

Why Do Smallholders Decide to Produce on Contract?

The Views of Traditional Staple Foods Producers in the
Upper East Region of Ghana



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Master Thesis in Development Geography

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Dedication

Dedicated to my lovely granny Victoria Mawusi for your motherly love and care given to me at a very tender age of my life when I most needed it.

Abstract

The recent growth in contract farming schemes particularly in developing countries has sparked controversy over its economic and welfare impacts on participating smallholders. This has given rise to a body of literature that analyses various aspects of the phenomenon. However, the question of why smallholders choose to participate in a contract farming scheme has not been thoroughly explored. Seldom are smallholders themselves asked explicitly why they choose to produce on contract for agribusiness firms, as many studies take it axiomatic that smallholders produce on contract solely because of the income benefits they expect to derive.

This study explores the motivational factors behind smallholders' decision to produce traditional staple foods on contract for local agribusiness firms in Tampola, a typical farming community in the north-eastern part of Ghana. The goal is to ascertain and highlight smallholder constraints that are embedded in such motivational factors to enhance agricultural policy intervention.

Using a qualitative research method, I find among other things that, the volatility of the mainstream input and output markets for agriculture were sources of motivation for smallholders to produce on contract. I also find that the urge to sell farm produce in weight rather than in volumes was another motivating factor. The desire to earn surplus food induced by the high yields potential of contract farming for household consumption was also another source of motivation for smallholders.

The study concludes with some recommendations for agricultural policy that are meant to address some smallholder constraints that emanates from the motivational factors. Among them is the need for the state and other development agencies to give the needed attention to the development of food crop value chains, not only to enhance food security, but also the creation of non-farm employment opportunities for smallholders.

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List of Abbreviations and Acronyms

ACDI	Agricultural Cooperative Development International
ACDI/VOCA	Agricultural Cooperative Development International Volunteers in Overseas Corporative Assistance
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
WB	World Bank
NGOs	Non-Governmental Organizations
GDP	Gross Domestic Product
MOFA	Ministry of Food and Agriculture
GSS	Ghana Statistical Services
ADRA	Adventist Development Relief Agency
ACDEP	Association of Church Development Projects
ADVANCE	Agricultural Development and Value Chain Enhancement
USAID	United States Agency for International Development
FBO	Famer Based Organization
MPCU	Municipal Planning Coordinating Unit
KNMA	Kasena Nankana Municipal Assembly
MASLOC	Microfinance and Small Loans Centre
WFP	World Food Program
FASDEP	Food and Agriculture Sector Development Policy
MTDP	Medium Term Development Plan

1. Introduction

1.1 Research Objective

This study seeks to find out what motivational factors influence smallholders' decision to produce staple food crops on contract for agribusiness firms in Tampola, a farming community located in the north-eastern part of Ghana. The main goal is to throw more light on the challenges that confront smallholders so as to inform pro-smallholder intervention policies. Logically, in most cases smallholders would decide to produce on contract only if the expected gains from contract production would make their living standards better than their traditional way of farming. Therefore the decision to contract may be laden with some existing challenges they expect to overcome. Whilst a comprehensive impact assessment of contract farming on the living standards of participants is beyond the scope of this study, it nevertheless highlights some impacts from their participation on their standards of living.

1.2 Background to the study

Contract farming (CF) has been seen as a promising linkage strategy between smallholders and agribusiness firms with vested interests in sharing the risks associated with the production of a specific crop. Through cooperation with smallholders either by providing the necessary farm inputs and technical assistance to farmers and/or through direct control of the farm production, agribusiness firms gain access to the land and labour of smallholders and are also enabled to meet their supply needs more regularly (IFPRI 2006). A growing number of smallholders globally are being inserted into the agro-industry through the use of production contracts. In fact the popularity of contract farming as a vertical integration strategy of agribusiness firms, as noted by Little and Watts (1994), can be traced to the structural adjustment period which saw IMF austerity measures amidst attempts to revamp dwindling agricultural export markets in developing countries after various agricultural subsidies were removed by the states. Consequently, the World Bank also recognizes contract farming as an avenue to create strategic partnerships between private capitals and smallholders which would lead to the transfer of modern agricultural technology, quality inputs, entrepreneurial development of smallholders and market growth (World Bank 2005).

However, recent growth in contract farming has sparked much controversy over its welfare and economic benefits to smallholders, necessitating various research into the phenomenon (Warning and Key 2002). The optimists on the one hand see contract farming as a viable solution to numerous challenges - lack of access to information and markets,

inadequate access to credits, poor technology application, risk factors and many more - that confront smallholders, and as a rural development strategy. It is argued that contract farming integrates the smallholder into *commercial agriculture*, leading to income growth and for that matter poverty reduction (Eaton and Shepherd 2001, Minot 2011). The sceptics on the other hand, view the system as being potentially exploitative and subject to manipulation of smallholders by large capitalist firms to suit their interests especially in third world countries (Little and Watts 1994, Key and Runsten 1999, Singh 2005). With specific reference to the African context, Carney and Watts (1990) noted contract farming to have increased gendered intra-household conflicts between male heads of households and their spouses and as well as children.

1.2.1 Rational of the Study

Access to a guaranteed source of inputs and markets as well as agricultural extension services is important for the development of smallholder agriculture, because it helps to create the necessary demand and enables smallholders to increase their volumes of output and for that matter get a higher income from farming. In the wake of state withdrawal from the provision of these services, contract farming has been argued to have a potential of delivering such services to smallholders.

Varying views on contract farming range from its positive impacts of integrating low-income farmers into a modern agro-industrial sector (Minot 2011) to its potential to skew the unequal power relations in favour of the contracting firms and thereby manipulating vulnerable smallholders (Key and Runsten 1999, Singh 2005). Other studies delve into issues such as the effectiveness of a private sector-led contract farming arrangements to address market failures (Grosh 1994), determinants of selecting participants by agribusiness firms (Barret et al. 2012), the welfare impacts of CF arrangements, as well as gendered intra-household resource conflicts and labour dynamics of CF (Raynolds 2002, Bellemare 2012). Whilst most of these studies explore the impacts of contract farming on the living standards of participating smallholders, only in few cases are the smallholders themselves asked explicitly what factors motivate them to produce on contract. Instead these factors are often inferred from the impacts of CF or at best by comparing different contract schemes as against the prevailing agrarian regimes (Porter and Phillips-Howard 1997).

Admittedly, some of the existing literature acknowledges the multifaceted and the complexity of motivations to engage in contract farming (Masakure and Henson 2005, Abebe

et al. 2013) but very little attention has been given to the smallholders' constraints that emanate from such motivational factors. Moreover the CF literature has been overwhelmingly dominated by contracts that focus primarily on high-value export crops, even though studies show a rather weak linkage between high-value chains and staple foods (von Braun 2005). The argument here is that the majority of smallholders across developing countries produce more staple foods than cash crops, and spend about three-quarters of their income on staple foods (World Bank 2007) hence a contract farming scheme that focuses on value chains for staple foods identifies more with the peculiarity of the constraints of smallholders.

The present study fills in these gaps in a number of ways as it introduces several dimensions to the contract farming literature. First, by asking smallholders themselves explicitly why they decide to produce on contract, the study provides empirical motivational factors from the perspective of smallholders as this factors has often been inferred from the income benefits of contract farming by many studies. Second, with a focus not only on the motivational factors but also ascertaining smallholder constraints that are embedded in such motivational factors, the study highlights deep-rooted challenges that smallholders often face in farming. Finally, by focussing on contracts that deal with staple foods producers, the study does not only throw more light on the potential of CF in poverty reduction in developing countries but also ascertains some direct links between CF and food security, a theme that is rarely discussed across the literature.

1.3 Research Question

To attain the stated objective, the following question would be answered;

- What motivational factors influence smallholders' participation in contract farming?

1.3.1 Relevance of the Research Question

The extent to which a particular academic research is relevant depends on *whom* the research is meant for and *who* is using the research and for *what* the research is being used for. Again, the relevance of a research is shaped by the social context in which the research is presented, defined and used. Nevertheless, Staeheli and Mitchell (2005) outlined some significant ways a research may attain relevance: relevance as *pertinence*, *commitment*, *application* and *centrality*.

Relevance as *pertinence* suggests that research should address everyday issues that affect people's lives. In this regard, the present study provides useful insight into issues that affect the livelihood of smallholders in Ghana and in Africa at large. Agriculture contributes significantly to Ghana's GDP with majority of farmers (about 80%) being smallholders (MOFA 2010). Consequently the issue of smallholder agriculture is a significant issue to many people in Ghana, since it constitutes a major source of livelihood to the majority. Against the backdrop that there is limited state support for smallholders, examining the motivational factors for contract farming and also ascertaining the challenges confronting smallholders provides a useful information for policy intervention.

Relevance as *commitment* deals with the motivations for a research as well as its goal. It may also involve some sort of political action. With a primary goal of poverty reduction, the study provides empirical knowledge for policy makers for the improvement of smallholder agriculture. By assessing factors motivating contract production, the empirical facts can better inform the future design and management of contract farming schemes that may serve the best interests of smallholders and agribusiness firms.

Relevance as *application* suggests that research has to translate into some sort of concrete action in society. Thus, research should have the ability to transcend the intellectual boundaries to affect behaviour. The study provides empirical facts that is relevant for project interventions geared towards smallholder agriculture, particularly in northern Ghana. Geographical variations in terms of food crop production shows that productivity in northern Ghana remains the most vulnerable compared to other parts of the country. The region also remains the most food insecure relative to other parts of the country (GSS 2008). In this regard, many donor agencies that are into the development of food crop value chains to enhance smallholder agriculture in the region can take a cue from this findings for their intervention projects. In line with this, a copy of this research will be provided to the local government unit of the study area, so that it can be made easily accessible to development agencies.

Finally, relevance as *centrality* suggests that the more the geography discipline dominates scholarly and public discourse, the more relevant geographic research becomes. As mentioned earlier, the study makes a scholarly contribution to the CF literature by filling the gaps cited above. Again, given the background that over 75% of the world's poor people live in rural areas and work on small farms in developing countries, with agriculture as their major source of livelihoods, and about 85% of all farms in the world being held under smallholdings,

producing to feed some one-third of the world's population (Singh 2008), the issue of smallholder agriculture remains a central theme in public discourse not only in developing countries but among the donor community globally.

1.4 Arrangement of the Thesis

The study is organized under 6 chapters. Chapter two forms the theoretical framework of the study. It unpacks the contract farming concept and dissects the various types of contracts. Also delving into the contract farming debate, the chapter acknowledges the sharply divided views of scholars regarding the economic and welfare benefits of contract farming to smallholders. A paucity of knowledge regarding an explicit account of why smallholders choose to produce on contract has been noted and thereby making an argument for the need for the present study.

Chapter three analyses the agricultural sector in Ghana with empirical facts demonstrating that agriculture in Ghana is characterised largely by smallholders and the challenges confronting them thereof. The chapter also gives a descriptive account of contract farming citing various vertical integration approaches that has been used by the state, private firms and NGOs to insert smallholders into commercial agriculture. The chapter ends with a geographical and socio-economic profile of the study community.

In chapter four, I discuss the method employed to generate data for the study. An argument has been made in favour of a qualitative method and why it is the most suitable, given the research question of the study. The relevance of each technique used in the data collection process has been mentioned as well as challenges encountered at the field and how they were managed. Some ethical dilemmas regarding confidentiality, gaining access to informants and many more have also been discussed.

Chapter five forms the crux of the study. It presents and discusses the empirical factors that motivates smallholders to produce on contract. The motivational factors as per the findings revolves around seven main themes and these are discussed into detail within the larger framework of smallholder agriculture in developing countries in general.

Chapter six reflects on the findings. Smallholder constraints emanating from the motivational factors are discussed within the context of smallholder agriculture in Ghana, whilst some recommendations for policy are made. The chapter concludes the study by highlighting the significance of the CF concept in achieving the set objective of the study.

2. Conceptual Framework and Literature Review

2.1 Introduction

The aim of this chapter is to present the theoretical grounds relating to the objective of the study as stated in the introduction chapter. The CF debate forms the main theoretical framework of the study. The chapter also draws upon concepts and empirical findings to explain the practice of CF. The chapter begins with a broad definition of the contract farming concept, various types and key elements of CF, and the subsequent sections discuss the CF debate and some conceptual frameworks that analyse possible motivations for contract farming from both the firm and the smallholders' perspectives. Some empirical findings that give explicit accounts of the reasons why smallholders produce on contract are also explored with the aim of providing a broad understanding and a pathway to the question of the present study.

2.2 The Contract Farming Concept

Contract farming refers to a vertical integration in which the production and supply of agricultural produce are carried out under forward contracts whereby growers (farmers) make commitments to provide an agricultural commodity of a specific *quality* and *quantity* at a specific *price* within a given time frame in exchange for *farming inputs* from agribusiness firms (Singh 2002). Generally, CF integrates smallholders into domestic or export supply chains as producers and suppliers of farm produce. The contracting agency provides services to farmers ranging from farm inputs such as fertilizers, seeds, pesticides and others like ploughing, crop spraying services, extension advice and many more. In return the firm secures access to a specified quantity of the farm produce. Under this vertical relation, an underlying factor that cuts across is that the purchasing terms are regulated in advance through contracts (Coulter et al. 1999).

Contract farming has emerged as a response to the need for making available good quality and timely raw material for agribusiness firms either operating in domestic or international markets. Schipmann and Qaim (2011) noted that the transformation of agricultural food systems towards high-value supply chains has caused a radical change in the procurement system of agribusiness firms in developed and developing countries. Supermarkets for instance are increasingly switching from buying through the open market transactions to the use of contractual agreements with farmers. A body of literature (e.g. Henson et al. 2005, Asfaw et al. 2009, Maertens and Swinnen 2009) have discussed how smallholders can be integrated successfully into the modern agribusiness supply chain, whilst

many studies have also analysed the benefits and the risks of CF schemes especially where smallholders are involved (Glover 1987, Peterson 2001, Simmons et al. 2005). The proponents of agribusiness growth argues that CF increases income and employment in regions whose agricultural sectors are backward and underdeveloped and serves as a cure to the problems of low agricultural productivity and market instability. This is made possible by the transfer of technology and capital resources to smallholders. The other side of the debate emphasizes the dangers of CF for smallholders, highlighting the unequal power relations of contracts which can lead to manipulations of the farmers by the contracting firm. This debate is discussed into detail in a latter section.

2.3 Types of Agribusiness Contracts

Numerous classifications of contracts and of market linkages can be identified in the CF literature. However depending on the *nature* of the relation, *who* and *what* is involved in the linkage, farm agribusiness linkages can be categorized under *primary*, *secondary* and *cross-cutting* linkages (Santacoloma and Rottger cited in IFPRI 2006).

Primary linkages refer to a wide range of arrangements between smallholders and agribusiness firms where the latter secures access to the raw material of the farmers. The complexity of the contractual terms under primary linkages may vary from simple informal contracts, formal contracts and to a full vertical integration where there is intra-firm management and control of the plantation. Also the intensity of primary linkages tend to accelerate as more written legal contracts are introduced along the way.

With the secondary linkages, arrangements are made between smallholders and intermediaries like input dealers and providers of services such as storage, training and transport. These intermediaries are usually sub-contracted by the main agribusiness firm which finally acquires the end product. These linkages are usually common in the area of exportation of fresh vegetables or the horticultural market where there is high food quality and safety standards. The services of these intermediaries are therefore crucial for prompt and safe delivery.

Under cross-cutting linkages, links to providers of financial services and other technical support services and also government agencies and the donor community are established. The core purpose is to strengthen the primary and secondary linkages and to effectively support the prevailing agrarian system (IFPRI 2006). However, primary linkages remain the most

widespread and the starting point for most agribusiness linkages whilst the secondary and cross-cutting are introduced mainly as complementary linkages. The most common type of a primary linkage is contract farming schemes, which have a long history and still becoming popular in recent times against the backdrop of failing food export markets and a declining state support for smallholder agriculture.

On the basis of what is involved in the contract, the contract node can further be classified under *market specification*, *production management* and *resource providing* contracts. *Market specification* contracts are the simplest of agricultural contracts. It involves some pre-harvest agreements stating the price, quantity and quality of the crop to be delivered at a future date, but the contracting firm has no control over how the farmer should produce the crop. Under *production management* contracts also, the price, quality and quantity of the crop are stated but the contracting firm dictates to the farmer how the commodity is to be produced and the farmer is obliged to follow that particular production method in return for a marketing agreement. The *resource providing* contracts requires that the contracting firm provides all the production inputs that are needed for a specific output of a particular crop to ensure that the desired quality standards are met. Whilst *input supply* is a core element of contract farming, the main difference is that, with market specification and production management, inputs supply is not mandatory for the contracting firm whilst under resource providing contracts, the contracting firm is obliged to provide all needed inputs (Minot cited in Key and Runsten 1999). Whichever form it may take, one key element that cuts across most CF schemes is the assurance of an output market for the contract crop. This has a mutual benefit to the contracting parties. On the one hand, it enables the firm's guaranteed access to the contract crop, while on the other hand it provides a platform to farmers to quickly sell their products in bulk.

Whilst the above classifications and different types of CF gives a broader understanding of the concept, it should be emphasized that in the present study the line of demarcation between different types of contract farming is rather blur, as it is not very important to the objective of the study. In the present study, therefore, *contract farming* is used to refer to a farming arrangement that is initiated by a donor organization (NGO) where the focus is on developing the value chains for traditional food staples. Private agricultural business firms that have vested interests are encouraged to invest in such chains by providing some form of inputs ranging from *improved* seeds, fertilizers, weed control chemicals and farm trainings to smallholders in return for the harvested outputs of the farmers at an agreed price. Other major capital inputs

like tractors, combined-harvesters and irrigation facilities are arranged by the NGO. The contract price is collectively negotiated using a tripartite approach between the Farmer Based Organization (FBO), NGO and the contracting firms. It should be understood within the context of an integrated approach that targets the development of the production and marketing capacity of smallholders using a business approach. This type of arrangements in my opinion is a *cross-cutting* linkage and leans more towards *market specification* contracts with a more flexible resource providing characteristics to ensure the right quality of output.

2.4 Key Elements of a Contract Design

This section conceptualizes specific elements of a contract design and their likely or empirical influence on the smallholder's decision to participate in CF schemes. This is important because it is central to finding answers to the questions this study seeks to answer.

2.4.1 The Contract Price and Marketing Options

A major source of risk that could possibly influence smallholders' decision to opt for contract production is price fluctuations which is common with most agricultural products due to the uncertain nature of the local agricultural output market. For this reason, the conditions of payment that a contracting firm adopts in its contract design to farmers for delivering the agreed quality and quantity of product is important to the smallholder. The commonly used price options in contract farming are *fixed* and *variable* options (Miyata et al. 2009).

With the fixed price option, the contract specifies a fixed payment prior to production. Fixed prices are usually not negotiable after harvest. The farmer only have to bear risks associated with the production of the crop, whilst the contracting firm bears all the market risks. The farmer is assured of a specific price for the product if all requirements are met and he/she does not have to worry about price fluctuations in the market. However, the shortfall of the fixed price method is that, in the event that at the time of harvest, the open market price by far exceeds the fixed price agreed upon, the farmer loses. This may also give rise to *side-selling*. The farmer gains when the agreed price exceeds the open market price at the time of harvest. With the variable price option, the price is contingent on certain factors such as a performance criteria set out for the farmer or the open market price for similar crops.

There are, however, several reasons why farmers will prefer one price option over another. Farmers will opt for a fixed price when there are limited alternative sales outlets for

the contract crop. Moreover, because of the production and marketing difficulties associated with smallholder agriculture, they often opt for a fixed price option. Empirical findings generally suggests that because of the risk averse nature of smallholders they will rather play it safe by going for a fixed price (Tripathi et al. 2005, Bielza et al. 2007, Minten et al. 2009). On the contrary, risk averse farmers may still prefer a variable price option for several reasons. First, because of unequal power relations which will likely tilt the contract price in favour of the contracting firm, and because of the insurance premium component of the contract price, some farmers often become suspicious that fixed prices are usually lower than that offered by other buyers. Second, when a variable price option is contingent on performance, farmers are induced to put in their best. Some farmers believe they can outperform their other fellows, and in this scenario farmers who believe they are capable of meeting the quality requirements set by the buyer will prefer a variable price option so they can get a higher returns. Third, when food prices are escalating in the area, and when there is enough information about the market for the contract crop, farmers will likely prefer a variable price option.

2.4.2 Input Supply Arrangement

Access to agricultural inputs and credit is a major challenge for smallholders in developing countries. Within the context of contract production, the financial and farming inputs demand, as well as labour requirements and attention, is often higher when the crop is a non-traditional one as compared to the inputs requirements for traditional crops that the farming households are used to. For this reason access to inputs and for that matter inputs supply arrangements is an important element of a contract design that targets smallholders in particular (Key and Runsten 1999). Indeed it is partly the lack of access to specialized inputs and credit that limits the capacity of smallholders to produce on large scale, and the very small sizes of their farms makes it difficult for them to compete with large scale producers for inputs and especially credits from the open market (Chavas 2001).

In an imperfect input market situation or in a situation where there are not many suppliers of inputs, smallholders have limited access to specialized inputs. They may consider to participate in CF in order to have access to such inputs from the contracting firm, especially in the light of the fact that public provisions of agricultural inputs and services especially in developing countries have been noted to be inefficient and ineffective due to unreliable delivery (Dorward et al. 2004) and also due to political interference (Banful 2010). Moreover, there are additional risks that comes with the production of contract crops such as the crop being new

and totally different from the traditional crops farmers are used to or a traditional crop adopting entirely new production technology. In this regard, inputs coming directly from the contracting firm is more likely to win the trust of farmers, since the quality of inputs has an effect on output quality. From the viewpoint of the farmer, the contracting firm is the claimant of the residues of the inputs and therefore will offer a high quality input compared to other sources. From the standpoint of the contracting firm, it stands the chance to control input quality and some key farm management practices when it supplies inputs directly to farmers, and by doing so the risk associated with quality is partly reduced because the inputs come from a known source (Wolf et al. 2001). Empirical evidence (Abebe et al. 2013) shows that Ethiopian potatoes contract farmers preferred seeds supplied by the contracting firm because it is believed to be of high quality and more reliable than from other sources.

2.4.3 Form of Contract

Another important element of a contract design is the form of the contract agreement- either oral or written. This is because the extent to which the various farming and marketing risks are shared among the contract parties to a larger extent depends on whether the contract is oral or written. A written contract usually specifies the detailed roles and responsibilities, farming practices, quality issues, monitoring practices, penalties as well as issues of arbitration, but it is more expensive to prepare and enforce (Popo and Zenger 2002). Oral contract on the other hand thrives on reputation and continuous interactions for enforcement. Empirical evidence shows that oral contracts are observed in most cases than written contracts. But in situations where private contracting firms are not properly integrated into the farmers' social networks like the involvement of FBOs, farmers would not likely trust an oral contract for the fear that the firm may not show up to buy the products (Nagaraj et al. 2008, Schipmann and Qaim 2011). This is further discussed in a latter section.

2.4.4 Other Contract Design Elements

The importance of FBOs in the organization of farm production in smallholder agriculture has been well noted by Glover and Kusterer (1990), and the need for organizing contract farming schemes in a manner that integrates farmers' representatives in the design and management of CF schemes so as to avoid an unequal power relations has been emphasized by Little (1994). Similarly, recent studies (Harou and Walker 2010, Barrett et al. 2012) have noted that the involvement of FBOs, cooperatives and NGOs, into contract designs has yielded significant

benefits to both the contracting firm and the farmers. Intermediation through these organizations for instance, has led to trust building among the contract parties, better bargaining on behalf of farmers who are often on the lower side of the power scale and also ensuring better compliance with contract terms by both parties. The involvement of NGOs for instance can help break the poverty traps that is often associated with geographic locations and regional inequality. Farmers in poorest regions who are most often not likely to get contract offers can receive initial inputs and technical training from NGOs to equip them to be able to produce high quality crops.

2.5 Rational for Contract Farming

The emergence of CF over the decades has caused changes in the organization of farm production. With increasing incomes, consumers in the developed world have come to cherish food diversity and all year round availability. Contract farming for example ensures that an average supermarket in the USA is capable of selling summer crops in the middle of winter because of uninterrupted supply (Bellemare 2012). Rather than relying on farm gate or the open market supplies, food processors and supermarkets tend to rely on complex supply chains in which commodities are produced under contract in order to ensure stable supplies and to meet specific quality requirements of consumers (Reardon et al. 2003).

From an economics view point, Abebe et al. (2013) conceptualizes the contract between processing firms and farmers as an institutional arrangements put in place to prevent or reduce transaction costs. The most common transaction cost in agriculture as noted by Masten (2000) is the uncertainties associated with agricultural transactions. Because of the high perishability and seasonality of agricultural products, transactions involve high uncertainty. On the processor's side, risks associated with open market purchases include unreliable supplies, poor product quality that does not meet the taste of consumers, high cost of coordination because multiple actors are involved, and high cost of harvesting and collection due to the disjointed nature of individual farm locations. Farmers on the other hand, especially in developing countries are faced with additional risks and uncertainties of high market failures, high production costs resulting from uncontrollable factors like weather conditions, failing input markets which affect the quality and quantity of outputs (Delgado 1999, Key and Runsten 1999, Poulton et al. 2010). In addition, farmers in developing countries face the risks of technological uncertainty due to lack or inadequate assistance for introducing new crop varieties and also price uncertainty due to high fluctuations (Smale et al. 1994). Contract

farming, then, is seen as a point of intersection for both the agribusiness firm and smallholders to share these risks.

2.6 The Contract Farming Debate

While the institution of CF is expected to have a positive impact on local agriculture in developing countries, empirical evidence, however, on the transformative effects and the welfare impacts leaves CF arrangements a much debated one. Discussions on CF mainly centres around issues such as the effectiveness of a private sector-led CF arrangements to address market failures (Grosh 1994), determinants of selecting participating CF beneficiaries by agribusiness firms (Barret et al. 2012), the welfare impacts of CF arrangements as well as intra-household gendered resource conflicts and labour dynamics of CF (Raynolds 2002, Belemare 2012). A political economic perspective or an institutional economics perspective views are often used to analyse CF schemes.

From the political economy view point, CF is seen through the lens of unequal power relations, labour related issues and conflicts. The crux of this viewpoint is that CF arrangements have a negative potential of leading farmers to indebtedness, loss of autonomy and higher production risks (Little and Watts 1994). A leading critique (Davis 1980) is that the social cost of CF radically alters traditional farm organization and assigns a new subservient role to the farmer:

“The contracting firm provides many of the production inputs (seeds, fertilizer, chicks, feed, etc.) while participating in many production decisions and holding full title to the contracted produce of the farmers labour. Contract farming thus grants to the capitalist firm a degree of control over both the on-farm production process and off-farm exchange process. At its most extreme, it may reduce the farmer to a wage earner on his own land – a piece worker who provides his own tools and works under supervision to produce commodities which he does not own. He sells his labour power instead of chickens, apples, beans, or beets.” (Page 142)

Similarly Burch et al. (1990) added that while CF may bring some benefits to participating farmers such as an additional income, the farmer’s traditional autonomy is taken away. The farmer can become like a steward looking after a piece of land but makes no significant decisions with regards to how the land can be used. They noted that with time contract farmers may be subject to the process of ‘deskilling’ because of their dependence on the agribusiness firm for the knowledge about the contract crop production. This dependence is reinforced by

the fact that in most cases crop varieties chosen by the firm are not always suitable for the open market and hence farmers may not easily find alternative outlets for their outputs in case of disputes. Glover (1984) also notes that the contract farmer is disadvantaged so long as crop quality control is the exclusive preserve of the agribusiness firm. Prices stated in the contract can be altered or varied by the firm to different farmers based on their respective crop quality levels. A counter response, however, to the power of the agribusiness firm is the formation of farmer groups or involvement of NGOs to handle price negotiations. Key and Runsten (1999) similarly cautions about the negative implications of this power play often skewed in favour of the agribusiness firm for smallholders. They noted that while farmers will usually enter into contract voluntarily, with time they tend to invest fixed resources into the production of contract crops or alter their production of traditional crops and become overly dependent on contract crops. When this happens: “...growers face limited exit options and reduced bargaining power vis-à-vis the firm, which may force them to accept less favourable or exploitative contract terms” (pages 381, 382).

Some issues relating to fairness in contract, sustainability implications of contract agricultural practices as well as the effects of CF on cropping pattern and the land lease market has been observed by Singh (2005) from his work on the political economy of CF in the Indian Punjab. With regards to contract fairness, he noted some form of contract bias in favour of the contracting firms. Whereas the contractual agreements provide immunity for the firm against unforeseen obligations, farmers under all circumstances must meet the contract obligations. Farmers are not compensated in time of crop failure due to natural disasters, and moreover farmers are obliged to sell to only the contracting firm and failure to do so is penalized. For sustainability implications of contract practices, it has been found that when crops are repeatedly cultivated at the same place (as is often the case with most contract crops) the land becomes infested and sometimes becomes unfit for a different kind of crop. Moreover, the high level application of fertilizers and other chemicals for most contract crops such as potatoes and tomatoes has negative implications for the environment especially against the backdrop that most farmers are unaware of the dangers for the environment. For cropping pattern and the land lease market, it has been found that with time, there has been an area expansion for contract crop cultivation whilst there is a shift from traditional crops to non-traditional high value contract crops cultivation. Moreover, land lease periods reduced from annual basis to crop seasonal basis, meaning landless farmers would have to pay more for rented land for

contract production. This situation has a potential of leading to food insecurity at the local level.

Another concern raised through the political economic lens are issues related to gendered intra-household resource and labour conflicts over contract arrangements. Watts (1994) noted that contract production fuels resource struggles within the household. From a more *optimistic* point of view, Raynolds (2002 page 794) noted that CF provides new opportunities for women to challenge entrenched patriarchal practices that gives husbands rights over the labour of their wives. The study reveals that whilst men often signed the contracts, they depend most often on household labour. But most women according to the survey are claiming financial compensation for their labour in household-based contract farming, renegotiating their household rights and obligations: “...by resisting the appropriation of their labour, women begin to chip away at men’s entrenched household authority and strengthen their domestic standing”. Yet, it is not clear whether financial gains alone to women can engender equity in the share of household resources within the context of deep-rooted norms that entrenched the husband’s position as the *family head*. Moreover, it has also been found somewhere else that there had been wage differentiations on the basis of gender, under CF schemes where female workers earned as low as 50% the wage of a male worker for the same work (Torres cited in Singh 2002).

From the institutional economics strand CF is seen as a potential instrument for addressing market failures, focusing more specifically on the functioning of CF schemes at the *micro level*, dealing with transaction costs emanating from uncertainty, market imperfections, risks and coordination failures (Kirsten and Satorius 2002). Various empirical studies especially in developing countries show varied results about participation and welfare effects of CF. However, the extent of welfare impacts of CF on smallholders’ participation still remain a methodological debate (Barrett et al. 2012). Nevertheless, there seems to be a general consensus among many authors that affirms a positive relation between household participation in CF and household income.

Warning and Key (2002) studied the social performance and distributional consequences of CF on participating smallholders in Senegal and noted that farmers increased their income *substantially* by participating in the program. This success, however, is attributed to three key conditions. First, the scheme involved the production of a traditional cash crop that the local farmers are already familiar with and have the required technology, hence farmers did

not have to make fixed capital investments in order to participate in the program. Second, the scheme unlike other rural community intervention programs elsewhere (Warning and Sadoulet 1998) made effective use of local information. Participants were mainly mobilized through the use of local agents making use of their knowledge of fellow community members, serving as a social collateral and overcoming the problem of information asymmetry. This is also consistent with (Robertson et al. 2013) that involving community members in the design and targeting of community programs can yield positive results. Third, there was a fair power balance between the agribusiness firm and the farmers as the potential monopolistic power of the firm is constrained by the fact that a viable alternative input and output markets exist for the contract crop. This is consistent with (Watts 1994) that CF arrangements become exploitative where there is a significant power imbalances between firms and participating farmers.

Several other studies provide similar results. Bellemare (2012) studied the welfare impacts of contract farming on smallholders in Madagascar and concluded that participation in CF by smallholder farm households did not only increase net household income significantly but also had a spill over effect on income from other agricultural sources than CF, such as livestock. Key and Runsten (1999) had mixed results from their study of contract farming and smallholders in Latin America. On the positive side, the study noted that smallholders who participated in CF enjoyed enormous benefits such as increased household income, access to new markets, technical assistance, specialized inputs and financial resources as against non-participating smallholders. On the negative side, however, the study noted that in areas where agribusiness firms chose to contract with large-scale farmers to the exclusion of smallholders, the latter was made worse off. They concluded that:

“To the extent that firms contract with smallholders, contract farming has the potential to raise incomes of the poor and promote rural development. On the other hand, where smallholders are excluded from contracting, contract farming may serve to exacerbate income and asset inequalities.” (Page 396)

These enormous income benefits notwithstanding, Foster and Rosenzweig (2010) cautions that the best measure of welfare impacts is not household income because it fails to account for the various costs borne by the household. They rather suggested that farm profits would present a much better measure of welfare.

2.7 Motivations to contract: Conceptualizing the Firm's Decision to Contract and the Smallholder's Participation in Contract Farming

This section adopts a conceptual framework based on (Barrett et al. 2012, Abebe et al. 2013) that seeks to explain some push and pull factors towards the decision to contract, both from the view point of the contracting firm and the smallholder. Whilst the original frameworks use some level of economic theories, an attempt has been made here to simplify the concepts in line with the objective of this study and thus, focusing more on the side of smallholders. The importance of the framework is to offer a broader understanding of the conditions under which agribusiness firms enter into contract production and more importantly the smallholder's motivation towards CF and the conditions under which CF schemes are beneficial or non-beneficial to the smallholder. This is explained in a sequence of contracting stages below:

2.7.1 Firms' Targeting of the Location and Farmers for Inputs Procurement

The contracting firm may consider several factors when deciding on one or more locations to access agricultural inputs. First, the location's level of infrastructural development can be a major factor to consider. The associated transport cost incurred when collecting agricultural commodities from farmers, telephone services and the level of security and crime can influence the contract compliance of farmers. Second, the agro-ecological conditions of the location may also affect the production capacity and the quality of agricultural commodities. These *location-specific* factors in effect influence smallholders' participation in CF schemes. This is because firms will usually target the most accessible regions that have the potential to supply the required quantity and quality of agricultural commodities. Smallholders living far away from roads and major urban markets with unreliable communication and transport networks and perhaps in regions with lower agro-ecological potentials may be less likely to get contract offers. Whilst this appears to be the general trend, it is not always the case. Contracting firms sometimes consider less accessible areas to be more profitable and safe to contract since smallholders in those areas have limited or no alternatives. This, for instance may reduce *side-selling* as there are few alternative markets in less accessible areas. For example contrary to this general trend, Narayanan (2010b) noted how contracting firms in India often prefer sourcing their agricultural commodity supplies from remote areas where the risk of side-selling is very low due to lack of a vibrant alternative sales outlets and also from peri-urban areas where transport costs are relatively cheaper. Moreover, several studies show that the presence of NGOs in remote and less accessible areas can boost the contracting firm's preference for

these deprived areas and also boost the participation of smallholders in CF schemes. This is possible when NGOs typically help with the provision of technical training for farmers, initial provision of inputs to farmers to enter high-value crop production, provision of irrigation schemes and the recruitment of commercial buyers. These has a dual effect of increasing the profit margins of the contracting firms on one hand, and improve the options of smallholders outside contract production on the other hand, because these NGO interventions can benefit the smallholders in other livelihood activities (Reardon et al. 2009, Bellemare 2012).

2.7.2 The Contract Offer

After identifying a suitable region for procurement of agricultural commodities, the contracting firm determines the contract terms and the selection criteria of participant farmers. The fundamental principle behind this selection criteria is that the firm will usually offer contract to those farmers which have the highest expected profit levels and are likely to meet product requirements. To achieve this objective, contracting firms look out for some readily observable indicators such as the farmer's access to irrigation, membership in an FBO or participation in an NGO extension programs. This is due to the associated benefits such as technical support, group enforcement mechanisms and bulking of outputs as well as the social collateral functions that comes with FBO memberships, the firm views FBO membership as a basis for contract compliance and to reduce the risk of default. Moreover, the farmers' expected scale of production is also important to the contracting firm. Smallholders with more land that is suited for the production of the contract crop, and who have more technical ability and experience in growing the contract crop are most likely to get the contract offer (Barrett 2008). Similarly, Harou and Walker (2010) show that Ghanaian pineapple farmers who were not members of farmer cooperatives had to sell through middlemen because contracting firms were dealing directly with cooperatives. The study, however, found that the relationship between the smallholders' farm size and participation in CF was less important.

The form of the contract as well as the content may vary depending on the location and the type of crop under contract. Whilst contracts may be informal oral or formal written agreements, Platteau (2000) noted that formal written contracts often provide stronger enforcement options even though they entail higher initial transaction costs than the former. However, Narayanan (2010b) noted that the cost of enforcements mechanisms involved in a formal contract are often too high compared with the expected recoverable damages, and moreover, the likelihood of prosecution of breaches of contract is too low to justify the

enforcement. On similar grounds (Fafchamps and Minten 2001) noted that first, the agribusiness firm would opt for an informal contracts so as to secure for itself the flexibility of reneging contractual agreements especially where there are uncertainties about the capacity of farmers to produce required output. Second, when it is too costly to pursue enforcement of contracts through the formal legal system and where the threat of nonrenewal of contracts can provide adequate enforcement against breaches, firms are likely to resort to informal contracts. On the contrary, under a limited market conditions, farmers would prefer a written contract since they need a guaranteed market for their outputs before making investments in production. In this case, a written contract is more assuring to the farmers than an oral contract (Kirsten and Satorius 2002).

2.7.3 Smallholders' Acceptance of a Contract

The most important determinant behind a smallholder's acceptance of a contract is that the smallholder will usually accept a contract offer that is superior or more profitable than the alternative gains the farmer would have otherwise made from not entering the contract. If this is not the case, the smallholder may call for a renegotiation of contract terms or outright rejection of the contract. There should be caution, however, that a smallholder's participation in a CF does not necessarily mean that he perceives the contract as fair, but it merely implies that the smallholder expects to be at least better off with the contract than without the contract. In most cases, however, most agribusiness firms chose contract designs that will offer them the highest payoffs without recourse to the welfare gains of the smallholder, and for that matter contracts are often biased in favour of the agribusiness firm.

Another determinant of smallholders' contract acceptance is whether or not contracts are designed to resolve market failures. Bijman (2008) noted that the basic source of benefits of contract farming to smallholders is through the resolution of market failures. This implies that contracts that have input supply packages as well as guaranteed markets are more likely to be accepted by smallholders. On the contrary, however, Narayanan (2010b) noted that even if a contract is capable of resolving market failures and increasing the welfare gains of smallholders, it can still be rejected if they perceive the contract will introduce a new risk. For instance he noted that Indian smallholders rejected contracts due to concerns about other risks such as health issues due to exposure to chemical inputs required under the contract or if the crop is perceived as destroying the fertility of their land. Similarly, Schipmann and Qaim (2011) found that non-contract farmers in Thailand refused to enter into contract (which offered

a higher returns) because they valued their independence and the freedom to produce and sell to whoever they wanted to.

As mentioned earlier, another factor that can influence smallholders' acceptance of a contract is whether or not they are members of a farmer cooperative and FBOs or linked to an NGO agricultural projects. Apart from the fact that FBOs lower transaction costs and easily attract offers from contracting firms, the contract terms available through these intermediary associations are in most cases better than those available to farmers who act on their own individually. Bachke (2010) noted that Mozambique smallholders who are members of FBOs enjoyed high welfare gains from participating in CF schemes because they had higher production value and a better access to production inputs. Similarly, Harou and Walker (2010) noted that pineapple farmers in Ghana joined cooperatives to deal with contracting firms because they perceived the cooperatives as having a higher bargaining power and the ability to demand for written contracts on behalf of farmers and the ability to take legal actions against contracting firms in case of breaches.

Whilst more empirical studies suggest that average smallholders who participate in CF schemes benefit from such participations, it is also possible for smallholders to accept contracts that actually reduces their welfare. This may arise from either unequal power relations as explained earlier or through misinformation (Platteau 2000).

2.7.4 Tendencies for Contract Breaches from Both Parties

Because of the multidimensional nature of contract terms and due to time lags between production and delivery, there are high tendencies for contract breaches from the side of both the contracting firm and the contract farmer. The contracting firm has the tendency to breach by not showing up at the agreed harvest time to collect the crops or by unilaterally rejecting crops on certain quality grounds. It may also breach by reducing the price after the farmer has incurred production cost or by either delaying or defaulting the payment due the farmer. In situations where farmers have limited alternative sale outlets, the contracting firm may also abuse its market power by reviewing contract terms. Smallholders on the other hand have some tendencies to breach contracts. These may include; diverting inputs supplied by the contracting firm into producing noncontract crops, side-selling especially where a vibrant alternative markets exist for the contract crop, refusing to adhere to production practices and schedule agreed upon and by failing to deliver the right quantity and quality of crops at the right time as agreed upon. According to Narayanan (2010b) contract breaches is common in most CF

schemes due to the unwillingness or the inability of both parties to resort to legal prosecution. Smallholders on the one hand have little capacity to prosecute in times of breaches, whilst contracting firms on the other hand find it not rational to prosecute breaches because most often what it can recover from smallholders who renege is lower than the cost of prosecuting them. However, in most cases, the smallholders often bear the bulk of risks associated with contract breaches. For, example Harou and Walker (2010) noted that farmers had to turn to the local market as a last resort when neither the contracting firm nor their middlemen showed up to harvest, collect and pay for the crop. Some farmers had to sell as low as half price at the local market, whilst others lost their harvest through spoilage caused by waiting for the firm. Nevertheless, in cases of contract breaches and arbitration, a written contract can help mitigate some of these problems. It can serve as a point of reference for legal actions than oral contracts. Moreover, to mention again, the presence of an NGO or FBOs can help to intermediate on behalf of smallholders and provide an avenue for smallholders to challenge the contracting firm.

2.8 Explicit Accounts of Smallholders' Motivation to Contract

In few empirical cases are smallholders themselves asked explicitly why they chose to participate in a contract farming. There seems to be a paucity of knowledge about the *empirical* instead of theoretical or the *actual* instead of potential determinants of a smallholder's decision to produce on contract. The empirical reasons below (Masakure and Henson 2005) focuses explicitly on smallholders' motivation toward contract production. Four key reasons (within the context of non-traditional vegetable contract farming in Zimbabwe) are discussed, serving as a springboard for the current study.

2.8.1 Market Uncertainty

The study identified market uncertainty as a major motivational factor for Zimbabwean vegetable farmers to contract with an export company. The weak nature of the local input and output markets associated with unreliable supply of inputs, poor transport systems, asymmetric information regarding market demand and prices were among the reasons motivating farmers to contract. Consequently, the offer of free inputs such as fertilizers and seeds by contracting firms were cited as reasons why farmers chose to produce on contract, and also the ready output market promised by the firms for the farm products motivated farmers to contract. In a similar vein, Minten et al. 2009 found that the option to get inputs on credit from supermarkets is a

significant factor for French beans farmers to contract in Madagascar, whilst Schipmann and Qiam (2011) found in Thailand that assured market access and input provision as a result of imperfections in the local input and output markets and seasonal saturations in the local market, were important factors driving smallholders to participate in a contract production.

2.8.2 Technical Advise

Producing on contract was also cited by farmers as potentially effective way to acquire technical knowledge for growing both existing and new crops. The production of a high value variety of a traditional crop (which is usually the preference of contracting firms) will require extra training on some farm practices. Farmers, thus, may not only contract to learn the production of new crops but also the knowledge acquired may have a spill over effect on their overall farming practices. However, this could also be a reflection of the weakness and poor delivery of public agricultural extension services in most developing countries as mentioned earlier too (Alex et al. 2002, Anderson and Feder 2007).

2.8.3 Income

Farmers especially those with few alternative sources of income cited the urge to earn extra income as the basis for deciding to contract. The main reasons cited for the need to earn extra income was the seasonality of the traditional crops which usually renders smallholders unemployed in the lean seasons, since their production is usually rain-fed. Farmers therefore indicated their willingness overcome seasonal unemployment by producing on contract. Most contract production are intensive, making use of improved cultivars and fertilizers and therefore does not depend on rainfall. This means a guaranteed source of income to smallholders all year round. This, however, could also be a reflection of the lack of off-farm employment opportunities in most rural areas in developing countries (Barrett et al. 2001).

2.8.4 Other Non-income Factors

Some intangible reasons were also noted as motivating farmers to contract. Some farmers, the study noted, also cited reasons such as the perceived pride associated with high value export crop production as motivating reasons. This is was attributed to the fact that best farmers were awarded by the contracting firm at the end of each harvest season. Some farmers got motivated by this to enter into contract production. Similarly, Barret et al. (2012) cautions that at the

initial level some smallholders may not fully understand the implications of contract farming participation, as some may solely enter into contract based on the past experience of other farmers. This makes them to focus only on the upside of contracting without thoroughly reflecting on the downside. To conclude, whilst the study (Masakure and Henson 2005) offers some insight into possible factors motivating smallholder participation in contract farming, it nevertheless, cautions that the motivation to contract is a reflection of “... *local economic, social, and institutional conditions and, as a result, will vary from one context to another and over time in the light of changing circumstances.*” (Page 1732)

2.9 Summary

While much has been written on various aspects of CF schemes, a general conclusion from the literature, however, is that participating in contract farming by smallholders increases the income of participants. Moreover, the basic assumption is that smallholders will only accept to produce on contract if they expect to be better off. On the downside, the unequal power relations that is skewed in favour of contracting firms often makes contract farmers more vulnerable in terms of negotiating the contract terms and the price of the commodity. One way to mitigate this potential negative impact of CF is the involvement of FBOs and NGOs in contract design and management. That notwithstanding, it is important to note that different individual farmers may decide to enter into contract production for varying reasons and the extent to which participating smallholders would benefit from contract farming also depends on broader issues like the agricultural regime and the level of institutional support for agriculture of a particular region.

3. Sector Analysis and Profile of the Study Area

3.1 Introduction

Despite the fact that the nation recently joined the league of global oil producers after the recent discovery and the consequent production of oil on commercial quantities, a larger contributions to Ghana's GDP still comes from the agricultural sector. The sector accounted for an average share of 38% to GDP from 2000 to 2008 and still maintains its crucial position in Ghana's economy as the largest contributor to GDP and the largest employer of the labour force (50.6%), and also the largest foreign exchange earning sector. However, the services sector is currently the fastest growing sector with an average growth rate of 6% as against 4.7% for agriculture for the period 2000 to 2008 (GSS 2008). This chapter focuses on agricultural productivity in Ghana with smallholders in mind, a brief overview of contract farming in Ghana and also the profile of the study area.

3.2 Crop Production and Constraints

Between 2000 and 2008, the overall increase in production for all arable crops in Ghana has been 41% or an annual average of 4.6% over the period. Also, the percentage increase for cultivated area for the same period is 17%. Studies, however, about the various components of this growth in agriculture indicated that the growth was largely induced by land area expansion instead of *yield increases* (Diao et al. 2010). This is mainly due to the fact that agriculture in Ghana is mainly *rain-fed* with little application of fertilizers and the use of other yield increase technology. Growth rates also vary significantly across various crop sectors. According to recent production data (GSS 2008) the cocoa sector recorded the highest annual growth rate of 8.5% followed by cereals and pulses (5.6%) and 2% for tubers. The data also shows that land area expansion accounted for close to two-thirds of the growth whilst intensification accounted for the rest. There is also a geographical variations in this overall growth patterns showing that the intensification-led growth occurred in the middle and southern parts of the country and in areas with higher population densities and with better access to markets. Much of the growth that occurred in the *north* are largely driven by *land area expansion*. In northern Ghana, agriculture remains the most vulnerable with lower productivity per hectare. Soil fertility is lower with a single rainfall season per annum as compared with a dual per annum rainfall patterns for the south. For example the average district-level yields for maize, the most widely tradeable cereal crop in Ghana, was 35% higher in the middle belt and 55% higher in the south than in the north for the period 1992 to 2005 (GSS 2007).

In general, agricultural production in the country is largely characterized by low crop and animal productivity. The average yield for most crops remains almost constant and generally low. Average annual increase for most cereal crops such as maize, millet, sorghum and rice remained low for the period 2000 to 2008 at 1.6%, 0.9%, 0.9% and 2% respectively. Moreover, most of these yields are just about 60% of their achievable yields. The main reasons for not attaining the achievable yields for most crops in Ghana is the low fertility of the soils which is also exacerbated by low use of fertilizers. Fertilizer usage in the country is only about 5kg/hectare which represents just half of the rate in sub-Saharan Africa and also lower than that of most other developing countries (MOFA 2010).

Another major constraints to agricultural productivity in the country is the low level of technical know-how of most farmers which is exacerbated by weak state support in the area of extension and advisory services to farmers. The use of improved seeds and planting materials for instance is very low and studies show that even where farmers used improved seeds, they still reserved some of their produce to be used as seeds in the next season, indicating a clear lack of understanding of seed technology by farmers. Also whilst the use of insecticides and other disease control inputs can increase productivity, very few farmers use it in the country (MOFA 2010). There is also market access constraints particularly for staple crops. This mainly emanates from poor infrastructure such as poor road networks and rural electricity, limited access to market information as well as rudimentary agricultural machinery such as processing and post-harvest facilities. Intense competition from cheap imported foods also pose a major threat to Ghanaian producers.

3.3 Sector Investments

Whilst public spending provides a springboard for other investments in an economy, studies show that investing in agriculture, especially in developing countries, is a necessary recipe for poverty reduction (IFAD 2009). The agricultural sector in Ghana just like many other African countries have seen a steady decline in terms of financial support over the past two decades. Budgetary allocations to the sector declined from 12% to 4% from 1980 to 1990 respectively. From the 1990s, the share of government's expenditure to the sector has been less than 2% excluding the cocoa sector (the main export crop). If cocoa sector expenditure is added, however, it increases significantly to about 5%. Traditionally, a larger proportion of government's expenditure to agriculture through the sector ministry had been spent on

recurrent expenditure at the expense of research and development. There has, however, been a significant increase in the allocations for research and development from 35% to 46% from 2000 to 2006 respectively which indicates some progress of a sort to the sector. Again following the *Maputo Declaration*¹ there has been a significant raise in the share of government's expenditure to the sector from an overall expenditure of 2% in 2001 to 9% in the 2009 fiscal year (MOFA 2010).

Whilst agriculture in Ghana is largely dominated by private sector activity, funding from the private sector to agriculture, however, has been on the decline. This emanates from the fact that the sector is largely characterized by high levels of informality with large tracks of farm holdings in the hands of private individual smallholders. Simply put, the sector, especially the smallholder sub-sector does not constitute a viable economic unit for the mainstream private sector. Another source of funding to the sector is foreign direct investment, but this has also been on the lower side. Data from the Ghana Investment Promotion Centre (GIPC cited in MOFA 2010) show that, aside the fact that investments in agricultural projects in the country has been the least registered among all investments, the figure has also been on the decline consistently from 15 to 6 in 2001 and 2006 respectively. This notwithstanding, the sector has attracted the attention of the donor community in recent times, particularly in the area of input delivery support and facilitation of market access for smallholders who constitute majority of producers.

3.4 Smallholder Activity

The agricultural sector in Ghana is overwhelmingly dominated by smallholders. With an average farm size of 1.2 hectares, and low application of improved technology, smallholders account for about 80% of domestic production (MOFA 2010). Many commodities including cash crops like cocoa and cotton, and staple crops like cassava, maize and rice are produced on small farms across the country. Chamberlin (2007) noted that more than 70% of all farms in Ghana are either 3 hectares or smaller in size and that most of the smallest farms are located in the south compared with the north (an average holding of 2.3 hectares in the coast compared with 4.0 hectares in the north). Whilst average holding sizes increases from the south to north, he nonetheless, noted that this is also characterized by lower land productivity in the north.

¹ The Maputo Declaration was made in July 2003 AU summit by African heads of state on agriculture and food security in the region. The most prominent among them is the commitment of at least 10% of their national budgets annually to agricultural development.

Again, land ownership is more important to livelihood strategies in the north where fewer off-farm employment opportunities exist compared to the south where the smallest holdings can be offset by a more diversified sources of income.

The rate of smallholders' participation in output markets has also been noted to vary not only with farm size, but also with the farmers' geographical locations (GSS 2008). It shows that the market share as well as the percentage of farmers who were able to sell their produce intended for the market tend to be the lowest for the north. For example, with average holdings between 2 to 3 ha, the percentage of farmers who sold their produce was 68 and 62 respectively for the coast and the forest zones compared with 48 for the savannah northern part. This in a way implies that efforts to improve the incomes of farmers in the country needs to focus more on improving land productivity and improving market access particularly for farmers in the north. This requires efforts to improve the efficiency of the input and output markets to encourage smallholder participation and also the development and dissemination of appropriate farm technologies to smallholders (IFPRI 2007). Many interventions are currently rolling in the country to expand or establish value chains for high-value cash crops and more importantly so for staple food crops. Some of this strategies include outgrower and contract farming schemes, as well as supports for farmer cooperatives. For the purpose of this study, the next section briefly looks at contact farming in Ghana.

3.5 Contract Farming in Ghana

Efforts to integrate smallholders into a more formalized market arrangements on a regular basis have been rather few in the country and largely concentrated in the horticultural sector where exporters and processing firms require the production of smallholders to meet the bulk of output that they need. In the food crop sector, however, various forms of informal contracts exist. This section presents some forms of contractual arrangements that are currently practiced in Ghana and relevant to this study as well. All the empirical cases presented below (with the exception of the present case) are extracted from the Ghana Strategy Support Programme (IFPRI 2006).

3.5.1 Direct Contracts Between Traders and Farmers

These forms of contracts are mainly informal and prevail mostly in the food crop sector. Through long term dealing with farmers, traders within the food crop sector provides production credits to their *regular farmers*, so as to secure access to some or all farm produce of the farmers at a prevailing market price during harvest time. There are levels of variations of control over the farm produce. Whilst some traders have full control over all the farm produce, others may purchase only produce equivalent to what has been pre-financed. The farmers may also decide to give out additional farm produce to the traders on credit whilst payment is expected at a later date but it is usually based on the market cycle of the area, either weekly or fortnightly. This type of contract is based mainly on trust between the farmer and his/her regular trader both of which have been dealing with one another for a long period of time, and it is established without any facilitation of a third party. This type of informal contracts is used by many smallholders particularly maize farmers across the length and breadth of the country. There is no strict emphasis on quality in this types of arrangements.

3.5.2 Smallholders-Agro-Processors Linkage

There is also a market oriented or specification contract arrangements that is usually facilitated by a third party usually an NGO. Under this arrangement the NGO provides all the production credits and technical support to farmers and links them to agro-processors who offer guaranteed markets. The vested interest of the NGO in this case is that the famers need to sell their produce in order to pay back the cost of production inputs supplied by the NGO. A leading actor in this regard is the Adventist Development and Relief Agency (ADRA) an NGO which brings together farmers and processors in some selected regions in the country. ADRA supplies inputs mainly seeds to soybean, cashew, citrus and mango farmers and also provides technical supports and links farmers to potential buyers. The buyers in this case provide no resource to the farmers and there are no quantity requirements. At the beginning of each season the farmers and the processors negotiate and agree on a pre-determined fixed-price at harvest or delivery time. The farmers are paid when the processor accepts the produce as having met the necessary quality requirements. The main challenge with this approach is that the quality issues are exclusively determined by the buyer, and also most buyers are often not able to redeem their promises to farmers since they have not made any direct resource commitments to farmers, thus, they lose nothing even if they do not buy.

3.5.3 The MOFA Experiment

The Ministry of Food and Agriculture also undertook a pilot project that aimed at linking rice farmers in the northern region (Tamale) to markets. Under the project a rice milling plant was built to train a group of women in processing milled rice from local paddy. This idea was to ensure that producers of local paddy supply high quality paddy to this group of processors who constitute a guaranteed market. The processed rice is then sold to various institutions and the milled rice market across the country. Various contractual arrangements exist between the farmers and the processors, but a weak enforcement has been identified because of the high level of informality that has characterized most transactions. Efforts are, thus, required to ensure stronger linkages.

3.5.4 Farmer's Company Initiative

Also in northern Ghana, an integrated farmer-to-market linkages has been established by the Association of Church Development Projects (ACDEP) an NGO. Under this project, the marketing company, the Savannah Farmers' Marketing Company was established to offer support to smallholder producers of sorghum, soybean and groundnut. The company is partly owned by farmer groups and it contracts its members to produce quality crops which is in turn supplied to the final users such as sorghum for Guinness Ghana Ltd., soybean for Golden Web, and groundnut for Agrimart. Through the marketing company the NGO ensures that the desired quality and quantity of output is obtained. The marketing company also serves as the link between farmers and customers (the end users of the produce), and mobilizes farmers into various groups and signs production contracts with farmers which specifies the quality, quantity and the time to deliver and most importantly the price. The groups are formed mainly to enable bulk delivery but production is solely at the level of the individual farmers. The major challenges identified with this project has got more to do with the difficulty involve in working with smallholders. Smallholders have been used to working individually and hence, group activities has been found to be a new experience to them.

3.5.5 The Horticultural Industry

Different export companies contract smallholders to secure their produce to meet their bulk requirements for export mainly into the European markets. For example, having been granted a supplier status by the Dutch supermarket chain Ahold, the Ghanaian fruit company, Tongu

Fruits turned to smallholders to help meet its pineapple supply requirements. In early 2000s the company signed a five-year contracts with outgrowers who worked mainly on the company's plantation. Farmers can decide to continue working on the company's farm after 5 years or to become independent farmers. Under this contract, only half of the farmers' total earnings are paid directly whilst the remaining is held in savings by the company on behalf of farmers and farmers can claim this amount anytime they decide to stop. Side selling is strictly forbidden and farmers comply for two main reasons. First, because the production takes place on the company's land, and second, because the company holds part of the farmer's money in savings. Adom Orchards in the Eastern region of Ghana is another fruit processing and exporting company established in 1986. The main criteria for selecting contract farmers was the farmer's access to farmland. Under the scheme, the company provides basic inputs like fertilizers and seeds whilst the farmers are responsible for the farm maintenance. There is a written legal contract with each farmer, while the produce are purchased at a pre-determined price.

Also, in the northern region of Ghana, the Integrated Tamale Fruit Company was established in 2000 for producing organic mangoes for export. In order to meet the bulk requirement for exports and at the same time enhance the incomes of smallholders, the company decided to contract farmers within its catchment area of the Savelugu-Nanton district of the northern region. A legal written contracts exist between the two parties and farmers are selected mainly based on their farming experience. The company supplies major inputs like seeds, fertilizers, disease control chemicals and tractors. Mango was seen as a long term investment by the company given the poor yields of arable crops in the area. Per the contract, the company takes 30% of the produce after sales whilst the remaining 70% goes to the farmer. The 30% was to cover loan repayments until all the loans are eventually paid off. Between 2004 and 2006, the number of outgrowers under this contract increased from 175 to 600.

3.5.6 The ADVANCE Project (The Present Case)

The Agricultural Development and Value Chain Enhancement (ADVANCE) project has a core objective of developing and transforming smallholder agriculture to obtain a greater degree of food security and also ensure the competitiveness of the domestic market for staple foods. The project adopts the value chain approach where smallholder producers of maize, rice and soybean are linked to credits, inputs and equipment through larger agribusinesses who have the capacity and the vested interest to invest in these chains. The project which is sponsored by the

USAID through some implementing NGOs especially in northern Ghana brings together agribusiness firms within the crop value chain and Farmer Based Organizations (FBOs) where the NGO mediates a contractual arrangement between the two parties. Whilst major capital inputs like irrigation facilities are financed by the project sponsor, basic farm inputs like seeds, fertilizers and other chemicals, as well as some technical advice are supplied by the agribusiness firms in return for the farm produce of the farmers. The smallholders' affiliation to an FBO is a necessary condition for getting recruited. The contract price is collectively negotiated between the agribusiness firm, the NGO and the FBO. The NGO usually serves as a witness, and not only does it ensure that the interest of the smallholders are protected but also that each party redeems its contractual promises.

3.6 Community map (study community shown by blue arrow)

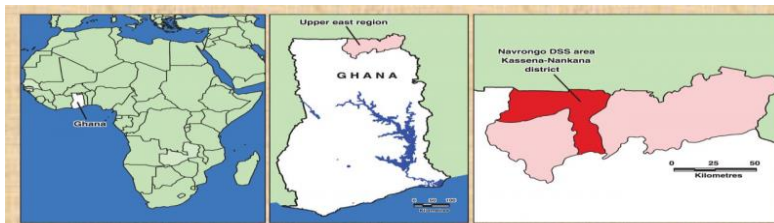


Figure 1: Source: Ghana Health Service, Upper East Region, Ghana.

3.6.1 The Study Area

The descriptions below and all empirical statements regarding the study area was sourced from the Municipal Planning Coordinating Unit (MPCU) of the Kasena Nankana Municipal Assembly (KNMA), which is the local governing body mandated to oversee the planning, implementation as well as monitoring and evaluation of development projects in that local government area. A municipality in Ghana refers to a large town with/without smaller adjoining communities with a total population of more than 95,000 (Act 462)². The empirical statements here is representative of the entire municipality (hereafter referred to as the local area) of which the study community, Tampola is situated.

3.6.2 Location

Tampola is one of the 97 communities under the KNMA local area in the north-eastern part (Upper East) region of the republic of Ghana. The community is located within the vicinity (about 3km) from Navrongo, the capital of the local area. The KSMA lies within the Guinea Savannah woodlands. It is one of the thirteen (13) local areas in the Upper East Region of the Republic of Ghana and shares boundaries to the North with Kassena-Nankana-West and Burkina Faso, to the East with Kassena-Nankana West and Bolgatanga Districts, to the West with the Boils District and to the South with West Mamprusi District (in the Northern Region).

3.6.3 Climatic, Vegetation and Soils

The climate conditions of the area are characterized by the dry and wet seasons, which are influenced mainly by two (2) air masses – the north-east trade winds and the south-westerlies (tropical maritime). The north-east trade winds is usually dry and dusty as it originates from the Sahara desert. During such periods, rainfall is virtually absent due to low relative humidity, which rarely exceeds 20 per cent and low vapour pressure less than 10mb. Day temperatures are often high, recording 42° Celsius (especially February and March) and night temperatures are as low as 18° Celsius.

The local area is covered mainly by the Sahel and Sudan-Savannah types of vegetation comprising open savannah with fire-swept grassland and deciduous trees. Some of the most densely vegetated parts of the area can be found along river basins and forest reserves. Most of these trees in the forest areas shed off their leaves during the dry season. The vegetation type

² Local Government Act 1993 (Act 462) is the current decentralization policy of Ghana

is conducive for animal rearing especially small ruminants and poultry. However, the activities of man over the years have affected the original (virgin) vegetation cover. Common trees found are baobab, sheanut and mangoes. The local area experiences the tropical maritime air mass between May and October. This brings rainfall averaging 950mm per annum. This shortfall in rainfall patterns in the area renders most people *idle* during the dry seasons (November to April).

In terms of soil, two main types of soil are present within the local area namely the *savannah ochrosols*³ and groundwater laterite. The northern and eastern parts of the local area are covered by the Savannah ochrosols, while the rest of the area has groundwater laterite. The savannah ochrosols are porous, well drained, loamy, and mildly acidic and interspersed with patches of black or dark-grey clay soils. This soil type is suitable for cultivation and hence accounts for the arable land areas including most parts of the Tono Irrigation Project⁴ site where both wet and dry season farming activities are concentrated. The groundwater laterites are developed mainly over shale and granite and covers approximately 60 per cent of the region's land area. Due to the underlying rock type (granite), they become waterlogged during the rainy season and dry out during the dry season, thus causing cemented layers of iron-stone (hard pan), which makes cultivation difficult.

3.6.4 Agriculture

Agriculture is the major economic activity in terms of employment and rural income generation in the area. About 82% of the working population are engaged in this sector which constitutes the main source of household income in the local area. There are three prominent types of farming activities. These are livestock farming, food cropping and tree cropping. The most predominant of these is food cropping with more than 96% of the farmers engaged in this type.

3.6.5 Crop Farming

The major food crops produced are maize, rice, millet, beans, groundnuts and Sorghum. Vegetables such as tomato, pepper and onions are cropped on large scales. A large number of these farmers have smallholdings. Most of the farmers engaged in crop farming are also

³ Savannah Ochrosols is one of the four main types of soil classifications in Ghana and occurs mainly in the semi-arid climatic regions. Most of the country's food crops like maize, yam, millet, sorghum and groundnut are supported by this type of soil.

⁴ The Tono Irrigation Project was established by the government of Ghana in 1985 in the upper east region to promote the production of food crops by smallholders within organized and managed irrigation schemes.

involved in livestock rearing. The main system of farming is bush fallowing and inter-cropping. Almost every location in the local area is a farming unit. There are large tracks of land for commercial farming and other agribusinesses. In terms of land acquisition, individuals do not own land but can acquire lands mainly through the contact of *Tindanas*⁵, family heads and chiefs.

The number of agricultural extension officers in the local area is grossly inadequate. The extension officer to farmer ratio as at 2013 was 1:10,994. The problem of this over stretched extension workers are compounded with the lack of transport and other support materials rendering their work very difficult. This partly accounts for the low proportion of farmers using hybrid seeds and agro –chemicals in their farming activities. Most of the crops are stored using traditional methods, and this is not always efficient. The most common method of storage is by the use of barns. A sizeable number of farmers also use spraying as a method of preserving their produce. The lack of storage facilities force farmers to sell off their produce at very low prices in order to avoid the produce going bad especially so if there is a bumper harvest. The preservation of highly perishable crops such as tomatoes, garden egg, cabbage, carrot and green pepper constitutes a major challenge to farmers. The main source of funding for farming activities is from the individual farmers' own savings. The few financial institutions around and other government institutions such as local agricultural department and Masloc⁶ give limited assistance in the form of credit and subsidized farm inputs to farmers. Farming activities are mainly rain-fed. However, irrigation facilities at Tono Irrigation project areas, smaller dams/dugouts and some other water bodies serve as sources of water for dry season farming.

3.6.6 Livestock/Poultry

Common livestock reared in the area are cattle, goats, sheep, poultry and pigs, and most of these are done on subsistence levels. Although crop farming, as indicated is the highest contributor to agricultural development, in practice, the people integrate the other non-cropping activities such as fishing, hunting, livestock and poultry keeping with their cropping activities. Nevertheless, the non-cropping activities are less intensely practiced as compared to cropping which is relied on to satisfy the domestic needs through direct consumption and sales of others to patch up non-food requirements.

⁵ Tindana is a term used across northern Ghana to refer to heads of clans who are regarded according to tradition as land owners, or the custodians of lands.

⁶ Microfinance and Small Loans Centre (Masloc) is a public enterprise responsible for implementing microfinance programmes targeted at poverty reduction

3.7 Living Standards

Data from the Ghana Statistical Services (GSS 2014) shows that the Upper East Region is the second poorest region after Upper West. The Upper East has one of the largest proportion of households with the lowest income in the country. Coupled with an average household size of 5.8 which is higher than the national average of 4.4 persons per household, the meagre household income is further challenged with large number of dependants. Food security is a major challenge in the region due to the seasonal nature of the agricultural system. Many households can barely produce enough food for household consumption all year round. Hesselberg (2013) noted that in a good harvest year, only 13% of smallholders in the Upper East region have staple foods lasting until the next farming season. Also, in the lean season prices of staple foods become less affordable for the poorer farmers due to meagre income. The WFP (2012) through a vulnerability assessment noted that people living in the coastal and middle belt of the country are more able to afford fish and meat (major sources of protein) than those living in the north. Whilst those living in the former places consume fish and meat frequently in a week, those living in the latter consume fish and meat only two days in a week. It also noted that the impact of wealth plays a significant role in how frequent a household consumes fish and meat, following logically therefore that there are poorer households in the north than in the south. Similarly, Yaro (2002) noted that the state of poverty in northern Ghana makes food a significant wealth indicator but not just a basic necessity. Enhancing agricultural productivity and expanding opportunities for non-farm employments is therefore very crucial to the people of the north.

Using a participatory rural appraisal techniques, the World Bank (2011) identified varying categories of households in northern Ghana. These include; the *flourishing* household, the *seasonal* and *near poor*, the *chronic poor* and the *extreme poor*. The *flourishing* households are relatively better off, members or at least the household heads are more likely to be skilled and educated, even though not all of them have completed school. The skilled and educated are usually returnee migrants who have accumulated their wealth by working for many years in the southern part of the country. Households under this category have relatively larger farms, a more diversified sources of income, and their investments typically include a combination of cattle, sheep, goats, guinea fowls, chickens and cereals plus other farms. They have farm assets like donkey-carts and bullock-ploughs which are hired out for additional incomes. Given their better asset holdings, the flourishing households have sufficient food and parents are more able to cater for their children's basic needs. However, only few households fall within this category

in northern Ghana. The *seasonal* and *near poor* category comprises a fairly broad group of households. Their major asset is their labour power with limited non-labour assets. They lack the capability of building investments because they have very little education and skill and little capital assets particularly finance. As a result they lack the ability to cultivate larger tracts of land. Many smallholders in the north fall within this category of households which do easily slip into poverty and hunger during the long lean season. However, the main difference between the two sub-groups under this category – the *near poor* and the *seasonal poor* is that the former slip back into poverty and hunger *only* during years of *extreme* drought and flood, whereas the latter fall back into poverty on a *cyclical basis* every year during the lean season. The *chronic poor* comprises of survival-seeking households who experience hunger as the norm. Households under this category typically are needy all year round and they depend on the benevolence of other better off people to survive. Children here are most likely to engage in various forms of child labour for survival. Their school attendance is often erratic due to difficulty in meeting school costs such as uniforms, food and fees. Among the chronic poor, a distinction can be made between the able bodied who can work physically if they have the resources and those who are incapacitated due to various forms of disabilities, or HIV/AIDS and also poor widows. The extreme poor often refers to the latter who often lack the capacity to work physically. Challenged with shallow asset holdings, the working poor under this category has the least diversified source of income.

4. Research Method

4.1 Introduction

Deciding on the choice of a research method that is appropriate for the research objective is a precondition for an excellent research work. This is because it provides the researcher with some form of guideline or roadmap for undertaking a specific study in a predefined manner. Winchester and Rofe (2010) refers to the method as “...*the investigative technique employed...*” in finding answers to the set research questions (page 5). From the array of methods available to the researcher, it is important therefore to carefully select a method that best suits his/her research questions and objectives. This chapter considers the range of techniques I used to collect data on the field. It covers issues such as rationale for my choice of method, pre-field preparations, some disparities between my pre-field expectations and the realities on the ground, the choice and rationale of method and techniques, selection of informants, some ethical considerations, storage and transcription of data and the challenges encountered on the field.

4.2 Pre-fieldwork Preparations

Having adequate preparations and knowledge of the research topic, objective and the place of the fieldwork beforehand is important for a successful fieldwork. First, this ensures that you get a wider information and alternatives about the topic you intend to investigate and a fair idea of the place you intend to carry out the research. The second benefit of pre-field preparations is that it increases your chance of avoiding a ‘null case’ in the field as it gives you some assurance that the phenomenon of interest under investigation actually exists (Hesselberg 2013).

As part of my pre-fieldwork preparations I have read a number of articles and books to dig into the entire concept of smallholder agriculture and also with keen interest in the contract farming debate. This exercise gave me a deep insight into the sharply divided views of researchers with regards to the benefits of contract farming and outgrower schemes to the smallholder farmer. With regards to ground contacts before the actual fieldwork I have also made some initial contacts whilst I was still in Norway. Having decided on my research objective and the intended place for the fieldwork I contacted the Development Planning Officer of the Bolgatanga Municipal Assembly, which is the regional capital of my study area. He is a friend to me so I did not find it difficult to zoom straight into my research mission. He then recommended me to the Kasena Nankana District Assembly where most of the NGOs

operating in small scale farming are concentrated. I then contacted the Development Planning Officer of the Kasena Nankana district and asked her to give a list of NGOs in her district with their contacts after I explained my research objectives to her. She gladly gave me a tall list of NGOs in the district. Whilst still in Oslo I contacted two of the NGOs who are into outgrower schemes and nucleus farming in the district. I explained my mission to them and gave them my travel and research itinerary and with a mutual agreement to meet when I come.

4.3 Choice of Research Method

Two competing methods within the human geography discipline since the late twentieth century have been the qualitative and the quantitative methods. The two camps have often been characterised as being in opposition with one another or even in conflict sometimes, but the use of qualitative methods has been noted to be on the increase since 1980s (Winchester and Rofe 2010). However there have been in recent times some equilibrium of a sort through the use of mixed-methods such as the use of triangulation by Davis and Baulch (2010) to study poverty dynamics in rural Bangladesh where they argued in favour of an integrated method approach rather than a single method approach in exploring poverty dynamics.

Nevertheless, the choice of method is driven by several factors such as the research objective and question, the researcher's level of knowledge about the phenomenon under study, resource availability and time frame allotted for the research and the level of existing information on the phenomenon (Hesselberg 2013). Having formulated my research objective and decided on the research question, I employed the qualitative data in generating the primary data. The motivation to rely on qualitative method for this research was informed by the *objective* and the kind of *research question* I was seeking answers for. I sought to explore the motivations behind individual farmers' decision to cultivate their crops on contract with agribusiness firms and to highlight the smallholder constraints that are embedded in such motivations. The qualitative method was the most appropriate in this case because the study falls within two fundamental issues that qualitative method often seeks to answer - *social structures* and the *experiences of individuals* - within such structures (Winchester and Rofe 2010).

First, the study explores the complex *structures* of contractor-farmer relationship where different levels of enforceable behaviour between two parties exist. Such structures, as noted by Sayer (1992) restricts individuals and induce certain behaviours and hence the role of qualitative research about structures should be to *investigate* which part of such structures

affect the issue under study. Second, the study explores the *experiences* of individual farmers of their farming arrangements and the effects on their livelihoods. Since different individuals experience the same event and place differently, much value and emphasis need to be placed on the *viewpoints* of each of my informants, and this calls for a qualitative method and techniques. A detail account of such personal experiences and events can only be *thoroughly* ascertained by “...*talking directly with people, going to their homes or places of work and allowing them to tell their stories unencumbered by what we expect to find or what we have read from the literature*” (Creswell 2007, page 40). This is consistent with Hesselberg 2013 that qualitative research is intended to give *depth of knowledge* and makes room for *unexpected information*. A qualitative method will then give this study the *flexibility* of soliciting the personal narratives of a variety of farmers of their experiences with contract farming and the impact on their livelihoods. Marshall and Rossman (2006) noted that human experiences are best studied qualitatively and since feelings, thoughts, beliefs, values and assumptive words are involved, they can best be captured through face-to-face dialogues with informants.

Moreover, a combination of other factors mentioned earlier also motivated the shift towards qualitative method. The level of existing information on the phenomenon under study is limited as far as my background search is concerned. Hesselberg (2013) noted that in the event of low level of existing information, qualitative method is the most preferable. I must admit, however, that there is abundant literature on various aspects of smallholder agriculture in Ghana (Yaro 2002, 2006, Kolavalli 2007, Hesselberg 2013, Kleemann and Abdulai 2013, Ouma et al. 2013), but there is still some knowledge gap as available information specifically on contract farming is limited. It may be due to the fact that contract farming in Ghana is highly concentrated and characterised with levels of informality and has not fully developed into a formalised institution to attract so much attention from researchers.

4.3.1 Choosing Informants

The aim of choosing who to talk to in a qualitative research, as noted by Valentine 2013, is more often than not a theoretically driven decision. It is, thus, the theoretical concept, to a large extent that determines the class, ethnicity, gender, age, education and occupational backgrounds of your potential informants. Also, as geographers we may be concerned with the bearing that *place* has on the type of information we are seeking and hence the need to choose informants from a specific geographical location and not the other. The decision, approach and the kind of informants chosen has a significant effect on the quality of the research. This is

because the informants form an important source of creating primary data for the study. Bearing in mind that the quality of a qualitative research depends on the extent of *variations* allowed in choosing informants, I consciously selected my informants based on certain criteria. Age, gender, educational background, type of crop under cultivation, length of time engaged in contract farming, as well as farmers from different contracting agribusiness firms were the main basis for choosing the informants with the sole objective of obtaining *varied* views and experiences about the phenomenon.

Initially, I had planned to interview a total of 25 farmers under the above categories but the actual number reduced to 22 mainly due to the latter approach of conducting an on-farm interviews as it took longer times moving from one farm to the other than it would have taken when conducting home interviews. Each interview lasted between 30 and 45 minutes. In terms of age, all farmers were between 20 and 60 years. In this regard, 8 were between 20 and 45 whilst 14 aged between 45 and 60. In terms of gender, there were 7 females as against 15 male farmers, the reason being that there were more male contract farmers than females. With regards to education, 8 could read and write English (the official language of Ghana), whilst 14 could neither read nor write. In terms of crop variations, there were 11, 7 and 4 farmers for maize, rice and soya beans respectively (the major crops produced under the project). In terms of farming duration, the period under exploration was the past 5 years, hence informants were categorized between 3 to 5 years and less than 3 years. There were 9 farmers for less than 3 years, whilst 13 was for between 3 to 5 years. All farmers produced for 4 different contractors with at least 5 farmers producing for more than one contractor at the same time. There was no categorization with regards to mode of land acquisition. This is because a homogeneous land tenure system exists in the study area, all farmers, thus, farm on family lands. No contracting agribusiness firm provides land to farmers in the area.

Notwithstanding the above enumeration (only meant to attain a high level of variations), it is important to state, however, that the *size of informants* in a qualitative research is not meant to be representative because as said earlier, and evident in the above categorization of my informants, the emphasis is on analysis of *meanings in varied contexts*. Patton (2002) noted that:

“...there are few if any rules in qualitative inquiry related to sample size, and it depends on what is needed in the way of knowledge, on the purpose of the research, on its significance and for whom, and on logistics and resources. The richness of information, its validity and meaning, is more dependent on the abilities of the researcher than on size

of sample. In the final analysis, then, it is you as the researcher who must be able to justify matters of case and participant selection to yourself, your supervisor, your interpretive community, and the readers and users of your work." (Patton cited in Bradshaw and Stratford 2010 page 76)

Primary data was generated mainly in the township of Tampola, a farming community located in the Kasena Nankana local government area in the Upper East region of Ghana. The selection of that region for the study was driven by two main factors. First, the *objective* of the study and the phenomenon under study. My preliminary background search suggests the northern part of Ghana as an ideal place where the phenomenon exist in various forms. This is due to a large concentration of non-governmental organizations (NGOs) with different smallholder oriented development projects including outgrower schemes and contract farming. The second motivating factor was the fact that I schooled in that part of the country and have undertaken some community works and for that matter got acclimatised to the customs of the people, and therefore, *gaining access* would be much easier for me. The qualitative research techniques I employed in generating primary data are mainly; semi-structured interviews, open discussion (stakeholder forum) and field observations.

4.3.2 *Semi-structured Interviews*

The main qualitative research technique used for generating *primary data* is semi-structured interviews. Interviews traditionally involves a face-to-face verbal interaction in which the researcher tries to elicit information from informants. There are other forms such as telephone interviews and more recently computer based interviews (Groves 1990). Since I was delving into the experiences, views and beliefs of my informants, I needed a technique that is *more flexible, less rigid and allows for probing*. Dunn (2010) noted that the nature of questions asked in a semi-structured interview are "*content-focused and deal with the issues or areas judged by the researcher to be relevant to the research question... and organized around ordered but flexible questioning*" (page 110). Commonly associated with most semi-structured interviews, the *interview guide* was used to aid the process of asking questions. Important topics such as the mode of contracting, output pricing decisions, quality control decisions, as well as the nature of the input and output markets which were mainly drawn from the contract farming literature were captured in the interview guide which served as a reference points during conversations.

In-depth interviews were conducted with all informants including farmers, and an official from the Agricultural Corporate Development International and Volunteers in Overseas Corporate Assistance (ACDI/VOCA) which is an implementing partner of the agricultural project I used to access farmers. After introducing my research objective to the official (later referred to as the *agric* officer) at ACDI/VOCA, he took me through the details of what they do as an organization and express his willingness to assist me have access to farmers for the purpose of interview. He gave me names and contacts of outgrower businesses that contract farmers under their project. Fortunately for me, my arrival coincided with an impending stakeholder forum of the organization and I see this as a good opportunity. This is because it would bring together all the key actors that matter, smallholder farmers, FBOs, Outgrower businesses, government officials from the local government unit as well as various NGOs. This is something I do not have the capacity and the resources to do myself. Also since I did not plan to use focus groups, I see this forum as a complement to my semi-structured one-on-one interview, since there would be open contributions from all stakeholders, arguments and counter arguments which will enrich the data collection and my understanding of the entire farming arrangements and collaborations under study. Moreover I intend to use this forum to establish my first contact with potential informants mostly smallholder farmers. This is because I want to be fully in charge of the informant selection process. I did not want the *agric* officer or any other official to influence the recruitment process. I decided to abandon the list of the outgrower businesses that the *agric* officer gave to me because I intend to rather get the outgrower businesses (later referred to as the ‘contracting firms’) from the farmers I was going to interview. This in my opinion would allow for cross-checking of information and consistency. Fortunately, during the stakeholder forum I got in touch with an FBO leader after several interactions. The plan was for the FBO leader to introduce me to the first farmer after which a *snowballing* technique would be used to get other informants. The rationale for using this technique stems from the *fragmented* nature of the settlements of the area and due to the fact that I intended to conduct an on-farm interview with farmers. In this case it is appropriate that a farmer recommends another farmer, and for that matter gives me direction to the next farm. The decision to conduct an on-farm interview was rather helpful as it gave me much insight through field observations. However, the overriding motive for conducting an on-farm interview was due to the busy and intense nature of the season of the fieldwork. It would have been rather difficult for me to get farmers at home to interview as most of them spend days on their farm houses.

The snowballing technique: “...using one contact to help you recruit another contact, who in turn can put you in touch with someone else” (Valentine 2005 page 117), was very helpful to me in this regard. Being conscious of one major weakness of this approach, thus, the tendency to recruit all informants from a narrow enclave of friends and like-minded people, I persuaded the FBO leader to introduce me to a wide range of farmers in terms of types of crops grown, gender, age and farmers under different contractors. This was to ensure that I made multiple initial contacts through which I could roll on. This was very successful as my initial contacts of 6 people comprised a soya bean farmer, maize and rice farmers, the three major crops produced on contract in the area. It also comprised of a female farmer and all of them produce for a variety of contractors. This technique proved to be very effective in terms of gaining the trust of my informants. Since each of my informant was recommended by one of his/her colleagues who is probably known to him/her personally, they did not find it difficult to *let me in*, and they were not sceptical. But at the same time I was conscious of issues bothering on confidentiality since some of their responses suggests or insinuates that I was asking a question to which I already got an answer probably from an earlier interview with a colleague farmer. I had to let each informant understand that I was not repeating the same questions for everybody since I was not using a questionnaire and for that matter each person’s input is unique. In that instance I avoided the possibility of revealing to the current informant what the previous informant told me either consciously or unconsciously and also ensuring that the informant has the courage and flexibility of speaking from experience without any fear of contradiction.

4.3.3 At the Forum

I adopted the stakeholder forum in place of a group discussion and got immense insight from this meeting since it was not possible for me to gather all these stakeholders at a time. The arguments and counter-arguments were very much revealing and provided me with much knowledge I could ever thought of. For instance, it was from this forum that I got to know that the contracting firms usually deal with only farmers who belong to an FBO, since it makes it easier for them to monitor farmers. It was also at this forum that I made a contact with my first farmer-informant, as I took note of potential informants during contributions to the ongoing debate. It was from this interactions that I was introduced to the leader of an FBO I mentioned earlier who is a contract farmer himself. I then proceeded from there with the snowballing technique to recruit contract farmers once I was introduced to the initial group of farmers by the FBO leader.

4.3.4 Field Observations

Kearns (2010) outlines a range of purposes of observation in scientific research. Among them is the fact that observation provides a *complementary evidence* to other forms of data collection. This is to gain added value in the field and to offer a *more descriptive* complement to the interview process. Unlike the contextual approach, the complementary evidence does not often require the researcher to be actively immersed in the socio-temporal context under investigation. Observation is more than just seeing, it involves making active choice of what one wants to see and how he wants to see it.

The on-farm interview was rather helpful in many ways as it helped me to have first-hand observation of some of the issues raised during the interview. For instance, I asked an informant to mention the kind of technical assistance being provided to him by his contractor as he claimed, he took me to a piece of land close to his farm as being one of his ‘demo farms’ which he uses as a prototype farm. To a similar question, another informant pointed out to a mechanized plough standing at one end of his farmland. I also observed and experienced the difficulty in accessing commercial vehicles to the district market so it was not difficult for me to figure it out when informants mentioned that as a major challenge.

4.4 The Contracting Firms

The contracting firms popularly referred to by the farmers as the ‘aggregators’ are those firms within the crop value chain who engage farmers on contract under the ADVANCE programme to produce for them with the NGO having an oversight responsibility of ensuring that each party fulfils its part of the contract agreement. All of my informants produce for four different contractors. As indicated earlier, I used a bottom-up approach to get the contacts of the contracting firms for the purpose of interview. All contracting firms are based in the southern part of the country but they have representatives who are in-charge of input supply, technical orientation and collection of harvested crops. As a result I conducted phone interviews with 3 contracting firms, one for each type of crop. Again I was careful not to let them know the depth of information I already had from the farmers and where it was necessary to disclose some information as evidence to provoke a flow of information from the contractor, I maintained a high level of anonymity (of both person and place) in order to protect the farmer’s identity.

4.5 Secondary Data

As the name implies, secondary data refers to information that has already been collected by a different person or institution which is public and available to the researcher. Clark (2010) noted that in addition to the primary data, secondary data can be useful in a number of ways. First, secondary data is a *vital guide* to the geography of the selected topic and the area. It gives an account of the research area and its people- present, past and future. The second reason is that secondary data has the potential of providing a contextual framework for the primary data, especially if the research involves original case studies. Secondary data can thus, provide geographical, historical and socio-economic basis for comparing with similar existing phenomenon. Third, the ability to reanalyse, interpret and present secondary data is a useful skill to the researcher.

In addition to the primary data that was generated from the field, I also collected secondary data relevant to the research. The main source of secondary data was the district assembly which is the local government unit responsible for my study area. The specific data I got from there is the profile of the district which gives detail analysis and statistics of demographic, economic, historical, religious as well as physical infrastructural stock of the area. The geographical map of the district was also collected from this unit. Being wary of the warning by Clark (2010) that secondary data is not static and undergoes review all the time, I always requested for current versions of documents that were given to me. One major challenge I encountered getting information from the district assembly which is a civil service was the undue delay in releasing the data to me due to cumbersome bureaucratic procedures. One needs to pay money to skip these procedures and this was something I was unwilling to do. But this notwithstanding, I eventually got useful data from this unit which gives this research a broader background.

4.6 Analytical Unit

The unit of analysis as per the research question are individual farmers. The limiting clause, however, is whether the farmer produces on contract for a third party. The type of crop or size of farm are insignificant. The option to maintain the analytical unit at the individual farmer level was to allow informants share a more independent views that is born out of unique experiences, compared to household levels for instance, where there is a likelihood of male household heads dominating the discussion during the interview processes. Nevertheless, the

research objective of finding motivational factors for engaging in contract farming and how this influence his/her livelihood is inextricably linked to that of their households. It is therefore envisaged that informants and as such, the analysis as a whole will make frequent references to the household.

4.7 Pre-field expectations and the reality

There is not much discrepancies between my expectations before, during and after the fieldwork. However, a few observations that I made are worth noting. In terms of situating the contractual agreement between the farmer and the contractor, I anticipated a direct contract between the farmer and an NGO. But the reality on the ground indicated that no such contracts exist. Because of this preconceived idea, I became frustrated when my initial contacts with some NGOs made this revelation and as a matter of fact I thought I was approaching a null case. But with a little patience, flexibility and with keen interest in learning and understanding the prevailing situation instead of trying to pursue my rigid preconceived ideas, I soon discovered that the gap between my expectations and the realities was closer than I imagined. In this case, instead of the NGO being the direct contractor, it is rather playing a facilitating role. The NGO identifies a gap within a crop value chain and in an attempt to improve smallholder agriculture, tries to provide a partial solution and invites agribusiness firms to also solve some and in return the agribusiness firm enters into contract with farmers to purchase their output at an agreed price. The NGO actually serves as a witness, and a co-provider of technical support to farmers, ensuring that each party redeems its promise. This situation is still valid and significant to my research question as far as my research objective of finding out factors motivating contract is concerned. Also I will still fulfil my interest in introducing a different dimension of contract farming, thus, a contract that has poverty reduction and the smallholder at the core of its design into the contract farming debate that has been dominated by profit oriented contracts, such as those by supermarkets and high-value export firms.

The second issue had to do with securing access to farmer-informants. My initial plan was to use the contracting firm as the *gatekeeper* to farmers producing on contract. I intended to get profiles of farmers from the contracting firm. This was because I anticipated a highly fragmented and widely dispersed individual farmers who would be difficult to access. But whilst on the field I noticed that the contracting firms were located hundreds of kilometres away from where I was conducting the fieldwork, hence, it would be practically impossible for me to use this approach. Thanks to the stakeholder forum I referred to earlier that grant me an

easy access to farmers and I rather used the reverse approach to get to the contracting firms. This latter approach was more objective since my initial fear was that the contracting firm was going to grant me access to only farmers who might speak well about them.

4.8 Ethical Issues

Qualitative research involves interactions with people within social contexts. Social structures and behaviours are therefore inseparable from the research process. The conduct of research involves participating in an activity or asking people questions about their private life experiences and therefore communicating the findings of our research has a potential influence on the lives of these people. Research ethics has to do with the conduct and responsibilities of the researcher to all those involved in the research especially the research subjects (O'Connell-Davidson and Layder 1994). I discuss below some ethical challenges encountered during the fieldwork and how they were managed.

4.8.1 Confidentiality and Privacy

The research involved delving into livelihood issues and the occupation of informants especially that of the farmers. Sensitive information such as income, number of dependents, farming technology and the contractual relationships between the farmer and the contractor were discussed. To ensure privacy and confidentiality in this regard, the farmers were assured of a high level confidentiality. Due to the snowballing technique I adopted in recruiting my informants and the sensitive nature of contractual agreements I was probing into, most of my informants requested that they remain anonymous. I made sure that issues about privacy and confidentiality were clearly communicated to each informant prior to the interview. They were made aware that whatever they shared with me would not be shared with anyone else not even other colleague farmers and that their individual identities would not be revealed in any form. Similarly, the contractors that I interviewed via phone also requested that their firms' identity be kept anonymous. However, with the facilitating NGO (ACDI/VOCA), with informed consent gave me the permission to use their name and the ADVANCE programme in any form for the purpose of this research.

4.8.2 Informed Consent

In conducting most research work, it is important that the informant willingly avails him/herself and agrees to be interviewed. However, it is not just enough for the informant agreeing to be

interviewed but it is important that the informants “...*know exactly what it is that they are consenting to*” (Dowling 2010, page 29). Though I used the snowballing technique, I did not take it as axiomatic that each informant that was recommended would be willing or was the right person to interview. To each single informant I gave a clear outline of my research objective, the sort of issues we would be talking about and an estimated time frame for the interview. The interview proceeded only after the informant had consented to this outlines. Also, I sought the permission of each informant to use my digital voice recorder and camera during the interview process, the essence of which I explained to them, would enable me to easily recapture what they were telling me later on. This explanation was necessary as some of my informants were curious about why I was taking a voice recording. Some wanted to know whether I was studying journalism at my school.

4.8.3 Remuneration

I envisaged some financial expectations on the side of farmer-informants. From experience, most people of the area hold the perception that most researchers take advantage of the poverty situation in the area and sell the information taken from them (informants) to NGOs. There is a high concentration of donor funded projects in that part of the country considered as the poorest region and most of these organizations are seeking for data for fund raising purposes. To neutralise this perception, I clearly communicated my mission to them as a purely academic exercise and the fact that I am a student. Nevertheless, this could not help much as it turned out that even my status as a *foreign student* studying in Europe greatly reinforced their expectation. I was, thus, perceived as *rich* even though I tried not to use assets which the people perceive as affluence. I used for instance, motorbikes instead of car since motorbikes are the most common means of transport in the area. I tried as much as I could to look like *one of them*. The leader of the FBO I earlier referred to, told me that “...*previously when you are a researcher and you come here we just give you all the information you want just like that, but now things have spoilt, now you can't just come and interview people and go just like that, you must do something*”. Subsequently almost all my informants asked me “*to do something*” after the interview when I thanked them and about to take my leave. But my response was always that I am a student and not working, but nevertheless I would let the FBO leader “*to come and see you later*”, an expression they understood very well and thanked me for. Because of this I had to give the FBO leader some amount of money to be given to my informants at the end of the entire fieldwork. This I did to ensure that I redeemed my promise and for the sake of future

study in the area and it had no effect on the quality of the information I had in any way since the promise was not made before the interview and the reward was not used as an incentive to induce informants.

4.9 Recording and Transcription of Data

A combination of note-taking and audio recording were the techniques I employed in data recording during the interview process. This option was intended to avoid as much as possible the extreme shortfalls of each technique because the advantages of each technique can serve as a complement. Whyte (1982) noted that audio recordings can allow for a more natural conversation since the interviewer is less preoccupied with taking notes. The researcher is a good listener and more able to observe gestures and moods than when taking notes. Douglas (1985), however, noted that audio recorders may sometimes impede informant's responses since it makes the interview process look too formal. Informants may be scared of people recognizing their voices on tape if the recordings were aired in public. Moreover, it is much easier to edit or make corrections to responses instantly upon request of the informant when taking notes than when using audio recordings. I was fortunate on the field as none of my informants raised any objection to my intention to use both field notes and audio recordings. This was helpful because I do not possess a very good shorthand writing skills to be able to capture a lot of information whilst being focused on listening and talking at the same time. The audio recorder became very complementary in this regard. I had large storage capacity digital voice recorder which made it easier for me to sustain long and uninterrupted recordings. Occasionally, I took photographs of some interesting field observations and with some of my informants too, these pictures also helped triggered my memories during the transcription process.

Interviews produce usually primary data that are practically difficult or impossible to analyse if they are not converted into a more comprehensive text. Transcription involves the reproduction of data generated between the researcher and the informant (Minichiello 1994). Motivated by Dunn's (2010) advice that transcription should be done as soon as possible after the interview, preferably on the same day and by the interviewer, I began transcription right from the field. After the end of each day whilst in my hotel room, all interviews that were undertaken for the day were reorganized and typed into my laptop. In my field note, every interview session were assigned to a unique number of pages bearing the initials of the informant and a brief description of the settings in which the interview took place. This made

it easier for me to link the data to a particular informant. Recorded interviews were much easier to transcribe because each interview session were broken into pieces of sound tracks or *files*. Since this corresponds with the field note, just by looking into my filed note it was logical that the first interview session corresponds with the first sound track and the second corresponds with the second sound track and so on.

This notwithstanding, I should agree, however, with Whyte (1982) that transcription is a tedious, resource-intensive and time-consuming exercise. It took me about 6 hours averagely to transcribe a 45 minute interview session into my laptop. But the process of transcription was one part I enjoyed despite its tedious nature. Consistent with Dunn (2010), I got deeply immersed in the data and began some preliminary analysis of the data even before the end of the field work.

Other challenges had to do with the place of the interview which was in all cases, with farmers on their farms. This posed a lot of logistical constraints as it was more expensive to fuel the motorbike than it would have been if I was conducting the interviews at home. Moving from one farm to another took a longer time and this slowed down the interview process since interviews were conducted either early morning before the farmers start work or midday when they are on break. This means I could interview less people in a day than I expected and the overall number of informants I expected to interview was reduced considering the limited time frame.

In summary, the choice of my research method was largely driven by the nature of the research question and objective. With a careful blend of techniques I have generated substantial data from my fieldwork to write a sound thesis. The little discrepancies and challenges I had encountered had no significant effect on the quality and for that matter the reliability of the data collected and do not pose any significant threat to the findings.

5. ANALYSIS AND DISCUSSION OF FINDINGS



Figure 2: The Bolgagtanga Office of the ACDI/VOCA, an implementing partner of the ADVANCE project.

5.1 Introduction

The empirical findings discussed below is based on the in-depth interviews with farmers in the Upper East region of Ghana who are beneficiaries under the USAID sponsored Agricultural Development and Value Chain Enhancement project (ADVANCE). The project is currently in its second phase and had its first phase which run for at least the past 5 years. The overall goal of the project is to increase agricultural investment and the competitiveness of food staples (maize, rice and soybean) through the improvement of their value chains in order to achieve a greater degree of *food security* among rural smallholders in northern Ghana, whilst increasing the competitiveness of the domestic markets. The project uses a value chain approach in which smallholders are linked to markets, finance, inputs, equipment and information through various *agribusiness traders* (aggregators) who have the capacity to invest in these chains. Major capital inputs like tractors, harvesters, mechanized ploughs, irrigation facilities are collaboratively provided for by the project sponsor and the implementing NGOs. The

development of the entrepreneurial skills of farmers is also the responsibility of the NGOs. Minor inputs like high quality seeds, fertilizers and weed control chemicals, as well as some basic farm practices are provided by the contracting firms in exchange for some quantity of the produce of the farmers. The project is mainly implemented in northern Ghana through some collaborating NGOs who usually mediate the contract arrangements between the firms and smallholders, most of which are affiliated to FBOs. I chose to call these agribusiness traders as the ‘contracting firms’ over here too, for consistence.

The aim of the chapter is to present and discuss the empirical findings that relates to the objective of this study. These findings seek to answer one key question: *what are the motivational factors behind smallholders’ decision to participate in a CF arrangement?* The chapter is divided into two main sections; the first and *main* section presents the motivational factors from the perspectives of the smallholders whilst paying attention to and highlighting some smallholder constraints that are embedded in such motivational factors. The latter sections deal with the nature of the contractual arrangements and the perspectives of the contracting firms as well as some key observations on the field.

5.2 Motivational Factors for Contract Farming

Per the analysis of the in-depth interviews, the motivating factors for contract production revolves around 7 main themes. These include market uncertainty, price differences, honesty and transparency, food security, knowledge transfer, income benefits, and social collateral.

5.2.1 Market Uncertainties

Table 1: Coding Extract for Motivational Factor One: Market Uncertainties.

Theme	Key Phrase	Summary
Market uncertainty (input/output markets)	Fertilizers, loan seeds, credit facilities, tractors	<ul style="list-style-type: none"> • High cost of inputs,
	Long travel time, bad roads, few vehicles, motorbikes	<ul style="list-style-type: none"> • High transport cost to market centres
	Input dealers, MOFA seeds, Improved seeds	<ul style="list-style-type: none"> • Agribusinesses offer quality seeds on loan, input dealers sell fake seeds
	Bulk purchase	<ul style="list-style-type: none"> • Agribusinesses buy in bulk

Source: Fieldwork, July 2014.

One major challenge that confronts smallholder agriculture in Africa is a weak input and output markets in an atmosphere of pervasive risks and information deficiencies. The input and output markets for agricultural commodities especially for smallholder agriculture is characterized by high uncertainties. Major inputs such as fertilizers, improved cultivars, irrigation facilities and other farm implements are either not available, or even if they are, too expensive for the *poor farmers*. Because of the very small sizes of their farms, most smallholders in developing countries find it difficult to access inputs such as credits, fertilizers and machinery. Whilst Foster and Rosenzweig (2010b) found that Indian smallholders were *unable to access* high productivity and cost-saving mechanization because their farms were *small* as compared with their large scale counterparts, Chavas 2001 found elsewhere that as a result of frequent market failures in developing countries, large scale farmers often enjoy competitive advantage over smallholders, because the former is more able to obtain credits and hence face lower capital costs.

The agricultural market situation is not different in Ghana and perhaps worse in northern Ghana. Hesselberg (2013) affirms that smallholders in northern Ghana indicated the lack of capital, loans and credit which can be invested in other production inputs such as fertilizers and technology as a main problem. Similarly, the Ministry of Food and Agriculture

identifies weak market-farmer linkages as well as *weak commodity value chains* as key issues confronting the development of smallholder agriculture. Value chains is broadly defined to include actors such as input dealers, traders, processors working together to satisfy the market demand for a particular crop (MOFA 2007). The nature of the local markets that farmers access inputs and supplied outputs was a major concern for many farmers interviewed. The following quotes from the in-depth interviews throw more lights on this issue. A male maize farmer in his early 40s contracted for the past 3 years noted:

“In the past it was very difficult for us especially in this village to get seeds...I mean improved seeds and also an inoculant. You know the way our soil is over utilized these days, you can't just put any type of seed into the soil and expect to have a good harvest. We need modern seeds, but how to get them is expensive. So when the NGO people came to us with the aggregators and say to us they will provide us with improved seeds on loan so that we pay back after harvest and also link us up with aggregators who can buy our crops when we produce quality crop, everybody was happy. They told us all we have to do is enter into a performance agreement with the aggregators and always follow the way they want us to produce the crop. They told us the aggregators will also give us all other inputs that we will need...”

A female soybean farmer in her early 30s contracted for the past 4years puts it this way:

“Listen my son, it is so expensive to hire a commercial tractor to do ploughing and harrowing of your land. You see this small piece of land here, you are talking of not less than 700 Ghana Cedis [\$218]⁷ for both ploughing and harrowing. Where do I get that kind of money from? We are talking of just preparing the land, before other inputs like fertilizers too. The tractor services being provided by government people is less expensive but is difficult to get them to hire because there are very few in the whole municipality. But the NGO and the aggregators promised to assist with hiring tractors for us when they came so I see that a good opportunity...”

Weak institutional support for the agricultural input and output market in Ghana and many other developing countries has left the local market ineffective. Many farmers like the above, expressed their frustration. It was, however, easier for farmers to access improved seeds and fertilizers as well as tractors from NGOs than from government sources. In this regard many farmers find it more rational to agree to produce on contract when the NGO introduced farmers to agribusiness firms. Another issue emanating from the above quote is the high transaction costs especially associated with inputs. The cost of inputs such as tractor services is beyond the

⁷ As at July 2014, \$1 = GHC3.2

ability of the smallholder whilst the government subsidized services are too limited. A middle-aged male rice farmer noted: “...as for those MOFA tractors, we only heard about them but I have never seen one in this village”. A common feature of input supply strategy adopted by the contracting firms which seemed to have gone down well with farmers is the ‘seed in-kind’ pay-back method. Under this strategy, the agribusiness firm supplies farmers with improved seeds and at the end of harvest each farmer pays back double the quantity of seeds received. For instance, if a farmer is given 2 bowls of improved seeds he/she pays back 4 bowls of the harvested crop after harvest before the contracting firm buys the remaining output. Many farmers got driven by this approach to participate in contract production for two main reasons. First, most sources at the open market are either *not reliable* or some sellers deliberately sell seeds that are not genuinely processed or ‘improved’ to unsuspecting farmers. So seeds coming from the agribusiness firms are deemed more trustworthy. Second, the in-kind pay-back method is more convenient, relatively cheaper and more affordable for farmers than going to purchase from the open market. This could be more beneficial to very poor smallholders who may not have other non-farm sources of income and the money to afford improved seeds from the open market. One male rice farmer noted:

“...it is so expensive to buy quality seeds from the inputs dealers and moreover even if you have the money, some input dealers can sell fake seeds to you if you are not lucky...they will tell you is a correct seed and if you do not know how to identify the correct one you just buy it without knowing it and before you get to know, it is too late.”

This finding is partly consistent with the findings elsewhere by Abebe et al. (2013). While both studies show that contract farmers prefer inputs supply from the contracting firm to other alternative sources for quality reasons, Abebe et al. noted that inputs supplied by the contracting firm are often overpriced, because the contracting firm in their case enjoyed some monopoly in the input market. The present study, however, finds that similar inputs (seeds) from the other input dealers were rather more expensive. Two things could possibly account for this development. First, there are many private agribusiness firms that are involved in the contract arrangements and therefore it is possible that competition for contract farmers could bid down the cost of input coming from the contracting firms. Second, it may be due to the in-kind pay back method. Because farmers have advance access to quality seeds on credit and have the flexibility of paying back later with part of their harvested crops, they see it as a more guaranteed source of credit even if they do not readily have the cash to pay for it. This way,

they may not really feel the price as expensive, since it is easier for them to pay back with part of their crops than paying with cash from the input dealers.

The poor nature of physical infrastructure in the study area also contributes to high transaction cost. This is compounded in the study community due to poor road network leading to the central market at the municipal capital Navrongo. The study community Tampola is about 30 minutes' drive from the municipal capital with untarred road, very dusty in dry seasons and in a rough state with several potholes making it difficult for motorists. Commercial vehicles hardly work on the road, and the most common means of transport is a three-wheeled motorcycle popularly called 'motorking' (figure 6) which conveys goods and people to market centres on *market days*⁸. The scarcity of commercial vehicles therefore, has raised transport fares relatively in the area, because similar journey on a tarred road costs less. Moreover, there is a risk of not being able to sell out all produce transported to the market especially during bumper harvest. In this case farmers are faced with two options, they are either forced to reduce their selling prices far below their profit margins in order to *sell off* their goods or spend extra money to convey these goods back home. A female maize farmer in her late 40s producing on contract for the past 2 years puts it this way:

“This place is cut off because our roads are very bad. No driver wants to come here, if you meet them at Navrongo the moment you mention you are going to Tampola they do not want to take you, they tell you the road is too bad. Because of that the motorking people also charge very high and moreover they can't carry more of your goods at once, they have to go like two rounds may be to transport 8 bags of maize. But the good thing about the aggregators is that they will just ask you to bring the goods from your farm to the collection centre which is here in this village...even some aggregators will come to collect the crops at your farm if your farm is not far from the roadside.”

The cost of transport is a very significant component of the marketing cost of agricultural products and the size of the market is determined to a large extent by the transport cost. Fafchamps and Gabre-Madhin (cited in Jayne and Mghenyi 2010) noted that transport costs are generally the biggest single component of price differences between areas that have surplus output and those with deficit output. As a result a general price increase in the urban centres does not necessarily mean that farmers in the rural areas will have a higher price for their

⁸ In Ghana, market days are popular days where there is intense trading activities in urban or sub-urban market centres. Rural farmers usually transport their bulk outputs on these days into the markets where they expect to make the highest sales compared to ordinary days because of the intensity of trading. Every town usually has its own market days in the week and is easy to calculate by the rural folk. It could be 1 or 2 days in a week.

produce. This is in sync with the Ghana Statistical Services' projections that maize farmers in the northern Ghana are less likely to market their produce due to high transaction costs compared to their southern and coastal counterparts who enjoy better transport services (GSS 2007).

Another issue emanating from the in-depth interviews in connection with marketing is the high tendency of the contracting firms to purchase agricultural outputs in bulk from farmers. As long as farmers comply with the production requirements of the buyers, in most cases all their outputs are assured a ready market. One major challenge many smallholders face when it comes to selling their farm produce is the high saturation of the local market especially in the bumper harvest seasons. Since farming forms the basic economic activity of the rural folk, and perhaps every farm household cultivating similar crops, effective demand at the local market level is often very low, because non-farm households are often few. Farmers who want to make more sales in the study community, have to incur an extra transport cost to travel an extra distance to the Bolgatanga, the regional capital where demand seems to be a bit more higher than the district capital. Even with that, there is no guarantee that a farmer will sell all crops transported. An elderly male rice farmer captures it this way: *"The problem is that if you are a farmer you need someone who can come to you and say I need 10 bags of rice at this time, and then you are sure your produce will not go waste after harvest."*

Another male maize farmer in his early 30s has this to say:

"We have the market centre, even in Tampola as small as it is we have a market square. The problem is not that we do not have a market, but in Tampola market here if you are selling maize who will buy? Almost everyone has maize, especially when we harvest fresh. If you want to sell and get something small to take care of family, unless you transport your goods to Navrongo or sometimes Bolga, where we have workers like teachers, nurses, police and so on, they do not go to farm, so they need to buy food, but over here everybody is a farmer, you understand? Even with that you can't sell the way you suppose to because a lot of people bring maize from other villages, so at the end of the day you have to send back home some bags of maize again. But the advantage with the aggregators is that if they show you how to use the fertilizers and get good grains and you follow what they tell you, when they come they buy everything and is so nice and you feel happy because you get something good in your pocket."

Similarly, Schipmann and Qiam (2011) found elsewhere that seasonal saturations coupled with imperfections in the local market were major reasons that drive smallholders to produce on contract. This may also be a reflection of the fact that the rural folk in northern Ghana are

overly reliant on farming as the main or for some, the *only source* of income. Lack of non-farm income alternatives or what Hesselberg (2013) describes as the ‘multiactivity’ of the rural folk has been well emphasized as a major factor that keeps rural smallholders in poverty by many agricultural development strategy documents including the World Development Report (2008). The logic is that if more alternative sources of income is made available in rural areas, major shocks in the market for agricultural produce such as price cuts, will have a less negative impact on the livelihoods of farmers since income from these other sources can serve as some form of insurance.

5.2.2 Price Differences

Table 2: Coding Extract for Motivational Factor Two: Differences in Producer Price.

Theme	Key Phrase	Summary
Differences in Prices (Contract price vs alternative price)	Low Sales	<ul style="list-style-type: none"> • Spot market prices lower during bumper harvest
	Price options	<ul style="list-style-type: none"> • Contract Prices are negotiable
	Regular income	<ul style="list-style-type: none"> • Contract prices more stable
	Price information	<ul style="list-style-type: none"> • Knowledge on alternative prices in urban centres is low

Source: Fieldwork, July 2014.

Coupled with the difficulty of selling in bulk at the local market and for that matter getting lower returns for their production cost incurred, some farmers also cited the fact that prices offered by middlemen or traders at the local market are usually unstable compared to that offered by the contracting firms. When informants were asked how variations in producer prices for staple foods influenced their decision to produce for the contracting firms, a male maize farmer in his early 40s has this to say:

“At the harvest season prices are generally lower because there are lots of maize in the market and moreover too those market women will always tell you that if you do not like the price they are giving to you, they can go to get from another farmer. You too you need the money to do other things in the house and for your children, so what will you do? You just take whatever they offer you, because if you say no another farmer will accept it, you can't go home empty handed, because you even need money to send the rest of the maize home if you do not sell everything. So at the end of the day you do not get what you were expecting to get. But with the aggregators you know that there is a range you are going to get, if you have good grains you can get a good price.”

The pricing option adopted by most contracting firms is the variable price option which is used to induce high performance from farmers. Prices are usually negotiated during harvest. Whilst farmers indicated that the contract prices especially for maize are relatively higher compared with open market prices during bumper harvest due to market saturation at local markets, they, however, noted that the prices offered by local traders in the lean seasons are usually higher than contract prices. This means the motivation to contract is not dependent on the high price per se, but on the *stability* of the contract prices compared with the open market prices. Price stability seems to be less risky to smallholders. This is aptly expressed in the view of a female rice farmer in her late 20s:

“I negotiate the price with the aggregators, but my price doesn't have much say, it is what they say that is final. Sometimes you get more, sometime less, but with them[aggregators] you know you cannot get lower than a certain price, because when the price is too low the ADVANCE people will come in.”

Frequent fluctuations in staple food prices at the local level poses a major threat to the income security of smallholders. Most smallholders in the study community have two alternative selling outlets, either the village market square which runs mainly on Sundays or the urban markets at the municipal capital Navrongo or regional capital Bolgatanga, which flourish mainly on market days when producers from neighbouring communities converge, usually 2 days in a week. From either of the markets, farmers in the community can best be described as *price takers*. At the village market, it is the middlemen that usually determines the price, as their cost of transport to and from the community are borne by farmers, and usually it is the poorer farmers with smaller holdings who find the village market square as a final destination for their marketable surplus, because most of them cannot afford the transport cost to the urban markets and sometimes it makes no economic sense to transport their produce to the urban

markets because they may pay more for transport than the entire value of their stock they have for the market. One middle-aged male maize farmer puts it this way:

“sometimes harvest is so bad that when you go to Navrongo market and return you just realise that the total sales you made is just a little above what you paid to the motorking drivers, is better you stay at the village market for the traders to come and cheat you than to go to Navrongo for the market women to cheat you.”

It also came to light that a minimum guarantee price for maize in particular exist in both harvest and lean seasons. This is usually announced daily by the local MOFA unit through radio broadcasts. Whilst most farmers located in remote villages like Tampola are not privy to this information on time, even the few that get to know can do little to influence buyers. Moreover one disadvantage of the MOFA minimum prices is that whereas prices are quoted per bag, the average smallholder who sells through the local markets sells in bits, usually using tins and bowls to measure in smaller quantities. As a result, the whole idea of fixing a minimum price is defeated since the price and quantity is now left at the discretion of buyers, who often have a higher bargaining power. A male maize farmer in early 50s reiterated:

“MOFA has a minimum price, but sometimes you only get to know when you arrive at Navrongo market, we do not hear it over here. And even if you know you can’t do much, everybody knows this time a bag of maize is going for 100 Ghana Cedis [\$31] but when you get to the market it is difficult to get someone to buy the whole bag outright, market women will normally prefer to use bowls to measure in bits because they want to cheat.”

The challenges associated with *lack of information* about market signals have been well documented (IFAD 2012). This makes it very easy for middlemen to take advantage of smallholders, and considering the fact that most agricultural produce are highly perishable, famers, most of which lack proper storage facilities, are left with little or no option. Again, *high transportation cost* necessitated by poor road networks and long distances from farm to market centres, as mentioned earlier, leaves the smallholder vulnerable when it comes to price negotiations. Moreover, a general price increase does not always filter down to the *farm gate* where most farmers sell their produce to middlemen due to high transaction costs. It is estimated that transaction costs along the maize value chain, for example, constitute up to about 80% of the farm gate price, implying that smallholders actually receive only 20% of what they are supposed to get for their produce in actual sense (World Bank 2007).

It is therefore not surprising when smallholders cited the quest for price stability as a reason for taking part in contract farming, but certain unique features of the pricing system needs to be pointed out. First, the pricing system is a variable range that is contingent on the performance of the farmers. Farmers who produced the best quality grains of rice for instance will usually get the highest price in the range. Every farmer has the same access to training, quality seeds and fertilizers and other inputs, but it was quite clear from the interviews that those farmers who have some formal education were more optimistic of meeting the grain quality standard. Moreover, the more educated farmers ventured into rice and soybean production whilst the less educated ones were more comfortable with maize. This is probably due to the fact that rice production, for instance, requires more chemical application and knowledge than maize will usually require, and seems to fetch more income than maize. This finding is consistent with Abebe et al. (2013) who noted that a pricing strategy that is contingent on certain performance criteria is more preferred by contract farmers than a fixed price. But in their context, it was high food prices at the alternative market that motivated farmers to opt for a variable price, so that they can benefit from the escalating food prices. In the present study, however, even though prices at the alternative markets were sometimes higher, especially in the lean season than the contract price, the former is often unstable, hence it is price stability that motivated contract production rather than the quest for higher prices. Many other studies elsewhere noted price stability as a main motive for producing on contracts and selling through formalized markets (e.g. Minten et al. 2005, Singh 2008, Neven et al. 2009). For instance, Minten et al. (2005) found that although majority of farmers believed that the contract price was averagely lower than the local market price (even though this was untrue because farmers did not consider the cost of inputs supplied by the contractor), farmers continued selling to the contracting firms with little evidence of side-selling. Similarly, Neven et al. (2009) found that price stability was key as contract farmers tend to have greater certainty about when and at what price the sale will take place, and for this reason contractual payments has led to income security of contract producers. The variable price option also induced high performance from farmers. This is also good for the development of the entrepreneurial, as well as the farming know-how of smallholders, which has been one of the goals of the ADVANCE program. Rehber (1998) argued that a fixed price option often punishes farmers who have better entrepreneurial skills.

The second feature of the pricing method is the tripartite price bargaining system that is adopted by the contracting firms. This is contrary to most contract farming schemes that often adopts a unilateral price system. During the harvest season, a stakeholder meeting is

usually held between representatives from the FBOs, NGOs and the contracting firms to agree on the range of prices that each crop would be sold for, taking into account, the prevailing market conditions. This has been very helpful as it serves to promote the interest of the smallholders against undue under-pricing by the contracting firms. A middle aged farmer made this clear “...because when the price is too low the ADVANCE and my FBO people will not accept it”. The role of FBOs and NGOs is discussed in a latter section.

5.2.3 Honesty and Transparency

Table 3: Coding Extract for Motivational Factor 3: Transparency and Honesty.

Motivational Factor	Key Phrase	Summary
Transparency	Measurement scale, in kilograms	Contracting firms measure in weight and are more transparent
	Measurement tins and bowls	Middlemen measure in volumes and are less transparent

Source: Fieldwork, July 2014.

Whilst many factors that militate against the smallholders’ ability to sell through the local markets and get value for their produce has already been mentioned above, another important revelation that came to light is the fact that many farmers interviewed claimed that the middlemen and traders available at the alternative local markets are usually not fair and transparent when buying crops from farmers. Many felt cheated for far too long and the emergence of the contracting firms was seen as a more transparent and objective alternative. Whereas the middlemen usually use bowls or empty tomatoes tin popularly called *olonka* (figure 3) as a unit of measurement of harvested crops such as maize and rice, the contracting firms strictly use the modern measurement scales to weigh bags of crops in kilograms. So the urge to *sell in weight* to the agribusiness firms than the traditional way of selling in volumes to middlemen was what drove some farmers to produce on contract. An elderly female maize farmer in her late 40s who has been on contract for the past 4 years expressed her frustration this way:

“For the market people they always cheat when they are buying from you. You see that the olonka is full but they tell you it is not full, and they keep fetching and pouring on top of it until it is overflowing, sometimes even the overflow alone is more than one olonka. So they fetch 2 olonka and count it as 1 olonka. But for the aggregators they come with a measuring scale, when they say is 1 killo, it is 1 killo, you can see it for yourself, no cheating.”

A young male maize farmer puts it in a more radical way:

“As for the market people they are just thieves, whenever they are buying, my heart is just boiling until they finish counting. Only God knows where they carry their olonka from. If I bring my own olonka for them to use they will not, they only use what they brought. They deliberately bore hole under some of them, so is bigger than the normal olonka we all know. I see clearly that they are cheating me but I can't do anything because I need the money, I can't use the maize to pay my son's school fees. The aggregators are far better, they use scale so everything is clear.”

Whilst many studies have noted that farm gate prices received by smallholders are far lower than the actual cost they have incurred in production, the attention has often revolved around high cost of transport as a component of the producer price which reduces the disposable income that finally gets to the smallholder. Other factors include lack of adequate information about market signals that weakens the bargaining power of smallholders especially in remote areas (IFAD 2012). However, little is known about the nature of transactions that transpires between the smallholder and their most regular buyers, the *middlemen*. Yet one of the ways smallholders are *squeezed* by middlemen is the buying method the latter adopts. It is not so uncommon in many rural areas in Ghana to see middlemen using bowls and empty tins to measure agricultural produce. Whilst one may argue that it is cheaper to use this locally adopted measurement method than the relatively costly modern scales, it is also true that the former is too subjective and solely at the discretion of the buyer and can therefore lead to cheating. This questions the effectiveness of a minimum guarantee price especially in rural areas and whether it benefits smallholders who sell to middlemen in any way. This is a major motivating factor as farmers interviewed expressed their dissatisfaction with the manner in which the middlemen measure their farm produce when they are selling to them.



Figure 3: A common unit of measurement – ‘olonka’ - filled with vegetables at a local market.

5.2.4 Food Security

Table 4: Coding Extract for Motivational Factor Four: Food Security.

Motivational Factor	Key Phrase	Summary
Food Security	Higher productivity	Contract production gives higher yields and surplus food for consumption
	More income	More regular income enhance secure access to food

Source: Fieldwork July, 2014.

The informants were asked how the need for their access to food all year round influenced their decision to take part in a contract production. The answers were mixed. First, some farmers noted that because of the higher productivity they derive from contract crops they are able to keep enough for household consumption than they would have gotten from farming on their own. They emphasized that in the lean season especially when food prices are higher they still have enough for the house consumption after supplying their contractors. This they, however, attributed to the high yielding technologies and the irrigation facilities that they enjoyed under the collaborative contract arrangements. A middle-aged male rice farmer puts it this way:

“Sometimes you agreed to supply the aggregators with maybe 40bags but after harvest you can get more than that, sometimes 45 or 50, and you decide to give them more or keep the rest for the house, it stops you from buying food, it helps a lot, especially in the lean season when food is very expensive... in the past it was not like that, I could not get even 20 bags from 4acres, but now because the seeds they gave to us is very good and also the fertilizers we use, I get more bags. They have also built irrigation dams for us, you know rice needs plenty water to grow well.”

Second, some farmers especially soybean farmers did not see a direct link between food security and taking part in contract production. They however, noted some spill over effects from higher incomes on food security as they mentioned that proceeds from contract production are often used to cater for general household needs including food.

Many smallholders in Africa are *subsistence* farmers and therefore produce very little for commercial purposes than the portion that is consumed by the farming household. Hesselberg (2013) refutes the notion that most subsistence farmers are able to produce sufficiently to sustain all the food needs of the farming household all year round. He noted in

the Upper East Region of Ghana (the study region), that in a good harvest year, only 13% of smallholders have staple food lasting all year round. The present findings is thus, consistent with this view as many farmers noted that they produced very little without contract farming and for that matter could hardly sustain the food demands of their various households until the next farming season. This also makes a lot of sense when juxtaposed against the fact that smallholders in developing countries feel the shock most in times of a global food crisis. If it is true that subsistence farmers produce more on their own to feed the household and also for the market, then a global food price escalation should not have affected them negatively.

The linkage between food security especially at the smallholder level and participation in contract farming depends largely on the contract design and the type of crop under contract. When the contract crop is a high-value cash crop, smallholders do not benefit much since most smallholders in developing countries are staple food crop producers. However, evidence shows that small holders in a high-value cash crop contract schemes can still benefit through input delivery channels, either by diverting part of contract inputs into food crop production (Govere et al. 1999), or through intercropping, where food crops are grown together with the contract crop on the same land using contract inputs (Porter and Phillips-Howard 1997). However, focusing too much on high-value cash crops does not favour poor smallholders. This is because staple food crop production (like the case under study) involves more small producers and therefore has a stronger linkage to food security and poverty reduction. In Ghana for instance, evidence shows that the most widely traded staple food crop (maize) is largely produced by smallholders. This has a dual effect of income generation and food security (GSS 2007). Hence smallholder-market linkage strategies such as contract farming is more beneficial to smallholders when the focus is on the development of the marketing chains for staple food crops. Consistent with this finding, Minten et al. (2005) also found that rice contract farmers in Madagascar enjoyed more food security due to higher productivity benefits of contract farming than their counterparts who were not producing on contract. They noted that rice productivity on contract plots was 64% higher than those that were not produced on contract plots.

In terms of impact, food crop productivity increase has a potential of transforming a net-food-buying household to a net-food-selling one if producer prices do not fall far below the expected gains from the increase in productivity (Hesselberg 2013). In this regard, to analyse the impact of a contract production on the food security of the participants, it is important to find out

whether the participant’s household is a net-food-selling one or a net-food buying one. Farmers were asked how the higher productivity they derived from a contract production affect their household food consumption compared to when they were not producing on contract. Some noted that because of the higher productivity benefits of contract farming, they are able to produce a surplus for household consumption than they would have been able to, without the contract. Whilst most of them noted that they are not completely food self-reliant at the household level, they nonetheless, noted that they now spend less on primary food staples compared to when they were not on contract. They now only have to spend on secondary food ingredients like cooking oil, sugar, salt and others that they do not produce directly themselves. A female maize farmer in mid-30s simply puts it:

“You can’t sell everything, you have to eat, I get more bags than I agreed to supply because of the fertilizer and good seeds. The rest is able to take care of the family up to some time. We used to buy maize previously especially in the lean season but now we still have enough to eat in the lean season. Now the only thing we have to buy to make a meal is, may be salt, cooking oil, tin tomatoes and so on.”

Whilst it is true that they still had to buy these ingredients previously, they indicated that the higher incomes induced by high productivity, now puts them in a *better position* to “*put bread on the table*” as mentioned by an elderly soybean farmer.

5.2.5 Knowledge Transfer

Table 5: Coding Extract for Motivational Factor Five: Knowledge Transfer.

Motivational Factor	Key Phrase	Summary
Knowledge Transfer	Demo farms Threshing Fertilizer application Winnowing Bagging	The type of training received depends on the kind of crop the farmer produces. A small prototype farm is usually cultivated close to the farm to guide the farmer

Source: Fieldwork, July 2014.

Participation in contract farming and value chains in general has been noted to have a potential of developing the human capital of participants through the acquisition of new skills, whether they serve as labourers or producers (Maertens and Swinnen 2009). The situation is not different in the study area. Farmers mentioned the quest to learn new farming skills and the

need to improve upon what they already know as reasons why they entered into a contract production. Whilst the three main crops under contract production (maize, rice and soybeans) are regular staple crops that most farmers are familiar with, yet the varieties preferred by the contracting firms requires additional skills and training. One elderly male rice farmer noted:

“The coming of the ADVANCE people and the aggregators has helped us a lot. We have learnt a lot of things, some of the things we already know it but we were not doing it the right way, so we were not getting good results like now. For example they teach us how to sort out good seeds. In the past we use to pour the rice seeds into cold water so that so that the bad seeds will float on the water. But now we know is better to pour into warm water and also leave for the 24 hours instead of the 12 hours we have been doing it. Now we sort out the quality seeds just by doing the right thing. We were also told to start nursing pre-germinated seeds immediately otherwise they can go dry and die off. In the past we thought you can just keep it and be sprinkling water on them. They also teach us how to make nursery bed with the right dimensions so that we make enough seedlings to plant one hectare.”

It was also evident that skills acquired through contract production has spill over effects on the cultivation of other similar crops. For instance knowledge acquired from maize farming is useful for the cultivation of millet. An elderly maize farmer simply puts it; *“We learn the skills, we can do it on our own, we use it for other crops”*. The desire to learn new ways of doing things and especially new farming technologies that will increase the farm productivity was also a major concern. A middle-aged male soybeans farmer noted:

“Now there are new and advance ways of farming, we need to learn them so that we produce more. Farming is no longer about fertile soil and plenty rains, if only you know how to apply the chemicals, you can produce more crops even if the soil is bad with little rain. We wanted to learn this things, government is supposed to teach us, but the MOFA field officers we do not see them around, they do not come here often, I think there are just few in the whole municipality. Sometimes when the FBO leaders invite them they come to have community forum with farmers, but that is not enough, you need someone to teach you one-on-one, for example how to apply fertilizer. But the aggregators and the ADVANCE people will teach you all this things, even when you start your farm, they come to do a demo farm for you [like that small farm you are seeing over there] so you are learning and practicing and you know you are on track when your crops are looking like those on the demo farm.”

Knowledge acquisition as a motivational factor for entering into contract farming has been shown by several other empirical cases in different contexts. Masakure and Hensen (2005) found that the need to obtain knowledge on growing both existing and new crops was a significant factor driving vegetable farmers in Zimbabwe towards contract production.

However, this was noted to be a reflection of the weakness of the local agricultural extension systems. In a related instance, Balckmore and Keeley's (2010) extensive study of the impacts of certification on Asian export crops concluded that the urge to learn new farming skills has a greater impact than market access or even price premiums.

Farmers who are the end users of new farm technologies need more information on proper implementation techniques. Many shortfalls have often been identified with the state-controlled extension services to farmers, calling for a more efficient strategies. First, most field staff lack adequate training and field experience to effectively do their job. Second, it involves a high financial demand due to the high staffing needs especially as with the *training and visit* approach making it difficult for the state to sustain. Third, due to poor supervision, most of the field staffs who are often civil servants lack accountability (Anderson and Feder 2007). In the study area, poor extension services has well been documented in the Medium Term Development Plan MTDP (2007-2012) ⁹of the local area. The extension officer to farmer ratio in the local area is as low as 1:10,994, and even this is compounded by lack of adequate transportation facilities for the field officers. This has been partly blamed for the low proportion of farmers using hybrid seeds and agro-chemicals in their farming activities.

⁹ Medium Term Development Plan is a 5 year medium term plan for each District Assembly that guides the execution of central government policies at the local government level



Figure 4: A mechanized ploughed land ready for rice cultivation. Source: Filedwork July 2014.

In terms of impacts of the knowledge acquired through contract production on farm productivity, farmers indicated that yields per hectare has increased significantly since they have engaged in contract production than when they had not. This they obviously attributed to the quality of seeds they now have access to, high yielding cultivars, technical assistance and constant monitoring being at their disposal under the CF arrangements. The simple comparative mechanism from the viewpoint of the contract farmer is that, if the farmer who is currently on contract production on the same land size for the same crop now yields a higher output than without contract production, a logical conclusion follows that the contract production has led to the higher yield. A middle aged maize farmer pointed out that *“Now I can get about 25 bags from that plot you are seeing over there, but in the past I could barely get 15 bags”*. This is as a result of better farming practices farmers are being introduced to from the cultivation of the crop to the harvest. Emphasis is placed by contracting firms on ways of reducing post-harvest losses. For instance, rice and soybean farmers are thought how to meticulously thresh the harvested crops so as to get quality grains and avoid damage caused to grains during threshing, whilst maize farmers are provided with shelling machines instead of the traditional hand

shelling they were previously using. A young male rice farmer noted that “*previously after harvest, I used to thresh the rice on the bare ground and as a result, sometimes sand and small stones gets into the rice but now we are thought how to use tarpaulin for threshing so that we can get clean grains*”.

Perhaps, a more comprehensive comparative analysis of productivity impacts of CF could have been a simultaneous study of non-contract farmers who have access to quality inputs compared with that of contract farmers, but that is beyond the purview of this study. Nevertheless, several other empirical findings have been undertaken in this regard, and with similar results. Neven et al. (2009) shows that Kenyan contract farmers use more quality inputs such as fertilizers and manures and as a result had a higher yield per hectare and a higher income than non-contract farmers. Minten et al. (2005) shows that because contract schemes provide incentives for quality and performance, contract farmers’ yield per hectare was higher, in quality and quantity than non-contract farmers. This is intrinsically linked to the income of contract farmers, which can positively affect their living conditions.

5.2.6 Income Benefits

Table 6: Coding Extract for Motivational Factor Six: Income Benefits.

Motivational Factor	Key Phrase	Summary
Income Benefits	Regular income source	CF was seen as a more regular source of income
	School fees, Food and consumable goods	As coping strategy to cater for family needs
	Higher returns	Yield per hectare is higher under contract

Source: Fieldwork July, 2014.

Apart from the above reasons given, some of which are closely related to income benefits, farmers also highlighted explicitly, the need to earn an *extra income*, *regular income* and *higher returns*. Those farmers who have an alternative sources of income apart from contract production stressed on the need for an extra income. The common alternative sources of income are all agricultural related. Farmers mentioned livestock such as guinea fowls and goats as the common livestock that are raised as an alternative sources of income. Others, especially, women also mentioned the brewing of a local beer ‘pito’ made from a fermented millet or

sorghum as an alternative source of income. However, farmers noted that income from these non-cropping activities are not sustainable because they are less intensely practiced. These are usually done at leisure hours or after they return from farm or as a coping strategy in the lean season when cropping activities come to a halt. In this regard contract farming is seen as an important source of a regular income by many farmers. An elderly female rice farmer puts it this way: *“Before the aggregators came, it was difficult to survive in the lean seasons, there are no other jobs. I have few guinea fowls and you know they do not sell much. Now we have something to live on even in the lean season”*. Farmers also noted that returns from contract production was higher compared to when they were not producing on contract. This higher returns was, however, attributed to the higher productivity potential of contract production rather than higher prices as mentioned earlier. A middle-aged male maize farmer noted:

“With the aggregators I produce more...on the same plot I used to produce less. Now I can get about 25 bags from that plot you are seeing over there, but in the past I could barely get 15 bags. It means I get more money, I can pay my children’s school fees, buy other stuffs like soap, dresses and shoes for them when they are going to school.”

As indicated in the literature, income benefits of CF to participating farming households has been well noted by several studies. The emphasis, however, often revolves around increased prices for cash crops and or higher contract prices for high value cash crops over traditional staple food crops. In the present case, farmers highlighted the *higher productivity* potential of contract farming on their traditional food crops as the driving force of increased income. The contract price, as noted earlier is not necessarily higher than that of the local market, but farmers perceive to get a secured income on their farm produce if they have access to contract inputs and technology and produce on contract, because they will get higher farm yields. This by implication could also mean that the low income of farmers is rather induced by low farm productivity as a result of inadequate or poor quality inputs and low capital investment that is often associated with their traditional farming system. A female rice farmer makes it clearer: *“...now I harvest more bags from this same plot when I use the seeds the aggregators gave me and when I follow their advice, and I get more income than I used to get”*. Some farmers also mentioned the ease of selling to the contracting firms as against middlemen to have reduced their transaction costs and thereby increasing their overall income from farm produce. An elderly maize farmer noted: *“In the past I used to worry about how I will transport my crops to Navrongo market so that I can sell because transport is expensive. Now with the aggregators I do not need to worry about transport money, and besides that I get more money”*.

Farmers also noted the income effects of CF on their standards of living. Farmers indicated further that higher income as a result of higher productivity has positively impacted the living conditions of their households. Hesselberg (2013) noted that higher productivity as a result of agricultural modernization often leads to market saturation particularly at the local level, and this will inevitably bid down producer prices. He therefore argues that net-food-selling smallholders will only benefit from a productivity increase if this increase *far exceeds* the fall in prices as a result of market saturation. Consistent with this argument, contract farmers compared their current earnings to when they were not producing on contract and noted that they earn more with the contract than without the contract. In their view producing on contract has enabled them to overcome the problem of market saturation that often characterized the local alternative market resulting in low producer prices especially during harvest seasons. Contract farmers, especially those engaged in it for up to 5 years noted some positive impacts over the years compared to when they were not on contract. Some highlighted their ability to sponsor their children through the university and other tertiary institutions and basic education as well. An elderly male soybean farmer noted that: *“I have been dealing with the aggregators for just the past 4 years, I have been able to send my elder son to the university, he is now in the final year, on vacation he comes to help me on the farm because he knows this is where I get his school fees from”*. Some farmers also indicated that proceeds from contract production has enabled them to invest into non-farm income generating activities. A middle aged maize farmer noted that for the past 3 years he has been producing on contract, he has been able to open a local drinking spot, where he sells beer and assorted drinks. He indicated that his wife operates the shop whilst he focuses on the farming and this, he noted has improved their finances significantly. An elderly male rice farmer also noted that proceeds from contract farming has enabled him to start building a better housing for his family. He puts it this way:

“I have lived in a mud house all this while, but since I started dealing with the aggregators, things have changed, now I have just started building a cement house for my family, I hire people to work on my building site and pay them, so you see I do not benefit alone others are benefiting too”



Figure 5: The cement house building site of a contract farmer. Source: Fieldwork July 2014.

Some farmers also mentioned the impact of contract farming on their finances, especially in the area of saving habits. Most contracting firms insisted that FBOs open bank accounts for their members. Opening bank accounts was a necessary requirement for getting recruited into the CF schemes. Payments accrued to farmers were made mostly through bank accounts by contracting firms. Whilst some farmers see this as a good opportunity because it enabled them to develop a saving habit, others also indicated that it enabled them to plan for the next season because they were more certain how much they have to invest in the next season. Yet, some farmers especially those with no education, also expressed their joy in owning a bank account, something they have never imagined. An elderly maize farmer put it this way: *“Because of the aggregators, me too, I now have a bank account. I now feel like am also a worker, I can walk to the rural bank and tell them I want to know how much I have in my account and how much I can withdraw.”*

Several other empirical studies show a positive correlation between smallholder participation in CF and increased household incomes. In Senegal, Maertens and Swinnen (2009) noted that green bean contract farmers had their household income increased from 50 to 130% than that of non-contract farmers. Similarly, Gibbon et al. (2009) analysed the revenue effects of smallholder participation in organic cocoa contract farming scheme and found that the revenue for participating households increased significantly compared to that of non-

contract farming households. Both studies in similar vein alluded to higher productivity effects of CF and access to a guaranteed market that is devoid of high transaction costs as factors that led to the higher incomes of farmers. This findings, especially the higher productivity potential of CF schemes has a positive implication for smallholder agriculture particularly in Africa. Against the backdrop that smallholder agriculture in Africa is largely characterized by land expansion and overreliance on rain, rather than intensification, CF can serve as a vehicle for delivering improved cultivars, fertilizers and irrigation to enhance the productivity and income of smallholders.

5.2.7 Social Collateral

Table 7: Coding Extract for Motivational Factor Seven: Social Collateral.

Motivational Factor	Key Phrase	Summary
Social collateral	FBOs, NGOs,	FBO membership was seen as collateral for engaging with contracting firms
	Price negotiations	FBOs perceived to have a stronger bargaining power
	Contract enforcement	FBOs perceived to enforce contract terms after harvest
	Mutual learning	FBO membership serves as platform for learning new farming skills

Source: Fieldwork, July 2014.

The involvement of NGOs and FBOs in the contract arrangements also served as a source of motivation for farmers to engage in a contract production. Membership in an FBO provided some form of social collateral for both the farmers and the contracting firms. Contracting firms strictly deal with farmers through their FBOs for two main reasons. First, to ensure easy delivery of inputs and other services such as training to farmers as FBOs have the capacity to organize their members. The second reason is to ensure that performance agreements are adhered to by farmers. But from the farmers' side, the FBO is seen as a platform for learning new farming skills from each other, especially from the most experienced or educated ones, and also a platform to easily access inputs and services like tractors and spraying machines.

Those farmers who were not previously producing on contract saw this benefits that other colleagues got from being members of an FBO and subsequently decided to also join. A middle-aged male soybean farmer indicated that:

“I also wanted to work with the aggregators, because I see that my colleagues were getting more support, they got spraying machines, fertilizers and tractor services and so they told me that the first thing I have to do is register with the ‘Apotaaba group’ so that once I become a member, the aggregators will start dealing with me. Then I decided to register.”

Implementing NGOs of the ADVANCE programme as well often encourage FBO membership as trainings and workshops for farmers were mainly carried out through FBOs. These trainings are often useful for the production of the contract crops. Technical trainings are, thus, largely diffused through various representatives of FBOs who in turn teach their members. An elderly maize farmer puts it this way: *“The FBO leaders normally goes for the workshops at Navrongo to learn the new farming skills and come back to teach us the other members”*. The more educated farmers are often selected to attend such training workshops and come back to train other farmers.

In the view of some farmers also, membership in an FBO is important for a stronger price negotiations on behalf of farmers, and a social collateral against the risk of any possible default on the side of the contracting firm by ensuring that contracting firms honour their part of the agreement. A young male maize farmer puts it this way:

“I decided to work with the aggregators because I know as a member of an FBO it is difficult for them to cheat me. I for instance am a maize farmer, then somebody comes to promise me that I should produce a number of bags for him so that he will come and buy, if is me alone, that person can run away after I have produced the crops, I can’t do anything, but as a member of a farmer group, I know for sure that am not alone, and that he has promised other farmers too, do you understand? When we are many he can’t run away or cheat, unity they say, is strength.”

In terms of price negotiations another young maize farmer indicated that *“We negotiate the price, I do not have a say as an individual farmer but it is a collective decision by all the members of the FBO that we will accept this amount or that amount. Moreover, The ADVANCE people always make sure that we get a good price”*.

The involvement of NGOs and FBOs in a contract farming arrangement has well been noted to provide complementary services that benefit both the contracting firm and the farmer (Barrett et al. 2012). In the study area for instance, the initial technical training of farmers is usually undertaken by implementing NGOs along the ADVANCE programme to prepare farmers both with farming skills and developing their entrepreneurial capacities to be able to engage in commercial production. Major irrigation facilities along the local government area and its surroundings were provided by the NGOs. This is done mainly to produce a conducive environment for commercial agriculture and thereby incentivising agribusiness firms into the area, since the availability of irrigation facilities reduces transaction costs for both farmers and the firms. Other empirical findings elsewhere emphasises the potential benefits that comes with FBOs and NGOs as a source of motivation for both contracting firms and farmers which is consistent with the present finding also as indicated in the above quotes. For example, Harou and Walker (2010) indicated that contract pineapple farmers in the south-eastern part of Ghana mentioned the likelihood of getting support from NGOs as the reasons for joining FBOs and farmer cooperatives. It is noted from the present study as well that NGOs and contracting firms as well deal with farmers only through their FBOs. The group enforcement mechanisms of FBO membership which is referred to as *social collateral* in the present study is also consistent with several other empirical findings. Farmers believed that FBO membership provides them with a better contract offers since FBOs have the greater bargaining power than individual farmers would have. Bachke (2010) noted that contract offers available through FBOs were better than those available to individual farmers who were not linked to an FBO because the latter has a better bargaining power.

Again, one unique finding from the present study regarding the involvement of FBOs, which has rarely been mentioned in the CF literature is the capacity of FBOs to *modernize* the financing channels of smallholders and for that matter *instil some fiscal discipline* in them. Farmers indicated that their FBOs usually open bank accounts for individual members and encourage every member to have an account through which contracting firms can pay moneys that are due farmers. An elderly maize farmer noted that “*It is a good thing to join the FBO especially when you are dealing with aggregators, because they [FBO] encourage us to open bank accounts so that we can receive our payments through the bank*”. This was also confirmed by an informant of one of the contracting firms interviewed this way: “*...we usually tell the FBOs to open bank accounts for their members, this is easy for us when we are paying farmers. We want them to see farming as business*”. This is important for a successful CF schemes that benefits farmers. First, the opening of accounts for farmers can encourage prompt payments of

claims to farmers since the risk and delays associated with carrying cash to remote farm gates to settle farmers will be reduced. Second, bank accounts can also enhance the farmers' access to financial credits from rural banks by eliminating at least the risks associated with identity. This point is further elaborated in the concluding chapter that deals with policy issues.

5.2.8 The Contractors' Motivation

All the contracting firms interviewed indicated that their decision to contract with farmers in the area was driven by the presence of NGOs as facilitators in the area. They mentioned the fact that the provision of major capital input requirements such as farm machinery and irrigation schemes was the responsibility of the NGOs and to a less extent the government. This they saw as a good opportunity to do business with the farmers since they think the farmers have the capacity to produce for them at a relatively lower cost. The contracting firms' main responsibilities was the provision of seeds, fertilizers and some technical advice. This is consistent with the theory fronts advanced earlier (Barrett et al. 2012) that the firm will usually offer contract to those farmers which have the highest expected profit levels and are most likely to meet product requirements. This they do by looking out for some readily observable indicators such as the farmer's access to irrigation, membership in an FBO or participation in an NGO extension programs. This makes a lot of sense in the study area against the backdrop that it is one of the poorest and marginalised regions in Ghana. There is weak infrastructure, weak public support for smallholders and erratic rainfall which makes the region unattractive for business investments.

5.2.9 The Contractual Arrangements

The contracting firms provide basic inputs like seeds and fertilizers, weed control chemicals and also technical support in return for a quantity of the farmers' harvested crops. However, the contracts are not very firm on the quantity of output to be delivered by farmers as it is on the quality. Whilst the determination of crop quality is exclusively the prerogative of the contracting firms, no farmer indicated a rejection of his/her crops solely based on poor quality. The mode of input delivery varies from one contracting firm to another. Whilst one contracting firm supplies the physical inputs directly to participating farmers, another firm indicated that it serves as a guarantor for the participating farmers through their FBOs to secure loans from rural banks for farmers to purchase some inputs by themselves and pay back. A representative

of the contracting firm in question explains the rational this way: *“We want them [farmers] to think business, when you give them everything just like that, some of them become lazy, but when we do it this way, the farmer knows he is owing the bank and he needs to make profit so he will be more committed, cultivate more land and produce more.”*

In terms of the form of contract, both oral and written contracts exist. Because all contracting firms come through the NGO, and recruit farmers through their FBOs, both parties tend to build some level of confidence and trust in this organizations when it comes to ensuring compliance. However, some farmers indicated that they always prefer a written contract based on experiences of breaches they had encountered with some contracting firms. A middle-aged maize farmer indicated that in the peak season when everybody has a good harvest, contracting firms are sometimes reluctant to honour their agreements after they get enough of what they wanted. He puts it this way:

“I remember one season, I agreed to supply 50 bags but they bought 41 and told me their vehicle was full and they were going to come the next day, but they didn’t show up. I knew they were not going to come back because they got more than they wanted. This time before I produce, I tell them to bring an MOU for me to sign.”

The dominant theoretical argument in this regard is that when the contracting firm is properly integrated into the farmers’ social networks, there is a high level of trust, less risk of default from both parties and hence, both parties may be more comfortable with oral contracts (Guo et al. 2007, Schipmann and Qaim 2011). The present finding, however, shows evidence to the contrary that the integration of such farmers’ social networks and even NGOs into contract design is good though, but that does not totally insulates farmers against the risk of default by the contracting firm. The contracting firm is most often than not, at the upper side of the power scale and can therefore skew the contractual agreements in its favour as and when it sees that necessary. However, the NGOs play key roles in enforcements of agreements and settlement of disagreements between the two parties.

In terms of recruitment of farmers, the main criteria for participation is access to land and labour. This does not however constitute a major impediment to smallholders. A communal land tenure system is practiced in the area and according to farmers, farmlands are usually allocated to farmers by the overlords upon request by any native or non-natives for farming and hence access to farmland is not a major challenge. Farmers also indicated that they usually use family labour.

5. 3 Some Variations in Responses

Even though the motivational factors discussed above reflects the broader view of informants, some variations based on relative importance to different categories of informants can be identified. Base on the analysis, all categories of informants mentioned market uncertainty directly or indirectly as a motivation for engaging in contract farming. However, the output markets seems to be of a greater concern to all categories of farmers than the input markets. Thus, whom to sell to at the right time, was a major concern to all farmers. Whilst this does not mean that it is much easier for farmers to secure quality inputs due to the obvious reasons mentioned earlier, the logical conclusion is that most farmers lack adequate and reliable storage facilities to keep their crops until such a time that they are able to sell, hence the anxiety that their crops will go waste makes the availability of an output market more significant to them.

It is also evident from the data that, farmers who had some level of formal education did not emphasize much on the issue of knowledge transfer as a major source of motivation when compared with farmers with no formal education. A possible explanation for this trend is that the educated ones could read and understand some basic farm practices on their own. This is because they could follow recommended farm practices if they have access to modern inputs on their own without necessarily receiving such services from a third party. However, knowledge transfer matters a lot to farmers with no education as they indicated that they most often depend on the educated farmers for assistance in best farm practices when they return from such workshops with the agribusinesses and the NGOs. This highlights the importance of formal education of smallholders in the adoption of agricultural technology in developing countries.

It was also noted that for female informants, especially those married and with kids the issue of food security as a motivational factor featured prominently in their responses when compared with the responses of their male counterparts. This gives credence to the fact that women and children are the worst victims in times of food crises in developing countries (WFP 2012). Also, soybeans farmers in particular do not emphasize much of food security as a major motivation for producing on contract, when compared with especially maize farmers. This could be possibly due to the fact that a variety of meals can be derived from maize, making maize a vital food staple for many households in Ghana. This highlights the need to focus more on developing the value chains for the most common food staples if more smallholders are to benefit from contract farming.

Again, it is noted that farmers who could read and write often demanded for a written contract from their contractors, whilst those with no education are more comfortable with oral contracts. Consequently, the issue of social collateral as a source of motivation for producing on contract is of greater concern to farmers with no education than it is to the educated ones. This could be due to the fact that the educated farmers have a better understanding of the contractual terms and obligations and also the legal implications.

Another motivational factor that featured prominently in the responses of informants as per the analysis is issues having to do with honesty and transparency. All informants mentioned emphatically that the measurement scale used by the contracting firms as mentioned earlier motivated them.

Whilst it is beyond the scope of this study to draw a scale of preference for the above motivational factors or to say which motivational factor is more important than the other, it is interesting, however, to note that a critical observation of the findings reveal that most of the motivational factors is closely related to the *volatility* of the agricultural commodity markets. Apart from 3 motivational factors - *food security, knowledge transfer* and *social collateral* - the remaining 4 factors revolves around the agricultural markets. It follows logical therefore to infer that lack of a *vibrant, reliable* and *accessible* agricultural input and output markets matters most to farmers in this case. The concluding chapter reflects on these findings within the larger policy framework for smallholder agriculture in Ghana and developing countries at large.

5. 4 Key Observations

In addition to the in-depth interviews I employed, keen observations of some descriptive variables in the study community also helped to enrich the data collected. First, I experienced and observed the state of physical infrastructure especially road networks that links the community to the municipal capital, Navrongo. The road is typically rough, untarred and dusty and with pot holes. At the time of the study the road had just undergone the usual periodic maintenance of *levelling* by the local government authority, and therefore in its *best* condition as shown in figure 6. Commercial vehicles (Lorries) do not work on the road due to the bad state. The common means of transportation for goods is a three-wheeled motorbike with a carriage, popularly called ‘motorking’ as shown in figure 7. The *motorkings*, however, do not work every day but only on *market days* usually two days in a week. Farmers who are more *affluent* own their motorbikes as this constitute the main means for commuting in and out of

the community. I have observed few motorbikes parked on the farms I have visited. Whilst from my experience I was quick to view motorbikes as a necessity, one farmer pointed out through an informal conversation that it is for the rich farmers because not many people could afford it. Second, I observed with keen interest the farming practices of the farmers interviewed as all interviews with farmers were conducted on their farms. I noticed how they put into practice the knowledge acquired on their own farms. The period of the interview coincided with the beginning of the major farm season so different levels of preparatory works like ploughing of land, sowing of seeds, and application of fertilizers and manures were observed. Fertilizers were applied with recommended quantities, whilst seeds were being sown in rows. I noted that each farmer has a handbook which they looked into for learning and guidance as they worked. I also noted smaller farms about 6metres/square close to each main farm which the farmers referred to as *demo farms* which was cultivated by the aggregators using recommended inputs. The demo farms, thus, serves as the prototype of a successful farm practice, as the demo farms and the main farms are cultivated almost around the same time and the crops on both farms should look alike as they grow together. This, farmers indicated was very useful for them for producing good quality crops.



Figure 6: The untarred road leading to the study community.



Figure 7: Motorking – a common means of transport in the study area.

6. Conclusions

6.1 Introduction

This final chapter summarizes the thesis. It begins with a summary of key findings. It ends with some reflections on the findings within the larger framework of agricultural policies targeted at smallholders in Ghana and developing countries at large and making some recommendations for agricultural policy.

6.2 Summary of Key Findings

The motivations for producing on contract revolves around 7 main themes as per the analysis of the data. These include; *market uncertainty*, *price differences*, *honesty and transparency*, *food security*, *knowledge transfer*, *income benefits*, and *social collateral*. With regards to market uncertainty, lack of access and high cost of quality farm inputs especially seeds and fertilizers were motivating reasons for a contract production. Also the ability of the contracting firms to travel down to farming communities and buy farm produce in bulk in an environment where the road network is in a poor state making vehicular transports scarce and expensive were reasons for deciding to produce on contract. In terms of price differences income stability matters a lot to farmers than higher prices per se. Therefore the fact that contract prices were more stable compared to the spot market prices was the motivation for producing on contract. With regards to honesty and transparency in transactions, from the view point of the farmers, selling farm produce in weight was more objective and transparent than the usual traditional selling in volumes. Hence, the fact that the contracting firms use measurement scales to buy units of farm produce as against measurement in volumes with empty tins at the local markets was a motivation for farmers to produce on contract. In terms of food security, the contract crops which are mainly food staples that farmers consume on a daily basis served as a motivation since farmers anticipated to derive double benefits of food and income from participation. Moreover, a more stable income effects of contract farming gives financial access to food for the participating farmers' households. The technical training offered by the contracting firms also motivated farmers as many of them wanted to learn modern ways of farming so as to improve their farm productivity. In terms of income, the urge to earn a more regular and higher returns on productivity were the motivational factors for contract production. Contracting firms were deemed more reliable since they offer quality inputs which culminates into higher farm productivity and also a guaranteed market for farm outputs. With regards to social collateral, the engagement of NGOs and FBOs in the contract arrangements

served as a social insurance for farmers as they feel more secured and assured that the contracting firms will honour their contract obligations.

6.3 Reflections on the findings

6.3.1 *Weak Market Linkages*

Based on the findings, with the exception of *food security, social collateral* and *knowledge transfer*, the rest of the motivational factors that the smallholders mentioned behind their decision to produce on contract mainly revolved around the issue of *weak agricultural input and output markets*. In terms of relative importance therefore, a logical conclusion is that access to a more *reliable* and *accessible* agricultural markets matters most to smallholders in this case.

Acknowledging the high cost of farm inputs especially improved seeds and fertilizers, the MOFA (2010 page 14) acknowledges that “...*the average food crop producer is resource poor and therefore uses little fertilizer, insecticides, high yielding varieties or irrigation-based cultivation. High prices of fertilizer contribute to the low use of the inputs in sub-Saharan Africa and Ghana in particular*”. Several initiatives taken by the state to administer input delivery to smallholders have not yielded the desired results either due to lack of political will or inefficiencies of the public institutions and sometimes external pressures that call for subsidy removals by the state. More often too, a selection bias against the poorest farmers is often identified with a state controlled input delivery system. For example, Banful (2010) observed that distribution of fertilizer vouchers in Ghana was marred by frequent political interferences with the ruling party selecting regions to bolster political support with no regard for vulnerability assessment of beneficiaries. As a result the poorest farmers who were the intended beneficiaries were left out. Similarly, an evaluation of a community-based targeting voucher distribution programme in Malawi by Minot and Benson (2009) revealed some selection bias against the poorest farmers who were left out.

Contract farming on the other hand has its own loopholes, as mentioned earlier in the theory chapter. However, the kind of contractual arrangement under study which is a donor-led initiative with smallholders and for that matter, poverty reduction as its core objective, has a potential of reaching poor farmers if the state also plays its major role of providing public goods. Improving the road networks in the study area for instance can reduce transport cost and thereby reducing transaction cost. This is beneficial for both agribusiness firms and farmers. Investing in irrigation schemes by the state will equally attract more agribusiness firms

into the region, and that means more farmers will be enrolled on contract productions. Providing rural infrastructure as argued in the conceptual framework (Barret et al. 2012), will not only boost contract farming in the region but also has a potential of improving the rural non-farm employment sector. Empirical studies (Zezza et al. 2007) show that rural communities with adequate infrastructure such as good roads and electricity, have many non-farm employment avenues than those lacking access to good infrastructure, whilst Yaro (2002) shows that peasant households with diverse income sources are better off than those with only one source of income. Many other studies argues for income diversification as an integral component for agricultural modernization and rural poverty reduction:

“The twin goals of a reduction in the number of poor and of a continuation of farming as a source of jobs and income for many are incompatible. No sustained economic development can take place in rural areas without a diversification of activities as well as agricultural specialization and modernization.” Hesselberg (2013 page 110)

Many farmers in the study community noted that they have very little income sources aside farming and many fall on such alternative sources like local brewing and few livestock as a *coping strategy* especially in the lean season, and not necessarily as a viable alternative source of income. Moreover, most of the agribusiness firms involved in the contract arrangements do their value addition and processing outside the study area, which could possibly be due to a lack of productive infrastructure in the study area. There is disconnect therefore between contract farming and rural non-farm employment in the community. Moving forward, policy should focus on how value chains can be arranged to enhance the creation of non-farm income opportunities. For example, having policy incentives such as tax free zones in poorer areas can attract processing firms within crop value chains in such areas.

As mentioned earlier regarding the output markets, the poor state of the feeder roads in the community coupled with high transport cost and the scarcity of commercial vehicles pose tremendous challenge to farmers in selling their outputs. Many middlemen take advantage of this situation by offering lower prices especially in the peak seasons when the market is already saturated. Again, with farming as the most regular source of income to farmers in northern Ghana, the proceeds thereof is very vital for their survival all year round. Therefore farmers will opt for buyers who give a more secured and stable prices even if these prices are still lower than what could have been realized from other buyers. While it is evident from the findings that the contracting firms offered a more stable prices, it is beyond the purview of this study to

ascertain the fairness of these prices compared to the alternative marketing outlets. A clear policy on *standardization* and the enforcement of a minimum guaranteed price for staple foods by the state can help protect the interest of smallholders. This will be a difficult task, though, but when properly implemented, it will eliminate all forms of bias against smallholders when selling. Prices should be quoted using a standard unit of measurement that is common to smallholders, not only in urban areas but also in rural areas. The findings revealed that, a minimum price exist for the most common cereal crops like maize which are announced daily through local radio stations but most farmers in the hinterlands are not privy to such information at the right time. Perhaps, a more effective channel of communication could be through the FBOs instead of solely through radio announcements. Moreover, there seems to be a mismatch between the unit of measurements for what is announced and the unit in which smallholders actually sell their outputs. Whilst the minimum price is quoted per bag for maize for instance (which is between 50kg to 80kg), many farmers noted that they usually sell in smaller units using the *olonka* (which weighs less than 5kg) to the middlemen. The bigger challenge with standardization of agricultural commodities has to do with quality. Since similar crops have different qualities and varieties it does not make sense economically to quote a standard price for all types. Perhaps a short term approach is for the state to create an enabling environment for contract farming, since the agribusiness firms together with the donor community have the capacity and the resources to develop the smallholders' capacity to produce specific crop qualities. In the *long run* when smallholders are gradually developed and migrated into value chains, certification policies can then be more effectively implemented and a more standardized pricing system can then be put in place just like in most developed countries. From a personal experience in Norway, I have noticed that even primary agricultural commodities are strictly sold in the market in weight using measurement scales and not in volumes. This to a large extent is made possible because these commodities have been certified to have met certain quality requirements. The story is different in Ghana as demonstrated in the findings.

Again smallholders in northern Ghana have limited options in terms of production and marketing choices. The location is a land-locked savannah with erratic rainfall and therefore not naturally suitable for a variety of crops. Moreover, separated by long travelling distance from a more flourishing domestic markets for staple foods in the south, farmers in northern Ghana face another challenge - *higher transport costs* - if they must take advantage of flourishing markets in the south. According to recent market analysis for maize, GSS (2007)

forecasted that out of smallholders with farm holdings 0.5 to 1 hectare, only 31% of farmers located in the northern part of Ghana were able to sell their marketable portions compared with 60% and 65% of farmers located in the forest and coastal regions of Ghana. Whilst it is in the right direction that donor agencies are taking the initiatives in providing inputs and training to poor farmers in northern Ghana and also linking them to agribusinesses like the case under study, a more sustainable approach perhaps by the state is to enhance the capitalization of smallholders by linking them to credits on softer terms and also building the capacity of smallholders towards a more *market-oriented* approach to farming. This will put them in a better position to bargain and negotiate contract terms with agribusinesses and get value for their efforts, since they will have the capacity to transport their goods to a more vibrant alternative markets in the south, if the contractual terms are not favourable to them. It will for example, involve the enforcement of import substitution policies such as tariffs on cheap imported staple foods such as rice which has flooded the domestic markets and has won the appetite of most local consumers over locally produced ones. For example, to overcome this challenge, the MOFA (2010) states that it will “*design and launch a market promotion programme for import substitution commodities*” (page 45). The dilemma, however, is whether this sort of programme can be successfully implemented without an imposition of higher tariffs on imported staple foods. This is not going to be easy since the major financiers of most economies of developing countries - the IMF and the WB – are in favour of neo-liberal policies which frowns on imposition of tariffs and all other forms of trade distortions.

With regards to *income benefits* as a motivational factor which is also closely related to markets, the motivation itself according to farmers is the higher productivity potential of contract farming and the ability of the contracting firm to purchase farm produce in large quantities at one time. But of keen interest also is the potential of contract farming to transform the financial systems of rural smallholders by improving their savings habits. This linkage is rarely discussed across the CF literature. Aside from the fact that opening of bank accounts can help smallholders to easily secure loans since they become customers to the banks, it can also help develop the savings habits of smallholders from their meagre incomes and this can put them in a better position to plan for the next farm season. For instance whilst Duflo et al. (2009) found that vouchers could affect fertilizer usage, they also noted that *poor savings habits* among farmers during the bumper harvest accounted for their inability to purchase fertilizers in the lean season. To the extent therefore that contract farming can transform the financial

system of the smallholders, it has the potential to improve upon their entrepreneurial skills as well in the long run.

6.3.2 Food Security, Knowledge Transfer and Social Collateral

Increases in food prices poses significant threat to poor farmers in developing countries as evidence shows that close to three-quarters of their income is spent on staple foods. It is also interesting to note that the recent global food crisis of 2008 and 2011 respectively is a result of agricultural supply cutbacks, and yet the problem of food security is not directly linked to unavailability of food at the global level, but most importantly, it is linked directly to food accessibility by poor people in developing countries (World Bank 2007). The World Food Programme (2012) shows that the northern regions are the most food insecure regions in Ghana. It follows, then, that a CF scheme that focuses on developing the markets for staple foods has a significant impact on food security of smallholders. A higher productivity potential of contract farming as shown from the findings means that farmers will no longer have to spend their meagre earnings on at least staple foods for some time in the farming year. This *excess* money can now be spent on other ingredients that is needed to make a more balanced diet.

A large number of smallholders in Ghana and most developing countries produce more staple food crops than high value cash crops. So the logical way to lift these smallholders out of poverty and enhance their continued access to food is to first of all develop their capacity to produce enough of what they consume more frequently, since many smallholders can barely produce to feed themselves and let alone, for the market. It is interesting to note that even both large and small-scale farmers combined are unable to produce enough cereals to feed just the domestic market in Ghana, which implies that there is effective demand for staple foods: *“Ghana experiences deficits with regard to rice, maize, sorghum and millet. To make up for the shortfalls in cereal production some quantities of maize, rice and sorghum are imported. Ghana imports all its domestic requirements of wheat.”* (MOFA 2010 page 11). The challenge has to do more with the weak capacity of farmers and also lack of the technical know-how to produce more. A shift towards staple foods contract farming of this kind is therefore very vital for smallholders’ food security. Moreover, the production of staple foods in commercial quantities must be seen as an integral part of poverty reduction. The state should give equal attention and support it gives to farmers of high-value export crops like cocoa and cotton to farmers of staple foods too.

With regards to knowledge transfer, there is abundant literature showing that agricultural production in Africa is characterized with low levels of high yields technology compared with all other regions of the world. This accounts for the stagnant food crop production in the region. Food crop productivity increased in all other regions of the world for the last four decades but remained stagnant in Africa (Jayne et al. 2010). Agriculture in Africa is mainly rain-fed with just about 4% of irrigated crop area as against 34% for Asia. Consequently, any growth in output comes from area expansion in Africa rather than intensification (de Janvry and Sadoulet 2009a). There is a general consensus therefore for the need for an African Green Revolution – the use of high yields varieties and intensive irrigation (IFAD 2009, Dethier and Effenberger 2012).

As argued in the literature, one strong argument for contract farming is its potential for bringing modern farming technology to the disposal of smallholders in particular, against the backdrop that there is a failure on the part of the state to diffuse such services. This is also evident from the findings as many farmers cited the urge to learn new ways of doing things and the lack of state support for such services as motivating factors for producing on contract. To ensure efficient adoption of technology at the smallholder level, what I think the state and the donor community can do is to provide an informal education models in farming practices to farmers in rural areas, as many farmers have no formal education with a few being semi-literates. The findings showed that farmers with some level of formal education ventured more into rice cultivation which according to them is more complex to cultivate and also yields more returns than maize.

With regards to *social collateral*, with the contractual arrangements being a donor-led one, the involvement of NGOs has not only served as a source of motivation for farmers, but also encouraged the involvement of poorer farmers as the NGOs assisted farmers in securing major capital inputs. It was also noted that the NGOs and FBOs were very instrumental in price negotiations between the contracting firms and farmers, and also assisting farmers with opening bank accounts. Whilst the contracting firms see the FBOs as an easier way for recruiting farmers, the farmers on the other hand see the involvement in an FBO as an insurance against the risk of default from the side of the contracting firm. But one challenge raised by the contracting firms in their dealing with FBOs in the study area is that there are too many and fragmented FBOs in the area. In this regard, bringing the FBOs under an umbrella body for easy coordination will therefore ensure quick dissemination of information for training purposes and also easier for the contracting firms to recruit farmers.

Overall, the concept of contract farming has been useful in this study to enhance the understanding of how motivational factors reflect the challenges and constraints of smallholders in northern Ghana and most developing countries at large. Admittedly, some of the existing literature acknowledge the multifaceted nature of the motivations to engage in a contract production. But the present findings emphasize the constraints emanating from such motivations and also points to the fact that contract farming for food staples and which involves donor agencies needs to be thoroughly explored to unravel the deep-rooted constraints that affect smallholders. Moreover if contractual arrangements of this kind are effectively implemented, it has the potential of improving the living standards of poorer smallholders in the long run.

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Appendices

Appendix 1: Interview Guide/Schedule

Section A – Entry Formalities

- Go through traditional community entry formalities
- Introduce myself and research mission and objective
- State the ethical guidelines and give assurance of respect for confidentiality and privacy
- Negotiate the terms of the interview, venue and time with each informant

Section B - Personal Profile of Farmer-Informants

- Age, Gender and Marital Status
- Level of education
- Crop category (maize, rice and soybean)
- How long has the farmer been producing on contract?
- How many agribusinesses does the farmer deals with?

Section C – Interview with Farmers (Motivations to Contract)

- What are your sources of income?
- How was your livelihood situation like when you were farming and selling output on your own?
- How did you get to know of the contracting firms?
- Why did you decide to produce on contract for a contracting firm?
- Since you started dealing with the contracting firm (s), what has changed, more specifically with regards to your farming as a source of livelihood?
- How do you compare your current standard of living to the past when you were not producing for the agribusiness firms?
- What is the nature of the agricultural inputs market? How easy was it for you to get the needed inputs from the local market when you were producing on your own?
- What kind of support do you get from the agribusiness firms and other collaborators of the contract farming scheme?
- What kind of support do you receive from the government?

- How and where do you sell your farm produce in the past when you were not producing on contract and how do you compare that to the present situation in terms of ease of selling?
- Could you please elaborate on the price you receive now for your farm produce (specifically how it is determined) and how different it is compared to when you were selling at the local market?
- How do you compare your farm productivity for the same crop presently to the past when you were not producing on contract?
- If not mentioned by the informant, find out more about how important the issue of food security is to the farmer in his/her decision to produce on contract.

Section D – Contracting firms

- What is your motivation for engaging smallholders on contract farming?
- How are the participants recruited?
- What kind of inputs and support do you provide for your contract farmers?
- How do you purchase the farm produce from farmers?
- How is the contract price determined?
- In your opinion, why do you think farmers decide to produce for you instead of the alternative local market?
- What are some of the strengths and weaknesses of this kind of contractual arrangement from your experience?

Section E – The Municipal Assembly (The Local Government Office)

- Get information on the socio-economic profile of the study area.
- Get information on the nature of state support for smallholder agriculture in the local area.
- Access a physical map of the study area.
- Find out whether the state has any form of control over prices for farm produce and how this disseminated and enforced.

Section F – Implementing NGO (ADVANCE Project)

- Get a detail understanding of the objectives and targets of the project.
- Find out about the nature of the contractual arrangements that exist between smallholders and the agribusiness firms.
- Find out the specific role of the NGO in such contractual arrangements.
- Find out what kind of inputs or assistance that is available to smallholders under the project.
- Find out how farmers are recruited into the schemes.
- Find out more about the obligations of the agribusiness firms as well as that of the farmers.

Section G – Field Observation

- Observe the state of road networks in the area.
- Observe farmers on their farms and their farming methods.
- Observe the means of transport in the community.

Appendix 2

Names and Description of Smallholder-Informants

No.	Name	Key Descriptions	Community
1.	Awine	Male, 42, married, secondary education, maize farmer, 2 years on contract.	Tampola
2.	Asibi	Female, 34, single, basic education, soybean farmer, 2 years on contract.	
3.	Razak	Male, 45, married, no education, rice farmer, 4 years on contract.	
4.	Daniel	Male, 50, married, no education, rice farmer, 3 years on contract.	
5.	Nyaaba	Female, 48, married, no education, maize farmer, 1.5 years on contract.	
6.	Anagbila	Male, 56, married, no education, rice farmer, 3.5 years on contract.	
7.	Maxwell	Male, 31, single, secondary education, maize farmer, 2 years on contract.	
8.	Adongo	Male, 43, single, no education, maize farmer, 5 years on contract.	
9.	Alice	Female, 29, married, basic education, rice farmer, 2 years on contract	
10.	Yin	Male, 46, married, no education, maize farmer, 4 years on contract.	
11.	Benard	Male, 53, married, no education, maize farmer, 3 years on contract.	
12.	Isha	Female, 49, single, no education, maize farmer, 3 years on contract.	
13.	Albert	Male, 32, single, basic education, maize farmer, 2 years on contract.	
14.	Anagbila	Male, 47, married, no education, rice farmer, 3 years on contract.	
15.	Mariam	Female, 35, single, basic education, maize farmer, 2 years on contract.	

16.	Akalga	Male, 58, married, no education, maize farmer, 4 years on contract.	
17.	Ayine	Male, 46, married, basic education, soybean farmer, 2.5 years on contract.	
18.	Asanah	Female, 55, single, no education, rice farmer, 2 years on contract.	
19.	Tia	Male, 47, single, no education, maize farmer, 3 years on contract	
20.	Mohammed	Male, 57, married, no education, soybean farmer, 3 years on contract.	
21.	Amidu	Male, 58, married, no education, rice farmer, 4 years on contract.	
22.	Hamsa	Male, 46, married, secondary education, soybean farmer, 3 years on contract.	

* Note: names are pseudo names and not real names of informants