THE CONTRIBUTION OF OUTGROWER SCHEME TO FARMERS LIVELIHOOD-A CASE OF OIL PALM FARMERS IN THE KWAEBIBIREM DISTRICT OF GHANA

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DECLARATION

This is to certify that this thesis is the result of research undertaken by Bright Loggoh towards the award of the Master of Philosophy of Agricultural Extension in the Department of Agricultural Extension, University of Ghana.

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ABSTRACT

The study was carried out to investigate the contribution of Ghana Oil Palm Development Company Limited (GOPDC) outgrower scheme to small-scale farmers' livelihood. A total of 214 respondents were involved in this study. The respondents were selected from four communities in the Kwaebibirem district of the Eastern region of Ghana. They were both outgrower and non outgrower farmers (small scale farmers). The data gathered were analysed using SPSS. Similarly, chi square test was used to measure the relationship between some selected variables. The results show that even though Ghana Oil Palm Development Company Limited (GOPDC) supplied enough inputs to aid outgrowers, the relationship between GOPDC and outgrowers is strained and has significant implications on the sustainability of the contract scheme. This is because only 19% of outgrower farmers sell fresh fruit bunch (FFB) to GOPDC stating delayed period of payment and non-payment of cash by GOPDC, transportation challenges, and land tenure arrangement as contributing factors. Socio-economic characteristics such as gender, level of education, and farming experience in oil palm cultivation were found to have contributed to the acceptance of the outgrower contract scheme. The results of the analysis also demonstrate that participation in the outgrower contract scheme improves farmers' livelihood outcome (accumulation of physical assets). Similarly, the study confirmed that the schemes play a very vital role in the economic development of the rural communities where the schemes are implemented by assisting communities with schools, employment and spin-off employment, health delivery and infrastructure development like provision and maintenance of feeder roads to ensure easy access for the farmers and their farm produce. The study recommends that the outgrower contract scheme should be encouraged in other agricultural sectors of the economy since it has proven to contribute to farmers' livelihood outcome.

DEDICATION

This work is dedicated to God, the Almighty, my dear father, Kwaku Loggoh and the entire family including Madam Gloria Adetsu Anthony.

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TABLE OF CONTENTS

CHAPTER THREE: METHODOLOGY

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

ATMF	-	African Tiger Mutual Fund
CPO	-	Crude Palm Oil
EU	-	European Union
FAO	-	Food and Agricultural Organization
FFB	-	Fresh Fruits Bunch
FOHCREC	-	Forest and Horticulture Crop Research Centre
GOPDC	-	Ghana Oil Palm Development Company
OECD	-	Organization for Economic Cooperation and Development
OPRI	-	Oil Palm Research Institute
PKO	-	Palm Kernel Oil
PPP	-	Private Public Partnership
PSI	-	Presidents Special Initiative
RBD	-	Refined, Bleached and Deodorized
RBDO	-	Refined, Bleached and Deodorized Oil
RSPO	-	The Round Table in Sustainable Palm Oil
SIAT	-	Societe d Investisement pour l Agriculture Tropicale
SSNIT	-	Social Security and National Insurance Trust
UN	-	United Nations

CHAPTER ONE

1.0 Introduction

1.1 Background to the study

An oil palm plant is native to West Africa, and commonly grows in warm and humid climates. The plant has evolved from a wild to an industrial crop, and in the past 40 years from a public sector to a private sector crop (Adjei-Nsiah, 2012). Traditionally cocoa is Ghana's major agricultural export good, but following an approach of diversification the oil palm sector amongst others was identified as an efficient sub-sector for export growth and supported by one of four Presidential Special Initiatives (Chandra and Osario-Rodarte, 2007).

The conventional oil palm production has contributed to most economies in Sub- Saharan Africa. In a review by Glastra et al., (2002), palm oil is used as household cooking oil, but in the United States, it is an ingredient in commercially processed foods. Chocolate products such as candy bars and cake icing may contain palm oil as a substitute for cocoa butter. Ice cream, margarine, peanut, butter, coffee whitener, canned cream, soups, sauces, baked goods, trail mix and other snack foods, and microwavable convenience foods may all contain palm oil. They further argued that palm oil has an industrial and chemical use, for example, as a mineral oil substitute for producing lubricants, detergents, soaps, and cosmetics including lipstick, makeup remover, body lotion, and sun cream.

According to Monbiot (2005), the recent discovery of oil palm as a useful product for conversion into biofuel in the form of biodiesel has been found to be environmentally friendly than the use of petroleum, given a further boost to oil palm as an economic viable product. This has become

a new incentive for investors in oil palm industry. He argued that oil palm is the most favourite options for fuel source, given its added advantage of high per-hectare yield and low production costs compared with petroleum. However, such low cost advantage tend to be extremely high at the local level where the plantations are established, given that they are based on the expulsion of rural population, the exploitation of workers, the repression of local communities, corrupt practices in the land acquisition, and its accompanied environmental destruction.

Given this high demand, reflected by increasing (and volatile) world market prices, oil palm production in Ghana has grown continuously over the last years. Thus, so far an estimated land area of 305,700 hectares is under oil palm cultivation ranging from the Eastern, to Ashanti, Central, Brong-Ahafo and Western Region (Opoku and Asante, 2008). According to White and Dasgupta (2010), the demand for palm oil has stimulated new forms of corporate land acquisition and of incorporation smallholders in contract farming

Contract farming, otherwise known as outgrower schemes are those contractual arrangements between investors and the local populations, whether oral or written, specifying one or more conditions of production and/or marketing of an agricultural production aiming at a win-win situation (Amanor, 2007). According to Vaeth and Kirk (2011), two characteristic arrangements can be identified as predominant in the oil palm sub sector: smallholder schemes as 1+4 contract farming (i.e. smallholder farmers provide labour whilst investor takes care of the inputs, credit, technical extension and land) and outgrower scheme as 2+3 contract farming (i.e. outgrower farmers provide land and labour whilst investor takes care of the inputs, credit and technical extension service).

Thus, both contractual arrangements have in common that the investor offers three elements: production inputs (e.g. seedlings of the improved Tenera variety), credit (where payback usually starts between five and seven years after planting), and extension service (e.g. extension services for planting or pest eradication). In return, smallholders and out grower farmers will have to care for labour by farming the plot themselves, organizing family labour or hiring agricultural workers. After at least 25years corresponding to the economic life span of an oil palm plantation, the agreement comes to an end (Vaeth and Kirk, 2011).

The difference between smallholder and out grower producers lies in the remaining element land. In a smallholder agreement land is provided by the investor. It is often part of compensation efforts for people who lived on the concession before the Government of Ghana expropriated or allocated selected land tracts for oil palm cultivation, or for migrants who started farming at parts of the concession which were in earlier days not yet developed by the investors (Amanor, 2001). In contrast, out growers have to supply the land themselves. In case they are not the land owners of the contracted oil palm farm, they are mandated to prove usage rights for at least 25 years and the landowner has to give its written approval to the agreement (Amanor, 2001). Hence, tenants are not excluded from assessing an out growers contract.

Besides smallholders and outgrower, private farmers are indirectly linked to investors. The private farmer per definition cannot be obliged to deliver continuously to an investor. The supply is widely out of control and can be solely triggered by price incentives. Moreover, the quality of their produce is not guaranteed. While smallholder and outgrower receive improved

planting materials, private farmers often purchase cheaper available seedlings of the local Dura variety having a lower oil extraction rate (Vaeth and Kirk, 2011).

With regard to the acquisition of land and accordingly FFB, those contractual linkages aim at different aspects. While smallholder agreements can lead to the transformation of concession land which was formerly not available for planting due to land conflicts, in out grower schemes investors can assess land for oil palm cultivation beyond the borders of their concessions.

1.2 Research problem

The oil palm sector remains dominated by smallholder farmers, which produce about 80% of the crop. Adjei-Nsiah, Sakyi-Dawson and Kuyper (2012), attributed the proliferation of small-scale oil palm producers and processing mills in the major oil palm growing areas to the devastating effect of bush fires on the cocoa industry in the year 1983. According to them, oil palm development in Ghana requires institutional conditions that would encourage smallholder farmers and processors to use modern methods of production and processing to improve their income.

Ghana and the rest of West Africa provide significant opportunity, which currently is being exploited by products from the Far East due to the under-development of the oil palm industry (Adjei-Nsiah et al., 2012). Nonetheless, global demand for palm oil has stimulated new forms of corporate land acquisition and the inclusion of smallholders in contract farming (White and Dasgupta, 2010).

The term 'contract farming' generally refers to situations in which a farmer grows an agricultural product for a vertically integrated corporation under a forward contract. In the outgrower contract scheme, smallholders are usually contracted to deliver 100% Fresh Fruit Bunch (FFB) to an investor. In this case, contracts may provide production inputs, credit, and extension services to the grower in return for market obligations on such considerations as the methods of production, the quantity that must be delivered, and the quality of the product.

In Ghana for example, Vaeth and Kirk (2011) posits that, because of the challenges associated with expanding production in conjunction with the land markets, bigger oil mills rather establish outgrower contract schemes with the local communities to secure and increase the supply of FFB. According to them, an option to stimulate a satisfying FFB supply is an improvement of investor's relationship to the local community. Nonetheless, as Ghana Oil Palm Development Company (GOPDC) changed its commitment to corporate social responsibility (supporting community projects such as water, education and health etc) in 2010 from formerly one percent of its turnover to two percent of its net profit, the tool presumably did not prove as very effective in the recent past.

Consequently, an increasing amount of side-selling is observed, making GOPDC to cut down its expenditure for out growers' extension and associated services (Vaeth and Kirk, 2011). Meanwhile, during the lean season GOPDC will have to fight for a sufficient supply of FFB as their nucleus estate is far too small to secure a cost-covering capacity utilization of their processing mill (GOPDC Household Journal, 2011). The nature of relationship between GOPDC and the farmers, and the benefits that accrue from the scheme are some of the possible reasons that might account for this development.

The special rapporteur of the United Nations (UN) (2011) stated that, in contract farming, the interest of the two parties differs. Thus, while both have an obvious interest in the success of the arrangement, the terms of the contract is more or less favourable to each, at the expense of the other. Thus, the benefits participants accrue from the scheme will depend on the terms of the contract and their own socio economic characteristics (Warnings and Soo Hoo, 2000). Ntsiful

(2010) contended that establishing outgrower contract scheme with the local community enhances the livelihood assets and outcomes of small scale farmers through increased incomes.

According to Food and Agriculture Organisation of the United Nations (FAO) (2012); a frequent criticism of contract farming arrangements is the uneven nature of the business relationship between farmers and their buyers. Buying firms, who are invariably more powerful than farmers, may use their bargaining power to their short-term financial advantage, although in the long run this would be counterproductive as farmers would cease to supply them. These problems notwithstanding, the balance between advantages and disadvantages for both firms and farmers seems to be on the positive side. Thus, contractual arrangements are more and more frequently being used in agriculture worldwide.

1.3 Research questions

The study aims at providing answers to the following questions:

1. To what extent does the nature of relationship between GOPDC and the small scale farmers contribute to sustainability of the outgrower contract scheme?
2. How does participation in outgrower contract scheme contribute to the asset base of the small scale farmers (financial, physical and human)?

1.4 Research objectives

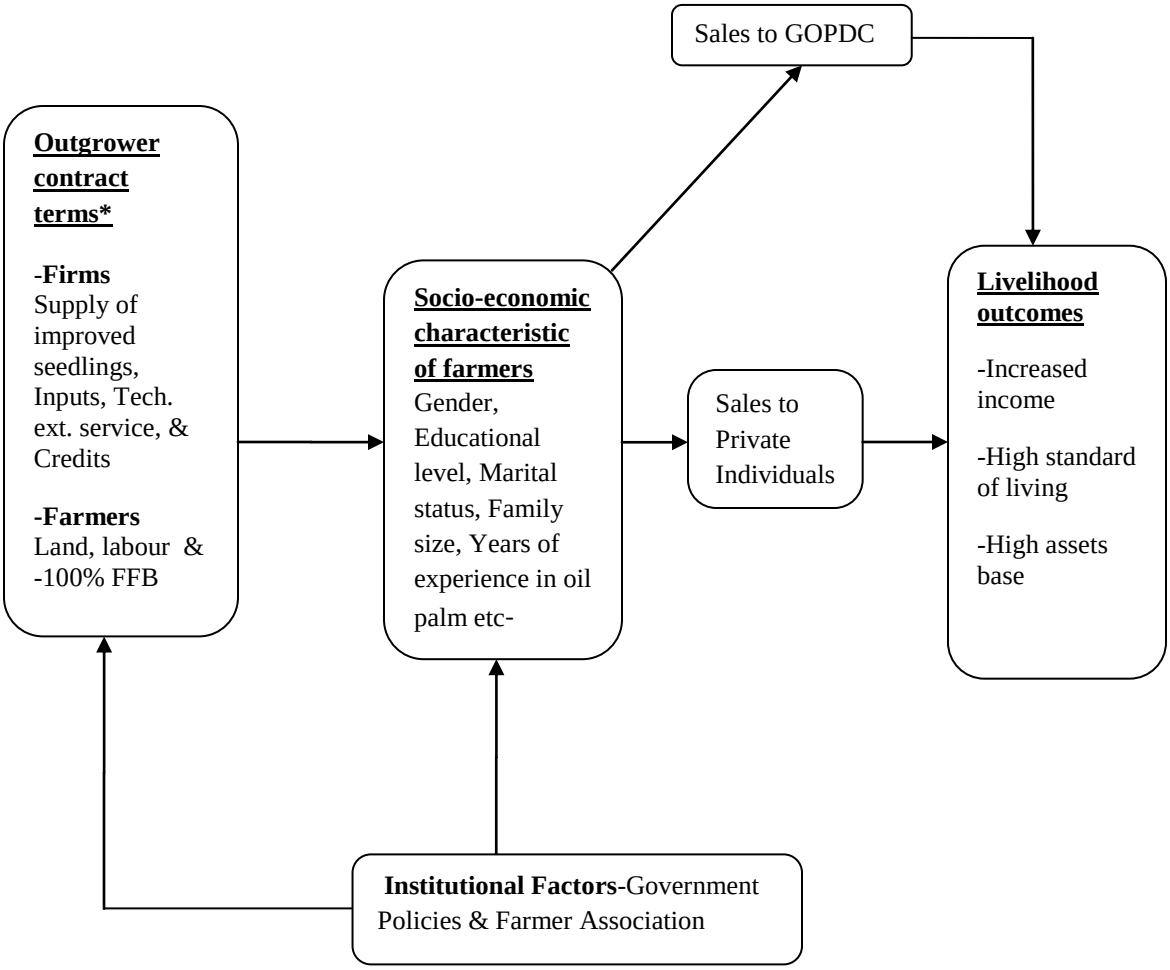
The main objectives of the study are to:

1. Find out how socio-economic characteristics of farmers contribute to the productivity of outgrower contract scheme in the study area.
2. Find out how the nature of relationship between GOPDC and small scale farmers contributes to the sustainability of the outgrower contract scheme in the study area.
3. Examine the contribution of outgrower contract scheme to farmers' livelihood outcomes.

1.5 Justification of the study

As argued by Ntsiful (2010), joint schemes based on contract farming allow potential problems with labour to be avoided it also allows the companies to profit from self-exploitation by participants' families .There is a need for research that investigates the extent of benefit to the small scale farmer from participating in such schemes, both in terms of their short-term impacts on the farmer and also in terms of their long-term viability and linkages to existing government poverty reduction strategy .In Ghana, the role of agriculture is pivotal for poverty reduction. For the majority of rural dwellers, agriculture is their main source of livelihood. Improvement on their living standards depends on agricultural growth and development (Brempong-Asuming, 2003). From this it is justifiable that any poverty intervention program which is agricultural related would be in the right direction .This assertion is supported by the FAO (2001), that agriculture is the single most important sector in many low-income countries, with a large number of people depending directly or indirectly on it for their livelihoods. It is therefore justifiable to undertake this study to show the potential of the oil palm as a single agricultural commodity product in reducing rural poverty. This study will also contribute to filling a gap in knowledge on the contribution of the outgrower contract to the livelihoods of small scale farmers in the study area. The research knowledge gained will also aid the development of the oil palm outgrower schemes as a poverty intervention tool in Ghana.

1.6 Conceptual framework



***The non outgrower farmer does not get such support from the contract scheme**

Fig 1 Conceptual framework of contract farming arrangements

(Source: Modified from Abwino and Haike, 2006).

The overall conceptual framework given above is based on the literature on the outgrower contract farming. According to Vaeth and Kirk (2011), outgrower contract scheme is the extension of contracting firm's activities in which the firm has considerable control over the smallholder production and provides a comprehensive inputs, technical extension service, improved seedlings, and credit, and in turn, the farmers provide labour, land, and 100% FFB.

According to Warnings and Soo Hoo (200), the benefits participants accrue from the outgrower contract scheme depend on the terms of the contract and their own socio-economic characteristics such as gender, educational level, marital status, years of experience in oil palm. Studies done by Bahaman et al., (2008), proved that contract farming is among the main choice for those with lower education group. Wooded (2003) highlighted that the institutional arrangement of contract farming has reduced the transactional cost and improved market efficiency to benefit the smallholder farmer.

It is hypothesized that the level of sales to either GOPDC or private individuals is also influenced by the socio-economic characteristics of farmers. Osei-Amponsah et al., (2012), reported that in the Kwaebibirem district, between 42% and 80% of the farmers sell their produce to private individuals. According to Adjei-Nsiah et al., (2012), the private individuals get most of the FFB produced by smallholder farmers because they pay farmers promptly, and fruits are sold at the farm gate compared to the GOPDC who take between one to two weeks to pay farmers after fruits delivery at the mills.

Beneficial aspects of outgrower contract scheme are that, the scheme improves farmers' livelihood outcomes such as increased income, high standard of living and high assets base. Ntsiful (2010) contended that establishing outgrower contract scheme with the local communities enhances the livelihood assets and outcomes of small scale farmers through increased incomes. The benefits of the outgrower scheme depend on the terms of the contract, farmer's own characteristics, institutional factors and the level of sales to both GOPDC and private individuals.

Institutional factors such as government and farmers association are not part of the outgrower contract scheme but contribute to the sustainability of the scheme. Vavra (2009) in his review, stated that governments main role in contract farming is in specifying the "rules of the game". That is, governments could help in setting up minimum contract provisions that would protect the basic rights of producers and buyers. Rudy (2010) stated that by working through farmer groups or clubs, companies could reduce their cost on delivery of services, whereas farmers can reduce transport costs to bring their produce to the company buying their crop, or negotiate better prices when delivering in bulk.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provides an overview of the nature of outgrower contract farming, including the impact of the scheme on smallholder farmers' livelihood in the context of agriculture in developing countries. The section attempts to define contract farming, review the different arrangements, and some of the benefits of contract farming as well as issues that affects sustainability of the outgrower schemes. Consideration of the economic importance of oil palm production, smallholder structures and socio-economic characteristics of farmers that contribute to outgrower scheme were also included in this section. Finally, the present study refers to how the contract theory can explain the existence of contract farming in the oil palm sector.

2.1 Oil palm out grower contract scheme in perspective

This section examines the outgrower contract scheme in general based on the contract farming concept. The review focused on the definition of contract farming, the different typologies or arrangements of the scheme and the benefits participant derived from joining the scheme. Issues such as contract enforcement, land tenure system, role of farmer association and governments were also included in the review.

2.1.1 Definition of contract farming

In Ghana oil palm outgrower contract scheme can be defined as an extension of contracting firm's activities in which the firm has considerable control over the smallholder production and

provides a comprehensive input or extension package and in turn, the farmers provide labour and land as highlighted by Vaeth and Kirk (2010).

The contractor specifies the conditions of the contract pertaining to hectares, quantity, price schedule, payment modalities and the delivery schedule. The basis of this arrangement is the commitment of the farmer to provide a specified quality of produce as determined by the contractor and a commitment on the part of the company to support the farmer's production and purchase the produce in effect making the contract non-transferable (Eaton and Shepherd, 2001). Oil palm is generally a capital and labour intensive crop and its production is based on the ability of a company to finance farmers throughout the production season since few farmers can afford much field work and alternative systems have developed slowly (Ton, 2002).

Several factors have been linked to the emergence of contract farming. The factors vary between developed and developing countries. In developed countries, agribusinesses were economically motivated and entered into contracts with farmers in order to obtain assured supply of produce for processing (Key and Runsten, 1996). In the context of developing countries however, Vaeth and Kirk (2010) identified the introduction of contract farming as a method of organization of production in agriculture. According to Kirsten et al., (2009) contract farming often emerges as a response to missing markets.

2.1.2 Theories of contract farming

In a review of contract farming in developing countries, Prowse (2012) highlighted seven different theories of contract farming. These include the life-cycle theory, transaction cost

approaches, contract enforcement theory, convention theory, value chain governance, competency / capability theory and political economy of agrarian change.

The Life-cycle theory posits that industries tend to be more vertically integrated in the early stages of their development (since specialization takes place when the size of the market supports economics of scale (Rehber, 2007). In addition, after an industry matures, vertical integration may also take place due to product differentiation and traceability requirements. Thus, vertical integration is predicted to be most frequent in very new and old industries contract enforcement.

According to Prowse (2012), theories of contract enforcement focus on the incentives to honour contracts. These incentives can be public (such as forms of legal redress), private (the match between the contents of the contract and market conditions at the time of exchange), or a mixture of both. Gow et al., (2000) posit that at any point in time during a contract, both parties assess the costs and benefits of breaking their deal. If market conditions change unexpectedly, such that the benefits of delaying or breaking the contract are greater than the capital and reputation losses for one party, then this will lead to a "holdup" (in other words, exchange will be delayed and the contract will not be honoured). Conversely, if the benefits estimated from such unexpected changes do not exceed the capital and reputation losses, then the contract will be fulfilled. Gow et al., (2000) refer to the range within which the contract will be completed as the "self-enforcement range

Transaction-cost approaches suggest that the markets comprised of economic actors who have bounded rationality (in other words, they suffer from severe information deficiencies, and are

unable to process all the information available to them) and are opportunistic (they can deceive, lie, cheat and steal) (Young and Hobbs, 2002 cited in Prowse, 2012)

Convention theory focuses on the quality attributes that products exhibit. In well-established markets with perfect information, prices are assumed to reflect all relevant quality attributes. Nevertheless, if quality requirements are particularly exacting, or product quality is especially uncertain, certain quality conventions help to facilitate exchange (Young and Hobbs, 2002). Four types of coordination are presented in convention theory (Young and Hobbs, 2002): market coordination (as above); domestic coordination (which relies on long-term relationships and trust); industrial coordination (where an independent party sets thresholds); and civic coordination (where there is a collective agreement among firms to avoid conflict and set standards).

In the competence theory perspective, the existence, structure and boundaries of the firm are explained in some way by individual or team competencies skills and tacit knowledge that are in some way fostered and maintained by that organization" (Young and Hobbs, 2002). Clearly, the ability to create and sustain contract-farming operations relies largely on the skills and experience of staff and the ability of the organisation to maximize these.

Prowse (2012) defined the value-chain governance as the extent and manner in which firms seek to control a supply chain. He emphasized that the value-chain governance focuses particularly on the increasing role of standards in structuring value chains

Singh (2002) summarises the main tenets of the "political economy of agrarian change" of contract farming as follows: (1) that contract farming develops only when the state's role in agricultural input and output markets is limited and when markets shows signs of failure; (2) that contracting often relies on monopsonies to be efficient; (3) that it leads to self-exploitation as farmers choose to relinquish control of their land and labour, but fail to receive payment that equals the value they've added to the product; (4) despite their limited resilience, farms usually bear all production risk and losses from *force majeure* calamities; (5) farmers neither benefit from a stable wage labour contract, nor the ability to manage their own farms for their own benefit; instead they become semi-proletarianised peasants or pauperised labourers; (6) contract farming frequently alters the intra-household distribution of labour/income to the detriment of women, and frequently involves child labour; (7) that, when successful, contract farming creates a class of peasant capitalist farmers, which accelerates the proletarianisation of poorer peasants, with peasant capitalists acquiring their land; and (8) contract farming can have substantial spill-over effects into local communities and markets: reduced food crop production can lead to higher food prices in local markets; the provision of inputs for contract farmers can lead to thinner spot markets and higher prices for non-participants.

Clearly, some of the findings from this body of work still resonate within current contract-farming debates — for example, the shifting of risk onto peasants, intra household issues, and spill-over effects. Nevertheless, it is also interesting to note within this body of work the lack of attention to the inter- and intra-firm aspects of contract farming, the characteristics of particular commodities, and the role of regulation and standards.

2.1.3 Typologies of contract farming

The review of literature (World Bank Report, 2006), outlines five different "types" or models of contract farming. Firstly, the centralized model, where a firm (often a large processor) contracts a large number of farmers, with strict quality requirements and quantity targets. Eaton and Shepherd (2001) suggest that products suited to this contracting model require substantial processing prior to retail — for example, sugarcane, tea, coffee, cotton, milk, and poultry. The degree of input provision varies widely. In addition, Bijman (2008 cited in Prowse, 2012) states that the contracts under this model are often entered into with large farms due to the large volumes required to make processing a success.

Secondly, the nucleus-estate model, where the firm (again, often a processor) enters the production node through an estate or plantation but also contracts with independent producers (for greater volumes, or for seed). According to Eaton and Shepherd (2001), this model is suited for perennial crops and is often the preferred model utilised with resettlement or transmigration programmes (such as palm-oil production in Indonesia). Thus, this is the contract-farming model that utilises out growers from a central estate.

Thirdly, the tripartite model is a joint venture (between a public entity and a private firm) and farmers. Eaton and Shepherd (2001) indicate that this model can involve national and/or local government, and Bijman (2008 quoted in Prowse, 2012) contends that it is particularly popular in China. Due to government involvement, contracting based on this model could potentially be politicised.

Fourthly, the informal model is where smaller firms or traders enter into annual agreements, often on a verbal basis, with a limited number of farmers, frequently for fruit and vegetables that require minimal processing. As firm size is usually small, the success of such initiatives partly relies on the extent to which other providers (such as the state and/or NGOs) can offer inputs, such as extension and credit (Eaton and Shepherd, 2001). Due to its non-formal nature, this model often suffers from extra contractual side marketing.

Lastly, the intermediary model is where the firm sub-contracts interaction with the farmers to an intermediary, such as a farming committee or a trader. Eaton and Shepherd (2001) state that this model is popular in Thailand and Indonesia, and that the increased distance between firm and farm decreases the degree of control that the firm has over the process and the product (one of the main reasons for contract farming).

This detailed classification by Eaton and Shepherd provides a clearer view of models of existing contract farming. In the case of this study, the GOPDC outgrower contract is partly similar to the nucleus model since its production takes place close to the processing plant, and is often the preferred model utilised with resettlement or transmigration programmes (such as palm-oil production). The other contract farming types applied by private and cooperatives can be classified into the informal model due to their limited provision of material inputs.

Furthermore, Minot (1986 cited in Saigenji, 2010) classified contracts into three types, namely Market Specification Contract, Resource Providing Contract, and Production Management Contract. Market Specification Contract is a pre-harvest agreement where firms often provide information on demand on price, timing, location, and form of products. Sale of products is the focus of this type of

contract where the firms often specify quality, price, and timing of products (Runsten and Key, 1996).

Resource Providing Contract mandates firms to provide production inputs partly to producers, under the agreement of procurement of products with pre-agreed price. Inputs are often supplied on credit, and their values are subtracted from crop sales. This type of contract is often applied to situations with substantial purchased input requirements and a long production cycle (Saigenji, 2010).

Production Management Contract restricts the producer to follow specific production methods or an input regime planned by firms, under the marketing agreement of producers or resource provision of firms. According to the classification by Minot, the case of contract farming applied by GOPDC in the Kwaebibirem district of Ghana is similar to the Resource Providing Contract and Production Management Contract.

2.1.4 Benefits of outgrower contract schemes

Wooded (2003) highlighted that the institutional arrangement of contract farming has reduced the transactional cost and improved market efficiency to benefit the smallholder farmer. In Zimbabwe, the cotton out growers' schemes has commercialized the cotton smallholder agriculture through provision of assured markets, "favourable" producer prices, critical input provision and knowledge on agriculture technologies to farmers and as a driver to rural development. The schemes are creditable for playing a key role in increasing profitability of crop farming reducing market risk and above all opening new markets (Larpar, Holloway and Ehui, 2008).

Contract farming has proved effective in integration of smallholder farmers in that provisions of seasonal finance is made to farmers that they cannot access through normal commercial channels as acknowledged by Wooded (2003). This has lightened the burden of sourcing scarce and expensive inputs to rural farmers. According to African Development Bank (2000), Public investments in roads, bridges, water control structures, utility services, storage and processing facilities, telecommunications systems, and market infrastructure provide basic means of linking rural households to the modern world. However, absence of such essential infrastructure in rural areas creates disincentives to rapid rural development, drives entrepreneurs and skilled labor to look elsewhere for opportunities, accentuates the problem of rural-urban migration and growing urban unemployment, and precludes complementary private sector investment in rural enterprises

Rural people are always associated with agriculture activities including contract farming. Lenihan et al., (2009) stressed that these positive attitude of the rural community may be particularly relevant in rural locations due to their process of undergoing rapid transformation of the agricultural system, economic base and related land uses. Shamelles and Tuulikki (2009) have other view; they noted through their study that there is a negative and significant relationship between rural and urban communities towards agriculture activities.

2.1.5 The sustainability of outgrower schemes

Sustainability of investments in agriculture requires that such investments be designed in a participatory manner, consistent with local people's vision of development (FAO, 2010). According to Adewumi (2010), sustainability of contract farming of essential oil plants in South Africa calls for a regulatory policy option that enforces well documented and clearly explained agreements between the farmers and the processors.

Prowse (2012) concluded that sustainability of contract farming initiatives that are mutually beneficial for both firms and smallholders require technical expertise by parties, good contractual design, and an appropriate choice of model. They also require the involvement of numerous third parties to act as arbiters and referees, ensuring that goodwill on both sides are not replaced by distrust and grievances.

Barrets and Carter (2010) stated that sustainable contract farming schemes could only be established if all actors benefit from the scheme (win–win situation). According to them, income distribution among actors in the contract farming scheme may be very unequal but in order to be sustainable, contract farming schemes must be profitable for both the contractor and the rural farmers. The GOPDC in the Kwaebibirem district is a good example where both processor and farmers need each other to set up and succeed with the common contract farming scheme.

2.1.6 The pricing mechanisms and payment modalities of contract scheme

Rudy (2010) notes that in order to secure the contracted crop it is important to pay the farmer in such a way that he could access the money quickly. According to Rudy, farmers prefer cash payment, than the bank transfers and cheque.

Action for enterprise development (2010) stated that pricing mechanisms should be subjected to an independent arbitration mechanism, and farmers provided with the market prices of internationally traded commodities to reduce the risks associated with the asymmetry of information between the parties

In the Kwaebibirem District, between 42 and 80% of the farmers sell their produce to the women who process palm fruits at the local milling sites commonly known as "Kramer" (named after a Belgian engineer who first set up a small-scale mill in the district in 1982, Osei-Amponsah et al., (2012). According to Adjei-Nsiah et al.,(2012), the small-scale processors get most of the fruits produced by smallholder farmers because they pay farmers promptly and fruits are sold at the farm gate compared to the large and medium-scale processors who take between one and two weeks to pay farmers after fruit delivery at the mills. Most of the small-scale processors also pre-finance the operations of the small-scale farmers.

2.1.7 The land tenure arrangements in the oil palm sector

Several types of land tenure arrangements exist in the oil palm system. These include own land, share cropping ("Abunu" and "Abusa") and lease arrangements (Amanor, 2001). Under the "Abunu" system of sharecropping, the landowner (most of whom do not have enough resources to invest in the land) provides land while the tenant farmer provides inputs and labour (Adjei-Nsiah et al., 2012). In such a situation, the field may be shared between the tenant and the landowner after five years on 1:1 basis or the tenant may maintain the farm and use a third of the income from the sale of the fruits for field maintenance, keep a third of the money for himself and give a third to the landowner (Amanor, 2001).

In the "Abusa" system of sharecropping, which is prevalent with out-grower schemes of the large industrial estates, a tripartite contract is signed among the management of the estate, the tenant farmer and the landowner (Adjei-Nsiah et al., 2012). The landowner provides land, the

estate provides inputs (fertilizer, planting material, money for maintenance and extension service) while the tenant farmer provides labour. When the trees come into full bearing, the fruits are sold to the company, which then deducts part of its input cost at source. The estate usually starts deducting its input cost 7 years after planting and deduction continues for about 20 years (GOPDC Contract Document, 1999). After the estate has deducted its input cost, the rest of the money is shared between the tenant farmer and the landowner at the ratio of 2:1.

According to Adjei-Nsiah et al., (2012), the lease arrangement is common only in the Western Region of Ghana. Under this arrangement, the landowning family leases the land to the prospective tenant farmer and the Chief validates it. This involves payment of some token amount of money to the landlord annually in addition to the onetime payment that is paid in bulk. The contract is also written in most of the cases.

2.1.8 The contribution of farmer association to outgrower scheme

According to Stessen (2004), farmers' organisations train their members in different aspects, like technical skills (cultural practices, ecological sustainable production methods, and product quality), elementary bookkeeping, rights, and obligations as a farmer, the role, and functioning of contracts, etc. They intervene in the input purchase and marketing of the commodity in order to gain bargaining power. However, farmers' organisations generally lack business management capacities to perform these roles. Farmers' organisations also need training for their own capacity building.

Rudy (2010) stated that by working through farmer groups or clubs, companies could reduce their cost on delivery of services, whereas farmers can reduce transport costs to bring their produce to the company buying their crop, or negotiate better prices when delivering in bulk. He further indicated that groups are the vehicle for distribution of inputs, dissemination of technical advice, and procurement of the crop. Peer pressure mechanisms with groups can contribute to a reduction of farmer default by eliminating potential defaulters (Rudy, 2010).

World Bank Report (2006) stated that farmers who are ill organized mostly deal individually with obtaining inputs and selling produce and thus do not obtain the more advantageous prices that larger groups could. According to the report, Agribusiness companies often distrust contracting individual smallholder farmers as these are resource poor and have no collateral to ensure recovering the company's investment in them (through input and service delivery), and would rather prefer entering into contracts with more capitalized growers.

2.1.9 The role of government in outgrower scheme

According to Caterina (2012), governments have an active role to play in ensuring fair contractual practices and in supporting farmers that are engaged in contract farming. Governments may potentially improve the success and equity of outcomes of contract farming ventures by providing extension services to educate farmers about contracts, for example by facilitating sample contracts or information checklists (UNCTAD, 2009).

In his review, Barrett (2010) stated that governments might grant financial incentives and subsidies to agribusiness firms that enter into contracts with small farmers. He further indicated

that governments might support poorer smallholders in their contract farming arrangements and foster the success of contract farming ventures by addressing public infrastructure deficiencies.

Vavra (2009) in his review, stated that governments main role in contract farming is in specifying the "rules of the game". That is, governments could help in setting up minimum contract provisions that would protect the basic rights of producers and buyers, and provide guidance and help in explaining the contract terms and conditions to the farmers.

According World Bank Report (2006), an over-regulation of contract farming by governments is dangerous. The private sector, particularly those involved with exports, frequently complains about the red tape and the costs involved with complying with excessive bureaucratic regulations and procedures. A simplification of official documentation, for example, could have a positive impact on the outlook of potential investors. The burden of taxes is another issue that could make it difficult for agribusiness to be competitive and discourages potential investors (World Bank Report, 2006). According to Likulunga (2005), the role of the government is to provide an "enabling environment" by creating a legal system and legislation in support of small-scale farmers engaged in contract farming as well as other areas such as council measures.

2.3 The contribution of socio-economic characteristics of farmers to acceptance of contract farming scheme.

The section reviews literature on the socio economic characteristics of farmers that contribute to the acceptance of contract farming scheme. Socio economic characteristics such as sex, age, educational level of farmers, years of experience in oil palm farming, etc were reviewed

2.3.1 Gender and acceptance of contract farming

In a study done by Norsida (2007) the number of women, participating in agriculture especially in contract farming is very discouraging and a number of factors are associated to this phenomenon. A study carried out by Rojas (2004), concluded that oftentimes, secluded women are not considered farmers. Powerful social norms in many areas – among them Bangladesh, Pakistan, Afghanistan - restrict women's movement in the public domain, and in countries like Kenya contracts are given to small farmers with the understanding that male household heads can mobilize the labour of women in the family. Men often sign the contracts and receive the payments (Prowse, 2012).

Social norms define female and male work and primary responsibility for household tasks, and childcare limits the activities of women where these two problems are among the major problems why women in Malaysia find it difficult to accept contract farming (Nor Aini, 2003). Despite this, Nor Aini (2003) emphasized that the level of women acceptance towards agriculture actually rely heavily on their involvement in the agriculture activity themselves. If women are implementing this activity by being leaders with less aid from men, women will highly accept it as an activity that can profit them and be involved more intensely.

In a study of nontraditional vegetable exports in Zimbabwe, women accounted for 62 percent of contract farmers in the studied firm, which was representative of the overall gender distribution of the firm's farmers. Strohm and Hoeffler (2006) similarly found that 80 percent of the contracted farmers were women in one of three contract sites of a French bean contracting firm in Kenya.

2.3.2 Age and acceptance of contract farming

An important element for acceptance of contract farming is age. A study done by Fritz et al., (2003) proved that there are significant difference on acceptance and perception on agriculture including contract farming between youths and adults. The self-reported awareness levels of adults were opposite those of youths. Youths were much less aware of how important contract farming is. In addition, in their study there was a positive relationship between awareness and acceptance levels on agriculture. Another study done by Norsida (2008) noted that the acceptance among Malaysian youths towards contract farming is also negative.

This is further supported by a study done by Md. Salleh et al (2009) and Ezhar et al (2008) where they found that majority of contract farming communities are those aged 42 years and above. Zaleha (2007) had further strengthened on this issue when she mentioned that out of the contract farming workers in Malaysia, only 15% of them are youths while the balance are among those age 55 years and above and foreign labour. Some actions must be taken to attract more youths to get involved in contract farming activities. Countries such as the United States of America has initiated projects such as Future Farmers of America that has attracted more than half million of members with their age ranging from 12 to 21 years old to participate in programmes related to agriculture.

2.3.3 Education and acceptance of contract farming

It is without doubt that education plays a pivotal role that influence youths involvement in a contract farming system. However, surprisingly previous studies demonstrated that those with higher education especially university graduates do not get actively involved in contract farming

(Mc Larty, 2005). Hayrol et al., (2009) also observed similar pattern in Malaysia that people with lower education achievement dominate contract farming scheme. Studies done by Bahaman et al., (2008) and Md. Salleh et al., (2009) proved that contract farming is among the main choice for those with lower education group.

2.3.4 Farmers experience and acceptance of contract farming

A study done by Guo et al., (2005) noted that involvement in agriculture activities will increase the possibility of acceptance of contract farming. This means that experience in agriculture also has something to do with acceptance on contract farming. Furthermore, they emphasized that those who have experience in agriculture have a favourable view towards contract production and would like to be involved in contract farming if they are offered the opportunities. Guo et al., (2007) further emphasized that acceptance of contract farming is influenced by enterprise type, marketplace attributes, public policy and the farm's production characteristics. Quality requirements for delivered raw material, price volatility, and public support policies encourage firms to utilize contracts.

2.3.5 The contribution of outgrower contract scheme to farmer's income levels

According to Miyata, Minot and Hu (2007), contract farmers earn more compared to non-contract farmers growing the same crops, even after controlling for household labor availability, education, farm size, share of land irrigated, and proximity to the village leader. Furthermore, their study revealed that three-quarters of contract farmers perceived an increase in income since they began contracting. According to them, what explains the income differences between contract and non-contract farmers was because contract farmers benefited from technical assistance and specialized inputs provided by the contracting company.

Generally, contract farming has been associated with increased incomes, especially when compared with non-contract farming areas. In a comparative study of contract farming in sub-Saharan Africa, Little notes that incomes from contract farming increased for a moderate (30-40 percent) to a high (50-60) proportion of participants (1994)." He goes on to show, however, that income disparity was considerable and that in most cases revenues were "insufficient to meet household subsistence costs without additional sources of cash." Previous studies too have concluded that those with lower income are more attracted to be part of agriculture community (Bahaman, 2009). Contract farming is one of the alternatives that they could choose from.

2.4 Summary

This chapter attempts to provide the theoretical and empirical understanding of outgrower contract farming in the oil palm sector in general. The review focuses on the definition and different theories of contract farming. Prowse (2012) highlighted seven different theories of contract farming. These include the life-cycle theory, transaction cost approaches, contract enforcement theory, convention theory, value chain governance, competency / capability theory and political economy of agrarian change. It is clear that the phenomenon under investigation relates to the competency and contract enforcement theory

The chapter also reviewed the detailed classification of contract farming models by Eaton and Shepherd (2001) which included the centralized model, nucleus estate model, tripartite model, intermediate, and the informal models of contract farming. In this case, the GOPDC outgrower contract scheme is partly similar to the nucleus estate model since its production takes place close to the processing plant, and is often the preferred model utilised with resettlement or transmigration programmes (such as palm-oil production). The other contract farming types

applied by private and cooperatives can be classified into the informal model due to their limited provision of material inputs.

The review also confirmed the mixed results on the potential benefits of outgrower contract schemes to both firms and smallholder farmers in the rural communities where they are established. The review further showed the types of land tenure arrangement in the oil palm sector particularly in the Kwaebibirem district of Ghana. In the last section, studies of farmer characteristics such as sex, age, educational level, farmers experience in farming and farmers income levels were reviewed. Those reviews aim to understand the backdrop of the acceptance of contract farming especially in the oil palm sector, and investigate the role of contract farming in improving farmer's livelihood outcomes.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

In research, methodology has a key role that helps the researcher in planning and executing a study and helps in collecting, investigating, and interpreting the results related to the study. In this chapter, various techniques applied, and procedures adopted for sample selection, data collection and data analysis are discussed in detail.

3.1 Research design

As described by Khan (2009), a research design is a plan of proposed research work, which helps in the preparation of data collection and data analysis in such a way that aims at merging relevance and economy in the research process. Through the research design process, a study can achieve its objectives with efficiency and reliability. However, it does not mean that new ideas and new conditions, which are necessary in the research process, cannot be included into the research. Thus a research design cannot be an inflexible or unchangeable process (Ntsiful, 2006), and the selection of the right research design depends entirely upon the objectives of the study.

In his study, Khan (2005) discussed the two types of research design i.e. 1- Cross sectional research design and2- Longitudinal research design. The cross-sectional survey research design collects information from a sample at a single point in time (Barret, 2003 quoted in Ntsiful, 2006). According to Ntsiful (2006), the cross-sectional design is suitable for determining the relationship among two or more variables that is determined by various methods. Whereas the

longitudinal survey research design includes collection of data at diverse points in order to study changes or investigate time-structured relationships. The researcher used the cross-sectional research design for this study.

3.2 An overview of the study area

Before discussing different data collection techniques for the present study, it would be very important to present a brief overview of the study area, so that a clear understanding and picture about the study areas is created in the mind of the reader.

3.2.1 The Kwaebibirem district

The study was conducted in four scattered communities namely Asuom, Akawani, Kwae and Otumi, all in the Kwaebibirem district of the eastern region of Ghana. The Kwaebibirem district is located in the southwestern corner of the eastern region, between latitudes 1^{o} 02' W and 0^{o} 35' E and longitudes 6^{o} 22' N and 5^{o} 75' S. On the west, the district is bounded by the Birim North District, on the northeast by Atiwa and on the east by East Akim Municipality, on the southeast by Suhum Kraboa Coaltar District, to the south by West Akim Municipality, and on the south-west by the Birim South District. The district has a surface area of about 1230 km^2 (472.4 sq miles), of which 917.6 square kilometers or 80% is suitable for agriculture.

The district is undulating with gentle slopes. The major mountain range, the ATIWA RANGE, is in the north-west of the district around Dwenase and Apinamang. Apart from this area, the general climb in the district is less than 500 meters. In between heights are extensive marshlands. The district lies on the semi-deciduous forest zone and the vegetation consists of

low-lying species of hardwood. Large plantations of teak have been cultivated outside forest reserves. The district has two (2) forest reserves Ayaola Forest and Atiwa Reserves. The Kwaebibirem district lies within the semi-equatorial climate zone, with a double maximal rainfall regime. The first rainy season is from May to June, with the heaviest rainfall occurring in June, while the second season is from September to October. Data obtained over the years reveal erratic annual rainfall figures; however, annual average rainfall for the district is about 1400 mm. Temperature ranges between a minimum of 26.5 °C and a maximum of 27 °C (Ministry of Local Government and Rural Development and Maks Publications & Media Services, 2006).

The dominant soils in the district are clayey and loamy. The clayey loams soils are found in the northwest, southeast, and eastern parts of the district whilst the sandy loamy clay soils are mostly in the northern, middle, and southern parts of the district. Three major soil associations in the district have developed over the lower Birimean soil type. These are : Betwai-Oda Association (that is silty-clay-loamy type of soil) in the north –west and south eastern parts of the district; Birimean –Chichiwere Association (sandy –loamy clay) in the north, middle and southern parts and the Atiwa-Asikuma-Ansum Association (mainly silty clay loans) in the east. The district is a forest area. The main occupation of the people is subsistence farming involving crops such as maize, cassava, cocoyam, yam, plantain, sugar cane, cocoa, coconut, and oil palm.

The prevailing land tenure systems in the district are outright purchase, share cropping (Abunu or Abusa), Rent, and Freehold. Inheritance Stool Lands form (75%) and families (25%) of total land acquisitions.

Another common feature identified in the district is that many of the farmers have more than one plot of land of medium sizes. The model farm size is about 5 acres. These are scattered over the areas often at considerable distance from one another. The acquisition of land by GOPDC and OBOOMA Farms for large-scale oil palm plantation has resulted in scarcity of land in some areas like Okumaning and Kwae. The prevalence of large plantation farms such as citrus and oil palm for individuals has reduced the acreages of land available for food crop farming in areas like Okumaning, Nkwantanang, Kade, Subi, Abaam, Abodom and Asuom. The small medium-size farms also make it uneconomical to introduce the process of agricultural innovations like mechanization and irrigation.

The farming systems adopted in the district are; mono cropping, mixed cropping, crop rotation, land rotation and mixed farming. However, the main systems used extensively due to pressure on land are the mono cropping, mixed cropping and mixed farming. The major crops in the district are oil palm, citrus, cocoa, vegetables, (garden eggs, pepper, and okra). The food crops include rice, maize, cassava, plantain, and cocoyam. The high demand for land for plantation crops has led to sedentary agriculture with no fallow period.

Agricultural extension services assist local farmers to increase agricultural production and introduce farmers to new and improved technologies through training and farm demonstrations. The district has two very important Research Institutes (Oil Palm Research Institute of the Council for Scientific and Industrial Research and the Forest and Horticulture Crops Research Center of the University of Ghana, Legon). The mandate of these institutions is to research into oil palm and tree crops respectively. Even though the two centers have veered into other crops

such as cocoa, coconut, plantain, cola, black pepper, bamboo, cocoyam, vegetables, and rubber etc.etc, they have remained focused on their core research areas.

The biggest oil palm producer in Ghana (GOPDC) and Obooma farms is also located in the Kwaebibirem district. These two companies process their own palm fruits. GOPDC runs an out grower system to support its processing mill. GOPDC is also involved in the refining of its palm oil. It is the largest single private employer in the district. All the four villages selected for the study are major oil palm producers in the district. Besides, they are also very close to Forest and Horticulture Crops Research Centre, Ghana Oil Palm Development Company and Obooma Farms Product Ltd, major research institutions and large industrial estates in the district.

3.2.2 Ghana Oil Palm Development Company (GOPDC)

GOPDC is the biggest palm oil producer in Ghana extracting over 35000 tons of palm oil and kernel oil per annum. The company was formerly a state-owned corporation**,** which commenced operations in 1975 with a 13.6 million dollar loan from the World Bank. The first phase of the project was in 1982 with a 3, 500-hectare plantation, 1,000 hectare in total of smallholder farms and a 200-hectarearea for outgrowers. This was complemented with an oil palm mill with a capacity of 15tons of fresh fruit bunches (FFB) per hour. In 1995, the government of Ghana privatized the company. Majority shareholder with 51 percent is the Belgian investor Societe d Investisement pour I Agriculture Tropicale (SIAT), which has a share capital of € 20 million and is investing in agricultural operations in Cote d Ivoire, Gabon and Nigeria. The minority shares of GOPDC are hold by the African Tiger Mutual Fund (ATMF) (19 percent) and Social Security

and National Insurance Trust (SSNIT) (30 percent), which is a statutory public trust in charge of the administration of Ghana's National Pension Scheme (GOPDC and SIAT, online).

With the divesture of the state-owned company, GOPDC has taken over two estates, the Kwae estate, and the Okumaning estate all in the Kwaebibirem district of the eastern region. The Kwae estate has a total concession of 8, 953 ha, of which about 4, 900 ha are developed. Besides the nucleus estate, the company established a smallholder scheme of about 349 ha within its concession but this contract matured some few years back. The company currently has about 3000 ha undeveloped land due to land tenure problems (see map on page 36). The Okumaning estate which has a total concession of about 5200 ha has almost 2,000 ha developed since 2002 (see map on page 37).

The Ghana Oil Palm Development Company has processing facility comprising of a 60mt /h fresh fruit bunch palm oil mill (the largest in the country), a 45mt /day palm kernel mill and a 100 mt /day refinery and fractionating plant, which started operation recently. The company has a storage capacity of about 15, 000 MT at both Kwae and Tema harbour. At the refinery, and the fractionating plant, the crude palm oil (CPO) and palm kernel oil (PKO) are refined, bleached and deodorized (RBD) to produce a bland product called RBDO or RBD PKO. This product is either sold as such or fractionated in olein (liquid) and stearin (solid). The olein is sold as cooking oil whilst stearin is used in many products such as bakery goods, margarines, quality soaps, magi cubes, biscuits etc.

GOPDC has the largest out-grower scheme in the country, with about 7000 farmers contracted to produce fresh fruit bunches (FFB) to feed the central mill of the company. The contract farmers with a planted area of about 14, 400 ha are located within a radius of 30 km from the GOPDC nucleus estate and processing facility at Kwae (see map). The contract between the GOPDC and the farmers stipulates that GOPDC provides inputs on credit to the farmer (at cost) and the farmer in return supplies 100% of the production of the GOPDC planting material to the company. Farmers enjoy a seven-year grace period on their loan, and start repayment when the trees are in full production. The inputs supplied to farmers include palm seedlings, fertilizers, technical assistance, and pest management.

The company produces about 40, 000-50, 000 metric tonnes of FFB per year from its own plantations whilst the out-growers produces about 144, 000 metric tonnes of FFB per year but deliver a maximum of about 80, 000 metric tonnes to the company. Fresh fruit bunch yield of the company's own plantation is about 14 metric tonnes/ha per year. Yield of out-grower farmers who own their own land can be as high as 18-20 metric tonnes/ha while Out-grower farmers who are share croppers obtain yields of about 6-9 metric tonnes/ha.

The major challenges of the company are side selling of fruits by its out-growers especially during the lean season and land tenure problems. At the time of the study, the company had about 3000 ha of its concession still not developed due to litigation over land with the communities. Although the chiefs had released the land to the company, the people who are occupying the land are reluctant to release the land to the company.

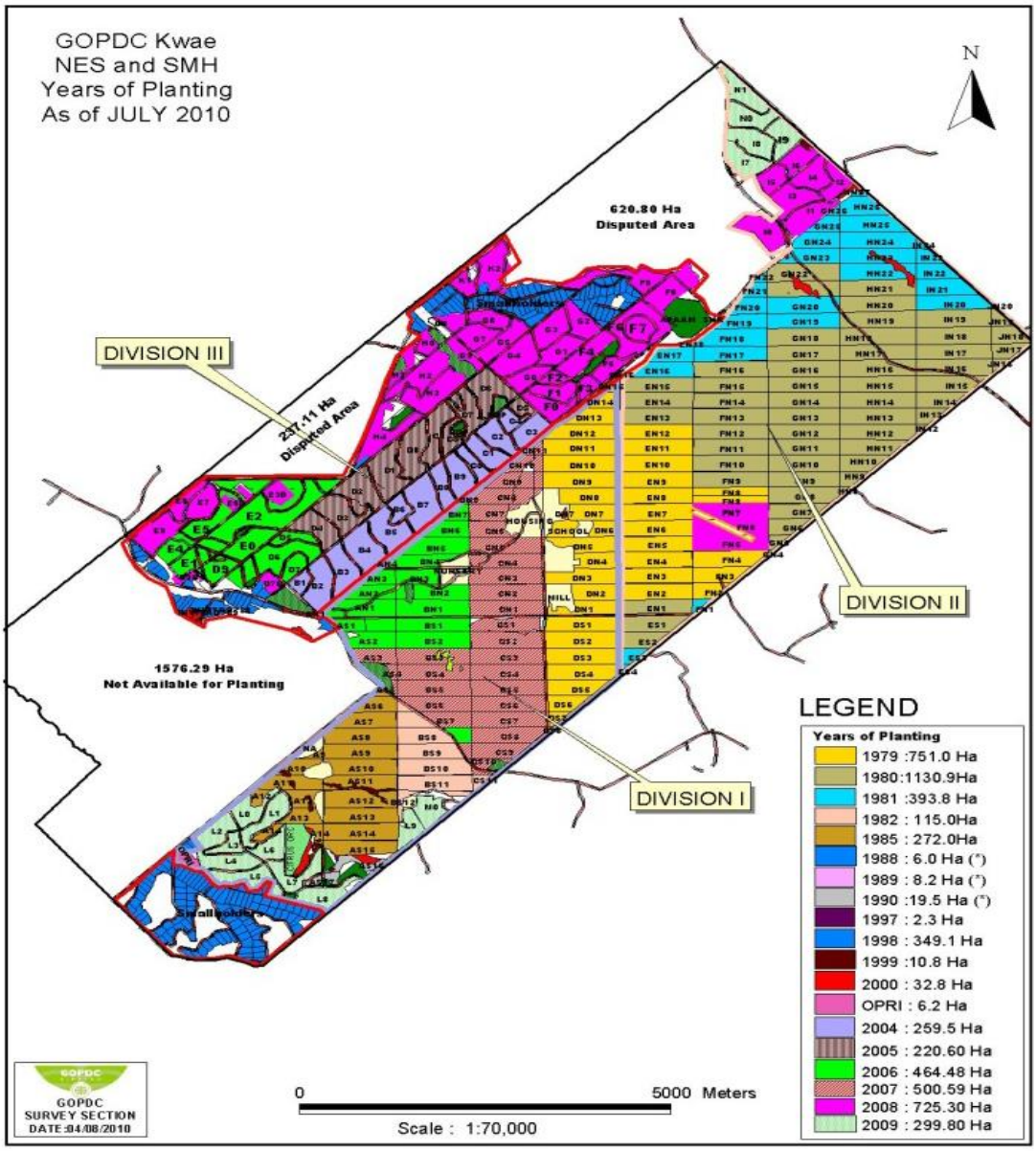


Fig 3.2 Kwae Estate Plantation Map (source GOPDC survey section)

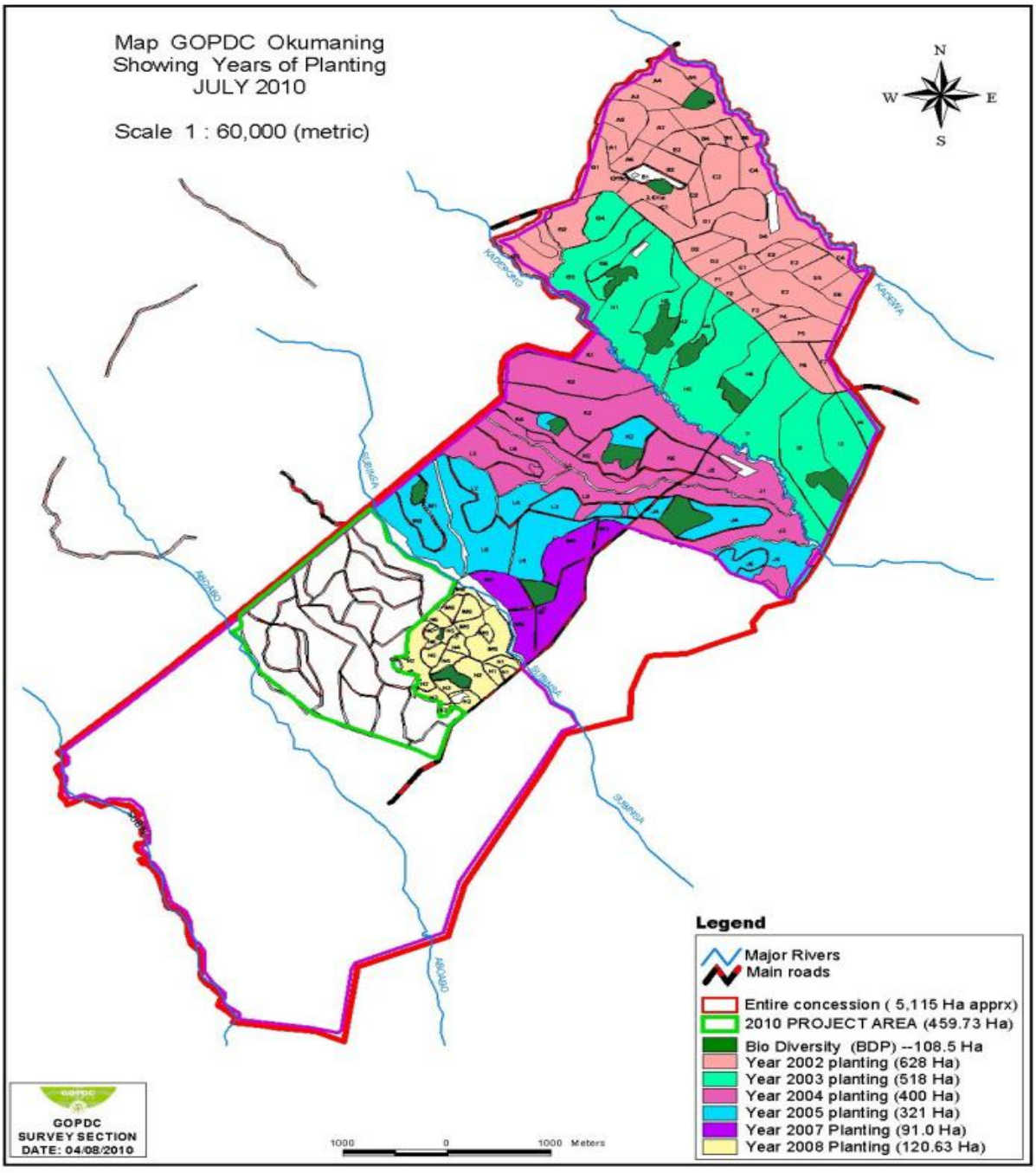


Fig 3.3 Okumaning Estate Plantation Map (source: GOPDC survey section)

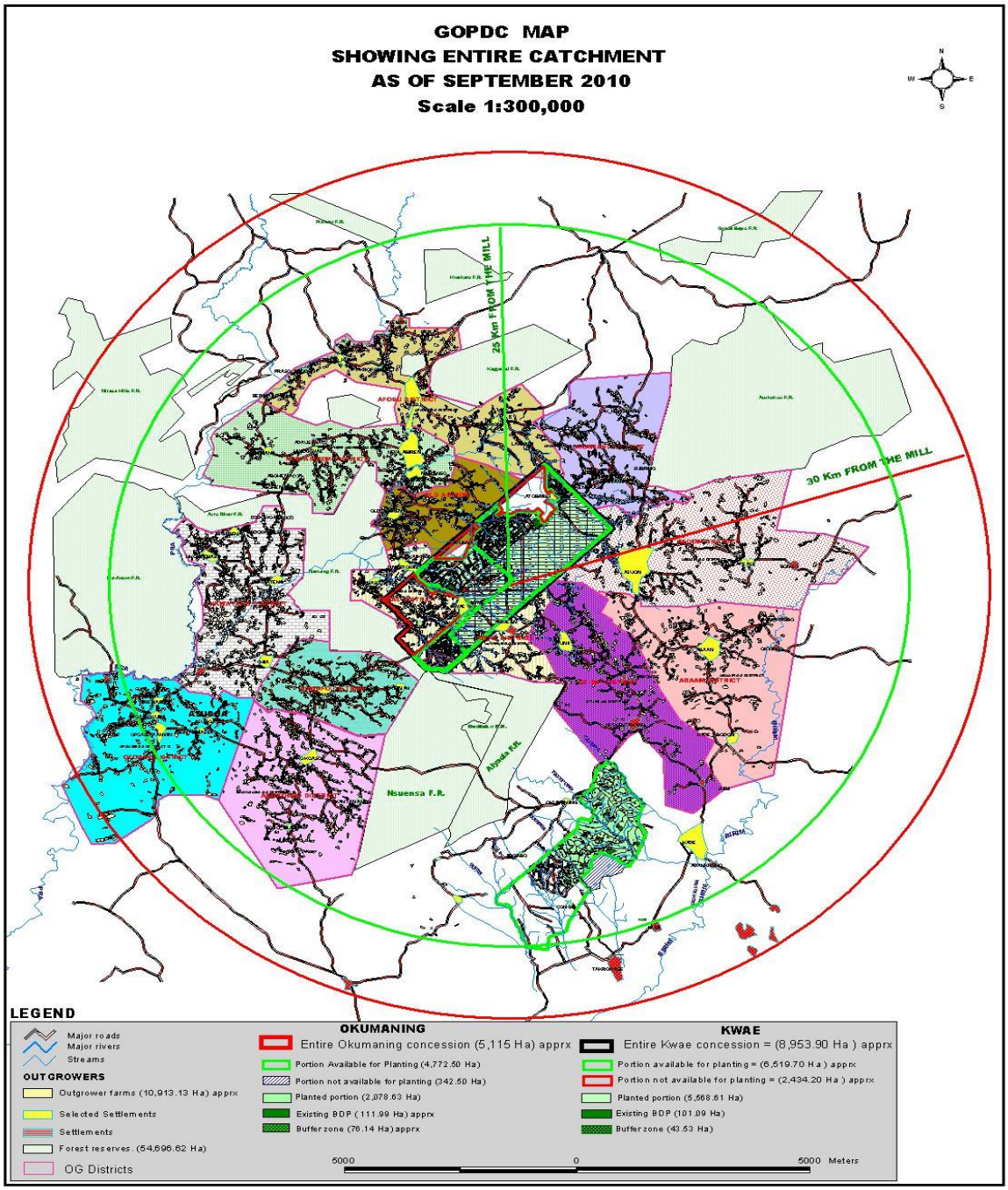


Fig 3.4 GOPDC Catchment Area (source: GOPDC survey section)

3.3 The study population

The population of this study included all small-scale oil palm farmers in some selected oil palm growing villages in the district. These towns were Asuom, Akawani, Kwae and Otumi.

3.4 The data collection methods

The section presents secondary and primary data collection, questionnaire design, pre-testing of questionnaire and the main steps of data collection. The data collection process started in June 2012 and completed in August 2012. The researcher himself collected the data after adequate preparation. The researcher adopted every possible measure to take valid data. About 90% of the respondents interviewed were at their homes and the remaining at their working place or other places.

Data was collected using the survey based questionnaire and key informants. Santoso et al., (2005) on impact assessment of the smallholder oil palm scheme and the outgrower schemes in general used the qualitative research methods in collecting data. On the contrary, Warner and Bauer (2002) used both qualitative and quantitative methods, thus combining the survey based questionnaire and the semi structured interview base for data collection. In reference to the research questions and purpose of this study, the study employed both the qualitative and quantitative research methods. The questionnaire-based survey, backed by personal interviews, which were semi structured and conversational, was quantitative in nature. This was administered through a face-to-face interview, where the researcher asked the question in the presence of the respondents, in addition to completing the questionnaire. The use of face-face interview technique is cost effective and convenient in a country like Ghana where the

communication systems are not reliable or allow the use of telephone interview or the mailing system. The process of data collection was cross sectional.

The main objective of the use of the quantitative method was to help establish the associations between the identifiable variables that are necessary for the assets build up of participating farmers of the scheme and that of the non-participating farmers. The quantitative methods also contributed to determine whether the predictive generalization of the theory that the corporate-community outgrower oil palm schemes increase income is true in the case of the Kwaebibirem district. This investigation became possible since the questionnaire-based survey targeted at many respondents, permitted generalization of results as against the interview-based approach for the qualitative that focus on few respondents and results cannot be generalized as such. The approach facilitated in testing the impact of the schemes on the treatment group that is farmer participating in the scheme and the control group, the non-participant. With this classification, it was possible to assess whether it is the treatment and not the characteristics of the individual farmers in the group that influenced the outcome.

The qualitative method was interview based and was semi-structured. This was conversational. The application of the method helped to capture emerging issues not anticipated by the researcher and not included in the questionnaire. The use of the qualitative interview based method helped to investigate the farmers perception on the impact of the smallholder oil palm schemes on their livelihood by providing a more detailed view of how the schemes have contributed in the building of their asset base and what problems they are encountering as constraints; and to explore the variables in terms of outcomes and what the farmers are getting

from the scheme like inputs such as loans, fertilizers, chemicals, expert advice and the extent of social and cultural impact. The method focused on the other respondents who are not members of the scheme and classified as Key Informants by the researcher.

The technique used as indicated above was semi-structured and was a face-to-face interview. The samples did not represent large population, but small purposeful samples representing rich information cases. The reason for employing qualitative method in outgrower oil palm research is that, the researcher is of the view that, the use of one method will only allow for a partial understanding of such a complex, multi-dimensional concept of the scheme's operation. To achieve a broader and more in-depth understanding of the scheme's operation and their potential to build assets for farmers, the researcher had to make use of the complimentary attributes of qualitative method in conquering some of the problems

3.5 The secondary data

The research made use of both primary and secondary data. The secondary data aimed at identifying GOPDC operations and the level of farming operation in the Kwaebibirem district as well as previous works on impact of oil palm schemes by private companies and individuals on farmer's livelihood. Although the result of the research is highly dependent on the primary sources from the survey questionnaires, it also required some secondary sources to understand the concepts, definitions, theories, and empirical results. As a result, secondary data through a desk review of relevant project files of the corporate organizations involved in the oil palm outgrower schemes such as Ghana Oil Palm Development Corporation become necessary. This focused on the review of agreement and negotiations leading to the implementation of the

programme and the terms and conditions for the division of the benefits, farmers' financial records, farmers Fresh Fruit Bunches (FFB) delivery statistics and audited accounts for the past five years.

Secondary data sources from government and other researchers' studies should not be overlooked. According to Adato, Meinzen, Suseela, (2003), this can provide the basis for sampling frames, for cross-checking information from the study with other regions or nationally representative samples, and even for providing direct information for the studies. Existing exploratory studies of the oil palm industry and technological and financial assessment of the oil palm production in the Kwaebibirem district provided useful historical and contextual information.

3.6 The selection of villages

A list of villages of the outgrowing contract scheme is available at the GOPDC outgrower managers' office at the Kwae Estate in the Kwaebibirem district. Since not all these villages were included in the survey due to lack of time and resources, it became necessary to extract only four villages at random from these villages. Thus, every third village on the list was included in the study. The villages identified for this study were Asuom, Akawani, Kwae and Otumi.

3.7 The sample size for the study

There were 600 farmers registered with GOPDC in all the randomly selected villages' i.e 189 in Asuom, 200 in Akawani, 144 in Kwae and 120 in Otumi. So, a total of 214 farmers were

randomly selected under the GOPDC outgrower scheme and the independent private small scale oil palm farmers, since the working conditions of farmers in all villages were similar. The list of farmers registered with GOPDC and those placed on the waiting list of the company was used as the sample frame for the selection of farmers for both outgrows and independent small scale farmers(those oil palm growers who are not in the scheme but sell their produce to the company and waiting to join the scheme). In all situations, participants and non-participants selection, a second list of respondents became necessary from which dropout's replacement could depend, to ensure the required number of respondent's selection in the survey.

3.8 Selection of 'Key Informants'

The 'Key Informants' as defined by the researcher comprise of 3 people from the company, 2 opinion leaders of the community, 2 government officials of the District Assembly and 3 ordinary residents within the project area. A total of 10 people were interviewed as the Key Informants. The selection of Key Informants focused on purposive sampling. The technique allowed the researcher to use his judgment to select cases that best enable the researcher to answer his research question and to meet the research objective (Robson, 2005).

The main objective of interviewing this group was to gain responses from people outside the scheme to help in assessing the impact of the scheme on the beneficiary participants in general and gain management's views on the schemes operation and the problems encountered.

3.9. The questionnaire design

A questionnaire was designed in order to collect relevant information from the 214 oil palm growers in the area. The four page questionnaire was designed in such a way as to seek information on farmers' educational level, farm size, ownerships status, and source of both agric and non agric income. The major portion of the questionnaire dealt with information relating to the type of relationship between farmers and GOPDC, farmer's income, assets build up as well as benefits of the schemes to the participants.

3.10 The method of data analysis

After collection of the data, it was analyzed statistically using computer software i.e. SPSS (Statistical Package for Social Sciences) and Microsoft Excel. Descriptive statistics such as percentages, figures and tables were calculated and used. Similarly, cross-tabulation was used to validate whether the difference observed in selected variables were due to chance or not. In the end, the chi-square test was employed to measure the association that exist between some selected variables.

3.11 Difficulties faced during data collection process

During data collection the researcher faced many difficulties; some of them were as follows:

- As in most of the villages, the road networks were very poor so the researcher had to visit these villages individually on motorcycle to collect the data.
- Some of the farmers were illiterate and much time had to be spent to convince them that no harm would happen to them if they give the correct information.

- Many respondents were interested in knowing the benefit for taking part in the exercise. In this way, the researcher had to explain the purpose of the research and its benefits.

3.12 Summary

The chapter has reviewed in detail an overview discussion of background information of the Kwaebibirem district, highlighting on the location, population, and the general economic and agricultural activities in the district. The section then reviewed the major operations of the GOPDC Ltd, indicating the level of production, operational areas, major stakeholders and some of the challenges faced the company. The section then concluded with an in-depth review of the study population, data collection methods, sample size, questionnaire design, methods of analysis, and the challenges faced during the data collecting process of the study.

CHAPTER FOUR

RESULTS AND DATA ANALYSIS

4.0 Introduction

This chapter presents findings on the perception of sustainability of the outgrower scheme looking at the current relationship between GOPDC and outgrower farmers and the contribution of the scheme to the livelihood of farmers. This is done by computing the correlations and testing the relationship at a significance level of 0.05 with a chi square distribution of broad factors like socio-economic characteristics of farmers of both outgrowers and non-outgrowers. The chapter also examined the livelihood of the two farmer groups taking into consideration their physical assets in relation to their harvest per acre. The extent to which the abandonment of the terms of the contract has reduced the confidence of both partners in the outgrower contract scheme has also been examined. This will effectively address the objectives set for this project.

4.1 The socio-economic characteristics of farmers that contribute to the acceptance of outgrower contract scheme

Socio - economic factors like gender, level of education, family size, level of experience in oil palm cultivation, have been matched with the terms of the contract scheme that contributes to the acceptance of outgrower contract scheme. They include access to land, labour, credit, inputs, efficient use of agricultural technology, and regular contact with extension agents, and attendance to training. An explicit cross tabulation of the variables carries a detailed representation of the results in observed counts, which are easy to comprehend. Other variables have been illustrated in figures to also ensure easy identification.

4.1.1 Gender and membership of outgrower contract scheme.

Gender is the first socio-economic factor being examined under the first objective to determine how it contributes to productivity of outgrower scheme. The result shows that so many men accounting for 83.1% are members of the outgrower scheme compared to the 16.9% of the members being women. The reasons identified under the study include land tenure arrangements, access to inputs, labour and extension service.

4.1.2 Gender and access to land

It can be inferred from Table 4.1 that out of the total number of farmers surveyed, 177 are men and 95 of them have very good access to land as compared to 7 out of the 37 females who said they had good access to land. Thus, chi square value of 28.8 , d.f of 2 and a p value of 0.000 clearly shows that land tenure arrangements significantly contributes to acceptance of the contract scheme. This is because it is less than the significance level of 0.05

Masood, et al., (2010), analysed the effects of land tenure and property right on agricultural productivity, making inferences to contract forming in the process and used Ethiopia, Namibia, and Bangladesh as case studies. They said that basic problem of low agriculture output is shortage of land and population pressure. The major focus of the paper was to describe all the matters regarding land tenure system, its rights, agricultural productivity, and effects due to change in climate. The results proved that proper land ownership policy is important for the majority of rural areas because their quality of life is very much dependent on farming.

Table 4.1. Gender and access to land

Gender	Farmers access to land			Total
	Very good	Good	Satisfactory	
Male	95	64	18	177
Female	7	14	16	37
Total	102	78	34	214

X^{2} = 28.8, d.f =2, p value = 0.000 (Sig) Source: field survey, 2012

4.1.3 Gender and the types of land tenure arrangements available to farmers

The types of land tenure arrangements available to farmers contribute to membership of the outgrower contract scheme. Majority of farmers who are men, equaling 45 inherited their land and 37 sharecropped. Many of the women on the contract scheme purchased the land instead of inheriting it or sharecropping. This outlook can be influential to acceptance of outgrower contract farming in many ways. Shimelles and Tuulikki's (2009), reported that sharecroppers have lower rate of acceptance and efficiency than the owner cropper. The difference between these two is 1:3. Table 4.2 illustrates the above assertion with a chi square test value 3.711, d.f 2, and probability value 0.001 meaning that the types of land tenure arrangements contribute significantly to acceptance of the contract scheme.

4.2 Gender and the types of land tenure arrangements available to farmers.

Gender	Types of land tenure arrangements			Total
	Inherited	Sharecropped	Purchased	
Male	45	37	8	90
Female	14	8	6	28
Total	77	46	14	137

X^{2}=3.711, d.f=2, p value 0.001 (Sig) Source: field survey, 2012.

4.1.4 Gender and access to agricultural inputs

Access to farm inputs differs in relation to gender type and this contributes to acceptance and productivity under the contract scheme. Table 4.3 shows that more men representing 36.7 and 25% say they have good access to agricultural technology. The chi square value of 3.711 d f 2 and probability value of 0.001 proves that there is a significant relationship between access to agricultural technology and gender. Benin (2006), agrees with this when he concluded that in almost all the indicators of technology and input use, female heads are less likely to use or adopt improved technologies and use fewer amounts of inputs

Table 4.3 Gender and access to agricultural inputs

Gender	Access to agricultural inputs			Total
	Very Good	Good	Satisfactory	
Male	45	37	8	90
Female	14	8	6	28
Total	77	46	14	137

X^{2} = 3.711, d.f=2, and p value 0.001(Sig) **Source: field survey, 2012.**

4.1.5 Gender and access to extension service

Another term of the contract under consideration is access to extension services. Respondents indicated that there is a gap between gender and access to extension services. This occurred in spite of the adequate share of the extension service provided by GOPDC. The table 4.4 shows 45 and 37 as very good and good respectively for men, 14, and 8 as very good and good for woman. The chi square value of 6.72, d.f 2 and probability value 0.0347 shows that there is no significant relationship between gender and access to extension services. From the global survey of 115 countries by FAO in the 1980s to the micro-studies by World Bank and IFPRI in 2010,

numerous studies show access to extension services is lower for women as compared to men (Ragasa 2012). This is total contradiction to the results obtained in this study

Table 4.4 Gender and access to extension service

Gender	Access to extension			Total
	Very Good	Good	Satisfactory	
Male	45	37	8	90
Female	14	8	6	28
Total	77	46	14	137

X^{2} = 6.72, d.f=2, and p value 0.0347(sig) Source: field survey, 2012.

4.1.6 Gender and access to labour

Access to labour is another term of the contract. Table 4.5 shows that 21% of men responded very good as against women of 25 %. The study revealed that access to labour was not gender specific. The chi-square value of 3.71, d.f 2 and critical value 0.156 indicates that there is no significant relationship between gender and access to labour. However, Ragasa (2012) stated that the lack of capital prevents women farmers from hiring replacement labour, limiting the amount of cultivated acreage and agricultural output.

Table 4.5 Gender and access to labour

Gender	Access to labour			Total
	Very Good	Good	Satisfactory	
Male	45	37	8	90
Female	14	8	6	28
Total	77	46	14	137

X^{2}= 3.71, d.f=2, and p value 0.156(Insig) Source: field survey, 2012.

4.1.7 Gender and access to credits

Access to credit is one of the terms of the contract scheme, which is influenced by the gender of the farmer. The study found that out of the 90 farmers, who have very good access to credits, only 7 are women and for the 81 who have good access to credit only 6 are women. The chi square test indicated an insignificant relationship between gender and access to credits with a value 17.9, d.f = 2, p value is 0.000. The problem women have with accessing credit is the inability to provide collateral for loans. Ragasa, (2012) is of the view that "without collateral or steady cash incomes, women cannot qualify for credit and must often persuade their husbands or other male relatives to put up the collateral for *a* loan." It added that a study conducted in Kenya revealed that only 1 percent of the women received loans; further, these women were mainly farm partners, not farm managers. Table 4.6 demonstrates this.

Table 4.6 Gender and access to credits

Gender	**Farmers ability to secure credits**			**Total**
	Very good	**Good**	**Satisfactory**	
Male	83	75	28	188
Female	7	6	13	30
Total	90	81	41	212

X^2= 17.9, d.f = 2, p value is 0.000 (sig) **Source: field survey, 2012**

4.1.8 Level of education and membership of the outgrower scheme.

Education is another farmer socio-economic characteristic that contributes to membership of the outgrower contract scheme. It helps the farmer to understand the terms of the contract. Farmers interviewed showed varied levels of education and these are grouped into tertiary, secondary, basic, and no formal education. For the contract scheme, 42.4% of out-growers are also basic

school graduates. The rest on the out-grower scheme represent 22.8%, 22.8%, and 11.8% of no education, basic and tertiary respectively. Hayrol et al., (2010), mentioned that previous studies have supported the fact that education will have an impact on people's acceptance towards contract farm

4.1.9 Level of education and farmer's use of knowledge from training

Attending training organized by GOPDC is one of the terms of the contract scheme, which is influenced by the level of education. The use of the knowledge obtained is equally important. Out of the 50 outgrowers who were very punctual to trainings, 10 have no formal education and 18 have basic education. The chi–square test value of 13.320, d.f 6 and probability value of 0.0381 in Table 4.7 suggest that there is significant relationship between level of education and the attendance to training programs organized by the outgrower scheme. The importance of training in ensuring agricultural productivity is not in doubt. Doni (1997) is of the view that any agricultural development initiative should start with training of the targeted farmers before providing other support services. In addition, even though such training should continue through extension support these may not be enough for a farmer to succeed in an agricultural venture.

4.7 Level of education and farmer's use of knowledge from training

Level of Educ.	**Farmer's use of knowledge from training**			**Total**
	Very punctual	**Punctual**	**Somewhat punctual**	
Tertiary	11	20	12	43
Secondary	11	20	10	41
Basic	18	30	52	100
No formal edu	10	16	14	30
Total	50	86	78	214

X^2=13.320, d.f=6 and critical value of 0.0381 (sig) **Source: field survey, 2012**

4.1.10 Level of education and contact with extension agents

The contribution of educational level to the acceptance of contract farming can be traced to regular contact with extension agents. In Table 4.8, majority of farmers who are secondary school leavers make up 35 and 55 have very regularly and regularly contacted extension officers. Farmers with tertiary education then those with basic education follow this. The chi square test value 115.472 d.f 6 and critical value 0.0169 proves significant, meaning, the more educated the farmer is the more important he/she would see the need to maintain regular contact with extension agents. Larpar et al., (2008), posits that better-educated farmers are twice as likely to be in contact with agricultural extension agents, indicating that farmers with higher levels of education benefit most from extension.

Table 4.8 Level of education and contact with extension agents

Level of Educ.	Contact with extension agents			Total
	Very regular	Regular	Quite regular	
Tertiary	20	15	10	45
Secondary	35	55	7	97
Basic	23	13	6	42
No formal Educ.	12	12	6	30
Total	90	95	29	214

X^2=115.472, d.f=6, and p value 0.0169(Sig) **Source: field survey, 2012**

4.1.11 Level of education and efficient use of agricultural inputs

The level of education of farmers contributes to the efficient use of agricultural inputs supplied under the contract scheme. Table 4.9 illustrates that farmers with secondary and tertiary education are able to apply inputs effectively and more efficiently. Thus, they make 43 and 24 out of the 86 and 42 farmers who apply inputs efficiently. The chi –square test value 7.322, d.f 6 and probability value of 0.062 suggest that there is a significant relationship between level of education and efficient use of inputs. This result confirms what Larpar et al., (2008), stated that education enhances the ability of farmers to acquire accurate information, evaluate new production processes, and use new agricultural inputs and practices efficiently.

Table 4.9 Level of education and efficient use of inputs

Level of Educ.	**Efficient use of technology**			**Total**
	Very efficient	**Efficient**	**Quiet efficient**	
Tertiary	15	6	4	25
Secondary	30	47	17	94
Basic	10	24	46	80
Non Formal Educ.	8	12	6	26
Total	60	97	75	225

X^2 = 7.322, d.f=4, and p value of 0.062(Sig) **Source: field survey, 2012**

4.1.12 Level of education and acceptance of good agricultural practices

The level of education can also contribute to the acceptance of good agricultural practices. Farmers with tertiary and secondary education are among the highest who always or usually acquire information and accept good agricultural practices. Out of the 55 and 50 farmers who acquire information always and usually, secondary school leavers make 17 and 23 respectively. The chi square test value 37.628., d.f 6 and probability value 0.096 means that there is a significant relationship between some level of education and acceptance of good farming practices. This result agrees with what Larpar et al., (2008), stated that education enhances the ability of farmers to acquire accurate information, evaluate new production processes, and use new agricultural inputs and practices efficiently. Table 4.10 vividly explains this.

Table 4.10 Level of education and acceptance of good agricultural practices

Level of educ.	**Acquisition of good agricultural practices**			**Total**
	Always	**Usually**	**sometimes**	
Tertiary	8	3	2	13
Secondary	17	23	42	82
Basic	8	19	31	58
No formal Educ.	25	5	10	40
Total	55	50	85	190

X^2 =37.628, d.f=6, and p value 0.000(Sig) **Source: field survey, 2012**

4.1.13 Experience in oil palm cultivation and membership of contract scheme

Among the respondents of small-scale farmers, outgrower farmers possess higher experiences in oil palm plantation than non-outgrowers do. With the years of experience grouped into 3-10, 11-20, 21-29, 30-40, outgrower farmers make up 16.9%, 52.9%, 20.6%, and 9.6% respectively .It is just in one experience group that non-outgrowers are more than outgrowers and that is even the years of 3-10. This means that many outgrowers on the contract scheme have adequate years of experience in oil plantation to enhance productivity.

4.1.14 Experience in oil palm cultivation and use of knowledge from training

The experience of the farmer contributes to the use of knowledge from training organized by GOPDC. Very educated people should assimilate knowledge better than the less educated. In Table 4.11, farmers that are very regular and regular at training programs are the ones with not too much experience ranging between 3 and 10. The percentages show 50% and 20% accordingly. The chi square test value 58.632, d.f 6 and p value 0.000 which is significant. Thus, the less experience farmers are, the more they participate in training programmes. This would negatively affect productivity because they would only be relying on history and lose sight of the current trend in the industry. A training organized by Rutgers Snyder Research and Extension Farms showed that farmers with less experienced participated more in the training than the experienced ones (Research and Extension Farms, 2009).

4.11 Experience in oil palm cultivation and use of knowledge from training

Experience in oil palm	Use of knowledge from training			Total
	Very regular	Regular	Quite regular	
3-10	25	19	15	59
11-20	1	2	9	12
21-29	1	14	3	18
30-40	2	3	3	7
Total	29	38	29	96

X^2 =58.632, d.f =6, and p value 0.000 (Sig) **Source: field survey, 2012.**

4.1.15 Experience in oil palm cultivation and contact with extension agents

The study is of the view that farmers' contact with extension officers also keep reducing with experience. Outgrowers with years of experience between 3-10 and 11-20 maintain more contact with their extension officers. In terms of observed counts, they represent 68 and23 and 18 and 16 as very regular and regular respectively in comparism to the other 2 categories of experience identified in the study. The chi square value supports it with a value of 35.067, d.f 6 and p value 0.000 shown in Table 4.12 means that farmer's experience contributes to their contact with extension officers.

Table 4.12 Experience in oil palm cultivation and contact with extension agents

Experience in oil palm	Contact with extension agents			Total
	Very regular	Regular	Quite regular	
3-10	68	23	4	95
11-20	18	16	3	37
21-29	6	3	7	16
30-40	7	5	6	18
Total	99	47	20	166

X^2 = 35.067, d.f=6, and p value 0.000 (Sig) Source: field survey, 2012.

4.1.16 Experience in oil palm cultivation and efficient use of agricultural inputs

Experience in oil palm cultivation contributes to the efficient use of agricultural inputs. Farmers responded to how efficient they used agricultural technology and the results illustrated in Table 4.13 below. It shows that the very experienced used agricultural technology more effectively than the non-experienced ones. The chi square value of 11.153 at d.f 4 with a critical value of 0.011 is evident that there is a significant contribution of experience in oil plantation to the efficient use of agricultural technology in the contract scheme.

Table 4.13 Experience in oil palm cultivation and efficient use of agricultural inputs

Experience in oil palm	Efficient use of inputs			Total
	Very efficient	Efficient	Quite efficient	
3-10	16	30	11	57
11-20	27	24	10	61
21-29	33	10	14	57
30-40	22	10	8	40
Total	97	74	43	214

X^2 = 11.153, d.f=4, and a critical value of 0.011(Sig) Source: field survey, 2012.

4.1.17 A summary of the relationship between the socio –economic characteristics of outgrowers and membership of the contract scheme

In the nutshell, the study found that the socio - economic characteristics of outgrowers and the terms of the contract scheme are dependent. It establishes the relationship between the socio-economic characteristics of outgrowers and membership relating it with productivity where applicable. The relationship between significant and insignificance of socio-economic characteristics and terms of the contract scheme contributes to acceptance of contract farming. The study revealed that since most of the socio-economic characteristics have significant relationship with the terms of the contract scheme, there is a significant relationship between socio-economic characteristics of outgrowers and the acceptance of contract farming.

4.2 The relationship between GOPDC and farmers, and its contribution to perception about contract farming sustainability.

The outgrower contract between GOPDC and the farmers promised a win-win situation for partners. However, both partners seemed to have reneged on their part of the bargain. This has affected the perception of both partners about the sustainability of the contract. This section examines the current relationship between GOPDC and farmers, and its contribution to their perception about the sustainability of the scheme. The variables considered to establish the relationship includes where farmers sell their FFB, who they sell the FFB to, the mode of payment, and the period of payment, level of enforcement, land tenure arrangements, and family size. The various variables are matched with each other to explain what has caused both partners to behave in the way they are doing with the various percentages and chi square test.

4.2.1 Level of outgrower sales to GOPDC and reasons for the level of sales to GOPDC

Outgrower farmers are supposed to sell FFB to GOPDC during the contract period. Many farmers do not sell their FFB to GOPDC for some reasons. Table 4.14 compares the variable, who outgrowers sell FFB to and the reasons for the sale. The reasons given by farmers are grouped into four, cost of transport, high price, early payment, and quantity of FFB. Out of the 136 respondents who are outgrower, only 26 sell to GOPDC with 72 being the majority selling to private buyers. Indeed out of the respondents who sell to GOPDC, majority sell because they do not have problems with transportation. 11outgrowers who sell to GOPDC take it there because of the high price they offer. The chi square test indicates a significant relationship between who outgrowers sell FFB to and reason for the sale. In Table 4.14, the chi square test shows a chi square value of 73.136 at d f 9 and a probability value of 0.000. According to Adjei Nsiah, (unpublished) in order to compete strongly with the large and medium scale processors, the small-scale semi-mechanised processors often offer prices higher than those being offered by the medium and large-scale processors as an incentive for farmers, particularly out-grower farmers of the medium and large-scale processors to bring their fruits to them.

Table 4.14 Level of outgrower sale to GOPDC and reasons for reduced level of sales to GOPDC

Reason for sale	Who outgrowers sell FFB				Total
	GOPDC	Krammer women	Self-processed	Private buyers	
Transport	13	5	2	10	30
High price	11	3	13	5	32
Early payment	2	2	6	54	64
Quantity	0	1	6	3	10
Total	26	11	27	72	136

X^{2} = 73.136, d.f=9, and a p value of 0.000(sig) source: field survey 2012.

4.2.2 Level of outgrower sale to GOPDC and perception of sustainability of the contract scheme.

For all the reasons that famers have given for selling or not selling to GOPDC, majority (56.6%) believe that, with the current status quo, the relationship is still sustainable to a high extent while some smaller minority (33.1%) also believe that it is sustainable to some extent and 10.3% believe that the sustainability is low. The test for significance revealed that a value of 6.758, d.f 6 and probability value 0.344 means that from the perspective of farmers the current pattern of FFB sale to GOPDC would contribute to the sustainability of the scheme. Thus, the challenge of transportation, early payment, and quantity, which is preventing outgrowers to sell to GOPDC, is contributing to the sustainability of the scheme. Figure 4.5 carries a pictorial representation of this.

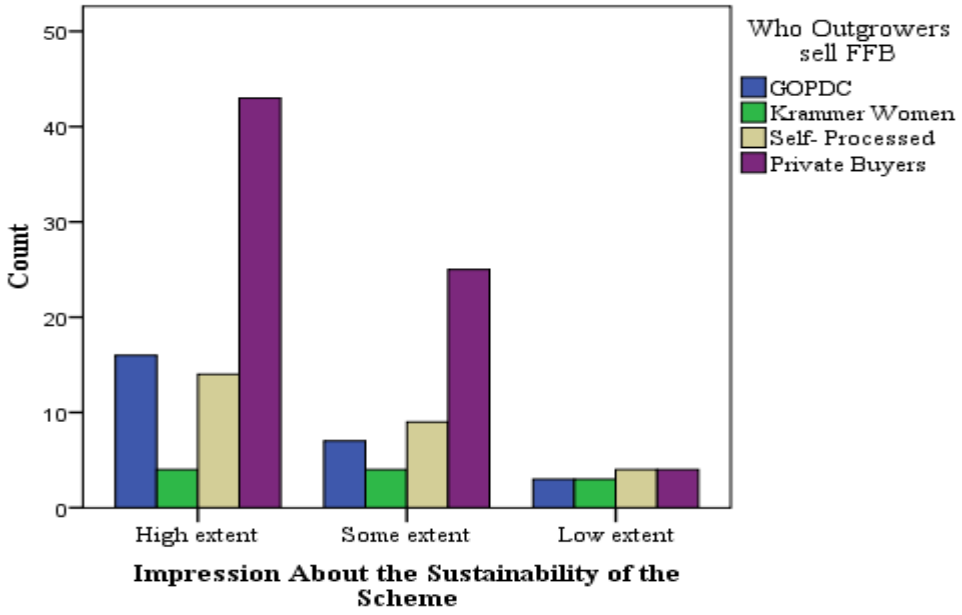


Figure 4.5 Level of outgrower sale to GOPDC and perception about sustainability of contract scheme

4.2.3 Level of outgrower sale to GOPDC and mode of payment by GOPDC

The current level of sales to GOPDC is influenced by the mode of payment by GOPDC. The result of the analysis reveals that GOPDC do not find it convenient paying farmers in cash. It can be seen from the table that 107 of outgrower farmers want payment by cash and the rest want payment by bank transfer but only 5 out of the 38 outgrowers who sell to GOPDC receive payment by cash. The chi square value of 1.1712, d f 3 and probability value of 0.000 proves that the mode of payment affects who farmers sell to. This agrees with Rudy (2010), who stated that farmers prefer cash payment rather than the Bank transfers. Table 4.15 presents it vividly.

Table 4.15 Level of outgrowers sale to GOPDC and mode of payment by GOPDC

GOPDC payment mode	Small scale farmer types				Total
	GOPDC	Krammer women	Self-processed	Private buyers	
Cash	5	11	27	60	103
Bank transfers	30	3	5	12	50
Cheque	3	2	4	2	12
Total	38	16	36	74	165

X^2 =1.1712, d.f=3, and p value of 0.000(sig) source: field surveyed, 2012

4.2.4 Mode of payment by GOPDC and perception of sustainability of the contract scheme

Many of the outgrowers' desired modes of payment are cash. 64 and 38 who say the scheme is sustainable to a high extent and some extent respectively prefer cash. Thus, only 29 think that with the mode of payment, the scheme has a chance to succeed if GOPDC would reverse to cash payments. The test for significance displayed in Table 4.16 shows a value of 0.262, d.f 2 and probability value 0.877. This means that the mode of payment does not contribute to the sustainability of the scheme.

Table 4.16 Mode of payment by GOPDC and sustainability of the contract scheme

Mode of payment	Impression about the sustainability of the scheme			
	High extent	Some extent	Low extent	Total
Cash	64	38	11	113
Bank transfers	13	7	3	23
Total	77	45	14	136

X^{2} = 262a, d.f=2, and critical values of 0.877 (Insig) source: field survey 2012.

4.2.5 Level of outgrower sale to GOPDC and the period of payment by GOPDC

This section deals with relationship between outgrower sale to GOPDC and the period of payment. For this part, it seems that many of the outgrower farmers need their money within one week of sale. 107 of outgrowers receive their payment within one week. Out of this figure only 5 represents outgrower farmers who sell to GOPDC. 14 of the outgrowers who sell to GOPDC are paid between one to two weeks with the rest 13 receiving their payment after two weeks. The chi square tests also demonstrated that there is a strong significant relationship between who farmers sell to and the period of payment.

Table 4.17 shows a chi square value is 79.240 at d f 6 and probability value of 0.000, which led to the conclusion. According to Adjei Nsiah et al.,(2012), the small-scale processors get most of the fruits produced by smallholder farmers because they pay farmers promptly and fruits are sold at the farm gate compared to the large and medium-scale processors who take between one and two weeks to pay farmers after fruit delivery at the mills. Most of the small-scale processors also pre-finance the operations of the small-scale farmer. Rudy (2010) notes that in order to secure

the contracted crop it is important to pay the farmer in such a way that he could access the money quickly.

Table 4.17 Level of outgrower sale to GOPDC and the period of payment by GOPDC

Payment mode	Who outgrowers sell FFB to				Total
	GOPDC	Krammer women	Self-processed	Private buyers	
One week	2	11	17	67	107
One week to 2 weeks	14	2	5	4	25
After 2 weeks	13	3	5	0	21
Total	29	16	27	72	136

X^2 = 79.240, d.f=6, and critical value of 0.000(sig) source: field survey, 2012

4.2.6 Level of outgrower sale to GOPDC and where GOPDC buys FFB

The palm fruit conveyance is a critical factor. This section focuses on how outgrower sale to GOPDC is influenced by where GOPDC buys FFB. Table 4.18 below displays this interestingly. From the table all the 30 respondents who sell to GOPDC take it to the processing factory. Many of the Krammer women that is 10 buy FFB at the farm gate and the Private buyers buy at collection points. This is why majority of outgrowers sell to the Krammer women and Private buyers.

A confirmation of the above observation is the chi square value of 2.4542 at d f 9 and probability value 0.000. The values obtained from the chi square test indicate a significant relationship between outgrower sale to GOPDC and where GOPDC buys FFB. Adjei-Nsiah et al., (2012) in section 4.2.5 above confirm this assertion.

Table 4.18 Level of outgrower sale to GOPDC and where GOPDC buys FFB

Where outgrowers sell FFB	Who farmers sell FFB to				Total
	GOPDC	Krammer women	Self-processed	Private buyers	
Farm gate	5	10	11	1	27
Collection point	0	1	4	68	73
Factory	30	5	2	3	40
Others	3	2	16	0	21
Total	38	18	33	72	161

$X^{2 =}$ 2.4542, d.f =9, p value 0.000(sig) source: field surveyed, 2012

4.2.7 Where outgrowers sell FFB and the perception of sustainability of the contract scheme

Many farmers sell FFB at the farm gate and collection point, but GOPDC buys FFB at the processing factory. This inverse relationship contributes adversely to the perception of sustainability of the contract scheme. Out of the 56.6% of outgrowers who think that the scheme has a high extent of sustainability, 57% sell at collection point, 19.5% sell at farm gate and 11.7% at processing factory. The same pattern remains for some extent and low extent. The chi square test for significance shows a value of 10.131, d.f 6, and probability value of 0.119, which is significant. Figure 4.6 below indicates the results.

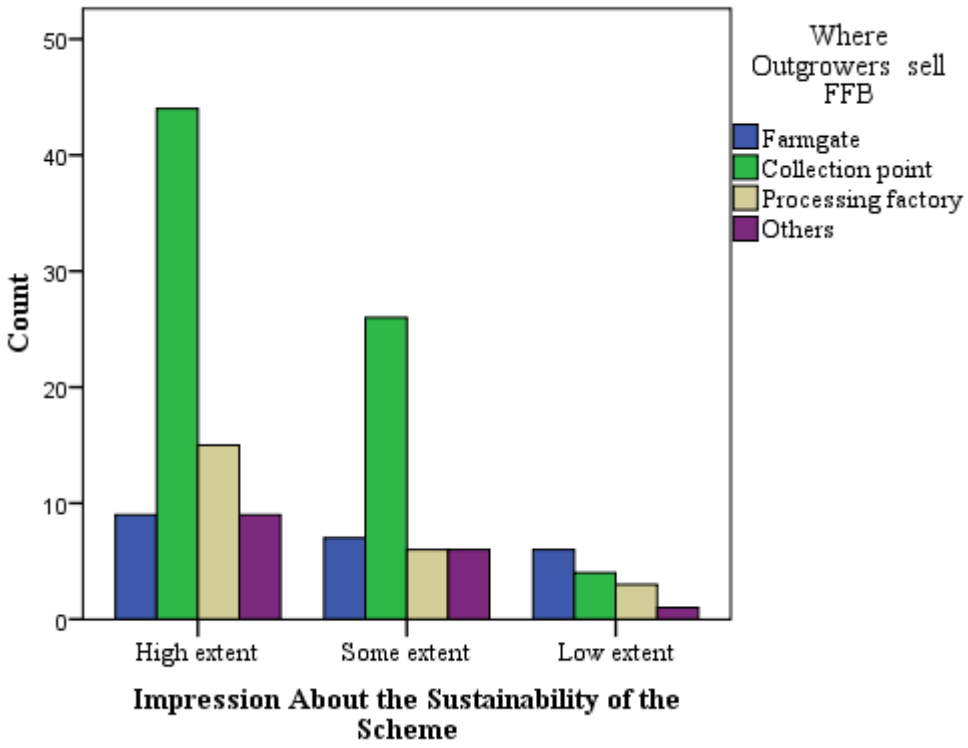


Figure 4.6 where outgrowers sell FFB and perception of sustainability of contract scheme

4.2.8 Land tenure arrangement and outgrower sale to GOPDC

The type of land tenure arrangements in the Kwaebibirem district (inherited, purchased, or sharecropped) and its influence on outgrower sale to GOPDC is the focus of this section. According to Table 4.19, majority of the people who sell to GOPDC, own the land by purchase. Outgrowers who have purchased their land follow this and with outgrowers who have sharecropped are the lowest to sell to GOPDC. With the chi square value of 6.195 d f 6 and probability value 0.004, an observation can be made on sound footing that famers who obtain land through inheritance and purchase have substantial number of them sell to GOPDC but so much is sold to the other buyers than they do to GOPDC.

Table 4.19 land tenure arrangements and who outgrowers sell FFB

Land tenure arrangements	Who outgrowers sell FFB				Total
	GOPDC	Krammer women	Self-processed	Private buyers	
Inherited	12	7	18	52	89
Purchase	9	2	5	12	28
Sharecropped	5	2	4	8	19
Total	26	11	27	72	136

X^{2} = 6.195, d f=6, p value 0.004(sig) source: field survey, 2012

4.2.9 Land tenure arrangements and perception of sustainability of the outgrower contract scheme

The land tenure arrangement does contribute to perception of sustainability of the scheme. Majority of outgrowers with inherited land (45) says the scheme is sustainable to a high extent. Outgrowers who obtained the land through inheritance are also in the majority for some extent and low extent. Sharecroppers also believe that the scheme is sustainable with none saying that sustainability is low. The chi square test indicates the value 17.635, d.f 4 and p value of 0.001 which means that the method of obtaining land influences sustainability of the scheme. This is represented in Table 4.20

4.20 Land tenure arrangements and perception of sustainability of the contract scheme

Land	Impression about the sustainability of the scheme			
	High extent	Some extent	Low extent	Total
Inherited	45	37	8	90
Purchase	14	8	6	28
Sharecropped	18	1	0	19
Total	77	46	14	137

X^{2} = 17.635, d.f =4, p. value of 0.001(sig) source: field surveyed, 2012.

4.2.10 Sharecropping and outgrowers sale to GOPDC

This section deals with sharecropping and outgrowers sale to GOPDC. According to the results of the analysis of data collected, only one of the sharecroppers who give 50% to their landowners sell to GOPDC whiles the rest (9) sell to private buyers. 16 of the outgrowers who give 25% to their landowners sell to GOPDC, and 46 sell to private buyers. Table 4.21 indicates a chi square value 6.732 d f 6 and probability value of 0.0346 to confirm that sharecroppers who receive more sell more to GOPDC.

Table 4.21 Sharecropping and outgrower sale to GOPDC

Who outgrowers sell FFB to	**The share of proportion for owners**			**Total**
	0.50	**0.33**	**0.25**	
GOPDC	1	0	16	17
Krammer women	0	0	7	7
Self processed	0	0	21	21
Private buyers	9	1	46	56
Total	10	1	90	101

$X^{2 =}$ 6.732, d f=6, p. Value of 0.0346 (sig) sources: field survey, 2012

4.2.11 Sharecropping and the perception of sustainability of the outgrower scheme.

Outgrowers' portions they receive after they give the share of their owners to them do not contribute to the perception of sustainability of the scheme. Many outgrowers who say the scheme is sustainable to a high extent and some extent are farmers who give 25% to owners and receive 75%. Some 13% of sharecroppers who receive 50% also think the scheme is sustainable. The chi square value 3.098, d.f 4 and probability value 0.541 in Table 4.22 proves that sharecropping does not significantly contribute to the perception of sustainability of the scheme.

Table 4.22 Sharecropping and perception of sustainability of the outgrower scheme.

Proportions owners receive	**Impression about the sustainability of the scheme**			
	High extent	**Some extent**	**Low extent**	**Total**
50%	7	2	1	10
33%	0	1	0	1
25%	47	35	9	91
Total	54	38	10	102

X^{2} = 3.098, d.f=4, p values of 0.541(Insig) source: field survey, 2012

4.2.12 Method of contract enforcement and outgrower sale to GOPDC

This section looks at the method of contract enforcement, as a factor does not affect outgrowers sale to GOPDC. The section presents the methods of contract enforcement such as fine, mediation, and legal action, which influence who outgrower, sell their FFB to. According to the results, majority of outgrowers have been fined and the penalty was taken away money from their sales. 25 percent of the outgrowers, who sell to GOPDC, represent outgrowers who have been fined before.

The chi square test did really show an insignificant relationship between the variables. The value is 5.864, d f is 6 and probability value is 0.439. What it means is that even if little, the method of enforcement is also accountable for the deteriorating relationship between GOPDC and outgrowers. Nevertheless, majority is adamant because legal actions are not used. Contract enforcement is often an issue in contract farming because contracts are seldom legally enforceable in practice (Grosh, 1994). Table 4.23 presents the above observation.

Table 4.23 Method of contract enforcement and outgrowers sale to GOPDC

Method of enforcement	Who outgrowers sell FFB				Total
	GOPDC	Krammer women	Self-processed	Private buyers	
Fine	25	9	25	60	119
Mediation	0	1	2	9	12
Legal action	1	1	4	3	5
Total	26	11	31	72	140

X^2 = 5.864, d.f=6, critical value 0.439(Insig) source: field survey, 2012

4.2.13 Methods of enforcement and perception of sustainability of the outgrower contract scheme

The methods used for the enforcements can contribute to the sustainability of the scheme. From the results of the analysis, farmers who have been fined (89.6%) and (84.6%) believe that the scheme is sustainable to a high extent. They are also among the highest to believe that the scheme is not sustainable. The chi square test value 1.204 d.f 4 and critical value 0.877 shows that there is no significant relationship between method of enforcement and sustainability**.** Figure 4.7 presents a graphical representation of the above.

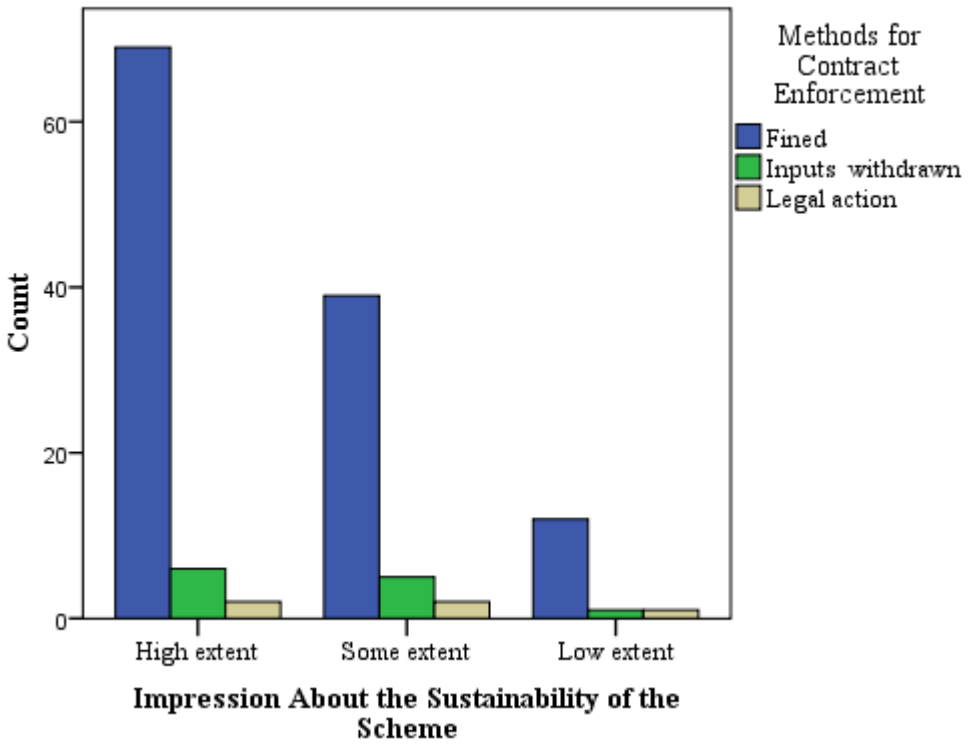


Figure 4.7 Methods of enforcement and sustainability of the outgrower scheme

4.2.14 Level of enforcement and level of outgrower sale to GOPDC

This section focuses on the current level of enforcement and the level of outgrower sales to GOPDC. From Table 4.24, almost all outgrowers say the level of enforcement currently is low extent. No outgrower thinks there is high enforcement and very few thinks there is some level of enforcement. The chi square value of 9.706, d f 9 and probability value 0.0374 shows that there is a relationship between the current low level of enforcement and who outgrowers sell to. Thus, more outgrowers are not selling to GOPDC because the level of enforcement is low. Minten (2009), contended that monitoring systems such as routine visits to farmers' fields can ensure stricter compliance with the terms of the agreement.

Table 4.24 level of enforcement and level of outgrowers sale to GOPDC

Contract enforcers	Who outgrowers sell FFB				
	GOPDC	Krammer women	Self-processed	Private buyers	Total
Low extent	24	10	26	63	15
Some extent	2	1	1	9	92
High extent	1	2	3	2	8
Total	27	13	30	74	144

X^{2} = 9.706, d.f=9, p. value 0.0394(sig) source: field survey, 2012.

4.2.15 Level of enforcement and sustainability of the contract scheme

The current level of enforcement, which is low, contributes to favourable perception about the sustainability of the scheme. Majority of the outgrowers who said that the level of enforcement is low represent 94.8, 84.6, and 85.7 with the view that the scheme is sustainable to a high extent, some extent and low extent respectively. The chi square value 4.950, d.f 2, and probability value 0.084 in Figure 4.8 shows that there is a significant relationship between level of enforcement and the sustainability of the Scheme.

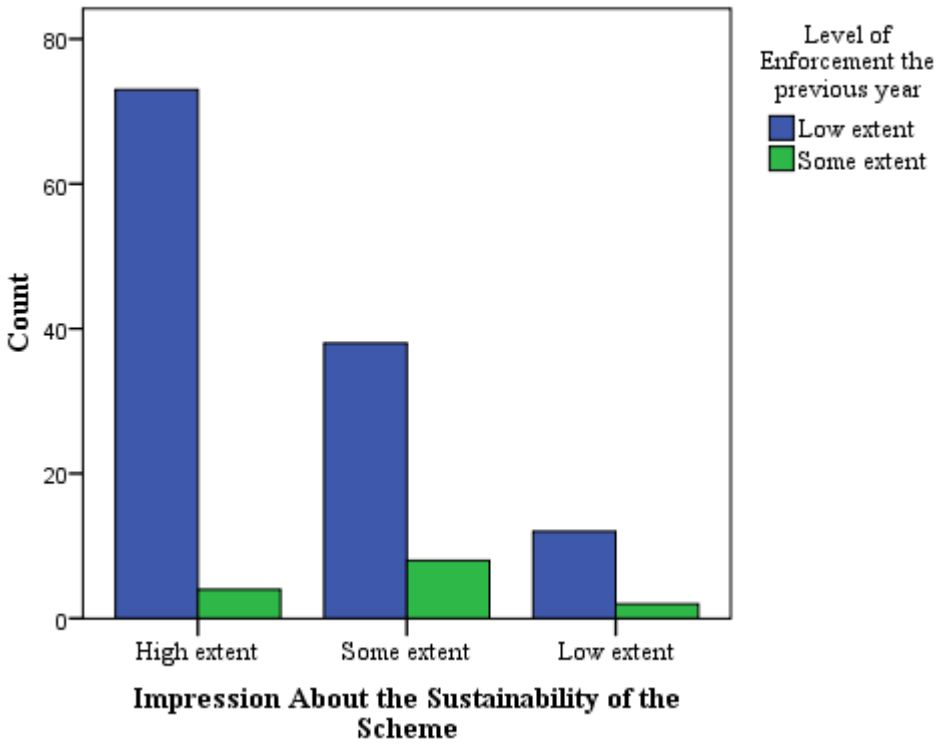


Figure 4.8 Level of enforcement and sustainability of the contract scheme

4.2.16 Cross analysis of the relationship between the outgrowers and GOPDC

This section presents a cross analysis between the determinants of the relationship between outgrowers and GOPDC. It establishes that the relationship between outgrowers and GOPDC is significant. Table 4.25 below shows the counts of significant and insignificant relationships in each of the chi-square tests run. Since the significant cases far outweigh the insignificant case, the study concludes that the relationship between outgrowers and GOPDC is still good.

Table 4.25 Cross analysis of the relationship between outgrowers and GOPDC

	Significant	Insignificant
Level of outgrowers' sale to GOPDC and reason for selling	sig	
Level of outgrowers' sale to GOPDC and Mode of payment by GOPDC	sig	
Level of outgrowers' sale to GOPDC Period of payment a	sig	
Where GOPDC buys FFB and level of outgrowers sale to GOPDC	sig	
Land tenure arrangement and level of outgrower sale to GOPDC	sig	
Sharecropping and level of outgrowers' sale to GOPDC	sig	
Method of contract enforcement and sales to GOPDC		Insig
Level of enforcement and sale to GOPDC	sig	
Total	7	1

4.2.17 Cross analysis of the relationship between outgrowers and GOPDC and perception of sustainability of the scheme.

This section follows the previous one with a cross analysis of the relationship between GOPDC and outgrowers and sustainability. The counts show that there is a significant relationship between the nature of relationship between GOPDC, outgrowers and perception of sustainability of the contract scheme since most of the observation recorded proved significant. Table 4.26

Table 4.26 Cross analysis of the relationship between outgrowers and GOPDC and perception of sustainability of the contract scheme

	Significant	Insignificant
Level of outgrowers' sale to GOPDC and Sustainability	sig	
Mode of payment by GOPDC and sustainability		Insig
Period of payment and sustainability	sig	
Where GOPDC buys FFB and sustainability	sig	
Land tenure arrangement and sustainability	sig	
Sharecropping and sustainability	sig	
Method of contract enforcement and sustainability	sig	
Level of enforcement and sustainability	sig	
Total	7	1

Source: Field Survey, 2012

	Significant	Insignificant
Level of outgrowers' sale to GOPDC and reason for selling	sig	
Level of outgrowers' sale to GOPDC and Mode of payment by GOPDC	sig	
Level of outgrowers' sale to GOPDC Period of payment a	sig	
Where GOPDC buys FFB and level of outgrowers sale to GOPDC	sig	
Land tenure arrangement and level of outgrower sale to GOPDC		Insig
Sharecropping and level of outgrowers' sale to GOPDC		Insig
Method of contract enforcement and sustainability		Insig
Level of enforcement and sustainability	sig	
Total	5	3

4.3 The contribution of the outgrower contract scheme to farmers' livelihood outcomes

An agro industrial company such as GOPDC is part of the community and cannot survive without social engagements. This section looks at the contribution of the outgrower contract scheme to the livelihood of farmers. The contribution could be both targeted and donated. The section is divided into two subsections, the first on the contribution of the social responsibility to all farmers and then the contribution of targeted benefits to outgrowers.

4.3.1 The contribution of GOPDC'S social responsibility to farmers' livelihood in the various communities

As part of the social responsibility of GOPDC to give back to communities some of the benefits from their operations, schools, roads, bridges, clinics, markets, community information centres among others have been built all over the years and these in no small way have benefitted both outgrowers and non outgrowers. The various groups of projects and their years of construction have been analysed to see if they contributed to the extent of the relationship or not. Thus projects that were done in years when the relationship was strong might have being projects to inspire farmers to do more and those done at the time the relationship is not so strong would be to make farmers reconsider the relationship or in sheer philanthropy.

4.3.1.1 The contribution of GOPDC's social responsibility to community accessibility

GOPDC has constructed a number of roads, bridges, and culverts in all four communities under study. The implication is improvement in the lives of the people, predominately farmers, with majority being outgrowers. Table 4.27 clearly indicates that many of the projects for all four communities were constructed seven years back. The table shows 50%, 53.1%, 53.1%, and

55.6% for Otumi, Kwae, Akawani, and Asuom respectively. This means that, the projects are dropping as the level of the relationship has dropped. Thus, even without the contract GOPDC may still go into building roads, bridges, and culverts as it has done for communities that are not even on the scheme like Takorase, and Kusi. The chi square test in this instance indicates that there is a significant relationship between years project was done in the communities and the level of relationship. The chi square value of 74.593, d f 9 and p value 0.000 confirms this.

Table 4.27 The construction of roads, bridges and culverts in towns surveyed

Scheme towns	Roads, bridges etc	Range of years it was provided			Total
	Yes / No	Past 1 year	B/n2 6years	Beyond7years	
Otumi	Yes	6	9	15	30
Kwae	Yes	6	9	17	32
Akawani	Yes	8	10	20	38
Asuom	Yes	7	9	20	36
Total		30	35	71	136

X^2 = 74.593, d.f=9, p value 0.000(sig) source: field survey, 2012.

4.3.1.2 The contribution of GOPDC's social responsibility to provision of energy

Two towns on the scheme, namely Otumi and Akawani have being connected to the national grid owing to GOPDC's efforts. The impact is not only going to be felt in local agricultural industry but in other non agriculture income generating ventures that many outgrowers are engaged in. In this category too, both towns, Otumi and Akawani have also received majority of GOPDC social responsibility projects over the past seven years. The chi square value of 113, d f 2 and critical value of 0.945 shows that there is insignificant relationship between ranges of years the project was provided in the various towns.

Table 4.28 The provision of electricity in the towns surveyed

Scheme towns	Pro. of electricity	Range of years it was provided			Total
	Yes / No	Past one year	B/n 2 - 6 years	Beyond 7years	
Otumi	Yes	6	9	15	30
Akawani	Yes	8	10	20	38
Total		14	19	35	68

X^2 = 0.113, d.f =2 and critical value 0.945(insig) source: field survey, 2012

4.3.1.3 The contribution of GOPDC's social responsibility to provision of community water and sanitation

GOPDC also provided portable water through borehole drilling and well sinking. These projects lie at the centre of the public health of the communities that benefitted from them. As can be referred from Table 4.29, all four communities benefited from the Boreholes and toilets. But 71 of them indicated that those projects were received over four years back .The chi square test for significance gives an indication that a drop in the provision of bore holes and toilets cannot be related to drop in the relationship between outgrowers and GOPDC . Its value of 1.766, d f 6 and probability value 0.0940 shows an insignificant relationship between well construction and range of years.

Table 4.29 The provision of boreholes and toilets to the towns surveyed

Scheme towns	Pro. of wells	Range of years it was provided			Total
	Yes / No	Past one year	B/n 2 - 4 years	Beyond 4years	
Otumi	Yes	6	6	18	30
Kwae	Yes	8	10	14	32
Akawani	Yes	8	10	20	38
Asuom	Yes	8	9	19	36
Total		30	35	71	136

X^2 = 1.766, d. f=6, p value 0.0940(Insig) Source: field survey, 2012

4.3.1.4 The contribution of GOPDC'S social responsibility to community welfare.

GODPC support the communities it operates in not only through the results from its business operations but also several other ways. They invest in education, health, and the environment because they are essential factors in social development with the aim of improving the living standards of the majority of the people. Table 4.30 shows the construction of schools, hospital, clinics, market, and community information centres among others in four communities where the scheme operates. Out of the four communities, Asoum did not seem to have benefitted much from these facilities. The obvious reasons could be that Asuom is more developed than all the other communities are and does not need much of these facilities. Table 4.30 also confirms that, majority of the projects here were done over seven year ago. The chi square test on the other hand indicated slight significance relationship between years projects were done and the type of relationship between GOPDC and the farmers.

Table 4.30 The construction of Schools, Clinics and Market etc, to the towns surveyed

Scheme towns	Pro. of schools, clinics etc	Range of years it was provided			Total
	Yes / No	Past one year	B/n 2 - 6 years	Beyond 7years	
Otumi	Yes	6	6	18	30
Kwae	Yes	8	10	14	32
Akawani	Yes	8	10	20	38
Asuom	-----	1	0	0	1
Total		23	26	52	101

X^{2} = 5.182 d.f=6, p value 0.0521(Sig) **Source: field survey, 2012**

4.3.2 The contribution of outgrower contract scheme to farmer's livelihood outcomes.

In determining the contribution of the scheme to farmer's livelihoods, the existent of income enhancing variables that contributes positively to increase income, which is inherent in the scheme, has been compared between outgrowers and non-outgrowers. The full picture of these variables is clearly understood in the rise in expenditure levels for groups of outgrowers in the same income category as compared with non-outgrowers in the same income level.

4.3.2.1 The contribution of the outgrower contract scheme to farmers' incomes

As can be referred in the analysis, that farmers do not cultivate only oil palm. Thus, they have other sources of agricultural income. The analysis has managed to narrow down on agricultural income obtained from the scheme and that is mainly oil palm. The section considers variables such as main source of agricultural income, farm size, rate of FFB harvest, estimated quantity per harvest per acre etc in determining the impact of the scheme on farmers' income.

4.3.2.2 Farmer type and farmer's main source of income

Many of the outgrowers and non–outgrowers do not depend on oil palm farming only. Many of them cultivate other crops like citrus, cocoa, food crops etc. The results from the analysis indicated that of the 9.3% farmers who cultivate one crop, 55% are outgrowers and 45% are non-outgrowers. Of the 38.3% of farmers who have two farms, outgrowers make up 63.4% whiles the rest constitute non-outgrowers. The same pattern applies to farmers who have 3 and 4 farms. Outgrowers make 61.5% and 70.2% and non-outgrowers make up 29.8% and 36.4% of farmers who have 3 and 4 farms respectively. Many of the farmers both outgrowers and non-outgrowers mentioned that oil palm is their main source of agricultural income. 78.5% of farmers depend on

oil palm as their main source of income, as compared to 20.1%, 9%, and 5% for cocoa, citrus and food crops respectively. Out of the 78.5% of farmers who depend on oil palm, 72% are outgrowers and 28% are non-outgrowers. Figure 4.9 clearly shows this. The chi square test indicates a significant relationship between farmer type and main source of income. Notwithstanding the inherent value of oil palm for all times, the scheme has generated so much interest in the crop and has attracted more people into it. The chi square value is 30.512 d f 3 and probability value 0.000.

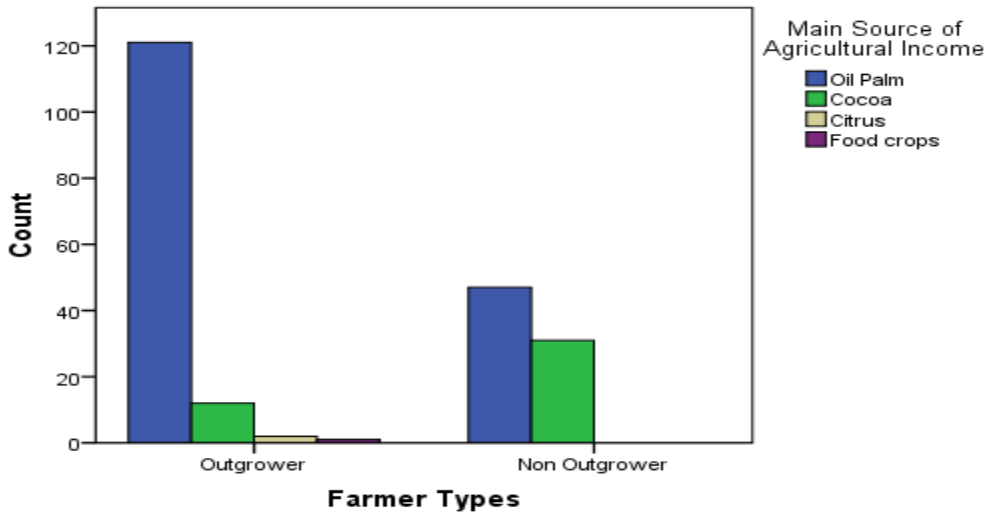


Figure 4.9 Farmer type and main source of income

4.3.2.3 Farmer type and farm size of oil palm

Income from oil palm can be measured with some degree of accuracy and fairness when all farmers, both outgrowers and non–outgrowers are put on the same scale. This is possible when farmers are analysed based on farm size. The disperse nature of the farm sizes has ignited 4 groupings, 1-2, 3-5, 6-8 and 9 above. 3 of the outgrowers and non-outgrowers have land sizes

between 1-2 acres. The rest of the farm sizes have 60, 82, and 69 respondents respectively making farmers who have 6 – 8 acres the largest in each group. The test for significance with the chi square produced a value of 1.939, d f 2 and probability value 0.03792, which is significant. A look at the farmer group figures in Table 4.31 for each of the farm sizes, outgrowers are more and this only confirms the earlier assertions that more outgrowers are landowners. This variable becomes very significant when compared with number of harvest and quantity of harvest.

Table 4.31 Farmer type and size of oil palm farm

Farmer type	**Size of oil palm farm**				
	1-2	**3-5**	**6-8**	**9 above**	**Total**
Outgrower	1	34	56	45	136
Non-outgrower	2	26	26	24	78
Total	3	60	82	69	214

X^2 = 1.939, d.f 2 and p value 0.03792(sig) source: field survey, 2012

4.3.2.4 Farmer type and number of harvest per acre per year

The level of income of farmers who cultivate oil palm, both outgrowers and non-outgrowers can be determined through their harvest. The variable who farmers sell to for the reasons that they themselves have given in the third objective can be a waver on the level of income. However, the margins as far as this study is concerned can be ignored because the market is a competitive one and price differences are not so much.

According to the results of the analysis, many of the farmers harvest every month. They make up 44.6% with 45.3% being outgrowers and 54.7% being non-outgrowers. That would have

being quite disappointing for the scheme. Nevertheless, a second look at the figures shows that 42.3 percent of farmers harvest every two weeks. Of this number, 93.3% are outgrowers and 6.7% are non-outgrowers. The rest harvest every two months and of it too, majority are non-outgrowers. The chi square test proved a very significant relationship between type of farmer and rate of harvest per acre in a year. The chi square value of 60.309 d f 2 and probability value 0.000 best confirms this. The reasons that would account for this are improved seedlings, adequate fertilizer application, and strict adherence to farm practices. This had been provided by the scheme and they fruits are what they are reaping and have refused to sell to GOPDC. Figure 4.10 displays the rate of harvest for the various farmer groups

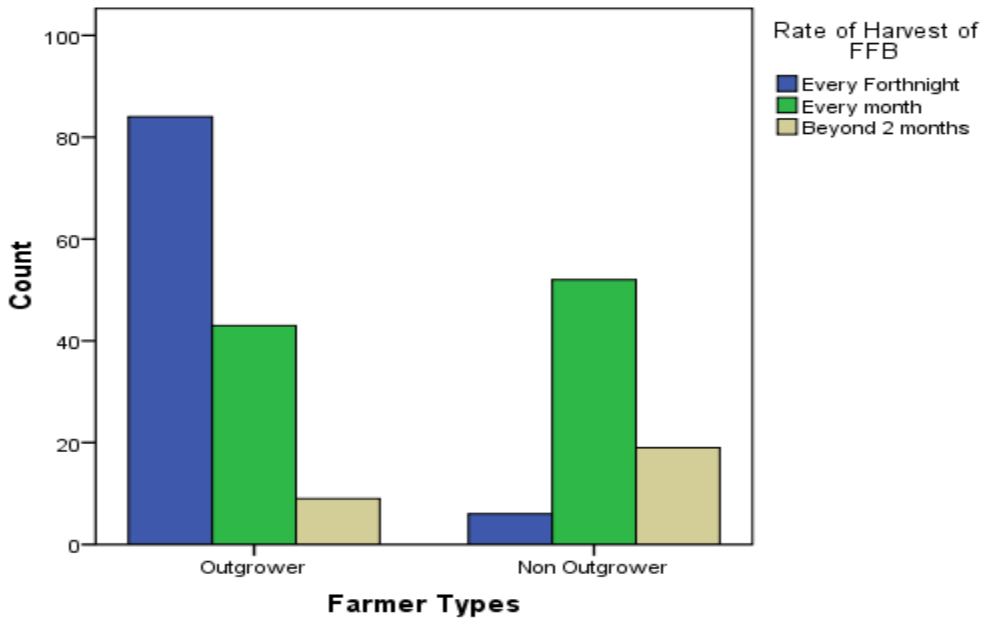


Figure 4.10 Farmer type and number of harvest per acre per year

4.3.2.5 Farmer type and estimated quantity of FFB harvest per acre per year

It is not enough to determine farmers' income through frequency of harvest but match it with quantity per harvest of each acre of farm. The estimated income can be deduced from

multiplying quantity per harvest per acre of farm by unit price and then by the estimated number of harvest in the year to come out with incomes for farmers. Table 4.32 shows that all farmers who harvested 3mt for an acre of land per harvest were outgrowers. Some non-outgrowers, making 31in number also harvested 2mt as their outgrower counter parts who were rather 72 in number. Therefore, overall outgrowers would be richer through each acre of land as compared with non-outgrowers. The reason is that many outgrowers harvest two times in the month and get 6mt per acre in a month as compared to non-outgrowers who many of them harvest once in a month and few get 2mt with many getting 1mt per acre in the month. The chi square test in this instance confirmed a significant relationship between farmer group and harvest per acre with 1.1452 as chi square value, d f 2, and probability value 0.000. This can also be credited to the facilities provided under the scheme for farmers.

Table 4.32 -The relationship between estimated quantity of FFB harvest per acre

Farmer type	**Estimated quantity per harvest per acre**			
	3 tonnes	**2 tonnes**	**1 tonne**	**Total**
Outgrower	62	73	1	136
Non outgrower	2	31	46	77
Total	62	104	47	213

$X^{2 =}$ 1.1452, d.f=2, p value 0.000(Sig) **Source: field survey, 2012**

4.3.2.6 Farmer type and estimated quantity of FFB harvest per farm size per year

The total income of farmers for outgrowers and non-outgrowers has been calculated in the categories of farm sizes. Therefore, outgrowers and non-outgrowers who have similar farm sizes would have their income derived from quantities that each acre of land gives them in their

various farm sizes per harvest. Table 4.33 presents a cross tabulation of three variables, farmer type, and estimated quantity per acre and farm size. From the table, no non-outgrower harvests to the tune of 2mt in two weeks per acre. Outgrowers who have 6-8 acres are among the leading outgrowers who harvest 2mt every fortnight, followed by outgrowers with 9 and more acres and those having 3- 5 acres. For farmers who harvest on1 and 1/2mt per acre of land, outgrowers, and non-outgrowers falling into farm sizes 3-5, 6-8 and 9 above do not show marked differences in their quantity per harvest. Only 1 outgrower harvests 1mt per acre and that farmer falls in the farm group size of 6-8. Most non-outgrowers with farm sizes 3-5, 6-8 and 9 above making 34.8%, 34.8% and 28.3% respectively, harvest a tone per acre. The implication here is that while majority of outgrowers for each farm size group harvest 2mt and minority harvest a metric tonne, majority of non-outgrowers harvest a metric tonne and minority harvest 1 and 1/2mt. The implication is that for farmers in each farm size group outgrowers harvest more than non-outgrower do.

The chi square test in this instance confirmed the contrast in quantity of harvest and farmer types. The test indicated a significant relationship between outgrowers and harvest. It proved that good harvest is a result of deliberate initiative with chi square value of 6.834, d f 9 and probability value 0.0336. The opposite is true in the case of non-outgrowers. The chi square test proved insignificant relationship with a value of 0.612, d f 9 and probability value 0.0894. This means that good harvest has poor relationship with non-outgrowers because of lack of deliberate initiatives like improved seedling and factors mentioned in the previous pages.

Table 4.33 – Farmer type and estimated quantity of FFB harvest per acre per year

Farmer type	Farm size for oil palm	Estimated quantity of FFB harvest			Total estimated quantity harvested
		2 mt	1 &1/2 mt	1 mt	
Outgrowers	1 - 2	1	0	0	1
	3 - 5	11	23	0	34
	6 -8	30	25	1	56
	9 above	20	35	0	45
	Total	62	73	1	136
Non Out grower	1 - 2	0	1	1	2
	3 - 5	0	9	16	25
	6 -8	0	10	16	26
	9 above	0	11	13	24
	Total	0	31	46	77

Outgrowers: X^2 = 6.834, d.f =9, p value is 0.0336 (sig) Non-outgrowers:

$X^{2\,=}$ 0.612, d.f =9, p value is 0.0894 (Insig) Source: field survey, 2012

4.3.2.7 The contribution of outgrower contract scheme to ownership of physical assets.

Income levels can largely be linked to ownership of certain assets. The section present asset farmers have in the various farmer types to present a picture of the contribution of the outgrower scheme to the income and livelihood of farmers. A certain margin of error has being factored in because there may be farmers who inherited these things, did not have it at all, or received it as a gift. With all these reasons, there is still a strong level of confidence to test income levels with ownership of assets. The tables below carries results from data analysis, where one is representing farmers with particular home appliances and the other showing farmers with particular physical property.

Table 4.34 compares out growers and non-outgrowers who have home appliances like T.V sets. Satellite dishes, Fans, Gas/ Electric stoves and Refrigerators. The acquisition and ownership of

these assets are considered as benchmark in determining household well being (Ghana Statistical Services 2007). From the table it can be concluded that outgrowers have a high standard of living than non-outgrowers. This is because except for the data for Gas/ Electric stoves and T.V sets where percentage of those who have and those who do not have for each farmer type is close, all the rest indicated a wider margin of ownership of home appliance between outgrowers and non-outgrowers. It is also true to associate the high standard of living with higher income levels.

Table 4.34 The relationship between outgrower scheme and ownership of physical assets (Home appliance)

Appliance	Outgrower farmers		Non outgrower farmers		Total
	Yes	No	Yes	No	
1.T.V Set	102	34	56	22	214
2. Satellite Dish	90	45	35	43	213
3. Fan	85	24	36	19	164
4Gas/Electric Stove	18	3	16	4	41
5.Refrigerator	74	61	25	53	213

Source: field survey, 2012

Table 4.34 presents an analysis of farmers who own physical properties like Bicycle, Moto cycle, House and Car. The percentages of those who have and have not have been compared based on farmer type to confirm the income levels. The analysis shows that in percentage wise more non-outgrower have bicycles than outgrowers. The picture is different in the case of motor bikes and car where very few non-outgrowers have motor bikes and cars. The same pattern is repeated in the ownership of house. This in itself agrees with farmers who own land for farming where more outgrowers own land than non-outgrower. The general impression is that outgrowers are well of

in livelihood than non-outgrowers. This cannot be attributed solely to the scheme, but beyond all doubts, it has being confirmed that the scheme has contributed significantly to improving the livelihood of farmers.

Table 4.35 The relationship between outgrower scheme and ownership of physical assets (Properties)

Physical properties	Outgrower farmers		Non outgrower farmers		Total
	Yes	No	Yes	No	
1.Bicycle	95	41	55	22	213
2.Motor cycle	68	68	30	47	213
3.Car	39	57	5	73	214
4.House	122	14	49	29	214

Source: field survey, 2012

4.4 Summary

The thesis drew three main conclusions from the analysis. Firstly, the study find out that the socio-economic characteristics of farmers contribute to the acceptance of outgrower contract scheme. Secondly, the type of relationship between agro processing firms and small-scale farmers contribute to the sustainability of the outgrower schemes. Thirdly, the implementation of outgrower contract schemes positively affected the livelihood outcomes of individuals in the communities within which they are developed.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The chapter summarizes the research problem, objectives of the study, methodology, summary of findings and discussions. In addition, the conclusions drawn as well as some recommendations based on the findings are also presented.

The study observed that outgrower contract schemes are established aiming at a win- win situation. However, in the Kwaebibirem District, as Ghana Oil Palm Development Company (GOPDC) contracts farmers to benefits from the scheme, the tool presumably did not prove as very effective in the recent past. Rather, an increasing amount of side selling is observed making GOPDC to suspend its expenditure for out growers' extension and associated services. Meanwhile, during the lean season GOPDC will have to fight for a sufficient supply of fresh fruit bunch (FFB) as their nucleus estate is far too small to secure a cost-covering capacity utilization of their processing mill.

The main objective of the study was to investigate the contribution of outgrower contract scheme to farmer's livelihood outcome. Selected variables such as income levels, acquisition, and ownership of physical assets of the farmer were examined. Also in the examination was the consideration of the nature of relationship between farmers and GOPDC as well as the contribution of farmers' socio economic characteristics to the outgrower scheme. Specifically, the study set out to achieve 3 objectives;

1. Find out how the socio-economic characteristics of farmers contribute to the acceptance of the outgrower contract scheme in the study area.
2. Find out how the nature of relationship between GOPDC and small-scale farmers contribute to the sustainability of the outgrower scheme in the study area.
3. Examine the contribution of outgrower contract scheme on farmers' livelihood outcomes (physical assets-home appliance and properties).

The study used chi square test and cross tabulation to analyze data collected. Tables and figures illustrated details of results of analysis, for clarity and better understanding of findings. In all, 214 respondents were interviewed comprising of 136 outgrowers and 78 non-outgrower farmers.

5.1 Summary of main findings

The thesis drew three main conclusions from the analysis. Firstly, the study find out that the socio-economic characteristics of farmers contribute to the acceptance of outgrower contract scheme. Secondly, the type of relationship between GOPDC and small-scale farmers contribute to the sustainability of the outgrower schemes. Thirdly, the implementation of outgrower contract schemes has positively affected the livelihood outcomes of individuals in the communities within which they are developed. Specifically, the study found that;

5.1.1 Objective 1 -The contribution of socio-economic characteristics to the acceptance of outgrower contract scheme

In discussing analysed results to achieve the first objective of farmer characteristics and the scheme, a cross-tabulated test analysis was used to establish the relationship between outgrowers socio economic characteristics and the terms of the contract scheme. A determination is then made as to its contribution to the productivity of the scheme. The variables are sex, level of education and years of experience.

The study found out that there is a significant relationship between the farmer characteristics tested and the terms of the contract scheme. The sex characteristics tested confirmed the dominant idea that in Africa, agriculture is an occupation for men and middle aged or old men and women because there is a significant relationship between sex and access to land, labour, credit, inputs and extension service. The implication therefore is that there is a significant relationship between sex and acceptance of outgrower contract scheme since a tally of the terms of the contract scheme with sex is on the higher side. The evidence also shows a significant relationship between level of education, farmers experience and the various terms of the contract scheme.

5.1.2 Objective 2 - The nature of relationship between GOPDC and small-scale farmers and its contribution to the sustainability of the outgrower contract scheme

With regards to the relationship between outgrowers and GOPDC, variables about the contract terms were considered to prove the relationship between outgrowers and GOPDC. The variables considered to establish the relationship includes, where GOPDC buys FFB, outgrowers who sell FFB to GOPDC, the mode of payment by GOPDC, the period of payment by GOPDC, level of enforcement, and land tenure arrangement,. The study found out that, the relationship between

GOPDC and the farmers is a bit questionable. The variable outgrowers who sell to GOPDC was cross tabulated with reasons for sale, mode of payment by GOPDC, period of payment by GOPDC, where GOPDC buys FFB, and land tenure arrangements. These variables compared with outgrowers who sell to GOPDC, proved that they significantly contribute to the type of relationship between GOPDC and farmers. Out of the 136 respondents who are outgrower, only 19.1% sell to GOPDC and majority of them do not have problems with transportation. 42.3 percent of those who sell to GOPDC also take it there because of the high price they offer. The results for the mode of payment by GOPDC, period of payment by GOPDC and where GOPDC buys FFB shows that 80.1% of outgrower farmers want payment by cash and the rest 19.9% want payment through the bank transfer. None of them wants cheque. 53.8 percent who sell to GOPDC are paid between one to two weeks with the rest 42.3% receiving their payment after two weeks. The farmers who cannot afford to wait that long may have been forced to sell to the other buyers who from the table shows that they pay for their purchase by the end of the second week. 90.9% of Krammer women buy FFB at the farm gate. This means that they provide for the transport and pay the driver before negotiating for the price. As it stands, 94.4% of the outgrower farmers who sell to the private buyers sell at the collection point. Therefore, the study proved that farmers would want to sell to GOPDC because the price offered by GOPDC is higher than what the private buyers offer. 17.6% of outgrowers who sell to GOPDC owned the land, which is not expected. 58.6% of farmers who owned the land rather sell to private buyers and the rest 17.2% self process it. The test for significance on the relationship proved significant in all the cases identified. All the variables above also significantly contribute to the sustainability of the scheme except for the period of payment.

With regards to sharecroppers who sell to GOPDC, 10% of sharecroppers who give 50% to their landowners sell to GOPDC whiles 17.8% of farmers who give 25% to their landowners sell to GOPDC, and 51.1% sell to private buyers. The test to see if drop in proportions of sale to GOPDC could be attributed to family size and proportions sharecroppers receive proved to have a significant relationship on the relationship between outgrowers and GOPDC and this intend significantly contributes to the sustainability of the scheme.

The contribution of enforcement to the relationship between GOPDC and outgrowers is also significant. Whether contract was ever enforced on the farmer before, method of enforcement, and the level of enforcement were cross tabulated with outgrowers who sell FFB to GOPDC and the proportions that is sold and the results for test of significance is mixed. For the variable, whether contract was enforced before and whom outgrowers sell FFB to and proportions for sale proved significant relationship. Also 96.2%, who sell to GOPDC have being fined just as 81.8%, 92.6% and 83.3% representing who sell to, Krammer women, self-processed and private buyers respectively. People who still sell to GOPDC have been fined the most, which means the method worked. This disagreed with enforcement above, which proved that enforcement did serve as deterrence so much to influence them from selling to other buyers. Apart from the method of enforcement, which does not significantly contribute to the sustainability of the scheme, level of enforcement significantly, contribute to the sustainability of the scheme.

5.1.3 Objective 3 - The contribution of outgrower contract scheme to farmers' livelihood outcomes

The livelihood outcomes of the participants of the outgrower contract scheme are well improved than the non-participants as revealed by the analysis for all the selected indicators for the study.

In examining the contribution of the scheme to outgrowers in particular, farmers' dependence on oil palm and rate of harvest for an acre of land for outgrowers and non-outgrowers were considered. 78.5% of farmers depend on oil palm as their main source of agricultural income, as compared to 20.1%, 9% and 5% for cocoa, citrus and food crops respectively. Out of the 78.5% of farmers who depend on oil palm, 72% are outgrowers and 28% are non-outgrowers. Even though many of the farmers harvest every month, 42.3 percent of farmers harvest every two weeks. Of this number, 93.3% are outgrowers and 6.7% are non-outgrowers. The rate of harvest shows that all farmers who harvested 2mt for an acre of land per harvest were outgrowers. The range of 1mt or less per harvest per acre of land is mainly made up of non-outgrowers with 2.1% being outgrowers. This means that many outgrowers harvest more bunches than non-outgrowers do and so given the market rate of Gh¢ 200 per metric tonne for peak seasons and Gh¢ 250 for lean seasons, the researcher is of the view that outgrowers are better off than non-outgrowers. The analysis concludes by confirming that outgrowers have home appliances and physical assets more than non-outgrowers do. The only variance is with appliances like gas/electric stoves and T.V sets. More outgrowers have homes, cars, motorcycles, satellite, T.Vs, fans among others more than non-outgrowers do. The evidence means that outgrowers have improved standards of living than non-outgrowers do.

5.2 Conclusions

The study concluded that the outgrower contract scheme is sustainable if only the partners are ready to reconsider their positions to the terms of the contract. This is because many farmers are not selling to GOPDC because GOPDC is not paying them cash, but uses bank transfers, payment also delays even though some farmers prefer the bank transfers in order to access loan

services from banks and save. They would also want GOPDC to buy at the farm gate like the Krammer women or at least at the collection point because many of them do not have the means of transport and conveyance may be inconveniencing.

96.2%, of farmers who sell to GOPDC have been fined before for defaulting contract terms, just as 81.8%, 92.6% and 83.3% representing who farmers sell to, (Krammer women, self-processed and private buyers) respectively have been side selling to other buyers. This result disagreed with enforcement above, which proved that the method of enforcement did not serve as deterrence to influence farmers from side selling to other buyers. Apart from the method of enforcement, which does not significantly contribute to the sustainability of the scheme, level of enforcement do not significantly, contribute to the sustainability of the scheme.

It then became clear, that the bane of the whole issue is about enforcement. All farmers are unanimous in the assertion that the level of enforcement has gone low. Probably low because enforcement has not being shifted to farmer association with little commitment on the part of GOPDC to track it because even for farmers who still have some time left to pay their loan, hardly do they sell to GOPDC. The obvious reason is the change in management of GOPDC, which is not enforcing the contract anymore.

5.3 Recommendations

Based on empirical results from the analysis, this study confirmed that participation in the outgrower contract scheme improves farmers' livelihood outcome such as the accumulation of physical assets, than the non-outgrowers. Similarly, the study confirmed that the schemes play a

very vital role in the economic development of the rural communities where the schemes are implemented by assisting communities with schools, boreholes, employment and spin-off employment, health delivery and infrastructure development like provision and maintenance of feeder roads to ensure easy access for the farmers and their farm produce.

Given the above, it is necessary to promote policies that will allow the people of the Kwaebibirem district and Ghana as a whole to continue to benefit from further oil palm schemes development. The following recommendations are therefore, proposed based on the results of the study:

- That the outgrower schemes should be encouraged in other agricultural sectors of the economy since it has proven to contribute to farmer's livelihood outcome.
- GOPDC should establish a continuous trustful relationship with farmers and cope with institutional changes (e.g. overcoming the inherited problems before new management takes over) to trigger win-win situations.

REFERENCES

Abwino, H. R., and Edwin N. (2006). Out-grower system through contract farming - Zambia Grolink / Agro Ecoefficiency in Lesotho". *World Development, 28*(1).

Action for Enterprise Development, (2009). Facilitating the development of outgrower operations: *A manual*

Adato, M., Meinzen-Dick, R. Suseela. (2003). Assessing the impact of agricultural research on poverty and livelihoods. *Quarterly Journal of International Agriculture 42*(2):149-167.

Adewumi, M.O., A.J. Afolayan and P.J. Masika, (2010). Contract farming approach to essential oil production in the Eastern Cape province of South Africa. *Journal of Agriculture and Social Research (JASR) Vol. 10,* No. 1, 2010.

Adjei-Nsiah, S., Sakyi-Dawson, O., & Kuyper, T.W., (2012). Exploring Opportunities for Enhancing Innovation in Agriculture: The Case of Oil Palm Production in Ghana *Journal of Agricultural Science; Vol. 4,* No. 10; 2012.

Akila, N. and M.F. Chander, (2009). Attitude towards utilization of draught bullocks in Indian

Amanor, K.S. and Pabi, O., (2007). Space, time, rhetoric and agricultural change in the transition zone of Ghana. *Human Ecology*, 35 (1), pp. 51–76.

Amanor, K.S., with Kude Diderutuah, M., (2001). Share Contracts in the Oil Palm and Citrus Belt of Ghana. IIED, London. *As Mechanisms for Integrating Smallholder Livestock Producers in the Growth and Bank*, Tokyo.

Bahaman, A.S., Hayrol, M.S., Azril, Md. H., Salleh A.H. Musa and I, Narimah (2009.) ICT contribution in increasing agro-based entrepreneurs' productivity in Malaysia. *J. Agriculture Extension and Social Sci., 5*(3): 93-98

Bajwa, M., (2009). An analysis of effectiveness of extension work conducted under farmers' field school (FFS) approach for sustainable agricultural development in the Punjab, Pakistan. *A thesis submitted in partial fulfillment of the requirements for the degree of Ph. D.*

Benin, S., (2006). "Policies and programs affecting land management practices, input use, and productivity in the highlands of Amhara Region, Ethiopia." In *Strategies for Sustainable Land Management*, edited by J. Pender, F. Place, and S. Ehui. Washington, DC: International Food Policy Research Institute.

Berhanu, G., and Moti, J., (2010). Commercialization of smallholders: Does market orientation translate into market participation? *Improving Productivity and Market Success (IPMS) of Ethiopian farmers project Working Paper 22*. Nairobi, Kenya, ILRI.

Bijman, J. (2008). Contract farming in developing countries: *An overview*. Wage University, Department of Business Administration.

Brempong-Asuming, (2003). Economic and Agricultural Policy Reforms and their effects *Bulletin No. 145*, F.A.O, Rome, 161 p

Carrere, R., (2002), The Bitter Fruit of Oil Palm. World Rainforest Movement

Caterina, P., (2012). An overview of contract farming: Legal issues and challenges) *NS – vol. xvii (*2012). University of Connecticut.Research Report No. 52

Chandra, V. and Osario-Rodarte, I., (2007). Options for Export Diversification and Faster Export Growth in Ghana. In: Ghana: Meeting the Challenge of Accelerated and Shared Growth, Country Economic Memorandum, Vol. II, Document of the World Bank Chatham, UK: Natural Resource Institute, Mimeo report.

Dixon, J., A. Gulliver, Gibbons, D. (2001). *Farming systems and poverty .Improving farmers' livelihoods in a changing world.* Rome and Washington D.C., FAO

Eaton, C., and Shepherd, A. (2001). Contract Farming: Partnerships for Growth. FAO Agricultural Services Bulletin 145.Food and Agriculture Organization of the United Nations. Rome. *Economics* 37(1).

FAO (2010). *Global forest resource assessment 2010 country report:* Papua New Guinea

FAO (2012). *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*. Rome: FAO...

Fritz, S., Husmann, D., Wingenbach, G., Rutherford, T., Egger, V., and Wadhwa, P. 2003. "Awareness and Acceptance Of Biotechnology Issues among Youth, Undergraduates, and Adults", *Journal of AgBioForum 6*, pp. 178-184

Ghana Oil Palm Development Company News, (2011). *The Household Journal of GOPDC, vol 22*

Glastra, R., Wakker, E. and Richert, W., (2002). *Oil palm plantations and deforestation in Indonesia. What role do Europe and Germany play?* Report to WWF Germany.

Gow, H., Streeter, D., & Swinnen, J. (2000). How private contract enforcement mechanisms can succeed where public institutions fail the case of Juhocukor a.s. *Agricultural Economics*

Guo, H., Jolly, Robert, W., and Jianhua, Z. (2007). "Contract Farming in China: Perspectives of Farm Households and Agribusiness Firms*,"*

Grosh, B. (1994), "Contract farming in Africa: An application of the New Institutional Economics," *Journal of African Economies*, 3 (2).

Guy, B. N., Jim, G., and Harounan, K., (2003). Explaining the Failure of Agricultural Production.

Hayrol, A. M. S., J. L. D. Silva, J. Uli and B. A. Samah, (2010). Socio-demographic factor that impinge youth acceptance towards agriculture: The case of contract farming in Malaysia. *American-Eurasian J. Agric. & Environ. Sci., 7* (2): 242-246, 2010

Khan, N.M., M. Akram, U. Pervaiz and I. Jan. (2009). Impact of education of diffusion of dates palm orchards in Northwest Pakistan. *Sarhad J. Agric. 25*(3): 495-499

Larpar ML, Holloway G and Ehui F. (2008).Policy options promoting market participation among smallholder producers. A case of Philippine. Retrieved from www.idio.wiley(22/06/13)

Lenihan, M. H., K.J. Brasier and R.C. Stedman, (2009). Perception of agricultural multifunctional role among rural Pennsylvanians. Rural Sociol. Dev.

Likulunga, M. L., (2005). The status of contract farming and contractual arrangements in Zambian

Makhura, M.T., Coertzee, G.K. and Good, F.M., (1996). Commercialization as a strategy for reconstruction in Agriculture. *Agrekon* 35(1): pp 35-40.

Masood A., Ellahi N., and Batool Z., (2010). Causes of Low Agricultural Output and Impact on Socio-economic Status of Farmers: A Case Study of Rural Potohar in Pakistan in *International Journal of Basic and Applied Science*, Insan Akademika Publications, Vol. 01, No. 02

McLarty, R., (2005). Entrepreneurship among graduates: Towards a measure response, J. Management Development, 24(3): 223-238.

Md. Salleh, H., Hayrol, A.M.S., Bahaman, A.S., Musa A.H., and Narimah I. (2009). "Internet Usage and Its Contribution Towards Agri-Based Productivity in Peninsular Malaysia," *Journal Ilmu-ilmu Sosial Volume 10, pp. 1-9*

Miyata, S., N. Minot and D. Hu, (2009). "Impact of Contract Farming on Income: Linking of Agricultural Tree Crops", *ODI Working Paper* No 139.

Monbiot, G., (2005). The most destructive crop on earth is no solution to the energy crisis. Network Paper 22a (winter 1997/98).

Nor Aini, I., (2003). "Daya Saing Usahawan Wanita Melayu Menghadapi Cabaran Globalisasi", *Paper presented* at The National Conference on Environmental Development Challenges at University Kebangsaaan Malaysia Bangsi, Selangor, Malaysia on 12-13 September 2003.

Norsida, M., (2007). "The Agricultural Community", 50 Years of Malaysia Agriculture: Transformational Issues, Challenges and Direction (pp. 128-143). Serdang, Selangor: UPM Publisher

Ntsiful A.K., (2010). Outgrower oil palm plantations scheme private companies and poverty reduction in Ghana**.** *A dissertation presented to St Clements University, in Turks and Caicos Islands in fulfillment of the requirement for the degree of doctor of philosophy*

Opoku, J., & Asante, F. A., (2008). *Palm oil production in Ghana*. Final report on the status of the oil palm industry in Ghana submitted to German Technical Co-operation (GTZ), Accra.

Osei-Amponsah, C., Visser, L., Adjei-Nsiah, S., Struik, P. C., Sakyi-Dawson, O., & Stomph, T. J. (2012). Processing practices of small scale palm oil producers in the Kwaebibibrem District, Ghana: A diagnostic study. *NJAS-Wageningen Journal of Life Sciences.*

Prowse, M. (2012). Contract farming in developing countries: A review. À Savoir, (2012). Agence Française de Developpemen

Robson, C, (2005). *Real World Research*, Blackwell Publishing.

Rudy, V.G., (2010). Outgrower best practices, field reporting, appraisal and monitoring, and notes on commercial and social dimensions of outgrower arrangement

Shimelles, T., and Tuulikki, P., (2009). Effects of Land Tenure and Property Rights Agricultural Productivity in Ethiopia, Namibia and Bangladesh 33.Sub-Saharan Africa.

Singh, Sukhpal (2002), Contracting out solutions: Political economy of contract farming in the Indian Punjab. *World Development*, Volume 30, No. 9, pp. 1621-1638.

Tauli-Corpuz, V and Tamang, P., (2007), Oil palm and other Commercial Tree Thailand: Lessons Learned", *ADBI Discussion Paper,* 112, July 2008, Asian Development Theoretical Aspects and Analysis of Some Mexican Case Studies." Report to Consider," in A. Gulat, P.K. Joshi and M. Landes (*eds.*), *Contract Farming in India:* under contract? Lessons from non-traditional vegetable exports from Zimbabwe," the Philippines and South Africa. Rural Development Forestry Network, the World Bank, Washington D.C

Ton P. (2002), Organic Cotton Production in Sub-Saharan Africa Pesticides. Policy and Livelihoods Series. PAN UK London.

UNCTAD, (2009). *World Investment Report 2009: Transnational Corporations, Agricultural Production and Development*. New York and Geneva: United Nations

United Nations (2011). General Assembly Special Rapporteur on the right to food, submitted in accordance with General Assembly resolution, 65/220.Sixty-sixth session.

Väeth, S. and Kirk, M. (2011). *Linkages between investors and the local population*: Evidence from the oil palm sector in Ghana.

Vavra, P. (2009). "Role, Usage and Motivation for Contracting in Agriculture,"*OECD Food, Agriculture and Fisheries Working Papers*, No. 16, OECD Publishing.

White, B. and Dasgupta, A., (2010). Agrofuels capitalism: A view from political economy. *Journal of Peasant Studies*, 37 (4), pp. 593–607.

Woodend, J., (2003). Potential of contract farming as a mechanism for the commercialisation of smallholder agriculture. The zimbabwe case study *Report prepared for (FAO)*

World Bank and IFPRI (2010). Gender and governance in rural services: Insights from India, Ghana, and Ethiopia. Gender and Governance Author Team. Washington, D.C.: IFPRI and World Bank.

World Bank, (2006). China's compliance with food safety requirements for fruits and vegetables: promoting foods safety, competitiveness, and poverty reduction. Beijing, China: World Bank.

Yu, B., A. Nin-Pratt, J. Funes, and S. Asrat Gemessa, (2011). *Cereal Production and Technology Adoption in Ethiopia.* ESSP II Working Paper 31. Addis Ababa, Ethiopia: Ethiopia Strategy Support Program II, International Food Policy Research Institute

Zaleha M. N., (2007). Labour in Agriculture. In Fatimah Arshad et al. (Eds.). 50 Years of Malaysian Agriculture: Transformational Issues, Challenges and Direction (pp. 652-658)

APPENDICES

APPENDIX I

SURVEY QUESTIONNAIRE FOR OUTGROWER AND NON-OUTGROWER OIL PALM FARMERS TO ASSESS THE CONTRIBUTION OF OUTGROWER SCHAME TO FARMERS LIVELIHOOD – A CASE OF OIL PALM FARMERS IN THE KWAEBIBIREM DISTRICT OF GHANA

DEPARTMENT OF AGRICULTURAL EXTENSION, UNIVERSITY OF GHANA, LEGON

This questionnaire is meant for data to address the above topic in partial fulfillment for the award of Mphil in Agricultural Extension at the University of Ghana, Legon.

Date……/……./12 Questionnaire # ……

Town: □ Otumi □ Kwae □ Akawani □ Asuom [please tick]

Interviewer…… ……Start Time……..

Farmer…..... End Time……...

Small scale type: Outgrower □ Non-outgrower □ [please tick]

Completed questionnaire checked □=Yes [please tick]

A: SOCIO-ECONOMIC CHARACTERISTICS THAT CONTRIBUTES TO ACCEPTANCE OF OUTGROWER SCHEME

Aq1	What is the size of your family?		Number
Aq2	Gender		1=Male 2=Female
Aq3	How old are you?		Number(see code)
Aq4	What is your marital status?		See code list
Aq5	How many years have you been engaged in oil palm production?		Number
Aq6	What is your highest level of education		See code list
Aq7	Which ethnic group do you belong?		See code list
Aq8	What is your religious denomination?		See code list

Marital status(Aq4)	Highest education(Aq6)	Ethnic group(Aq7)	Religious denomination(Aq8)
1=Married	1=None	1=Akan	1=Catholic
2=Not married	2=Basic	2=Ga-Dangbe	2=Anglican
	3=Secondary	3=Ewe	3=Presbyterian
	4=Tertiary	4=Guan	4=Methodist
Age(Aq3)		5=Guruma	5=Pentecost
		6=Mole-Dagbani	6=Other Christians
1=20-40		7=Grusi	7=Moslem
2=41-60		8=Mande	8=Traditional
3=60+		9=Other tribe	9=No religion
			10=Jehova witness

TERMS OF THE OUTGROWER CONTRACT SCHEME

	How would you rate your access to the following			
ABq1	inputs	Very good	Good	Satisfactory
ABq 2	labour	Very good	Good	Satisfactory
ABq 3	credit	Very good	Good	Satisfactory
ABq4	land	Very good	Good	Satisfactory
ABq 5	How often did you acquire adequate information	Always	Usually	Sometimes
ABq 6	How would you rate your punctuality to trainings	Very punctual	punctual	Quite punctual
AB 7	How often did you contact your extension agents	Very regular	regular	Quite regular

B: THE CONTRIBUTION OF RELATIONSHIP BETWEEN GOPDC AND FARMERS TO THE OUTGROWER CONTRACT SCHEME

Bq1	For the past 12months, who do you sell your FFB to?		See code list
Bq2	If you sell to GOPDC, do you get receipt for sold FFB?		1=Yes, 2=No
Bq3	Which place do you sell your FFB?		See code list
Bq4	If at the farm gate, why?		See code list
Bq5	How long does it take to get your money for sold FFB?		See code list
Bq6	What is the mode of payment?		See code list
	Which of the following methods is used to enforce contract in the last 12months?		1=Yes 2=No
Bq7	-Fine		
Bq8	-Mediator		
Bq9	-Legal action		
Bq10	Who is supposed to enforce contract?		See code list
Bq11	What happens when contract is not enforced?		See code list
Bq12	What is the extent to which these benefits have motivated you to honour the contract?		1= High extent 2=Some extent 3=Low extent
Bq13	Why should GOPDC honour contract?		See code list
Bq14	What is the extent to which GOPDC's reason to honour contract contributes to sustainability of the scheme?		1= High extent 2=Some extent 3=Low extent

Code list

Buyer of FFB(Bq1)	**Place of sales(Bq3)**	**Time 4 money (Bq5)**	**Mode of payment(Bq6)**
1=GOPDC 2=Krammer women 3=Self-processed 4=Private buyers	1=Farm gate 2=Collection point 3=Processing factory	1=1-Day 2=1-Week 3=2-Weeks 4=3-Weeks	1=By cash 2=By cheque 3=Through Bank transfers
Why farm gate(Bq4) 1=cost of transport 2=High Price 3=Early Payment 4=Quantity	**Enforcing contract (Bq10)** 1=Farmer 2=GOPDC 3=Government 4=Chiefs 5=Farmer Association	**Not enforcing contract(Bq11)** 1=Side selling 2=Contract default 3=Reduced product. 4=Crop diversificat	

C: CONTRIBUTION OF OUTGROWER SCHEME TO FARMERS LIVELIHOOD OUTCOMES

Income source

Cq1	What is your main source of agricultural income?		See code
Cq2	How many farms do you cultivate?		Number
	Indicate the type of crop cultivated on the following farms?	Crop	Size of farm
Cq3	-Farm 1		
Cq4	-Farm 2		
Cq5	-Farm 3		
Cq6	-Farm 4		
Cq7	Which of the above farms is private or out grower farm?		
Cq8	Where did you get your planting material?		See code list
Cq9	How did you obtain your farmland?		See code list
Cq10	In case the farm is sharecropped, what proportion of crop goes to the landlord?		See code list
	During the last 12months, how often did you harvest FFB?	Quantity/unit	Price per unit
Cq11	-2-weekly		
Cq12	-3-weekly		
Cq13	-Monthly		
Cq14	-Bi-monthly		
	How much money did you receive from the following non-agricultural activities in the past 2 weeks?	Monthly Value=	Yearly Value=
Cq15	-Sales of prepared meals(e.g .chop bar)		
Cq16	-Wholesale/ retail trade		
Cq17	-Passenger transport(tro-tro, taxi etc)		
Cq18	-Professional service(maison, painters, barbers, hairdressers)		

Code list

Agric income(Cq1)	Planting material(Cq10)	Land owner(Cq14)	Obtain land(Cq15)	Proportion(Cq17)
1=Oil palm	1=GOPDC	1=Farmer	1=Bought 6=Gift	1=2/3(67%)
2=Cocoa	2=OPRI	2=GOPDC	2=Rented	2=1/2(50%)
3=Citrus	3=Others	3=Friend	3=Sharecropped	3=1/3(33%)
4=Food crops		4=Relative	4=Inherited	4=1/4(25%)
			5= From GOPDC	5=1/5(20%)

Farmers' expenditure

	During the last 12months, how much did you spend on the following?	Monthly Value	Yearly Value
Bq1	-Health		
Bq2	-Education		

Physical assets of farmers

	Do you own any of the following physical assets (appliance or equipments)? 1=Yes 2=No		How many are there?	If it were to sell, how much would you get for all of them?
	…..-a		**…..-b**	**…..-c**
Cq1	-Electric or gas stove			
Cq2	-Fan			
Cq3	-T.V.			
Cq4	-Satellite Dish			
Cq5	-Refrigerator			
Cq6	-Bicycle			
Cq7	-Motor cycle			
Cq8	-Car			
Cq9	-Own house			

Community projects

	Which of the following infrastructure has been provided by GOPDC in the past?	Infrastructure	Year
Aq1	-Construction of roads, bridges and culverts		
Aq2	-Building of schools, clinics, markets, toilets etc		
Aq3	-Drilling of bore holes and wells		
Aq4	-Provision of electricity		

APPENDIX II

QUESTIONNAIRE FOR KEY INFORMANTS TO ASSESS THE CONTRIBUTION OF OUTGROWER SCHAME TO FARMERS LIVELIHOOD – A CASE OF OIL PALM FARMERS IN THE KWAEBIBIREM DISTRICT OF GHANA

Name of respondents …..... Date……..

Town/Village……..

Organization /position……

Could you please tell me the extent to which GOPDC supports community projects like, provision of schools, boreholes, clinic, feeder roads, and scholarship scheme for students in the community?

Could you please tell me the extent to which the company's location in the community has contributed to the community socially and economically?

What problems in your opinion are militating against the successful implementation of the schemes and their possible solutions?

As a participating farmer of the scheme, what is your candid opinion on the overall benefits of the scheme and the peculiar problems farmers are confronting with?