghana cedis (GH¢ 5) (Ghana Business News, 2013), a youth engaged in a casual job will earn Twenty-five (GH¢ 25.00) Ghana cedis for 5-mandays (working Monday to Friday), one hundred Ghana cedis (GH¢ 100) in a month and possibly four hundred Ghana cedis (GH¢ 400) in a 4-calender months duration. Table 5.7 illustrates profit from block farming vis-à-vis wages from a non-farm job.

Table 5.7 Profit from Block Farming vis-à-vis Wages from a Non-farm Job

Activity	**August (GH¢)**	**September (GH¢)**	**October (GH¢)**	**November (GH¢)**	**Total (GH¢)**
Monthly earnings from nonfarm job (5days*5 cedis*4weeks=100)	100	100	100	100	**400**
Profits from block farming	-	-	-	354.57	**354.57**

Source: Fieldwork, May/June 2013

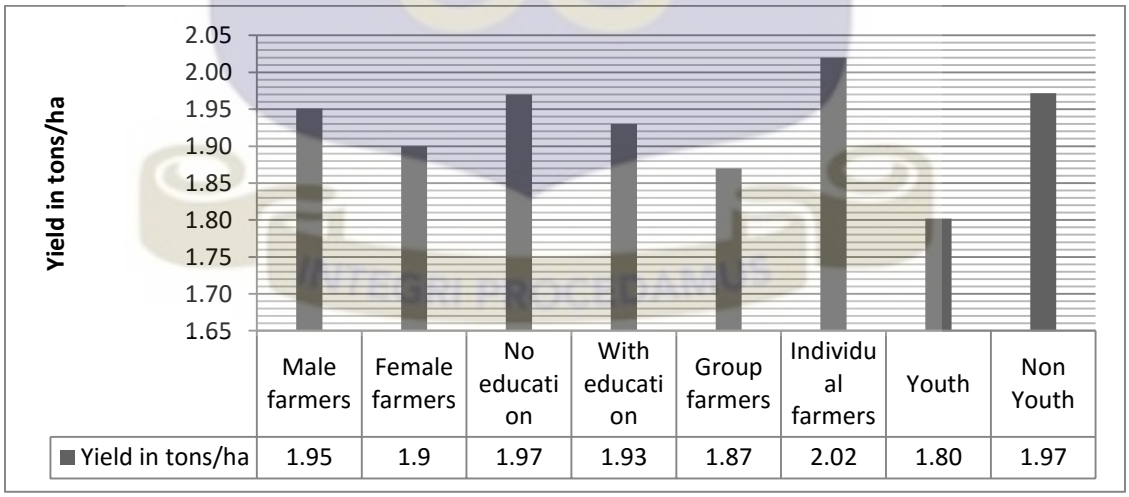
A beneficiary of block farming who is also an employee of the youth in sanitation module of the NYEP reported a monthly allowance of one hundred Ghana cedis (GHS100.00) and

this suggests a possible 400 Ghana cedis in a 4-calendar months duration as well. He remarked

'*…if salaries from Zoomlion were regular, working with Zoomlion is better than engaging in farming'* (Asub02, 41 years, 29th May, Asunbinja)

The low and unattractive profit from block farming is due to low yields. The YIAP reports a six (6) tons/ha achievable maize yield in Ghana and that farmers averagely attain 1.7 tons/ha. In 2009, the average block farming yields were 2.9 tons/ha. This rose to 3.4 tons/ha in 2012 but fell to 2.5 tons/ha in 2013 (Mahama, 2015). In the Techiman Municipal Area, maize yields from 2009 to 2012 oscillate between 1.9 to 2.24 tons/ha (MOFA/SRID, 2009-2012). Yields obtained by farmers in block farming in this study ranges between 0.5 and 6.4 tons/ha with an average yield of about 1.9 tons/ha. Figure 5.12 illustrates yields obtained by different categories of farmers.

Figure 5.13: Yield from Block Farming by Farmer Category in Techiman Municipal Area (2011-2012)



Source: Fieldwork, May/June 2013

In all cases, the average yields are about the 2009 yield (1.9 tons/ha) for the study area. While yield obtained by farmers in block farming in the study area is higher than non-

block farm yields (1.46 tons/ha), block farm yields in the Techiman Municipal Assembly are not only below the achievable yield in Ghana (6 tons/ha) but the yields are also below the Block Farm Programme yield of 2.5 to 3.4 tons/ha between 2009 and 2013 (Mahama, 2015).

It is important to mention that merely supporting farmers with fertiliser, seed, agrochemicals and extension services will not translate to improving yield because other factors exist. The study attributes the low yields obtained by farmers in block farming in the 2012 season in the study area to three cropping practices namely minor season block farming, mixed cropping and unrecommended use of inputs.

The implementation of block farming in the Techiman municipal area is in the minor season (August to November) during which both farmers and the municipal agricultural office acknowledge unreliable rainfall as a challenge. About 12 and 24 percent reported drought as a challenge in the 2011 and 2012 seasons respectively. A male farmer remarked,

> '*…harvest will be good if support was for rainy farming, …but it always in the minor season' (Bonk03, 40 years,26th May, 2013, Bonkwae, Farmer).*

The Techiman Municipal Agricultural Office desk officer for block farming reports that the preference of the Municipal Agricultural Office is to implement block farming in the major season (March to July). However, he cited the late delivery of inputs from the ministry as a challenge. Secondly, mixed cropping with maize interplanted with tomatoes will affect plant population per hectare and affect maize yields and profits from block farming. Also block farms are not on contiguous land and this affect the ability of AEAs

to ensure farmers adhere to good agricultural practices such as spacing and use of agro inputs at recommended dosage. From Table 5.4, implementers' suspect possible inefficient use of resources and diversion of inputs. This suggests poor adoption of good agricultural practices manifesting as low yields.

While low yields will discourage the youth to venture into farming, it is also important to note that the time and uncertainty associated with profits from farming are important factors that influence decisions to engage in farming. A youth taking up farming is not certain of the benefits because of the vulnerability of farming to risk factors such as drought, flooding, pest and diseases. On the length of time to benefit from farming, a male farmer remarked,

> '*...it will take about three months to get a benefit from farming,….,the youth do not like farming because the profit from farming is not attractive. We the elderly even if the money is not good, we still continue because of feeding of the family' (TANO031, 60 years, 31st May, 2013, Tanoso, Farmer)*

Another important factor is income security. Income security has the potential to influence the decision to engage in farming and thereby attract the youth into farming. As a female farmer remarked,

> *'...with farming you will not get money…, farming is difficult and I don't want my children to get into farming…with government work, even if no rain you have no problem,… when you go on pension, you will get something…, I have to continue farming even if I am old…' (Atta06, 46 years, 26th May, 2013, Attakrom, Farmer)*

These remarks emphasise the importance of secured income as expressed in the outcome component of the Sustainable Livelihood Framework if the youth are to take up farming as a lifetime vocation. Unlike collective farming in Soviet agriculture where farmers were assured of guaranteed purchases of farm produce, higher prices and insurance against risk, no insurance exist under the Block Farm Programme. Yet the risk associated with farming is enormous. Farming is rainfed, it is characterised by low yields, poor market for farm produce and a relatively unattractive profits. To make farming a secured income source will require guaranteed purchases of farm produce, higher prices and insurance to safeguard farmers against risk. Additionally, inadequate support for farming exacerbates the risk of discouraging the youth to take up farming as a lifetime vocation. With lower profits and the uncertainty associated with farming, a more diversified livelihood strategy is required if the youth are to be enticed into farming as a lifetime vocation. Else the youth may engage in farming because of no alternative livelihood options but not as a lifetime vocation. The youth may engage in farming to generate the needed capital to transit onto nonfarm trades (Anyidoho et al. 2012) which some reports describe as using agriculture to exit agriculture (Okali and Sumberg, 1999).

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary

The Block Farm Programme is part of Government of Ghana broader programme on youth in agriculture. The objective of the programme is twofold—to engage large tracts of arable land in selected locations and grow crops that would do well in such locations to enhance food security and to attract the youth into farming not only as an employment avenue but also to help curb the aging farmer population. The programme targeted generating employment for 545,565 farmers by 2012 (GOG/MOFA, n.d). The study sought to investigate the role of the programme in attracting and sustaining the participation of the youth farming. The study was conducted in the Techiman municipal area and it examined the motivation and participation of farmers, the inputs accessed and profitability of block farming.

One hundred and ten (110) farmers participated in the study. Almost a half (45%) of the farmers are native Bono. Forty-five percent (45%) of the farmers have no formal education. Income rather than employment is the most important motivation for enrolling onto block farming in the Techiman Municipal Assembly. The important motivation to take up farming as a lifetime vocation were similar to the motivation for enrolling onto block farming namely income, profits and acquisition of inputs for farming.

Less than 20 percent of the farmers are youth. The most common channel used to enrol onto block farming is through agricultural extension agent (AEAs). Farmers express

interest by applying either as individuals or in groups. Forty-six (46) percent enrolled as a group and remaining 54 percent enrolled as individuals. The inputs supplied to farmers included fertiliser, seed, agrochemicals and extension services. However farmers rely on their own land and also arrange for their own mechanisation services. Informal market actors are the dominant source of market to farmers.

Contrary to the block farming design to enrol for a 3-year period, participation of farmers in block farming is more than the stipulated 3-years. However, a farmer may not continuously participate in a 3-year period because of emphasis on recovery of input credit. Both national and district level implementers reported the importance of loan repayment as a condition for continued staying in the programme. While recovery of input credit from farmers is poor, the emphasis on recovery manifest in the inability of farmers to progressively graduate from block farming.

The average profit from block farming is Three Hundred and Fifty-Four, Ghana cedis, Fifty-Seven pesewas (GH¢ 354.57) per hectare of maize farming and this is below a possible income from engaging in a non-farm job such as offering labour services for construction. The average yield obtained is 1.9 tons/ha and this is below block farm yield reported by the Youth in Agriculture Programme.

6.2 Conclusions

The study concludes that targeting of the youth in block farming in the Techiman municipal area is poor. Only 18 of the 110 farmers surveyed are between the youth age

bracket of 15-35 years. Also all 110 farmers were into farming before enrolling onto the programme. The emphasis on recovery of input credit has overshadowed the objective of using the programme to provide jobs for the youth and help curb Ghana's aging farmer population.

The study also concludes that the provision of resources for farming under the Block Farm Programme is inadequate. In addition to extension services, the programme provides farmers with fertiliser, certified seeds and agrochemicals. Equally important resources to motivate the youth to take up farming as a lifetime vocation such as land, appropriate machinery and marketing of farm produce are generally not available to farmers. Also the programme does not include capacity building of farmers to be able to access formal and semi-formal sector credit when they graduate from block farming. The study therefore concludes the programme is not holistic in terms of the provision of resources to make farming more appealing to the youth who will want to enter higher value crop farming to improve their livelihoods.

Another conclusion from the study is that block farming is not generating appreciable incomes to farmers. Profits from block farming are below the possible wages that could be earned from a non-farm job. Finally, block farming does not offer diversified livelihood options that are appealing to the youth. Among the four components of the Youth in Agriculture Programme, only the youth in crop farming was implemented in the Techiman Municipal Area. Also limiting participation to only one crop limits the options on cropping

and farmers are unable to cultivate other crops which may attract higher prices to earn higher profits.

6.3 Recommendations

Achieving the target and objectives of the Block Farm Programme requires commitment of both government and implementers to ensure that targeted groups benefit from the programme. The findings of this study suggests that the programme is supporting farmers but not the youth. While loan repayment is important for sustainability, giving priority to youth employment over loan repayment will help in attracting the youth in block farming, reduce youth unemployment and help curb Ghana's aging farmer population.

Secondly, a more holistic approach should be adopted if the programme is to make a significant improvement in productivity, improve well-being of farmers and make farming attractive to the youth and other vulnerable groups. Only supporting farmers with fertiliser, seed, agrochemical and extension services is not adequate. Considering the role of land availability in farming, there is the need to ensure easy access to land and also technology to reduce drudgery associated with farming. District assemblies should acquire land banks so that the youth who will want to venture into farming could easily access the resource. Land banks will not only enable MOFA to engage youth farmers but will also ensure beneficiaries are put on a contiguous land where there will be effective and efficient monitoring of block farms. This will not only increase the use of inputs to improve productivity and income but it will also enhance loan repayment. Agricultural Insurance[4]

[4] http://mofa.gov.gh/site/?page_id=12237

will also minimise the risk associated with farming and this will be better implemented if the group farms are in contiguous zone. This will help cushion farmers to withstand risk and uncertainty associated with farming.

Finally, for the youth to take up farming as a lifetime vocation, profits from farming need to be significantly higher than non-farm jobs. Higher profits from farming will compensate for the uncertainty and risk associated with farming. Also a more diversified approach should be adopted if the youth are to take up farming as a lifetime vocation. The Youth in Agriculture Programme as spelt out in chapter two comprises of other components but only the block farming component is implemented in the Techiman Municipal area. A youth in block farming taking up either livestock farming or aquaculture will provide the individual a diversified or alternative source of income. Providing a diversified source of income will reduce the impact of shock associated with farming and make farming more appealing to the youth.

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APPENDICES

Appendix 1

Table 1: NYEP Regional Employment Figures (2005 – 2008)

Region	No. of youth		Percentage Employed
	Registered	Employed	
Ashanti	48,522	11,694	24
Brong Ahafo	30,568	10,992	36
Central	34,616	10,450	30
Eastern	30,325	10,779	36
Greater Accra	42,526	9,994	24
Northern	41,532	11,598	28
Upper East	25,521	10,188	39
Upper West	26,255	9,698	37
Volta	27,456	12,013	42
Western	25,257	10,997	44
TOTAL	332,578	108,403	34

Source: GOG/MYS, National Youth Employment Programme Ghana. May 2011

Appendix 2

Table 2a: Cropped area of major crops in Techiman Municipal Assembly (Figures in Ha)

Crop/Year	2008	2009	2010	2011	2012
Maize	12,500	15,230	15,690	15,780	12,735
Cassava	8,517	8,680	10,420	10,390	6,647
Yam	12,250	13,230	13,630	13,510	13,781
Cocoyam	3,248	2,970	2,710	2570	1542
Plantain	7,682	8,120	7,960	8210	3,745
Groundnuts	-	-	580	659	214
Cowpea	-	-	820	980	703

Source: GOG/MOFA-SRID (2008-2012

Table 2b. Production of major crops in Techiman Municipal Assembly (Figures in Mt/Ha)

Crop/year	2008	2009	2010	2011	2012
Maize	27,500.00	28,940.00	32,792.10	31,717.80	28,526.40
Cassava	137,123.70	143,300.00	184,955.00	183,695.20	117,718.37
Yam	233,975.00	284,330.00	284,185.50	274,793.40	246,128.66
Cocoyam	23,060.80	21,460.00	16,639.40	15,137.30	8,481.00
Plantain	79,892.80	86,130.00	80,236.80	81,935.80	41,382.25
Groundnuts	-	-	522.00	586.51	214.00
Cowpea	-	-	902.00	1,068.20	843.60

Source: GOG/MOFA-SRID (2008-2012)

Table 2c: Average yield for major crops in Techiman Municipal Assembly (Figures in Mt/Ha)

Crop/year	2008	2009	2010	2011	2012
Maize	2.2	1.90	2.09	2.01	2.24
Cassava	16.1	16.51	17.75	17.68	17.71
Yam	19.1	21.49	20.85	20.34	17.86
Cocoyam	7.1	7.23	6.14	5.89	5.50
Plantain	10.4	10.61	10.08	9.98	11.05
Groundnuts	-	-	0.9	0.89	1.00
Cowpea	-	-	1.1	1.09	1.20

Source: GOG/MOFA-SRID (2008-2012)

Appendix 3

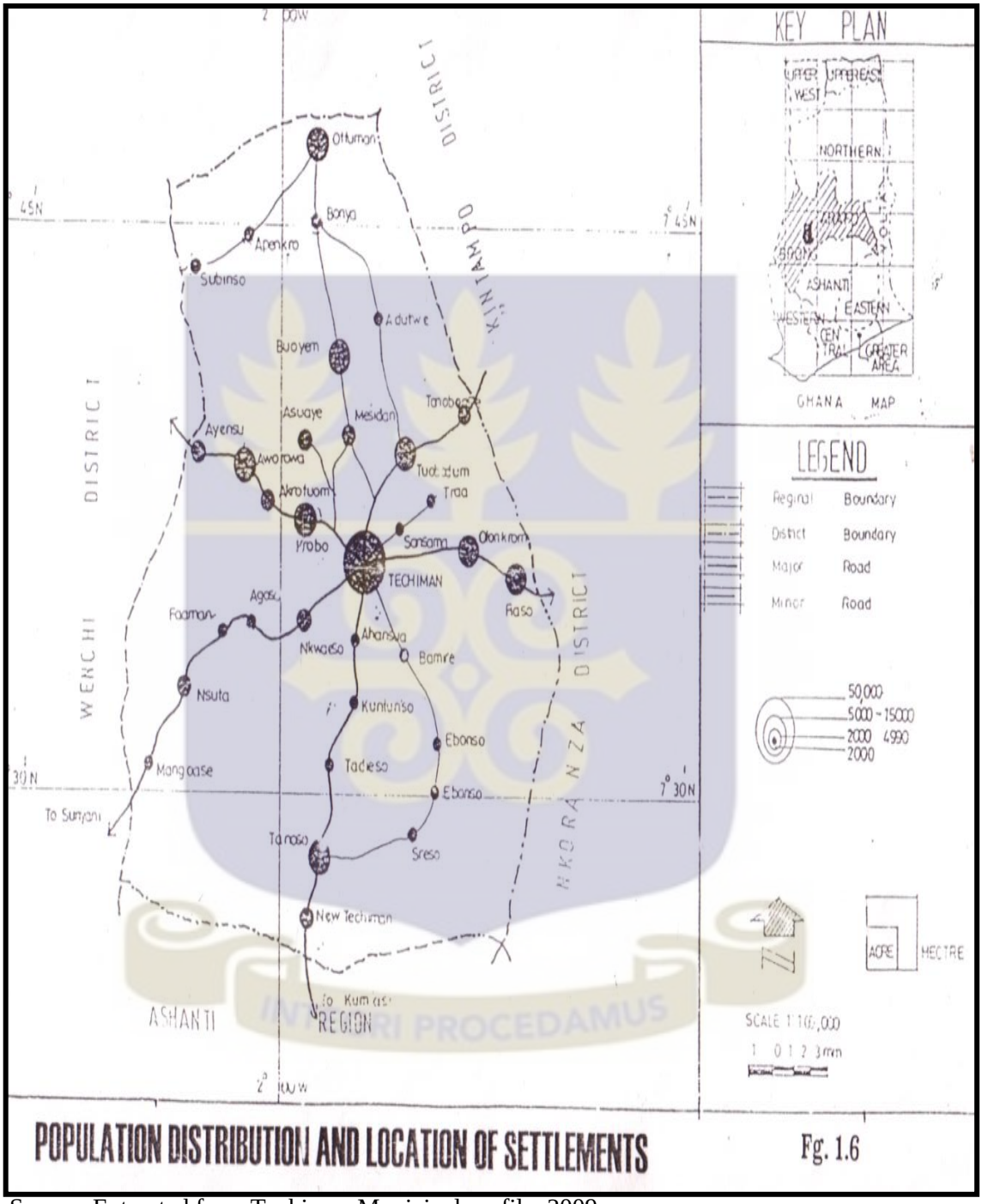
Table 3.1: Chi square test on Prices

Price	Traders	NAFCO	Total
40	1	0	1
45	3	0	3
50	16	1	17
52.5	1	0	1
54	1	0	1
55	16	0	16
58	1	0	1
60	42	1	43
62.5	1	0	1
65	8	0	8
70	7	0	7
75	1	0	1
80	2	1	3
100	1	0	1
Total	**101**	**3**	**104**

Likelihood-ratio chi2(13) = 6.2628 Pr = 0.936

Appendix 4

Map of the Techiman Municipal Assembly



Source: Extracted from Techiman Municipal profile, 2009

Appendix 5

Questionnaire

Community name | | **Date of inter:……..**

Questionnaire No | | | | | | **Start time: ……**

Farmer Telephone No. …… **End time: .....**

THE ROLE OF THE BLOCK FARM PROGRAMME (BFP) IN ATTRACTING AND RETAINING THE YOUTH IN FARMING IN THE TECHIMAN MUNICIPAL ASSEMBLY OF THE BRONG AHAFO REGION, GHANA.

QUESTIONNAIRE FOR FIELDWORK

K. JIMAH-M.PHIL STUDENT, ISSER- UNIVERSITY OF GHANA

SECTION ONE: PERSONAL INFORMATION

1. How long have you lived in this community/village? Number of years: ☐

2. How will you describe yourself in this community? (**Native=1 Nonnative=2)** ☐

3. If Nonnative, where do you come from? ☐

1. Techiman Municipal Assembly
2. Outside Techiman Municipal Assembly but in Brong Ahafo region
3. Other region (specify)……

4. What is the gender of the farmer? Don't ask, just record (**Male=1 Female=2)** ☐

5. How old is farmer since last birth day? **(If farmer does not know his/her birthday, use 1979 coup, 1979 election, 1981 coup, 1992 elections to help estimate farmer age)** ☐

6. Are you married? ☐

1. Married
2. Divorced/separated
3. Unmarried
4. Widow/widower

7. What level of education have you completed? ☐

1. None
2. Basic (primary/JHS)
3. Secondary/SHS
4. Post-secondary but below tertiary

8. What ethnic group do you belong? ☐

1. Bono
2. Other Akan
3. Dagarti
4. Dagomba
5. Ewe
6. Other Specify……

SECTION TWO: BLOCK FARM CONCEPT AND PARTICIPATION IN BLOCK FARM

9. In which year/s did you participate in the block farm programme?

(Multiple responses possible)

1. 2009 **(Yes=1, No=2)** ☐
2. 2010 **(Yes=1, No=2)** ☐
3. 2011 **(Yes=1, No=2)** ☐
4. 2012 **(Yes=1, No=2)** ☐

10. If you participated in 2009 and/or 2010, what crop did you cultivate?

	2009 Minor	2009 Major	2010 Minor	2010 Major
Maize (yes=1, No=2)				
Other crop (Cassava=1, Yam=2, Cocoyam=3, Plantain=4, Groundnuts=5, Tomatoes=6, Cowpea=7, Other Specify)…….=7				

11. In 2011 and 2012, which seasons did you participate in the block farm? (Multiple responses possible)

1. 2011 minor season (**Yes=1, No=2**) ☐
2. 2012 minor season (**Yes=1, No=2**) ☐
3. 2011 Major (**Yes=1, No=2**) ☐

12. If you did not participate in the programme in 2011, what was the reason?

1. Do not have land
2. Did not apply ☐
3. Applied and was not accepted

13. If you did not participate in the programme in 2012, what was the reason?

1. Do not have land
2. Did not apply ☐
3. Applied and was not accepted

14. How did you get enrolled in the programme?

1. Applied and was accepted ☐
2. Through my AEA
3. Through my assemblyman

15. For the most recent season, how were you engaged on the block farm?

1. As a group (**Yes=1, No=2**) ☐
2. As an individual (**Yes=1, No=2**) ☐

16. If you participated as a group, what benefit did you get? (Multiple responses possible)

1. Sharing of knowledge (**Yes=1, No=2**) ☐
2. Acquisition of credit (**Yes=1, No=2**) ☐
3. Acquisition of inputs (**Yes=1, No=2**) ☐
4. Marketing of produce (**Yes=1, No=2**) ☐
5. Group support in cultural practices (**Yes=1, No=2**) ☐
(land preparation, sowing, weeding and harvesting)

17. Did you sign any contract/MOU with the district office? (**Yes=1, No=2**) ☐
18. In the last season did an AEA visit your block farm? (**Yes=1, No=2**) ☐

19. If yes how many times did an AEA visit your block farm in the last minor season? ☐

20. If no extension officer visited you, what was (were) your sources of knowledge and information? (Multiple responses possible)

1. NGOs (**Yes=1, No=2**) ☐
2. Radio/FM (**Yes=1, No=2**) ☐
3. Mobile phone (**Yes=1, No=2**) ☐
4. Other Specify)…..... (**Yes=1, No=2**) ☐

21. What are the most important reasons/motivations for participating in the BFP? (Multiple responses possible)

1. Source of employment (**Yes=1, No=2**) ☐
2. Improve household food security (**Yes=1, No=2**) ☐
3. Increase household income (**Yes=1, No=2**) ☐
4. Acquire farm inputs (**Yes=1, No=2**) ☐
5. Market produce (**Yes=1, No=2**) ☐
6. Acquire credit (**Yes=1, No=2**) ☐
7. Other…… (**Yes=1, No=2**) ☐

FOR THE MOST RECENT SEASON

22. In your most recent season on the block farm how many acres did you cultivate? ☐

23. In your most recent season on the block farm how many bags of maize did you obtain? (ask of bags in Kg, eg. 12 bags of 90kg)) ☐

24. For your most recent season, how many bags did you sell for cash? (***ask sales bags in kg because sometimes harvest bags differ from sale bags***)….kg ☐

25. What was the average price that you sold maize from the block farm? In GH¢ ☐

26. Who was the major buyer of your maize from the block farm? ☐

1. Traders from the local community
2. Traders from Techiman
3. I sent my maize to Techiman market
4. National Buffer Stock Company
5. Other specify……

27. For your most recent season, how far was your block farm from the community? (In km)

28. For the most recent season, who provided you the land on which you cultivated your block farm maize?

1. It is my own land
2. MOFA acquired land
3. I rented it: cost in GH¢)……
4. Other, please explain briefly……

29. In your most recent season, what inputs/support did you receive from MoFA for your block farm?

Input description	**Yes=1, No=2**	How will you rate MoFa in the provision of the service?1=Timely 2= delayed 3=was not provided
Fertiliser,		
Seed		
Agrochemicals		
Land preparation (tractor services)		
Extension		
Other specify		

Access to agricultural infrastructure

30a. Do you own a tractor? (**Yes=1, No=2**)

30b. If farmer rented tractor services for land preparation, who provided the services?

1. Tractor service provider in this community (**Yes=1, No=2**)
2. Tractor service provider in another community **(Yes=1, No=2)** (indicate distance to farmer community.....km)
3. An AMSEC service provider (**Yes=1, No=2**)
4. Other specify…… (**Yes=1, No=2**)

30c. In the last season, if you rented tractor for land preparation, how many days did you have to wait to access tractor services?

31. In the last season did you use a sheller? (**Yes=1, No=2**)

32. If yes, how many days did you have to wait to access shelling services?

33a. Is there a fertiliser/agrochemical shop in this community? (**Yes=1, No=2**)

33b. If no, what is the distance you travel to nearest community to buy fertiliser/agrochemical?

34a. Have you repaid cost of inputs supplied? (**Yes=1, No=2**)

34b. If no, complete table below

Year/season	Amount expected to pay (GH¢)	Amount paid (GH¢)	Outstanding debt (GH¢)
2011 Minor			
2012 Minor			

35. Please mention any three other services/support you will wish to be added to the BFP in order of importance?

1. Credit for land preparation **(Yes=1, No=2)** ☐
2. Credit for labour **(Yes=1, No=2)** ☐
3. Support with Knapsack **(Yes=1, No=2)** ☐
4. Agrochemicals **(Yes=1, No=2)** ☐
5. Other specify……...**(Yes=1, No=2)** ☐
6. Other specify……..**(Yes=1, No=2)** ☐

36a. Is maize your preferred crop for the block farm? **(Yes=1, No=2)** ☐

36b. If no, what three crops would you have preferred and please state your reason?

Major crop in Techiman municipal assembly	**Rank (1st, 2nd, 3rd**	State your reason: 1=ready market, 2=quick cash/income, 3=food for the family/food security, 4=other specify
cassava		
yam		
cocoyam		
plantain		
groundnuts		
cowpea		
vegetables (Specify)……		
Other specify……		

37. In your most recent season, what major disaster/s did you encounter on the block farm? Tick

Disasterdescription/Year		2011 Minor	2011 Major	2012 Minor	2012 Major	Any comment on action that was taken?
Fire	**(Yes=1, No=2)**					
Flooding	**(Yes=1, No=2)**					
Drought	**(Yes=1, No=2)**					
Pest and disease attack	**(Yes=1, No=2)**					
Other……	**(Yes=1, No=2)**					

38. How long do you anticipate continuing to be on the BFP?

1. 1 year **(Yes=1, No=2)** ☐

2. 2 years **(Yes=1, No=2)** ☐

3. 3 years **(Yes=1, No=2)** ☐

4. Other specify……..**(Yes=1, No=2)** ☐

39a Will you agree that the BFP has increased your interest to take up agriculture as a life time activity?

1. Fully agree **(Yes=1, No=2)** ☐

2. Somehow Agree **(Yes=1, No=2)** ☐

3. Fully disagree **(Yes=1, No=2)** ☐

4. Somehow disagree **(Yes=1, No=2)** ☐

40. What are the factors that will motivate you to take up farming as a vocation?

	Yes=1 No=	If YES, is the block farm a motivation? **Yes=1, Somehow=2, No=3**
Increased profits		
High price for agricultural goods		
Introduction of machinery and farm equipment		
Availability of land		
Lower cost of land		
Ready market for agricultural produce		
Block farming		
Increased knowledge on farming		
Easy access to credit		
Provision of initial capital		
Increase status of farmers		
Reduce reliance on rainfed agriculture		
Access to other farm inputs(fertiliser, agrochem.)		
Insufficient initial capital		
Reduction in post-harvest losses		
Access to transport to market		
Poor storage facilities		
Reduce the energy-sapping/Tedium associated with agriculture		

SECTION THREE: EMPLOYMENT HISTORY

50. Please indicate what you were doing before joining the block farm programme, what you currently do while on the block farm programme and what you will be doing when you exit the block farm?

Job description	**Before BFP Yes=1, No=2**	**While on BFP Yes=1, No=2**	**After BFP (include**

			exited) **Yes=1, No=2**
Service and related work			
Teaching related			
Community health assistant			
Community policing service			
Community sanitation service			
Cooks, waiters, bartenders and related work			
Building caretakers, cleaners and related			
Hairdressers, barbers, and related workers			
Religion related work			
Sculptors, painters,			
Photographers and related creative Artists			
Transport (eg driver or driver apprentice)			
Agricultural related works			
Crop cultivation (own farm)			
Crop cultivation (Not own farm)			
Livestock farming (own farm)			
Livestock farming (Not own farm)			
Farm labourer			
Forestry related			
Fishermen, hunters and related work			
Production and related works			
Mining, quarrying, and related work			
Metal Processors			
Wood preparation work			
Spinners, weaving, dyers and related work			
Fishmongers			
Food and beverage processors.			
Artisanal work			
Cabinetmakers, and related wood work			
Stone carvers and stone cutters			
Blacksmith, and machine tool operators			
Machinery, fitters, machine assembling			
Electrical fitters and related electrical works			
Broadcasting station and sound-equipment operators, cinema projectionists and related			

Plumbers, welders, sheet-metal and related			
Glass formers, potters and related works			
Rubber and plastic product makers.			
Bricklayers/mason, steel benders, carpenters and other construction works			
Sales and related workers			
Petty trading			
Sale of mobile phone units & Telephone sales			
Sales/shop assistants and related work			

51. What is the percentage of your income from the following three sources including agriculture before joining the block farm programme, now on block farm and farmer who have exited?

What percentage of total income is from	**Before BFP (%)**	**During BFP %)**	**After BFP (exited farmers (%)**
Remittance from relations			
Agriculture related			
Other works engaged in by beneficiary			
Total	100	100	100

SECTION FOUR: LIVELIHOOD

52. Farmer ownership of basic needs before, during and after participation in block farm.

Asset description	**Before BFP Yes=1, No=2**	**During BFP Yes=1, No=2**	**After BFP Yes=1, No=2**
A radio/ Tape recorder			
A TV			
Video deck (DVD/VCD)			
A mobile telephone			
A fridge (freezer/ refrigerator)			
Computer			
Camera			
Owns a bed			

Cabinet/cupboard			
Microwave			
Living room furniture			
Satellite disc			
Sewing machine			
Fan			
Air conditioner			
Gas cooker			
Kerosene stove			
Blender			
Rice cooker			
Transportation equipment (bus, minibus, truck)			
Private car			
Bicycle			
Motorbike			
Living with relation			
Living in own rented apartment			
Living in self own apartment			
No access to electricity			
Signed on NHIS			
Other specify……			

SECTION FIVE: ASPIRATIONS

53. In order of importance, please mention NOT MORE THAN 3 most important things you aspire to achieve in life?

Aspirations	Rank: 1st, 2nd, 3rd
Build a house	
Educate my children	
Upkeep of my family	
Buy a car	
Learn a trade, specify…….	
Establish a non-farm business	
Continue farming & also establish a non-farm business	
Marry	
Travel to Europe for a non-farm job	
Travel to Accra/Kumasi for a non-farm job	

Travel to other urban centre in Ghana for a non-farm job	
Diversify in agriculture (eg rearing of livestock)	
Other specify ……	
Other specify……..	

54. Do you consider farming an option to fulfilling these aspirations?
(Yes=1, No=2)

Occupation of relations

Occupation	1=Farming, 2=Trading, 3=Other specify
55. What is the occupation of your father?	
56. What is the occupation of your mother?	
57. What is the occupation of your spouse if married?	

SECTION SIX: CROP BUDGET

Instructions: Fill relevant parts of table for maize in the village based on the average cost and output per acre in 2012. Write NA (not applicable) if an item/activity is not undertaken.

ITEM / ACTIVITY	Maize as sole crop	Maize with other crops
A. Labour/Mech input: pre-harvest	Average cost per acre (GH¢)	
Land preparation		
-Clearing		
-Ploughing		
-Harrowing		
-Others		
Herbicide spraying		
Planting		
Fertiliser application		
- 1st		
- 2nd		
Weeding		
- 1st		
- 2nd		
Insecticide spraying		
Bird scaring		
Harvesting		
- Slashing		
-Gathering		
- Dehusking		
- Shelling		
Filling of sacks or bags		
Others (specify)……..		

ITEM / ACTIVITY	Maize as sole crop	Maize with other crops
B. Labour/Mech input: post-harvest	Average cost per bag (GH¢)	
Drying and cleaning		
Winnowing		
Sewing of bags		
Others (specify)……..		
Transportation	Average cost per km (GH¢)	
Inputs to farm eg fertiliser		
Output to home		
Others (specify)……..		
C. Tradable inputs	Average cost per acre (GH¢)	
Seeds		
Fertiliser		
- NPK		
- SoA		
- Urea		
- Others		
Herbicide/Weedicide		
Insecticide/pesticide		
Bird scaring inputs		
Others (specify)……..		
Other inputs	Average cost per unit (GH¢)	
Renting of hoes		
Renting of Knapsack		
Other specify		
D. **Other costs**	Average cost per unit (GH¢)	
Land rent (per acre)		
Land (……acres for …..years)		
Bank/loan processing fees (per 1000 GH¢)		
Micro Finance		
Interest on loan (per 1000 GH¢)		
Others (specify)……..		
E. Output		
Number of bags (eg 90 kg bags) per acre		
Average price per bag		

THANK YOU FOR YOUR TIME

Appendix 4b

QUESTIONS FOR KEY IMPLEMENTING STAFF OF THE BLOCK FARM IN TECHIMAN MUNICIPAL ASSEMBLY

1. Rank/Position……

2. If an AEA, what is the name of your operational area……

3. Which zonal council is your operational area? (Name of zonal council)……

4a. In the last (2012 Minor season) was the Block farm implemented in your operational area?

Yes=1 No=2 ☐

4b. If yes how many farmers were involved? ☐

4c. If No, please explain briefly why the programme was not implemented in your operational area.

……

……

……

……

5. How do farmers become members of the Block Farm Program? Please, describe any steps or process in detail.

……

……

……

6. For what reasons will a beneficiary be dropped from the program?

……

……

……

7. How long are farmers expected to stay on the Block Farm?

……

……

……

8. Indicate your level of satisfaction or dissatisfaction with the areas on the Block Farm stated in the Table below

Area	**Ranking** **Very satisfied=1** **Satisfied=2** **Very dissatisfied=3** **Dissatisfied=4**	**Reasons for ranking**
Providing		
a) Land		
b) Inputs		
c) Services to farmers		
Improving		
d) Food security		
e) Incomes		
Youth farmers		
f) Targeting of the youth		
g) Orient young farmers to take farming as business		

9. How does the Block Farming compare with the FBOs approach/Contract farming; and others in terms of effectiveness and efficiency with providing services to farmers, technology adoption

……

……

……

10. What percentage recovery were you able achieve for the last season? ……%

11. From your experience/observations, why are some beneficiaries not able to repay the credit?

……

……

……

12. What challenges have you encountered with the implementation of the Block Farm programme?

……

……

13. What mechanisms are in place to ensure the sustainability of the block farm programme?

……

……

……

14. What are the factors that will motivate the youth to take up farming as a vocation?

……

……

……

15. From your experience/observations, what are the key successes of the Block Farm Program?

……

……

……