

# EMPOWERING SMALL-SCALE PRODUCERS FOR A SUSTAINABLE PALM OIL VALUE CHAIN

challenges of small-scale processors' organizations in the Adansi North District, Ghana.



By  
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September, 2018



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Empowering Small-Scale Producers for a Sustainable Palm Oil Value Chain: challenges of small-scale processors' organizations in the Adansi North District, Ghana

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## **DEDICATION**

I dedicate this research work to my beloved mother for her encouragement, support and inspiration

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## **ABBREVIATIONS**

FO	Farmers Organization
FBO	Farmer Based Organization
CPO	Crude Palm Oil
GOPDC	Ghana Oil Palm Development Company
NORPALM	Norwegian Oil Palm Ghana Limited
BOPP	Benso Oil Palm Limited
TOPP	Twifo Oil Palm Plantation Limited
MoFA	Ministry of Food and Agriculture
AGSSIP	agriculture Sub-Sector Investment Project
MCC	Millennium Challenged Cooperation
PSI	Presidential Special Initiative
GoG	Government of Ghana
COVE	Corporation Village Enterprise
FFB	Fresh Fruit Bunches
FAO	Food and Agriculture Organization
BDS	Business Development Services

## ABSTRACT

The palm oil sector is selected by the government of Ghana as one of the pillars for economic development in the country. The sector is dominated by small-scale producers who cultivate about eighty percent (80%) of the estimated total land area of 330,000 hectares under oil palm cultivation. Despite the small-scale sectors dominance, it is the most challenged with smallholder farmers usually found within the lower asset group in rural communities. Research has shown that farmer-based organizations or cooperatives can help small-scale farmers to overcome their production and marketing constraints that hinder the improvements of their livelihoods. Since the year 2000, Ghana has seen many governmental and nongovernmental projects seeking to promote farmer-based organizations development. Despite the efforts and investments into forming and strengthening FBOs, the Adansi North district is challenged with weak farmer-based organizations. Most of which become inactive after two or three years of being formed. However, studies to show the causes of this trend is limited. The objective of this research was to assess and identify challenges of small-scale palm oil processors organizations and to come up with recommendations for improvements.

A multiple case study and a survey was used to identify the challenges that affects the successful operation of small-scale processors organizations. Four farmer-based organizations were selected from four different communities in the district. Out of the four organizations, two were active and two were inactive based on the rankings by the Ministry of Food and Agriculture. In-depth interviews were done on one leader, three members in each organization and six key informant using checklist. In addition, a survey was carried out on 30 processors from active organizations and 30 processors from inactive organizations using stratified random sampling method. Data collected from the case studies were analyzed qualitatively by transcribing audio recordings and categorizing findings under themes. The survey was analyzed quantitatively using spss and excel.

The findings revealed that the processors organizations provided machinery services to its members but failed to provide marketing services to them. It also revealed that political interference and external supports made farmer-based organizations to be over reliance on external support, which weakened member participation. It was found that small scale palm oil processing is profitable in both the major and minor season in the Adansi North district and that the activeness of the processors organizations has an influence on the profitability of the venture. It was revealed that support services from the Ministry of Food and Agriculture, the Department of Cooperatives and the Banks was very low. The main challenges of the small-scale processors organizations identified in the study are low literacy and training of members, poor managerial skills and business capacity, inadequate market supportive regulatory framework, poor infrastructure, incentive problems, market access problems, inadequate extension support and low financial support.

To address these challenges the study recommended the formation of an apex or secondary farmer-based organization at the district level to coordinates the activities of the local organizations and to give the farmer-based organizations a united representation at the market level and to be more involved in the management of the palm oil value chain. The study also recommended for the decentralized departments to be resourced to provide the needed services to the processors organizations.

# CHAPTER ONE: INTRODUCTION

## 1.0. Background

In terms of production value and trade, palm oil is among the top-rated vegetable oil the world. It accounts for one quarter of global consumption and nearly 60% of international trade in vegetable oils. The increase in consumption is due to its multiple uses in both food industry and non-food sectors. It also has many competitive advantages over other competing oils, such as having low cost of production, high yield, and being free from trans-fatty acids. Oil palm is commercially cultivated on about 12 million hectares of land in the humid tropics. Major producers are Malaysia and Indonesia (87% of global output). Other smaller but significant producers include Nigeria, Colombia, Costa Rica, Ecuador, Honduras, Cote d'Ivoire, Ghana, Cameroon, Papua New Guinea, and Thailand (*The World Bank*, 2011) (appendix 1).

In Ghana oil palm is one of the most important economic oil crops. Its cultivation serves as a means of livelihood for many rural families and indeed the farming culture of millions of people in the country. The reference to oil palm as a crop of multiple value underscores its economic importance. Oil palm has been selected by the government as a key strategic pillar of agricultural and industry-led growth for poverty reduction because of its potential to provide income for many rural smallholders (Osei-Amponsah *et al.*, 2012).

In Ghana oil palm is cultivated in the forest belt, where the annual rainfall exceeds 1200 mm/annum. The total area suitable for oil palm cultivation in Ghana is 1 million hectares. The most suitable areas for oil palm cultivation in Ghana as shown in appendix 1 are in the Western, Central, Ashanti, Volta, Brong Ahafo and Eastern Regions(MOFA, 2011). Large oil palm plantations (nucleus estates and out growers) and processing mills are in these regions. Benso Oil Palm Limited (BOPP), Norwegian Oil Palm Ghana Limited (NORPALM), Twifo Oil Palm Plantation Limited (TOPP), and the Ghana Oil Palm Development Company (GOPDC) are among the large scale producers in Ghana(Sarpong, 2015).

Ghana has been involved in international trade of palm oil since 1820. Oil palm has evolved from wild harvesting into an agricultural crop, first oil palm plantation was established in 1850. This led to palm oil becoming the principal export from the then Gold Coast. In 1880, the country reached a record high of getting 75% of its export revenue from palm oil. Malaysia one of the current leading World producers of oil palm got its first planting materials from Ghana. The current total land size under oil palm cultivation in Ghana is 305,758ha. More than 80% of this is cultivated by private small-scale farmers It is estimated that 243,852tons of palm oil is being produced. Currently there is a shortfall of palm oil supply of 35,000tons in Ghana. The estimated unmet demand in the ECOWAS sub-region is 850,000tons (MOFA, 2011). Ghana thus could explore this demand by developing its oil palm industry further to meet the growing market interest in palm oil both domestically and internationally.

The oil palm industry in Ghana consists of various types of agro-systems, which ranges from large agro-industry estate farms to small-scale farms. Several supply models also co-exist, from fully integrated agro-industry companies with oil mills which procure from their own plantations, to out grower schemes, to small-scale producers – primarily women. The local industry contends with several constraints, including little demand-driven research, limited access to land and finance, high production costs, low levels of technology, low extraction rates and poor-quality of CPO (Crude Palm Oil), and lack of adequate government support (Sarpong, 2015). As part of efforts to address the challenges facing the sub-sector, the Government of Ghana since 1960 has been guided by various policies and programmes that were

formulated and published in 8 national development plans and strategy documents (MOFA, 2011), as shown in appendix 1-C . Most of these policies and programmes did not achieve the expected impacts on the sub-sectors development because they were driven by the large-scale agro industry and favored large plantations for economies of scale forgetting that the oil palm industry in Ghana has always been dominated by small-scale producers and processors who contributed about 93% of total production in 1960. They are still dominant actors in the oil palm industry and are currently contributing over 80% production of FFB (Fresh Fruit Bunches) and palm oil in the country(Sarpong, 2015).

Despite the small-scale sectors dominance, it is the most challenged with smallholder farmers usually found within the lower asset group in rural communities (as shown in appendix 1-D) who are unable to take advantage of the rising palm oil demand and turn this into an opportunity to increase their incomes by raising production and productivity. Why? Because many small and marginal farmers are scattered, they are not grouped, and therefore, alone they are unable to leverage market opportunities. They suffer from high transaction costs, lack access to services and infrastructure, information and knowledge, and productive assets and markets. Another major constraint to their development is that they are scarcely represented in policy and decision-making processes (Jordan Chamberlin, 2008).

To better deal with these challenges and be viable market actors, small scale farmers need to become increasingly organized and join forces. Farmer organizations and cooperatives can empower farmers to address these constraints. Small scale farmers can seize new economic opportunities to improve their livelihoods and food security when they have access to natural resources, productive assets and markets, information and knowledge, and participate in the policy making process. Evidence shows that by collaborating voluntarily in pursuit of a common group goal within their organizations and building linkages with public and private actors within innovative institutional arrangements, men and women farmers can access the productive assets they need to expand their capacities, to seize economic opportunities, and to participate in policy making (WFO, 2012). Findings by the world farmers organization (WFO) shows that many small farmers who are grouped, especially into cooperative- like structures are more viable market actors as they have more access to information, better negotiation power as a group and overall, are better able to take advantage of market opportunities- in virtue of the fact that they are organized rather than scattered and acting alone. Cooperatives and farmer organizations play important roles in rural communities: encouraging democratic decision-making processes, leadership development and education. Given their values and the principles inherent in their structure they are also well placed to be vehicles of inclusion for often marginalized categories such as women and children in value chain development (KIT,Faida, 2006). It is in light of this that the United Nations declared 2012 the international year of cooperatives to acknowledge the importance of organization among smallholder farmers(Schüppler, 2016). For these reasons, the government of Ghana, private organizations and donor agencies over the past decade have implemented several policy strategies, projects and initiatives including the Food and Agriculture Development Policy I and II, and the Medium-Term Agriculture Sector Investment Plan 2009 – 2015 to empower the small-scale farming sector for a sustainable palm oil sector development through formation of new farmers organizations and strengthening of existing ones (Asibey-bonsu, 2012). This study seeks to assess these farmers organizations, identify their challenges and to come up with recommendations for improvement. The focus of this study is on crude palm oil processing and the processors organizations in the Adansi North district of Ghana.

### **1.1. Research Problem**

Recognizing the benefits of Farmer Based Organization, in recent times there has been renewed interest on the part of government and non-governmental institutions to form and strengthen FBOs and Agricultural cooperatives in Ghana (Salifu *et al.*, 2012). Since the year 2000, Ghana has seen many governmental and nongovernmental projects seeking to promote FBO development. Between 2000 and 2007, the World Bank alone invested more than US\$9 million for the development of Farmer Based Organizations (FBOs) as part of Agricultural Service Sub-Sector Investment Project. In 2007, the Millennium Challenge Corporation (MCC) also approved a five-year US\$547 million anti-poverty compact with the Government of Ghana and a significant proportion of this amount was used in the development of FBOs (Salifu *et al.*, 2012). Through Government's policies namely the Growth and Poverty Reduction Strategy (2006 – 2009), and the Food and Agricultural Sector Development Policy (2007) greater emphasis has been placed on the need to develop FBOs as a strategy to improve access to services by smallholder farmers and encourage private sector participation in agricultural development (Republic of Ghana 2005, 2007). The palm oil sector, which has been selected by the government as a key strategic pillar for agricultural and industry led growth for poverty reduction because of its potential to provide income for many rural smallholders, had projects designed to empower smallholders. An example of such projects is the Presidents Special Initiative (PSI) which supported smallholder organizations with planting materials and processing machineries (Osei-Amponsah, 2013). The vision of these projects was to empower smallholder farmers to increase their production and do more activities in the chain by processing their fruits to create more value addition, and through their organizations could participate in the management of the palm oil value chain by partaking in deciding how much they sell, to whom, at what price and even in policy making.

Despite the efforts and investments into forming and strengthening FBOs, the Adansi North district is challenged with weak FBOs. Most of the FBO's become inactive after two or three years of being formed. According to the 2016 annual report and records of the Ministry of Food and Agriculture in the district, 55 smallholder FBOs of which 23 of them are palm oil producer/processors groups have been formed and registered within the last 15 years and out of this palm oil FBOs only 7 are active (District Planning Coordinating Unit-Adansi North, 2016). What might be the cause of this trend? And how can it be changed?" This trend if allowed to persist will hamper the development of the palm oil sector, entrap smallholder farmers in the cycle of poverty, and thwart all government's efforts of developing the palm oil sector. A need therefore arises to investigate why there is this trend despite government's efforts, especially now that as part of efforts by the government to revamp the oil palm sector in the district, the Adansi North district has been enrolled onto the Planting for Jobs and Investment Program a subsidiary of the Planting for Food and Jobs Policy. This thesis intends to investigate why the low level of smallholder palm oil processors organizations in the Adansi North district and explore ways to improve the situation.

### **1.2. Problem Owner**

The problem owner is the Adansi North District Assembly. The Adansi North District Assembly is the administrative head for the Adansi North district. The District Assembly coordinates and implements all government's programs and policies in the district (District Planning Coordinating Unit-Adansi North, 2016). Currently the District Assembly is the planner and implementor of the Planting for Jobs and Investment Program which seeks to transform the palm oil sector in the District. The District Assembly wants to use FBOs as a tool for agricultural development and therefore wants to address this problem the agricultural sector is confronted with.

### **1.3. Research Objective**

To assess and identify challenges of small-scale palm oil processors organizations and to come up with recommendations for improvements.

### **1.4. Research Questions**

#### **1.4.1. Main Research Question 1**

What are the internal issues of small-scale processors organizations?

##### ***Research Sub-Questions***

- I. What are the key characteristics of FBOs and their members?
- II. What are the processes involved in forming FBOs?
- III. What are the challenges of small scale palm oil processing in the district?
- IV. What is the prevailing business capacity and profitability of small scale palm oil processors?

#### **1.4.2. Main Research Question 2**

What are the value chain level challenges of small-scale processors organizations?

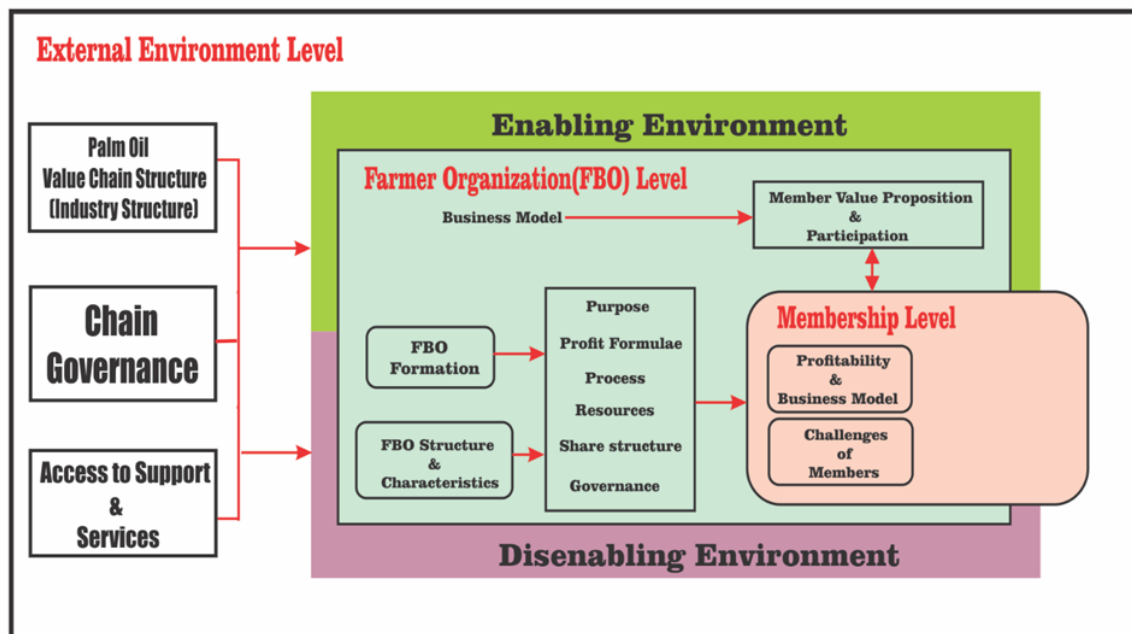
##### ***Research Sub-Question***

- I. What is the structure of the palm oil value chain in the Adansi North district?
- II. What is the effect of the palm oil value chain's governance structure on FBOs' sustainability?
- III. What challenges FBOs access to support and services in the palm oil value chain?

### **1.5. Conceptual Framework**

Farmers organization (co-operative) is a unique business model that fits uncomfortably into existing organizational paradigms. This is due to its dual function or „symbiosis“ in which it simultaneously serves both an economic and a social purpose (Levi and Davis,2008). To better examine Farmers organization very well in a diagnostics studies such as this one which seeks to identify the challenges influencing their failure, the conceptual framework in figure 1 below which was developed by Mazzarol, Simmons and Mamouni Limnios in 2011 would be adopted and used in this study. This is because it looks at the organization from different conceptual levels. As shown, it has three primary levels and a series of sub-elements. The framework's three primary levels relating to the individual member, co-operative/organization level and macro or „external“ environment is drawn from past literature used to examine business organizations (D'Amboise and Muldowney 1988; Tan et. al. 2009).

**Figure 1: Conceptual framework for research into Co-operative Enterprise**



**Source:** Mazzarol, Limnios and Simmons, (2012, p. 3)

### 1.5.1. Member Level

Researchers have found that members' attitudes and perceptions play a significant role in members' behavior toward their organization and impact the performance of such organizations. In the organizational behavior and psychology literature, a great deal of emphasis is given to the interaction and trust among the people involved in an organization, such as a firm, a cooperative, or a labor union. This is because both trust and positive interaction among people reduce transaction costs and enhance revenues. In the case of farmer-owned cooperative organizations, research has shown that effective members' relations and communication between members and management are essential for a cooperative's success. (Birchall and Simmons 2004)

### 1.5.2. Farmer Organization or Cooperative Enterprise Level

At the co-operative enterprise level of the framework the focus is on how the co-operatives business model delivers value to the member. The concept of business models has been studied in recent years as the configuration of products, processes, profit formula (how money is made), and resources required to deliver a customer value proposition (Teece 2010).

The key elements of the business model comprise: i) the co-op's purpose: ii) its formula for generating sustainable profits for both itself and its members; iii) the processes and iv) resources it needs to deliver its purpose; v) how its share structure is configured; and vi) the governance structure (e.g. board composition, constitution etc.) Agricultural or producer co-ops have generally been created for the purposes of giving members enhanced market access and market risk reduction, as well as financial benefits from higher farm gate prices and lower input costs. However, they may also offer improved



productivity through the pooling of resources and bulk purchasing, as well as access to market information, knowledge and opportunities for community building (Krivokapic- Skoko 2002). Finally, co-ops can also allow capturing profits from another operational level and investments that add value to the co-op product or service.

### 1.5.3. The External/Institutional Environment Level

The institutional environment consists of the fundamental set of rules that govern and constrain production, exchange and distribution within a society. These rules/institutions include the formal institutions of the state as well as the informal ones based on custom, tradition, convention and ideology. North distinguishes between institutions which he refers to as the ‘rules of the game’ and organizations which are the ‘players’. The latter include political bodies, economic bodies, social bodies and education bodies, and are groups of people bound by some common purpose.

The institutional environment has considerable influence on FOs, in terms of both their internal and external relations. The formal laws of the state, as well as local institutions based on custom and tradition, determine whether the environment for FO development is an enabling or a disabling one.

## 1.6. Operationalization of main concepts “challenges of Farmer Based Organization”

**Table 1: Unravelling the concept of FBO challenges**

Concept	Dimensions	Sub-dimensions	Indicator
		<i>Membership characteristics</i>	<i>N Males</i>
			<i>N Females</i>
			<i>Age of males/females</i>
			<i>Educational level</i>
			<i>Marital status</i>
			<i>Primary occupation</i>
			<i>Household size</i>
			<i>Household head</i>
			<i>Farm size</i>
			<i>Number of years in processing</i>
			<i>Number of years in FBO</i>
			<i>Participation (dues paying &amp; meetings)</i>
			<i>Production capacity</i>
			<i>Source of capital</i>
			<i>Source of palm fruit</i>
		<i>FBO characteristics</i>	<i>Organizational structure</i>
<i>FBOs Challenges</i>	<i>Internal</i>		<i>Leadership capacity</i>

Concept	Dimensions	Sub-dimensions	Indicator
			<i>Collective Activities &amp; Services</i>
			<i>Source of funding</i>
		<i>FBO Formation</i>	<i>Internally initiated</i>
			<i>Externally initiated</i>
			<i>Formation process</i>
			<i>Availability of fruits</i>
			<i>Availability of labour</i>
		<i>Challenges of palm oil processing</i>	<i>Infrastructure (road, electricity, water)</i>
			<i>Processing machinery</i>
			<i>Market access</i>
	<i>Organizational level</i>		<i>Quality</i>
		<i>Business capacity and profitability</i>	<i>Production volume</i>
			<i>Cost of production</i>
			<i>Revenues</i>
<i>FBOs Challenges</i>			<i>Gross margin</i>
		<i>Value chain structure</i>	<i>Actors</i>
			<i>Functions</i>
			<i>Supporters</i>
			<i>Selling prices</i>
			<i>Value shares</i>
	<i>Value chain level</i>	<i>Value chain governance</i>	<i>Power relations</i>
			<i>Chain coordination</i>
		<i>Hindering factors to support and services</i>	<i>Financial services</i>
			<i>Business advisory services</i>
			<i>Educational &amp; training support</i>

## CHAPTER TWO: LITERATURE REVIEW

### 2.0. Introduction

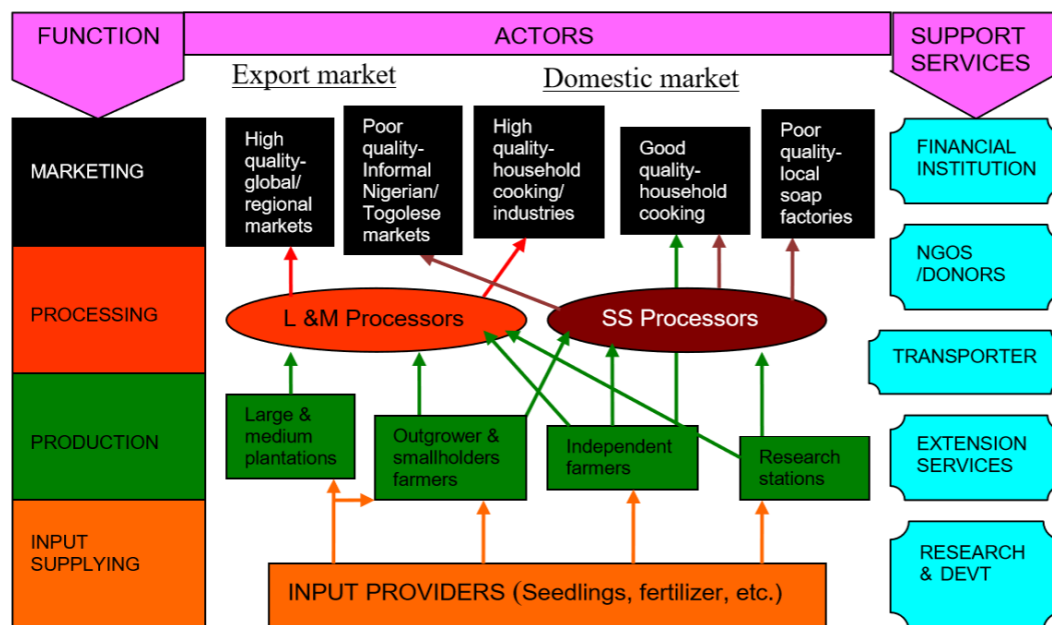
This chapter presents the literature relevant to the study. It presents an overview of the oil palm industry in Ghana, the oil palm small-scale processing industry and the challenges they are confronted with, government intervention and policies for the oil palm industry, and then finally literature relating to the concept of farmers organization is reviewed.

### 2.1. Main actors of the oil palm industry

#### 2.1.1. Small-scale production, processing and marketing

The small-scale independent farmers cultivate 87% of the roughly 306,000 hectares (ha) of land under oil palm cultivation and produce about 80% of the fresh fruit bunches in Ghana (MoFA, 2011). Their farm sizes range from 2-10 ha with an average fresh fruit bunch productivity of 4-8 tons/ha. These farmers are generally free to decide how to use their land, which variety of seedlings to plant, how to manage their farms and which processor to sell the bunches to. Land for cultivation is acquired from chiefs as stool lands (lands attached to the chieftaincy administration), family heritage lands, owned property or rented land for sharecropping. Some farmers use certified seedlings and seed nuts from the Oil Palm Research Institute whilst others tend to cultivate 'volunteer' or uncertified seedlings (Adjei-Nsiah *et al*, 2012).

**Figure 2: Overview of the oil palm industry in Ghana**



L is large scale, M is medium scale and SS is small scale

**Source:** (Osei-Amponsah, 2013)

The small-scale processing enterprise made of artisanal mills is predominant in most oil palm producing areas of Ghana. Processing is semi-mechanized with palm oil extraction done mainly using a separate digester and hand spindle press. Processing capacity is from 3 to 8 tons fresh fruit bunches/day with an extraction rate of 9-15% (GoG, 2010). The (predominantly female) processors go to mills to access processing facilities, extract the palm oil and sell it at the same place. Few processors produce good quality palm oil for home consumption while the majority make poor quality ordinary crude palm oil which is sold to the local soap making enterprise (Figure 2) or to Togolese and Nigerian informal markets. The price of the commodity is determined by these markets and the fruit bunch production seasons.

### **2.1.2. Medium and large-scale production, processing and marketing**

The larger plantations are mostly owned by private foreign investors and the government of Ghana, and they have access to credit from international financial institutions such as the World Bank's International Financial Corporation (World Bank, 2011). The main large-scale players in the industry are Ghana Oil Palm Development Corporation, Twifo Oil Palm Plantation and Benso Oil Palm Plantation. The medium-scale plantations are usually private with or without assistance from financial institutions. Examples are Juaben Oil mills, Golden Star, Ameen Sangari, Obuoma mills and Adansi Oil mills. Both scales of production are characterized by commercial production of fresh fruit bunches with farm sizes ranging from 200 to 500 ha for medium-scale and above 500 ha for large-scale production. The companies generally maintain a nucleus estate which consists of their own plantation, then a smallholder farmers' scheme on the plantation's land, and out grower production schemes based on individual's owned or leased land. Smallholder farmers are bound by contract, credit agreement and other economic arrangements to the plantations. The medium and large-scale producers together with their smallholders and out growers cultivate 13% of the total area under oil palm production in Ghana. Fresh fruit bunch productivity is about 9-14 tons/ha/year (GoG, 2010).

The plantations are also linked to 15-60 tonnes/hour capacity processing and refinery facilities with palm oil extraction rates of 18-21.5% (GoG, 2010). Processing activity starts with the arrival of the fresh fruit bunches at the processing site and ends with the packaging of palm oil for delivery to various buyers. Processing of fresh fruit bunches is highly mechanized. The crude palm oil is of high industrial quality and it is refined into other products, exported and/or sold to domestic manufacturing companies, while smaller quantities are sold at supermarkets as edible vegetable oil. The price of palm oil sold by the medium and large-scale plantation is quoted based on the prevailing world market price and the quality level of the oil.

## **2.2. Development of Small-scale oil palm processing in Ghana**

Oil palm processing started in Ghana around the 16th century and the palm oil produced was first traded to England at about 1590 (Henderson and Osborne, 2000). Interest in its trading however increased only in the early 1800s during the industrial revolution. At this time, palm oil was produced by households (Lynn, 1991) using mortar and pestle for pounding the boiled fruits. Oil palm production was then mainly from natural groves managed by peasant farmers. Later plantations were established by the Dutch (Dickson, 1969). Ghana's first international commercial trade in palm oil was in 1820 (MOFA, 2011). By 1884, 20,000 tons of palm oil (mainly from peasant palm fruit production) was exported and accounted for about 75% of export revenue (Gyasi, 1992). In the late 19th and early 20th century, more plantations were established by the British and other Europeans. Then through an oil palm ordinance in 1913, rights

were given by the government to mill operators to extract palm oil by mechanical means within the vicinity of the plantations. However, this plantation system failed partly due to internal political insecurity and rivalry among the European powers seeking territorial hegemony. Also, the British colonial administration did not favour plantations because it believed the indigenous peasant farming system was more resilient economically (La-Anyane, 1961; 1963). Around the same time, cocoa production surpassed oil palm production because it was less labour intensive (La-Anyane, 1966), this contributed to a decline in peasant oil palm production. Some farmers, however, continued with the small-scale cultivation of oil palm, and sold the harvested fruit bunches or processed them into palm oil (Gyasi, 1992).

Then, after Ghana's independence in 1957, there was a policy change which put more emphasis on plantation systems (Ministry of Agriculture, 1990). This led to the creation of state farms, but the attempts at engaging in state-owned farms did not prove economically viable (Miracle and Seidman, 1968). During this second half of the 20th century initiatives were made to modernize oil palm processing but again with little success. For example, the establishment by the Ministry of Agriculture of communal processing factories developed in high oil palm density areas did not work out, due to lack of enthusiasm from the local people. The factories could not also offer a price which would be above what the farmers could make from processing the fruit bunches themselves, because of the factories' high start-up costs (Kaniki, 1980). Then from 1977, the government sought to promote plantations through private corporations, foreign assisted government ventures, and joint public-private projects. As a result, three large plantations with processing plants were built in the Eastern, Central and Western Regions, but small-scale processing continued alongside the large-scale processing.

Small-scale oil palm processing in the Adansi North district is part of the way of life for most people. In the past, palm oil was produced at home from fruits harvested from wild groves. The oil was produced in small quantities for cooking and the excess sold in the local markets. With the establishment of the Oil Palm Research Institute in 1964, farmers were introduced to high-yielding hybrid (Tenera) oil palm seedling varieties. The production of fresh fruit bunches increased, and it was almost impossible to continue using the old home method of pounding with a mortar and pestle to process several tons of fruit bunches. An artisanal oil palm processing mill using semi-mechanized equipment was first developed and used by a Dutch engineer to process fruits from his farm. Later different designs of the technology spread in many parts of the district. This type of artisanal processing enterprise started developing gradually in the district and palm oil production increased, exceeding household cooking needs. Some traders who were already familiar with buying and selling in neighbouring countries like Togo started purchasing palm oil to sell in their countries market. Since 2005, a Nigerian market has also evolved which buys a large proportion of the palm oil.

### **2.3. Challenges of small-scale palm oil production**

The small-scale palm oil processors as compared to the medium and large-scale processors are confronted with several challenges. Adjei-Nsiah, S., Zu, A. K. S., & Nimo, F. (2012) and Orewa et al (2009) in their studies on financial and profitability assessment identified low oil extraction rate and high FFA content as the major problems of small-scale palm oil producers. In that same research he found out the national annual estimate of palm oil losses because of inefficient processing methods to be 42% of total production in Nigeria.

Semi-mechanized palm oil processing is characterized by over-utilization of resources such as cost of labour and farm size (Adeniyi et al. 2014). In another study, Akangbe, J. A. et al (2011) identified the training needs of small-scale palm oil processors to include the need for expertise in sterilization, stripping, mixing, skimming and clarification activities of palm oil extraction. They also singled out poor transportation network and water scarcity as the major constraints faced by extractors. Still on challenges of small scale palm oil producers, Daniel S.U(2009) and Soyebó et al (2005) identified the major problems faced by small scale oil producers as; the use of low yielding varieties, limited land for growing oil palm, high cost of nurseries and plantations establishment, high labour cost and unavailability of skilled and unskilled labour. The same author further posited that other constraints of this class of producers include fluctuations in market prices, lack of market information as well as spoilage and low-quality products.

SAHEL (2015) and Ofosu-Budu and Sarpong (2013) have also identified that some technical constraints encountered by small-scale Palm oil producers in Ghana include Scarcity or total absence of demand-driven research, limited access to finance, high production costs, inefficient milling methods which, in most cases, are associated with low levels of mechanization, low levels of technology and poor quality CPO, and inadequacy of government support were also identified by SAHEL (2015) and Ofosu-Budu and Sarpong (2013) as some technical constraints facing small-scale palm oil producers in Ghana.

It was also estimated by Poku (2012) that in Ghana processors, especially small-scale processors incur a loss of 38% for every cedi of palm oil sold during the peak period of production. Adjei-Nsiah S., et al., (2012) concluded in their research that the processing and sale of palm oil becomes a profitable business for small-scale producers only during the peak yield period, that is from September to December. To fill the gap between palm oil production and demand in Ghana, these challenges facing the small-scale industry needs to be addressed (SAHEL, 2015).

#### **2.4. Government interventions and policies for the oil palm industry**

Ghana's industrial quality crude palm oil (CPO) production amounted to 520,000 metric tons (MT) in 2017 (Index Mundi, 2018), while 320,000MT of CPO was imported. Crude palm oil production trends over the past 15 years has been low as against domestic consumption (Appendix 1-E). Ghana is a net importer of CPO, but re-packs a portion of what is produced and imported for export to other African countries. Most West African countries are net importers also, and neighbouring countries like Nigeria and Benin imported 300,000 and 620,000 MT respectively in 2017. Most of these imports are from Malaysia and Indonesia, the world's biggest (together 89%) producers of palm oil.

Ghana's projections for high quality palm oil production (2010-2025) suggest there will be only a modest increase in production if the current trend continues without any sustainable intervention in the industry. On the other hand, domestic consumption of the commodity will increase drastically within the period (GoG, 2010). Ghana currently imports high quality palm oil in the order of 50,000 MT per year and this will increase to over 125,000 MT by 2025. There is a growing demand for such crude palm oil not only in Ghana but globally. In West Africa alone, there is a market which demands close to 1 million MT a year. China and India have rapidly growing economies which needs a lot of crude palm oil (imports show an annual growth rate of 100% since 2009) to feed its giant factories. Ghana thus can explore this demand by developing its oil palm industry further to meet the growing market interest in palm oil both domestically and internationally.

At the start of the new millennium, the Ghanaian government identified the oil palm industry as having great potential to create jobs and reduce poverty. Already over 636,000 households, mainly in rural communities, are engaged in oil palm cultivation generating about 8.75 million Ghana Cedis to the agriculture sector (GLSS, 2000). To offset the gap between demand and supply of the commodity, the President's Special Initiative (PSI) on oil palm managed by an inter-ministerial facilitation team was announced in 2002. This was an initiative to make the oil palm industry a key sector for sustained economic growth and development (GoG, 2003). The intervention was to serve as a precursor to agro-industrial development and economic development in particularly rural areas. Taking into consideration that land tenure system in the country remains a barrier for large-scale production, the initiative sought instead to help small-scale farmers to cultivate 100,000 ha of oil palm in the first five years and an extra 350,000 ha in the long run. The small-scale farmers were to be affiliated to processing mills to supply the raw material (fresh fruit bunches). The objective was to encourage farmer ownership in new processing mills to be managed under Corporation Village Enterprise called the COVE concept (GoG, 2004). It was expected that the development of the new oil palm farms and efficient processing facilities would lead to employment creation (about 1.2 million farm operatives alone), foreign exchange generation (net inflow of about US\$1.6 billion from CPO alone) and foreign direct investment flows (over US\$4.0 billion). This pro-poor initiative however did not survive and came to a halt by 2008 (Asante, 2012).

The current development plan document is expected to enhance Ghana's competitiveness in the palm oil export market and to meet its domestic demand for manufacturing and household consumption (GoG, 2010). The plan focuses on access to credit, certification, land use and tenure policy, technology transfer, infrastructure development from the farm to the port, as well as pricing mechanisms and marketing issues. It recommends the establishment of a plantation and processing mill complex through the acquisition of 30,000 ha of land by the government, of which 50% will be used for a nucleus estate and the other 50% for smallholder development schemes. Small-scale processing was found to have a relatively lower efficiency level and questionable sustainability (GoG, 2010). It was thus not part of the best model recommended for addressing the shortfall in palm oil production in Ghana; yet history (Miracle and Seidman, 1968; Kaniki, 1980) shows that past policies and interventions tried to organize and fix developmental changes in the industry through similar interventions but with little success.

At the macroeconomic level, it may seem logical to kick out the 'inefficient' artisanal processors and channel all fruit bunches to the medium and large-scale processors with high extraction rates. On the other hand, there is a high degree of embeddedness of palm oil production in rural societies and the artisanal enterprise provides livelihoods for several people in such areas. So, to enhance growth of the industry, the inefficiencies should rather be identified and addressed. However, the caution here is that, just coming up with technological fixes only to address problems may not be effective because actors in the small-scale processing industry have their own 'science' and practices which need to be understood alongside the introduction of new technology (Barrow, 1992).

## **2.5. Farmer organizations: what are they and what do they do?**

To fill the institutional vacuum created by the structural adjustment programmes in the mid-1980s, in which several Sub-Saharan African governments relinquished support to state-controlled institutions, farmer organizations have emerged in the policy agenda of these governments (FAO 2010). Different terminologies in literature are used to refer to farmer groups including producer organizations, farmer

organizations, groups of co-operative action, or private co-operatives organizations (Asante et al. 2011; Aliguma et al. 2007; Uliwa and Fisher, 2004; Rondot et al. 2001). Farmer Organization as defined by FAO is a formal or informal (registered or unregistered) membership-based collective action institution serving its members, who get part or all their livelihood from agriculture (crops, livestock, fisheries and/or other rural activities). services provided by the Farmer Organization aim to improve the livelihoods of its members, and include access to advice, information, markets, inputs and advocacy. Farmer Organizations differ in terms of their scale or character of membership, function, legal designation, among other dimensions.(Fao, 2014)

### **2.5.1. Farmers' Organization: benefits of being organized**

Some of the benefits of being organized in Farmers organization include the ability to share information and ideas, pool resources, lower production costs, gain access to markets, and it also provides efficient access point for communication with other development actors, as well as advocate through strength in numbers. The Green Revolution in Asian countries has showed that reaching small farms through agricultural growth can be an effective pathway for poverty reduction (Hazell *et al.*, 2010) According to a research done by Latynskiy and Berger, Farmers organizations are: (i) tools for improvement of farmer commercialization and access to output markets, (ii) conduits for diffusion of good agricultural practices and (iii) providers of resources for farms in rural areas. (Latynskiy and Berger, 2016) Accordingly, the Agriculture-for-development strategy formulated by the World Bank (2007) identifies the smallholder farm sector as the foundation for achieving the development of rural economies and suggests enhancement of the performance of smallholder producer organization as the key to improving the smallholder farm sector. It is also proven that cooperative membership have a positive impact on technology adoption by farmers (Wossen *et al.*, 2017). Moreover, in today's agriculture whereby sustainable agricultural production is being championed through certification. The most common way to get small-scale producers, fishermen and forest users to join certification programs is through producer groups. Consequently, such groups have a key role to play in any strategy aimed at enhancing the access of individual farmers to certification (Molenaar, Beekmans and Pelders, 2011). Hence, over the past two decades governments and development agencies have put more attention in the empowerment of rural farmers and communities through collective action institutions, identifying them as important partners in the implementation of agricultural development programs (IFAD, 2001, 2010; World Bank, 2007).

### **2.5.2. The cooperative life-cycle**

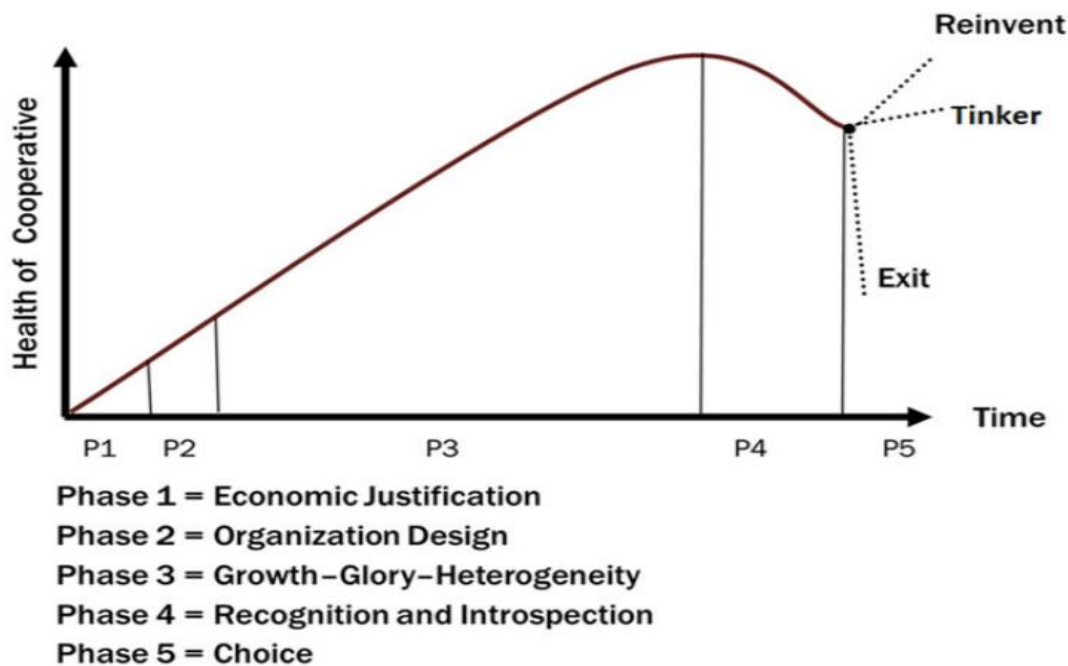
As shown in figure 3 below, according to Cook and Chambers (2007), a Cooperative or farmers organization pass through five different stages in its lifetime and these stages bear different characteristics. To analyze a cooperative one need to first understand these stages;

In the first phase of this cycle (P1), the establishment of a cooperative is driven by the need to improve farmers' access to markets. Cooperatives thus tend to emerge for defensive purposes i.e. to pass risk-bearing to the cooperative level so that individual member patrons can maintain their on-farm value adding capacity. Establishment is followed by a design phase (P2) during which founding members lay down the enforceable rules of the game. It is argued that this is often the phase that receives insufficient attention in defining property rights. Following the design phase, organizations enter a phase of growth, glory and heterogeneity (P3). Increased value-added and organizational consolidation induces member-farmers to develop an increasingly offensive or entrepreneurial attitude and start investing in their



organization. The ability of the organization to grow and maintain its competitiveness depends amongst others on the linkages it manages to establish with other relevant business developments services (BDS) (Best, et al, 2006; Wanyama *et al.*, 2014). BDS include input supplies (seeds, livestock and fertilizers), financial services (micro-credit), market information (prices, trends, buyers and suppliers), transport services, quality assurance (monitoring and certification), technical expertise and business advice, veterinary services and support for product development and diversification (Markelova et al., 2009).

**Figure 3: The Cooperative life cycle framework**



**Source:** Cook and Chambers (2007)

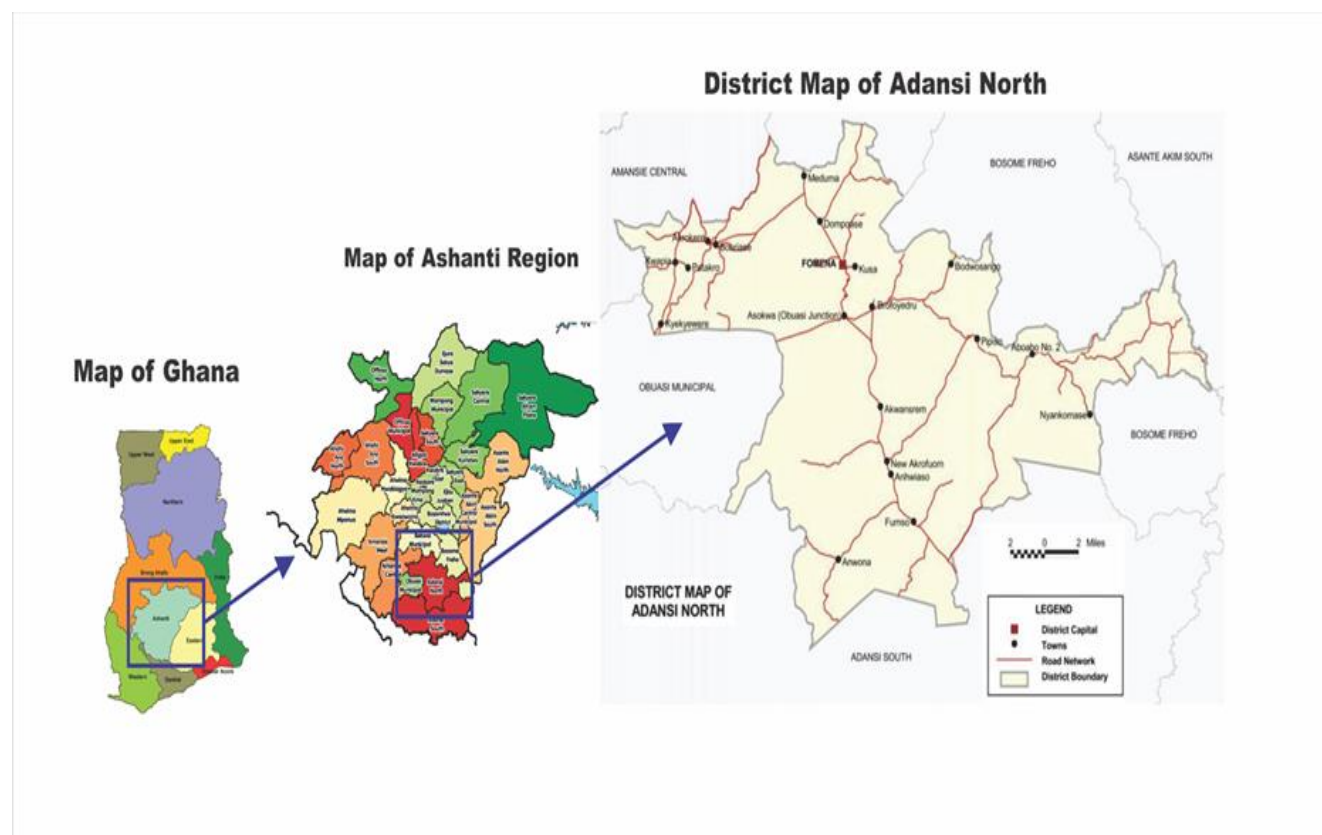
During P3 success leads to growth in membership and because the intrinsic motivation of new and existing members tends to differ, heterogeneity in preferences increases. Due to diverging interests and the persistence of vaguely defined property rights, towards the end of the third phase an organization becomes increasingly exposed to amongst others the free-rider problem, which in turn leads to internal conflicts and shirking. Organizations subsequently enter a phase of recognition and introspection (P4) until they cease to exist, change their organizational form to become an investor owned firm or limited liabilities company, adjust their rules or reinvent themselves in such a way as to enter a new life cycle (P5). Although the cooperative life cycle framework was developed for cooperatives in the US, recent studies have described similar organizational patterns in different parts of the world, including Europe (Nilsson et al, 2012) and Ethiopia (Francesconi, 2008).

## CHAPTER THREE: METHODOLOGY

### 3.0. Study Area

The Adansi North district in the Ashanti Region of Ghana was the focus of the study. The district forms part of the 216 districts in Ghana and is one of the 30 Administrative districts in the Ashanti Region of Ghana. The district is found between longitude 1.5W and latitude 6.3N. The district covers a land size of approximately 11,440 sq km representing 4.7% of the total area of the Ashanti Region. (Ministry of Finance and Economic Planning-Ghana, 2017)

**Figure 4: Map showing the study area**



**Source:** Ghana district map

The district is sub-divided into two constituencies namely the Asokwa constituency and the Fomena constituency. There are 125 communities in the district. The district has a population of 107,091 representing 2.2% of Ashanti region's total population with a growth rate of 2.6% per annum. The males form 49.5% of the population whilst the females form 50.5% of the population. 90% of the population is rural. The population of the district is youthful with 48% of the population in active labour force. The district is dominated by the agricultural sector as the sector employs about 57,228 people in the district. (Ghana Statistical Service, 2014). Most farmers in the district are engaged in crop farming with only few engaging in poultry and fish farming. The dominant crops grown in the district are cocoa, oil palm, citrus and vegetables. The farmers are predominantly small holder farmers with an average farm size of one hectare. The total land area that is under oil palm cultivation in the district is 3,643 hectares and the annual production of Fresh Fruit Bunches (FFB) of the district is 13,114.8 tons. The small holder farmers

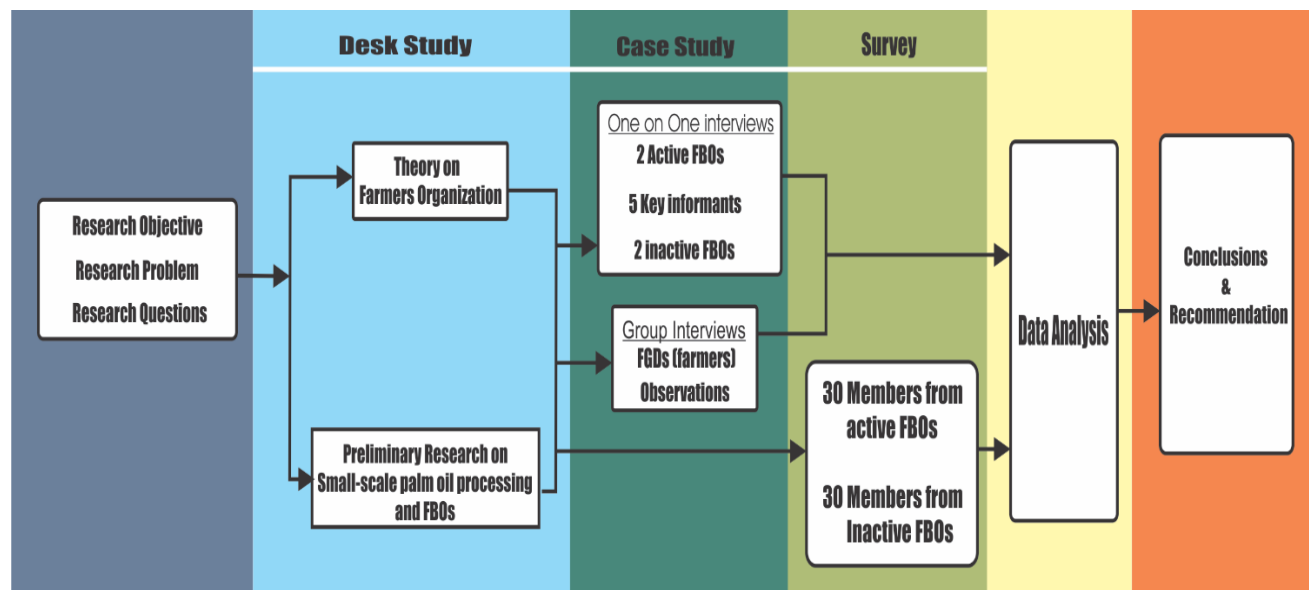
account for 80% of the total annual production of FFB in the district (Ministry of Finance and Economic Planning-Ghana, 2017).

Three communities in the Asokwa constituency namely Fumso, Brofoyedru, and Kyerebroso were purposively selected as one stratum whilst three communities in the Fomena constituency namely Kusa, Dompase and Fomena were also selected as another stratum for the study because of their predominance in small-scale palm oil production. The criteria for selecting the study sites included: market environment, accessibility, presences of cooperatives both successful and unsuccessful.

### 3.1. Study Design and Strategy

An in-dept investigation is required to understand what leads to Farmer Based Organizations failure or success. Therefore, this research used the mixed methods in which both qualitative and quantitative studies was done using desk studies, multiple case study, and survey. To triangulate the methods used, the research followed this design as shown in the research framework in figure 5 below: Desk studies was done in the first phase, then followed by the multiple case study of four FBOs, the final data collection phase made use of a survey. A case study gives an overview and in-depth understanding of a case, process, and interactional dynamics within a unit of study (Kumar, 2011). Qualitative research is indicated by using words, context, and meanings and examining cases (Silverman, 2011). Then, it involves transforming gathered data into knowledge (Rossman & Rallis, 2012). The study was conducted for three months in total with one month of preparation and research proposal, one month of field study, and one month of data analysis and report.

**Figure 5: Research Framework**



**Source:** Researcher

## 3.2. Field Research

### 3.2.1. Multiple Case Study

Considering the objective of the research study, the cases were purposively selected. This was to allow me choose cases which would illustrate some features of interest as argued by Silverman (2005). Two small-scale processors FBOs were selected from the Asokwa constituency and another two from the Fomena constituency. Out of the two in each constituency one was an active FBO and the other was inactive. This selection was made with the help of the district Ministry of Food and Agriculture and the district cooperative department. For each selected FBO, one leader and three members were interviewed using semi structured questionnaires. Purposive sampling techniques were used to select farmers for interviews according to Ritchie and Lewis (2003). In purposive sampling, participants were selected, based on their experience with the FBO including farmers who had an overall knowledge of how the FBO worked and who were able to understand other farmers' situations. Five key informants were also interviewed using semi-structured questionnaires: two respondents from the Ministry of Food and Agriculture, one from the district department of cooperative, one from the Adansi Rural Bank, and one the Adansi Oil Mills. Two focus group discussions were also done in each of the constituencies to discuss the challenges facing the FBOs, their causes and possible solutions. The FBOs studies and their communities are shown in the table below:

**Table 2: Selected FBOs**

Constituency	Status	Name of FBO	Name of Community
Fomena	Active	Kusa Farmers' Cooperative	Adansi Kusa
	Inactive	Harris Co-operative	Adansi Dampoasi
Asokwa	Active	Fumso Agricultural Co-operative Society	Fumso
	Inactive	Brofeyedru Oil Palm Co-operative Growers and Processors Ltd.	Adansi Brofeyedru

### 3.2.2. Survey

Structured questionnaire was designed and used to collect information on the characteristics of small-scale processors, their challenges, profitability of the industry, power relations, relationships with other stakeholders, dissemination of market information, and problems in marketing. 60 small scale processors from 6 communities in the targeted areas (3 communities each from Asokwa and Fomena constituency) responded to the questionnaire to generate a wider scope of information on small scale palm oil production and FBOs in the industry. 10 respondents were randomly selected from each community. The selected communities from the Fomena constituency are Kusa, Dampoase and Fomena, whilst Fumso, Brofeyedru and Kyereboroso were selected from the Asokwa constituency.

### 3.2.3. Data Analysis

The collected quantitative data from the field survey was coded and processed using statistical package for social sciences (SPSS) and Excel. Descriptive data was used to analyse responses from interviews.

The data collected from the case study was transcribed by reading notes taken and listening to audios recorded. The general ideas in the transcribed documents was underlined and coded. After coding, similar

information was grouped into categories, or themes, value chain mapping, and stakeholder matrix was used to analyze and present the findings of the qualitative data.

The results were interpreted and compared with the relevant literature. Therefore, theoretical discussions and empirical data analysis from the surveys, and case study were used to inform conclusions and recommendations.

#### **3.2.4. The choice of Research Strategy**

A multiple case studies was chosen as a research strategy for this research because of the following reasons, according to Yin (2003):

- To have results that is more realistic, taking into consideration the large number of farmers organizations operating under different conditions.
- As compared to a single case study, multiple case study has the advantage of robustness.
- It has the advantage of improving the external validity of the findings, since it gives way for a cross case analysis, to add to this is the fact that comparisons can be made with theory.

However, I was mindful of the fact that a multiple case study may trade-off with the depth of the study, considering the limited time and resources.

#### **3.2.5. Limitations**

The following are the limitations to this study:

- There were few research works done on oil palm and farmer-based organizations in the Ashanti region and the Adansi North district and therefore the study was constraint in terms of using literatures that were specifically relating to the study area.
- July and August, the months in which the data collection was done was the lean season for the palm oil processors and therefore activities of the processors groups were low, coupled with the shortness of the period in which the data was collected, limited the observations made on the group's activities.
- In collecting data for the profitability analyses, because the processors were not used to using weighing scale in their activities, the weight of the fresh fruit bunches were taken based on the weight equivalent of the volume or quantity of fresh fruits bunches used. Some of the respondents gave me the cost and revenue sources of their activities but couldn't give me their records for cross checking because they didn't have records.
- Because the data collection coincided with the National Census of Agriculture, fertilizer subsidy program, and other data collection exercise by the government, farmers had been interviewed a lot within the period and therefore had a lot of my respondents declining interview sessions with them.

## CHAPTER FOUR: RESULTS

### 4.0. Introduction

This chapter presents the findings from the analysis of the internal and external environment of the processors organizations. It begins with the characteristics of the farmers organizations, its members and the associated challenges it poses to the farmers organizations. It then goes on to present the challenges that the farmers and their organizations face in the palm oil value chain.

### 4.1. Socio-economic Characteristics of FBO Members

This section is made up of two parts. The first part describes FBO members demographic profile and the second part describes their economic activities. These two features highlight the basic information on members and their implication on the farmers organization.

#### 4.1.1. Demographic Profile of FBO Members

The demographic profile of the sampled members of small-scaled processors organizations are shown in table 3. The gender of the respondents was skewed: 46 (77%) were females while 14 (23%) of them were males. Adjei-Nsiah et al (2012) reported 89% women dominance in the industry in Kwaebibrem District of Ghana. The dominance of women in the small-scale palm oil processing industry is not peculiar to Ghana as Ibekwe (2008) and Akangbe et al. (2012) reported of similar observation (94%) in Nigeria. It is an indication that the nature of the operations does not encourage male participation.

A mean age of 38 years was recorded for the FBO members, with the youngest being 21 years old and the oldest being 63 years old. The majority (92%) of the processors were between the ages of 31 and 60 years while the remaining 7% and 1% of the processors were below 30 years and above 60 years respectively. This shows that majority of the people involved in the small-scale oil palm processing in the district are within the economically active population as classified by the Ghana Statistics Service (GHANA STATISTICS SERVICE, 2015). This indicates the importance of the small-scale palm fruit processing into palm oil as economic activity for most women in rural communities where oil palm plantations are common.

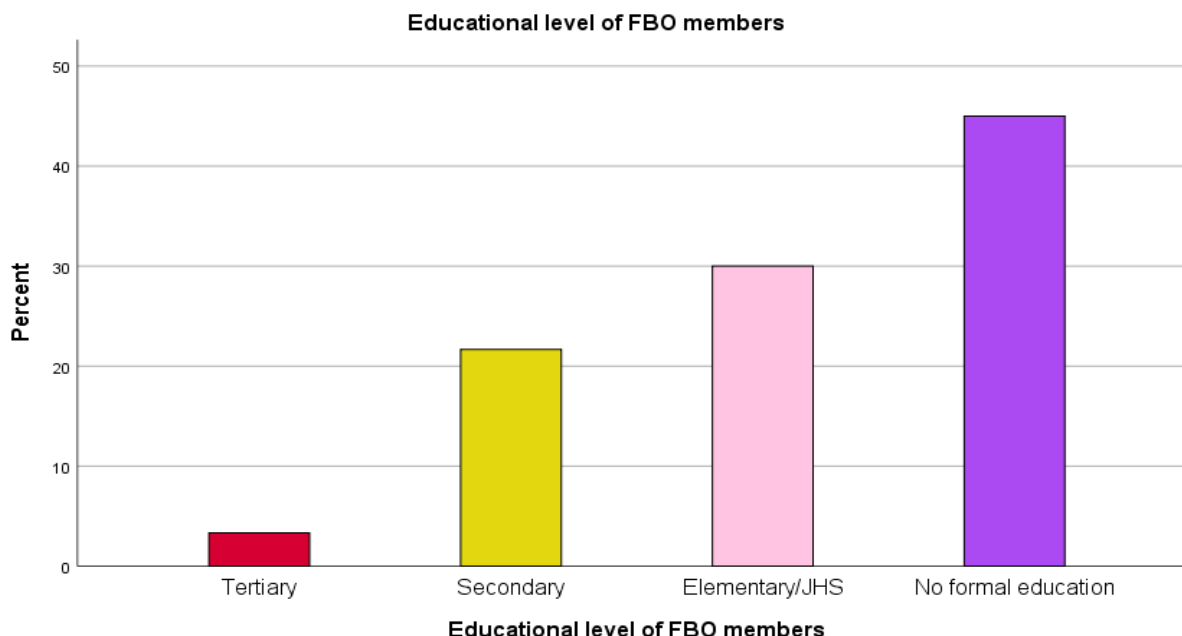
Education plays an important role in palm oil processing operations and FBO management, since it facilitates the adoption of innovations that will improve palm oil processing and the organization. The study revealed that 30% of the respondents had basic/elementary education; 22% had secondary education, 3% had tertiary education and the remaining 45% had no formal education. This shows that the level of education in general of FBO members is low (figure 6). 75% of FBO members had only been to basic school or have never received any form of education. This poses a challenge to the formation and management of farmers organization because all the four groups studied had their leaderships chosen within members of the farmers organization and had not employed the services of a non-member. During the interview with the District Cooperative Officer, he highlighted this as one of the challenges affecting the poor performance of farmers organizations in the district. He stated;

*“working with the farmers’ cooperatives in the district over the years, one of the main challenges working with them and in the management of their groups is the low illiteracy level. This makes reporting and records keeping difficult and moreover they don’t have enough money to hire the services of an expert.”*

Comparing the educational levels of the active and inactive FBOs as shown in table 6 revealed that members who belonged to the active FBOs had a higher level of education than members of the inactive

FBOs. The active FBOs had members in every educational level where as the Inactive FBOs members highest level of education was senior high school.

**Figure 6: Educational Level of FBO Members**



**Source:** Field Survey, 2018

This shows that the level of education of members has an influence on the activeness of the FBO. An observation made from the four groups studied also revealed that the leader of the FBO were among the highly educated members. The study revealed that the sampled small-scale FBO members did not have enough training as only 32% had extension training while 68% had never benefited from any extension training. According to the members interviewed most of the processors were informally trained by parents.

Out of the 60 sampled processors 15% had been in processing for between 1-7 years, 45% had 8-15 years processing experience, 25% had been in the business for 16-22 years, 10% had been in the business for 23 to 30 years and the remaining 3% had been in processing business for more than 30 years. The mean processing experience was estimated at 13 years which implied that the processors are experienced in the processing business.

63% of the respondents were married and the remaining 37% were single. About 75% of the respondents had their household size ranging between five and nine persons. The mean household was six people (6); this is higher than the national average of four (4) members per household (GLSS, 2008)

**Table 3: Demographic Profile of Respondent**

<b>Variables</b>	<b>Frequency (n=60)</b>	<b>Percentage (%)</b>	<b>max</b>	<b>min</b>	<b>mean</b>
<b>Gender</b>					
Male	14	23.3			
Female	46	76.7			
<b>Age</b>			<b>63</b>	<b>21</b>	<b>38</b>
21-30	4	6.7			
31-40	18	30.0			
41-50	26	43.3			
51-60	11	18.3			
>60	1	1.7			
<b>Level of Education</b>					
No formal education	27	45.0			
Basic education	18	30.0			
Secondary education	13	21.7			
Tertiary	2	3.3			
<b>Training Status</b>					
Ever been trained	19	31.7			
Never been trained	41	68.3			
<b>Marital Status</b>					
Single	22	36.7			
Married	38	63.3			
<b>Household size</b>			<b>9</b>	<b>2</b>	<b>5.9</b>
2-4	15	25.1			
5-7	32	53.3			
8-9	13	21.6			
<b>Experience in processing (years)</b>			<b>38</b>	<b>2</b>	<b>12.8</b>
1-7	9	15.0			
8-15	27	45.0			
16-22	15	25.0			
23-30	6	10.0			
>30	3	5.0			

**Source:** Field Survey, 2018

#### **4.1.2. Economic Activities of FBO Members**

Economic activities of respondents are presented in table 4. Palm oil processing was found to be the primary occupation for 47% of the respondents whilst 48% of the respondents have oil palm farming as their primary occupation whilst the remaining 5% were involved in other activities such as trading and



cocoa farming. 20% of sampled processors sourced their palm fruits for processing through purchase, 58% through own farm production and the remaining 22% through both purchase and own farm production.

Results from the study showed that personal savings was the primary source of capital for the processing business which recorded 42% of the response whilst 52% responded that their source of capital is from both borrowed and personal savings. Further studies showed that 77% of the respondents got their borrowed capital from traders on pre-financing terms and 23% got their funding from banks. The members interviewed revealed that the interest rate of the banks is very high, and the repayment terms of the loans are not suited to the work they do. One member stated;

*“I took 500 Ghana cedis from one bank and I had to pay 120 Ghana cedis every month for six months. This was difficult for me because its not always that I got fruits to process and our market price is also not stable, but the bank pressured me to pay. So, since then I have vowed not to go for a bank loan”*

An interview with the credit manager of one of the major banks in the district confirmed this, he stated that as at the time of this research the bank did not have any package for agro-loans and that farmers and processors who access their loan packages do it as any other commercial entity.

The most common type of labor used was hired labor recording 57% of the sampled respondents whilst both family and hired labor also recorded 38%.

**Table 4: Economic Activity of FBO Members**

<b>Economic Activity</b>	<b>Frequency (n=60)</b>	<b>Percentage (%)</b>	<b>max</b>	<b>min</b>	<b>mean</b>
<b>Primary occupation</b>					
Oil palm farming	29	48.3			
Palm oil processing	28	46.7			
Others	3	5.0			
<b>Source of palm fruits</b>					
Own farming	35	58.3			
Purchase	12	20.0			
Both	13	21.7			
<b>Type of labor</b>					
Family labor	3	5.0			
Hired labor	34	58.7			
Both	23	38.3			
<b>Source of capital</b>					
Personal savings	25	41.7			
Borrowed funds	4	6.7			
Both	31	51.7			
<b>Source of borrowed capital</b>					
Banks	8	13.3			
Traders (pre-finance)	27	45.0			

**Source:** Field Survey, 2018

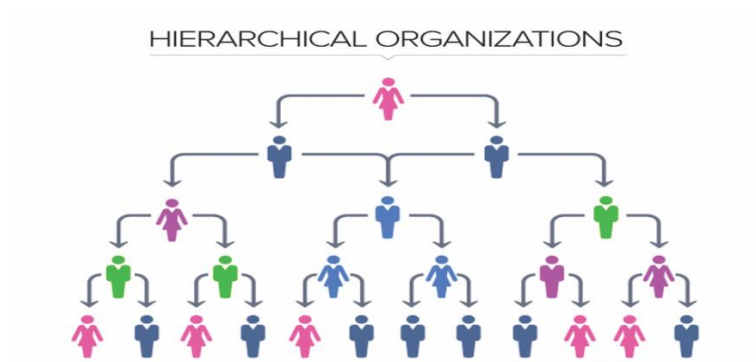
## 4.2. Characteristics of the Oil Palm Processors Organizations

### 4.2.1. Organizational Structure and Leadership

All the four processors organizations studied in this research had a simple hierarchical form of organizational structure with the Chairman as the leadership head assisted by a treasurer, organizer, and executive secretary (figure 7). These leaders steer the affairs of the organization. The leaders are democratically elected for a term of office agreed on by members. 48% of the leaders of the organizations were males whilst 52% were females. 29% of the leaders have tertiary education, 62% have high school education and 9% have basic education (Table 5).

The four processors organizations studied were legally registered by the Department of Cooperatives as cooperative societies and had the characteristics of a cooperative, that is they were owned and democratically controlled by their members, were not motivated by profit, and were formed solely to serve its members.

**Figure 7: Hierarchical Organizational Structure**



*Source: Morgan (2017)*

**Table 5: Educational Level and Gender of FBO Leaders**

Name of Famer Based Organization	Level of Education of Leaders			Total	Gender of Leaders		Total
	Tertiary	High School	Basic School		Females	Males	
Kusa Farmers' Cooperative	2	4		6	4	2	6
Harris Co-operative	1	5		6	2	4	6
Fumso Agricultural Co-operative Society		4	2	6	5	1	6
Brofeyedru Oil Palm Co-operative Growers and Processors Ltd.	3			3		3	3
<b>Total</b>	<b>6</b>	<b>13</b>	<b>2</b>	<b>21</b>	<b>11</b>	<b>10</b>	<b>21</b>
<b>Percentage</b>	<b>29%</b>	<b>62%</b>	<b>9%</b>	<b>100%</b>	<b>52%</b>	<b>48%</b>	<b>100%</b>

*Source: Case Study Result, 2018.*

#### 4.2.2. Activities and Services

According to the by-laws of the organizations, the four farmers organizations studied had been set up to serve these purpose; to provide marketing services to its members in a profitable manner, to purchase and supply its members with agricultural inputs, to improve the accessibility of its members to appropriate credit facility, to facilitate in extension delivery to its members, the FBOs was expected to acquire and distribute information about the most successful ways of farming and processing palm oil, in order to increase the profitability of their members (FBOs constitution). Out of the above listed objectives of the farmers organizations studied, it was machinery services that all the farmer-based organizations except Harris Cooperatives provided to its members. For the remaining, the organizations were challenged in providing it for its members. Results from the survey confirmed that machinery services were the major service that members were receiving, out of the 60 respondents 47 were receiving machinery services from their organization whilst 13 were not receiving. Comparatively respondents from the active groups were receiving machinery services more than respondents from the inactive groups.

**Table 6: Level of Machinery Services by FBO**

		Group Status		Total
		active	Inactive	
Do you receive machinery services through FBO?	yes	28	19	47
	no	2	11	13
Total		30	30	60

**Figure 8: Hydraulic press machine (Brofoyedru Co-operative)**



**Source:** Field Observation, 2018

For market services, none of the four organizations studied in the case study did collective sales. Members sold their palm oil individually to traders who come to the processing center to buy. Results from the survey showed that although majority of the groups don't provide market services to their members, some groups assisted their members to sell their oil. As results from the survey revealed that 15 out of the 60 members received market services from their organizations (table 7). With Fumso Agricultural Cooperative, the members were obliged to sell to the mill owner to which some of the members are not happy with that arrangement as one of the members interviewed expressed dissatisfaction with the price they receive for the oil. The inability of the organization to provide market services to its members was one of the challenges of the farmers organizations in the Adansi North district that influence members participation and the activeness of the organization. As comparison between respondents from active and inactive organizations showed that majority of the active members received markets services from their groups whilst only few members from the inactive groups received market services (table 7).

**Table 7: Level of Market Services by FBOs**

		Group Status		Total
		active	Inactive	
Do you receive market services through	yes	13	2	15
FBO?	no	17	28	45
Total		30	30	60

**Source:** Field Survey, 2018.

According to the leaders and members interviewed what makes collective bargaining and sales difficult to implement in the organizations are; the organizations don't have storage facility to store large volumes of oil as observations from the field confirmed this ( figure 9), the organizations do not have capital to buy from farmers, and because of the low-income status of members they wouldn't accept for their products to be kept for collective bargaining and sales.

**Figure 9: Storage facility used by one of the organizations**



**Source:** Field Observation, 2018

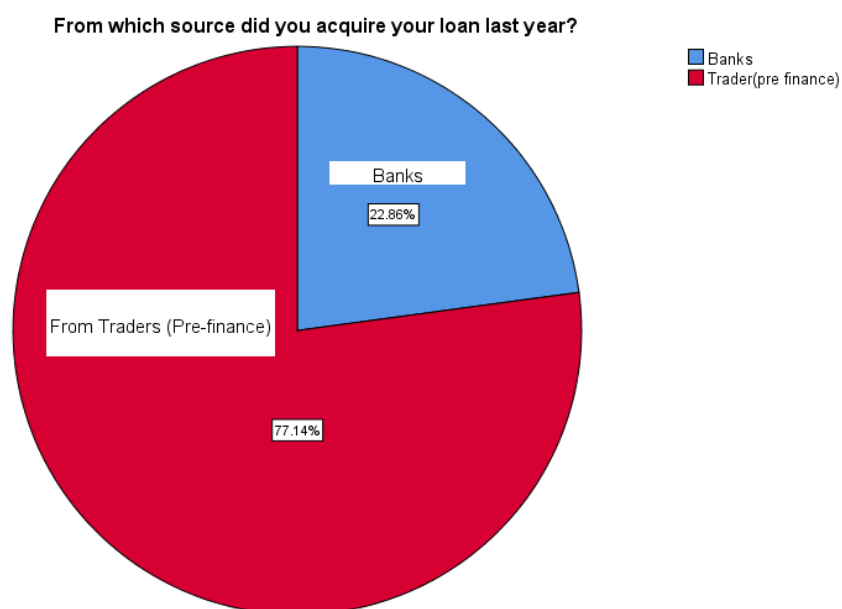
Access to credit as indicated by the organizations as a service they seek to render to their members was identified as one of the challenges of the organizations. None of the four processors organizations had accessed credit facility from a financial institution as at the time of conducting this research. The respondents gave high interest rate and unfavourable repayment conditions as the hindering factors that deter them from accessing bank loans. Results from the survey shows that 18 respondents out of 60 were the only members who had received credit services from their organization as at the time of the research. Comparing the members of the active organizations with the inactive revealed that out of the 18 members receiving credit through their organization, 17 of them were from the active organizations whilst only one member had received credit from his/her organization (table 8). Further studies revealed that 22% of these credit facilities was from banks whilst 77% were acquired from traders on pre-finance terms (figure 10). That is, the traders give processors interest free credit which the processors payback with the processed oil.

**Table 8: Level of Credit Services by FBOs**

		Group Status		Total
		active	Inactive	
Do you receive credit services through	yes	17	1	18
FBO?	no	13	29	42
Total		30	30	60

**Source:** Field Survey, 2018.

**Figure 10: Source of loan**



**Source:** Field Survey, 2018.

Results from the studies showed that most members were not receiving technical support services through or from their organizations. From the survey results 15 members out of 60 were receiving technical support from their organization. Out of the four groups studied it was only the Fumso cooperative that the leaders and members affirmed that they usually have contact with the Agricultural Extension Agent (AEA) in the area. For the other organizations according to their leaders and members the Agricultural Extension Agents and the Cooperative officer hardly visits. One leader stated;

*“Since we formed this cooperative, the Agric officer has been here only twice and for the past three years no government official has come here to give us any training. It is the Cooperative officer who used to come and check our records but even him it’s been more than a year since he came.”*

**Table 9: Level of Technical Services by FBO**

		Group Status		Total
		active	Inactive	
Do you receive technical support through	yes	10	5	15
FBO?	no	20	25	45
Total		30	30	60

**Source:** Field Survey, 2018.

#### 4.3. Formation of the Processors Organizations

Contrary to the unique characteristic of Cooperative or Farmer Based Organization that it should be a voluntary and autonomous association (Ortmann and King, 2007), results from this studies showed that formation of most of the farmer based organizations in the Adansi North district were influenced by governmental and donor funded projects. From the case studies of the four cooperatives, three of the cooperatives were formed in the early 2000 when the Presidential Special Initiative on oil palm project and the Agricultural Sub-Sector Improvement Policy projects were being implemented. Most members joined the farmer-based organizations to benefit from these projects. As was stated by one of the leaders;

*“Initially when the association was formed our membership was around 200. Most of the farmers joined thinking they were going to receive money from the government so after some time they left since their expectation was not met. Now we have 75 members who are highly motivated to be members.”*

These external influences alter the formation processes of some of the processors organizations and makes them weak right from the beginning. This was evident in the trend observed in memberships of the organizations. From the results, Kusa Farmers’ Cooperative started with more than 200 members and after one year their membership declined to 75 members, Harris Cooperative started with 126 members and then declined to 20 members, Brofoyedru Oil Palm Cooperative Growers and Processors started with 174 members and then declined to 67 members. According to the one of the key informants some of the groups do not pass through the due process of formation, he stated;



*“Some of the groups are formed with some politicians spear-heading their formation with the intention to amass votes from farmers especially during campaign periods. Some of these groups have taken delivery of processing machines about three years now and they are yet to install them”*

#### 4.4. Challenges of Small-scale Palm Oil Processors in the Adansi North District

The sampled small-scale processors were presented with a list of 13 constraints identified through focus group discussion and those reported in literature as hindering efficient palm oil processing. The task of each respondent was to rank the challenges from most pressing to least pressing challenge to processing. Table 10 displays the results of the rankings.

**Table 10: Challenges of small-scale palm oil processors**

<i>Challenges</i>	<i>Mean Rank</i>	<i>Rank</i>
Market price fluctuation	4.6	1 <sup>st</sup>
Limited access to credit	4.4	2 <sup>nd</sup>
Inadequate market information	3.9	3 <sup>rd</sup>
Training needs	3.6	4 <sup>th</sup>
Poor road network	3.5	5 <sup>th</sup>
Insufficient milling machinery	3.3	6 <sup>th</sup>
Poor Agric Extension contact	3.2	7 <sup>th</sup>
Use of low yielding varieties	3.2	8 <sup>th</sup>
Competition from large scale producers	2.9	9 <sup>th</sup>
Limited access to markets	2.9	10 <sup>th</sup>
High cost of labor	2.7	11 <sup>th</sup>
Inefficient milling machinery	2.7	12 <sup>th</sup>
Scarcity of labor	2.6	13 <sup>th</sup>

**Source:** Field Survey, 2018.

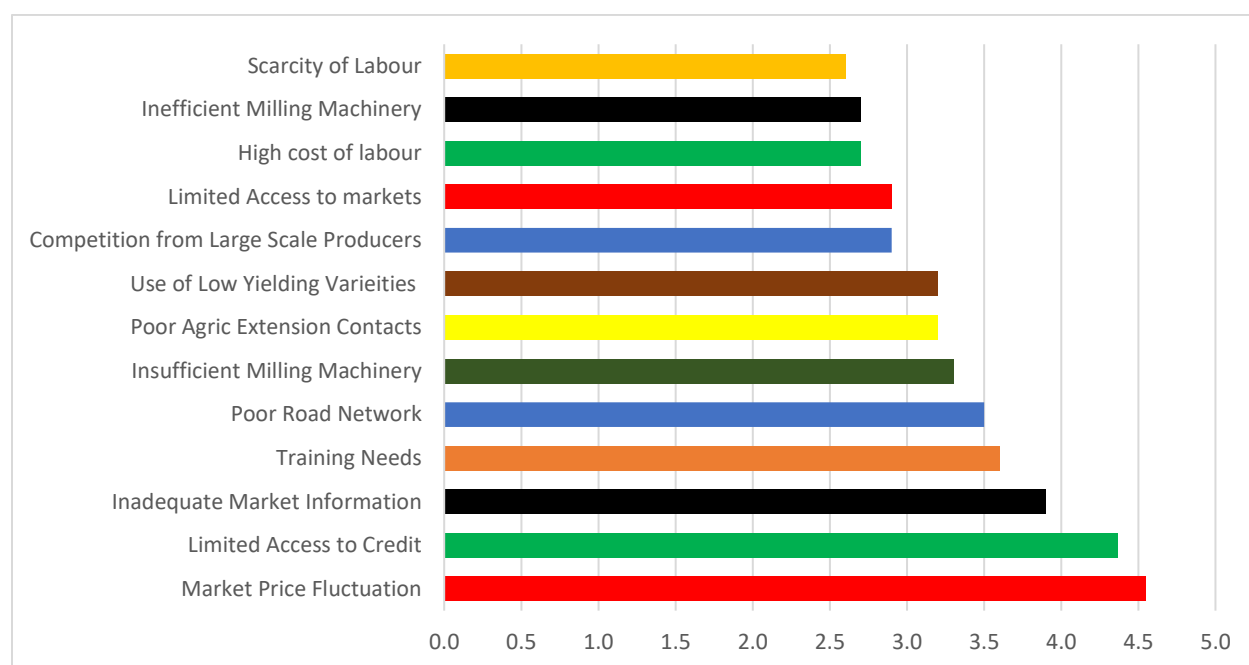
The scale used for ranking: 5 = the most encountered problem, 4 = the second most encountered problem, 3 = the next and so on.

According to the ranking, the first two ranked as the most troubling issues are market price fluctuation and limited access to credit. From the focus group discussion with the processors, the instability of palm oil price on the market has a serious effect on the profitability of their business because they said it makes it difficult for them make projections on their profitability and puts them at the mercy of the traders. They said they sometimes run at a loss because of this. *“we buy the fruits at the same price as the selling price of the oil, for example if a gallon of oil is selling at 100 Ghana cedis we buy a box of fruit bunches too at 100 Ghana cedis and sometimes after processing you can find the price of oil dropping to 75 Ghana cedis”* stated one of the processors.

Limited access to credit was ranked second with average score of 4.4 which is very close to the average score for the market price. According to the processors, if they had enough capital they could produce more and make more money because the business is lucrative and therefore wants the banks to reduce their interest rates and make their repayment terms flexible to suit their business. Inadequate market information which is related to the price fluctuation was ranked third. According to the processors the

price is determined by the traders and sometimes it is very difficult to get updates on the selling prices. These were the top three challenges according to the rankings. The remaining in descending order of severity as shown in figure 11 are training needs, poor road network, insufficient milling machinery, poor agricultural extension contact, use of low yielding varieties, competition from large scale producers, limited access to markets, high cost of labor, inefficient milling machinery, and scarcity of labor

**Figure 11: Challenges of small-scale palm oil processing**



**Source:** Field Survey, 2018.

#### 4.5. Profitability Analysis of Small-scale Palm Oil Processing in Adansi North District

This section of the study assesses and compares the financial profitability of palm oil processing business of the active processors organization's members with the inactive organizations members to see whether the organizations activities has an impact on members profitability and to find out whether palm oil processing in general is profitable in the Adansi North district. The financial figures computed and compared is the average gross margin per cycle of production. One cycle of production is the period between the point of receiving the palm fruits to the point when the palm oil is produced and ready to be sold. The data for the calculation was collected on the 60 sampled small-scale processors organization's members in the survey and calculated using excel. The analysis was done for both major and minor season.

##### 4.5.1. Profitability Analysis in the Major Season

From table 11, the average palm oil processor in active farmers organization can produce 278.20 liters of crude palm oil per cycle in the major season and therefore could make GH¢776.18 crude palm oil sales per cycle in the major season. According to the results, the average palm oil processor in active farmers organization also has the capacity to produce 1 ton of palm kernel per cycle in the major season which culminates into a per cycle sales of GH¢30.00. hence, the average palm oil processor in the active



organization makes total revenue of GH¢806.18 per cycle in the major season. The average palm oil processor in an active organization also incurs a total variable cost of GH¢631.13 per cycle in a major season with the cost of palm fruits constituting the biggest portion of the processing cost. Therefore, an average palm oil processor in an active organization according to results makes an average gross margin of GH¢175.05 in the major season.

**Table 11: Income statement for small-scale palm oil processing per cycle in major season**

VARIABLES	ACTIVE FBO MEMBERS	INACTIVE FBO MEMBERS
<b>REVENUE (GH¢)</b>		
Average Quantity of CPO (litres)	278.2	253.03
Average Price per Litre (GH¢)	2.79	2.57
<b>Total Revenue of CPO (GH¢)</b>	<b>776.18</b>	<b>650.29</b>
Average Quantity of Palm Kernels (ton)	1	0.82
Average Price per Ton (GH¢)	30	30
<b>Total Sales of Palm Kernels (GH¢)</b>	<b>30</b>	<b>24.6</b>
<b>TOTAL REVENUE (TR)</b>	<b>806.18</b>	<b>674.89</b>
<b>VARIABLE COST</b>		
Average Quantity of Palm Fruits Processed (ton)	3.12	2.56
Average Cost Price of Palm Fruits (GH¢)	145.3	149.2
<b>Cost of Palm Fruits Processed (GH¢)</b>	<b>453.34</b>	<b>381.95</b>
Transportation/Cost of carting palm fruits (GH¢)	69.63	55.47
Labour Cost for Threshing and Winnowing (Man-days)	35.93	27.43
Cost of water (GH¢)	12.43	9.4
Cost of Extraction/Milling (GH¢)	41.7	38.32
Cost of Removing Nuts from Fibre (Man-days)	18.1	16.64
<b>TOTAL VARIABLE COST (TVC)</b>	<b>631.13</b>	<b>529.21</b>
<b>Average Gross Margin Per Cycle (GM=TR-TVC)</b>	<b>175.05</b>	<b>145.68</b>

**Source:** Author's calculation from survey, (2018)

On the other hand, the average palm oil processor in inactive organization produces 253.03 liters of crude palm oil averagely in the major season, which is lower compared to the one produced by those in the active group. Revenue of GH¢650.29 is made from the crude palm oil and then GH¢24.6 revenue is also gained from the sales of the palm kernel oil. The total average variable cost incurred by processors belonging to inactive organizations was found to be GH¢529.21, which is also lower as compared to that of their counterparts in the active organizations. The average gross margin of processors belonging to inactive organization was found to be GH¢145.68 which is lower compared to that of the processors in active organizations. This shows that the average small-scale palm oil processor in the Adansi North district during the major season gets a positive gross margin whether their organization is active or not.

#### 4.5.2. Profitability Analysis in the Minor Season

From table 12, the average palm oil processor in an active farmers organization can produce 158.37 liters of crude palm oil per cycle in a minor season and hence could make GH¢543.21 sales on that per cycle in a minor season. The average processor in an active organization also capable of producing 0.45 tons of palm kernel per cycle in a minor season which yields sales of GH¢13.5. Therefore, the average palm oil processor in an active organization makes a total revenue of GH¢556.71 per cycle in the minor season. They also incur a total variable cost of GH¢363.80 per cycle in a minor season. hence, the average palm oil processor in an active organization makes an average gross margin of GH¢192.91 per cycle in a minor season.

**Table 12: Income statement for small-scale palm oil processing per cycle in minor season**

VARIABLES	ACTIVE FBO MEMBERS	INACTIVE FBO MEMBERS
<b>REVENUE (GH¢)</b>		
Average Quantity of CPO (litres)	158.37	129.13
Average Price per Litre (GH¢)	3.43	3.57
<b>Total Revenue of CPO (GH¢)</b>	<b>543.21</b>	<b>460.99</b>
Average Quantity of Palm Kernels (ton)	0.45	0.31
Average Price per Ton (GH¢)	30	30
<b>Total Sales of Palm Kernels (GH¢)</b>	<b>13.5</b>	<b>9.3</b>
<b>TOTAL REVENUE (TR)</b>	<b>556.71</b>	<b>470.29</b>
<b>VARIABLE COST</b>		
Average Quantity of Palm Fruits Processed (ton)	1.59	1.35
Average Cost Price of Palm Fruits (GH¢)	167.4	180.73
<b>Cost of Palm Fruits Processed (GH¢)</b>	<b>266.17</b>	<b>243.99</b>
Transportation/Cost of carting palm fruits (GH¢)	35.13	25
Labour Cost for Threshing and Winnowing (Man-days)	19.6	15.83
Cost of water (GH¢)	5.1	6.76
Cost of Extraction/Milling (GH¢)	26.47	19
Cost of Removing Nuts from Fibre (Man-days)	11.33	8.7
<b>TOTAL VARIABLE COST (TVC)</b>	<b>363.80</b>	<b>319.28</b>
<b>Average Gross Margin Per Cycle (GM=TR-TVC)</b>	<b>192.91</b>	<b>151.02</b>

*Author's calculation from survey, (2018)*

On the other hand, the average palm oil processor who belongs to an inactive organization can produce 129.13 liters of crude palm oil which is relatively lower than that of the active organization's members production in the minor season. Their sales from palm kernel oil also gives them GH¢9.3 per cycle in the

minor season. The average gross margin made by members belonging to inactive organizations per cycle per processor in the minor season is GH¢151.02. These results show that small scale palm oil processing in the Adansi North district is profitable both in the major and minor season and that activities of farmers organizations have a positive impact on members profitability.

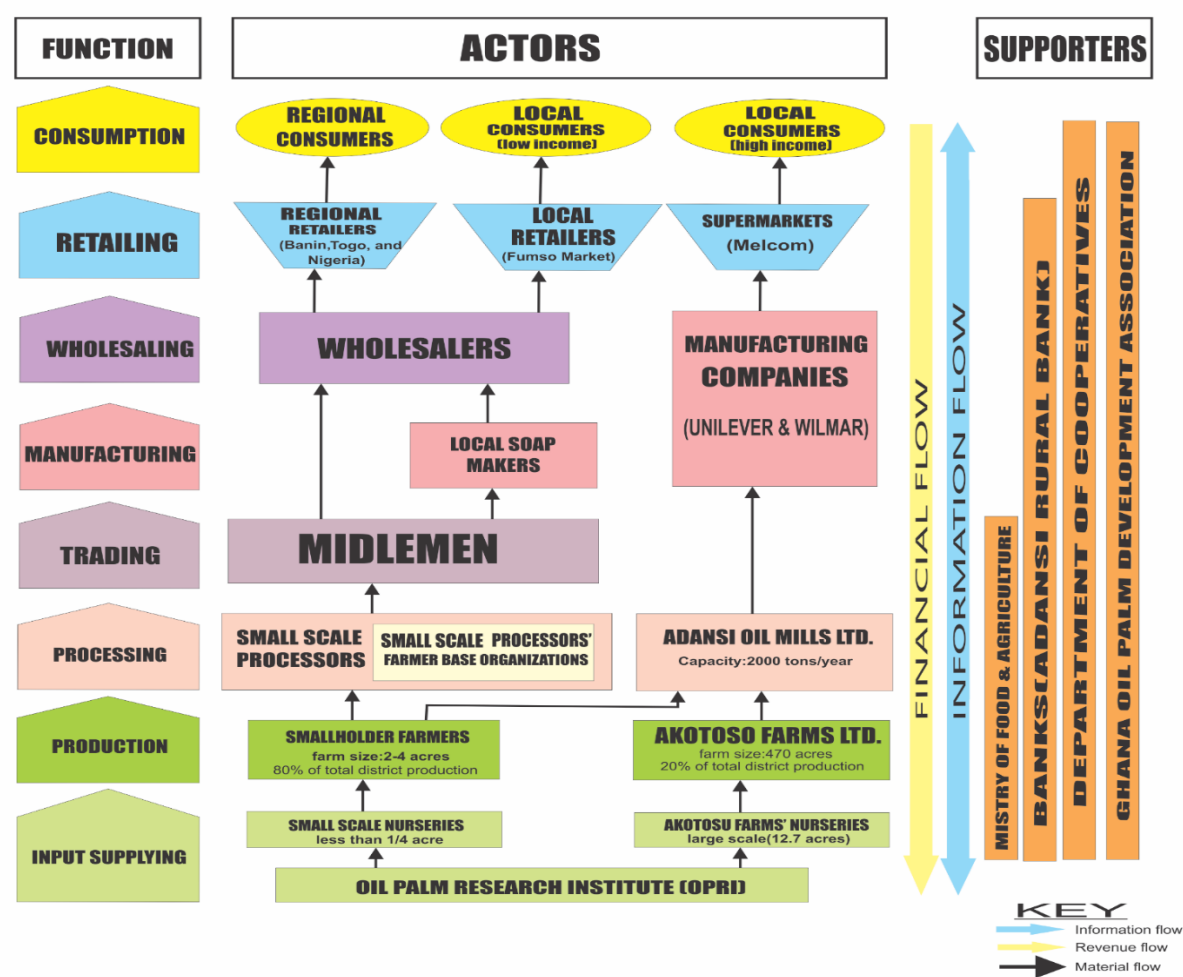
#### 4.6. Challenges of Processors Organizations in the Palm Oil Value Chain

To identify the challenges facing palm oil processors organizations in their institutional environment, that is in the palm oil value chain, key informants in the value chain were interviewed and one focus group discussion was done. In this chapter the results of the key informants interviewed, and the focus group discussion are presented and analyzed.

##### 4.6.1. Activities of Actors and supporters in the palm oil value chain

Results on the activities of actors and supporters in the chain were obtained through observations and the interviews as well as from desk study on chain operators, these are presented in the chain map and stakeholder matrix below:

**Figure 12: The palm oil value chain in the Adansi North District**



**Source:** Research Findings, 2018

**Table 13: Stakeholder Matrix**

STAKEHOLDER	FUNCTIONS
OIL PALM RESEARCH INSTITUTE (OPRI)	<ul style="list-style-type: none"> <li>• Provides research support to the oil palm sector and sector.</li> <li>• Develops new varieties and improve existing varieties.</li> <li>• Supply quality planting materials(seeds) to farmers or nursery establishments</li> <li>• Offers technical backstopping to the oil palm industry</li> </ul>
NURSERY ESTABLISHMENTS	<ul style="list-style-type: none"> <li>• Nurses and supply seedlings to farmers</li> </ul>
SMALLHOLDER FARMERS	<ul style="list-style-type: none"> <li>• Produce fresh fruit bunches to meet the demand of small and medium scale processors, local and regional consumers.</li> </ul>
AKOTOSO FARMS LTD.	<ul style="list-style-type: none"> <li>• Produces quality fresh fruit bunches to feed Adansi Oil Mills</li> <li>• Nurses and plant improved tenera dominant varieties for high yield.</li> </ul>
SMALL SCALE PROCESSORS	<ul style="list-style-type: none"> <li>• Extract palm oil from the Fresh Fruit Bunches produced by the small holder farmers.</li> </ul>
ADANSI OIL MILLS COMPANY LTD.	<ul style="list-style-type: none"> <li>• Process fresh fruit bunches produced by the Akotosu farms ltd.</li> <li>• Outsource fresh fruits bunches from smallholders to supplement what is received from Akotoso farms.</li> <li>• Extracts palm oil and sell to manufacturing companies.</li> </ul>
MIDDLEMEN	<ul style="list-style-type: none"> <li>• Buys palm oil directly from processors, bulk, transport and resell to wholesalers at the district market or major markets in the Ashanti region.</li> <li>• Supply palm oil to local soap makers</li> </ul>
WHOLESALEERS	<ul style="list-style-type: none"> <li>• Buys large volumes of palm oil from middlemen, transports and supply markets in the regions of Ghana and markets in other countries like Benin, Nigeria and Togo.</li> </ul>
MANUFACTURING COMPANIES	<ul style="list-style-type: none"> <li>• Receives supplies from Adansi Oil Mills, conduct secondary processing.</li> <li>• Manufacture soaps, margarine, and other products from the palm oil.</li> </ul>
RETAILERS	<ul style="list-style-type: none"> <li>• Sell the final product that is produced in the palm oil value chain which is either the palm oil itself, the fresh fruit and other products manufactured from the oil such as soap and margarine.</li> </ul>
CONSUMERS	<ul style="list-style-type: none"> <li>• Purchase and consume palm oil and products made from it.</li> </ul>

**Source:** Research Findings, 2018

#### 4.6.2. Access to Support Challenges

The department of cooperatives, one of the departments mandated by the cooperative societies act 252 of the republics of Ghana to see to the proper functioning of farmer-based organizations in the district, faces a lot of challenges that prevents it from carrying out its duties efficiently. The department as at the time of the research was under staffed with only one staff manning the departments activities in the entire district. According to the respondent, the Atonsua cooperatives college responsible for training of new cooperative officers has not been functioning for more than four years as at the time of this research and this was due to a national directive to cut down on public expenditure by halting public sector employment. According to the respondent, the department has also been under resourced due to the ongoing implementation of the decentralized governance system. He stated; *“the department used to get its resources from the central government, but after it changed to a decentralized department the district assembly was expected to resource the department from its common fund, which is not enough to cater for all the decentralized departments.”* This was evident in the survey results in which 45 respondents out of 60 responded that they have never had any visits from the cooperative officer.

**Table 14: How often does the co-op officer visits?**

		Group Status		Total
		active	Inactive	
How often does the co-op officer visits?	quarterly	7	2	9
	annually	2	4	6
	no visits	21	24	45
Total		30	30	60

**Source:** Field Survey, 2018.

The respondents from the Ministry of Food and Agriculture, which was also a decentralized department as at the time of this research had faced similar challenge for the past seven years. According to the respondents the Agriculture Extension Agent (AEA) to Farmer ratio of the district which stood at 1:1000 was too high to enable them reach out to all the farmers. The department was under resourced, no motor bikes and no funds were available for its activities. The survey results also show that 33 respondents out of 60 have never had any contact with the extension officer whilst 20 and 7 have had visits quarterly and annually respectively from the extension officer.

**Table 15: How often does the extension officer visits?**

		Group Status		Total
		active	Inactive	
How often does the extension officer visits?	quarterly	9	11	20
	annually	7	0	7
	No visits	14	19	33
Total		30	30	60

**Source:** Field Survey, 2018.

Interview with the key informant from the bank revealed that the interest rates of 36% to 40% from the banks was very high for the processors and the repayment conditions too was not favourable because they are expected to start paying back the loan within the first two months. The respondent also cited low level of education as one of the challenges that makes working with farmers or processors very difficult because credit is granted based on the financial records of the business, which processors normally finds it difficult to keep. According to the respondents, financing a farmers group that is centered on one commodity has a higher risk because should anything go wrong with that business line then the group would have no other source to repay the loan and therefore prefer to work with groups that are very diverse and has a lot of revenue sources.

#### **4.6.3. Governance Within the Chain**

From figure 12, the smallholder chain in which the small-scale processors organizations operate is fully governed by the wholesalers and the middlemen, who are commonly referred to as market mommies. Due to non-existence of market regulatory framework, the market mommies control the pricing of the palm oil and because of the high interest rates from the banks, they also serve as creditors to the processors. This has created a high dependency of the processors on the market mommies, stripping them off their bargaining power and reducing their profit margins (Table 16). Interactions within the chain is also characterized by no price discovery mechanism and price fluctuations which creates uncertainty for the processors and their organizations. As one member stated during the focus group discussion; *“if you call them (market mommies) on phone to ask of the price, they will tell you to wait when they come to the selling point they will tell you. They sometimes determine the price based on the volumes available at the selling point.”*

Another challenge within the chain is the competition between the small-scale processors and the large-scale processors for palm fruits. According to the key informant from the Adansi Oil Mills, the fresh fruits produced is inadequate and besides other large processors in nearby districts who have the capacity to pay higher prices for the fruits competes with processors in the district thereby reducing the volumes processed in the district. This contributes to reducing the profit margins of the processors.

**Table 16: Who determines the price of the palm oil?**

		Group Status		Total
		active	Inactive	
Who determines the price of the palm oil?	Traders	24	26	50
	Organization	2	0	2
	Traders & Organization	4	0	4
	Processors & Traders	0	4	4
Total		30	30	60

**Source:** Field Survey, 2018.

## CHAPTER FIVE: DISCUSSION

### 5.0. Introduction

This chapter discusses the research findings, by comparing with literature and identifying the main findings from research. The chapter begins by first discussion the challenges identified at the organizational level of small-scale palm oil processors' organizations and then goes further to discuss the challenges identified at the palm oil value chain level.

### 5.1. Organizational level Challenges of Processors Organizations

#### 5.1.1. Low Literacy and Training of Members

The study revealed that low literacy rate of processors organization was one of the major challenges affecting the sustainability and success of processors organizations in the Adansi North district. The study revealed that 75% of processors organizations' members had basic or no formal education, and 45% out of the 75% have had no formal education. This affects their productivity level as processors as was revealed by a study conducted by Eric *et al.* in a study to investigate the effects of education on agricultural productivity in the Offinso municipality in Ghana concluded that as educational level increases, output increases, with secondary school education having the highest returns on agricultural productivity and that formal education opens the mind of the farmer to knowledge (Eric *et al.*, 2014). The level of education of the organizations' members also influences the level of participation and membership decisions as a study by Mojo *et al.* to examine the determinants and economic impacts of cooperative membership using household survey data gathered from coffee farmers in the Jimma Zone of Oromia, Ethiopia, concluded in their study that the probability of farmers' membership decision increases with age, education level, family size, social networks, land property and accessibility to cooperatives (Mojo *et al.*, 2017). The low literacy level also influences members ability to access services. Record keeping, and financial statements are a key requirement in securing financial services from the bank as was stated in the interview with the key informant from the bank. What even makes the situation worst is the low level of extension training of the processors recorded in the study. As the survey showed that 68% of the processors had never received extension training.

#### 5.1.2. Managerial Skills and Business Capacity Problems

Inadequate managerial and business skills was identified as one of the challenges of the processors organizations.

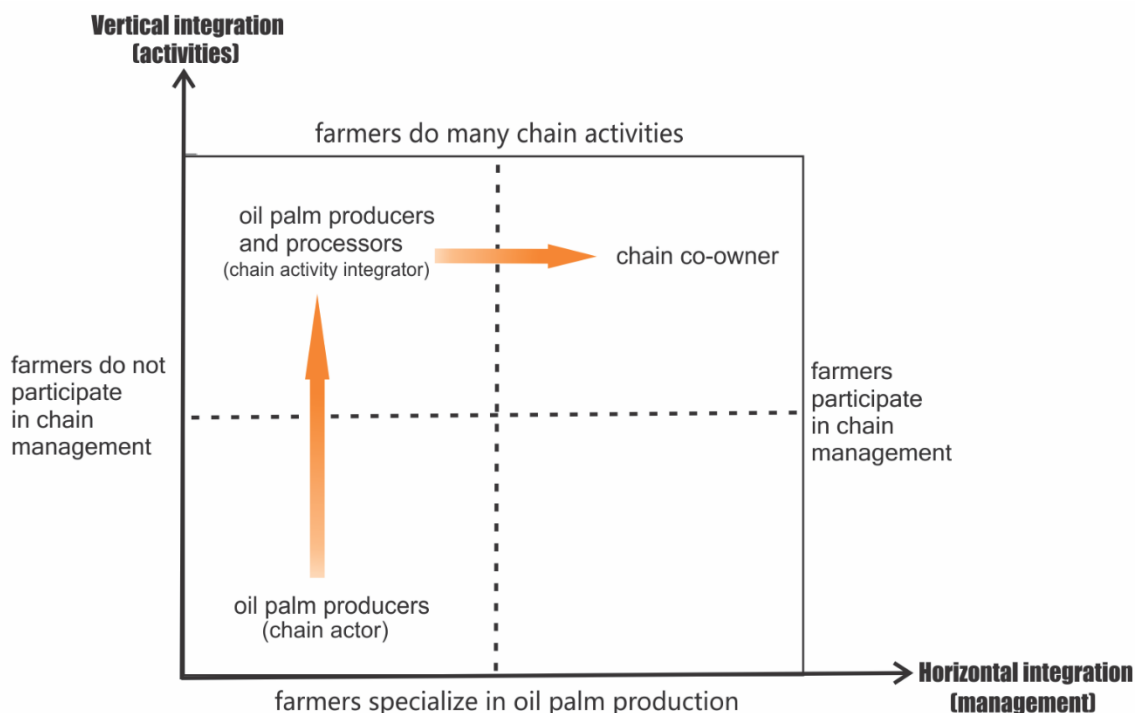
The findings revealed that the organizations leaders were not experienced and were hardly professional. These unqualifies leaders had limited abilities to develop or implement business strategies, which would bring maximum benefits to the organizations. The leaders did not have the required professional, technical and economic skills for the analysis of markets trends. As shown in table 5, 71% of the people in leadership positions in the organizations have secondary school and basic school as their highest level of education. The lack of managerial skills was evident as none of the organizations had a business plan or proper financial records. This finding was consistent with a research done by Malachy Daudu, Yemi Oluwu and Aliyu, to examine the impact of managerial skills on small scale businesses performance in Bauchi state of Nigeria, concluded that inadequate managerial skills are factors militating against small scale businesses performance (Daudu *et al.*, 2015). And, a research done by David Ram, Wayne Ganpat,



and Lendel Kade Narine, to examined farmers group members’ perceptions of how management functions are performed, and how such performance is related to their satisfaction with being a member of the group. The study concluded that if basic management functions of groups are not strengthened then the sustainability of farmers groups would be at risk(Ram *et al.*, 2017).

The processors organizations low business volumes brought about by their lack of collective sales contributed to failure to reduce transaction costs, which has resulted in the organizations having no impact on members incomes. Farmers organizations such as cooperatives are formed purposely to help reduce costs for their members; provide access to financial support and access to profitable markets (Markelova, et al., 2009), which the organizations have failed to meet. As a result, they depend on small traders for their markets. This dependency has taken away their negotiation power and has reduced them to price takers whilst the traders gets the upper hand. From the study, it was realized that all the organizations were set up only to provide machinery services to their members, most of which are oil palm farmers (table 4). This activity moves them one step upstream the chain from just being producers to being processors as well, but because they operate in isolation it is difficult for them to participate in the management of the chain as shown in figure 13 below;

**Figure 13: Matrix showing position of members in the chain**



**Source:**(KIT,Faida, 2006)

### 5.1.3. Incentive Problem

The study revealed that motivations that drew farmers into being part of the organizations has a role to play in the sustainability of the organizations. Support aid from the government played both a positive and negative role in the survival of the organizations. On the positive side, external support is necessary for the organizations to become empowered, before they could become independent (Hill, et al., 2007), since business assets and other resource provided help to boost their financial position, but what was realized in the study was that the organizations had become over reliance on the external supports and

had not put mechanisms in place to generate funds internally. As was seen in the study that most of the organizations had been externally formed because of the implementation of the Presidential Special Initiative on oil palm project by the government. Most of these organizations formed purposely to take advantage of such projects could not survive the test of time. This is consistent with the findings of Peter Asibey-Bonsu in his research to analyze the current situation of farmer based organizations engaged in the economic field and endogenous and exogenous factors that contribute to the development of services to producers, discovered that most farmer based organizations in Ghana were externally formed and that what an a farmer based organization can do for itself appeared in most cases not to be as important motivation as what government or development partners can do for the FBO because they are a group (Asibey-bonsu, 2012).

Moreover, the targeting of beneficiaries for these supports were also poorly done and to some extent influenced by politicians or opinion leaders. Due diligence was not done in the selection of beneficiaries and this allowed the groupings that was not in any case interested in processing or oil palm farming to formed only to collapse in some few months. This was evident in the decrease in membership of the farmers organizations studied from start to when the study was carried out. Some of the external supportive programs also lacked a proper exit strategy that would have left the organizations at a level, where they were sufficiently equipped and skilled to manage the organization as argued by EW Chirwa et al. (2005). and this contributed to the failure of some of the organizations.

#### **5.1.4. Main Challenges of Small Scale Processors**

From the findings of this research, the main problems of the processors in the Adansi North district are market prices fluctuation, limited access to credit, inadequate market information, training needs, poor road network, insufficient milling machinery, and extension contact. These were the immediate problems of the processors that needed to be addressed. This was not consistent to the findings of David Zigah and Esela in their research to determine the profitability and technical efficiency of small scale palm oil processors in the Assin South district, a nearby district to the Adansi North, in their findings concluded that access to credit was the first main problem of processors, followed by cost of carting the fresh fruits, and then cost of labor for processing, labor scarcity, limited market opportunity followed in that order (Zigah and Esela, 2014).

In both research access to credit was highly ranked in the two districts, ranking first in the Assin South district and ranking second in the Adansi North district. As Abraham Maslow quoted in his famous 1970 book *Motivation and Personality*, “our actions are motivated in order to achieve certain needs”. This implies that for farmers organizations or farmers cooperatives to be successful in the district, they should be structured in a way to address these needs because processors or farmers would be motivated to join such groups when they know their basic needs as processors would be addressed by these organizations.

#### **5.1.5. Profitability of Small Scale Palm Oil Processing**

According to the findings of this research small scale palm oil processing is profitable in the Adansi North district. This is was consistent with a study done by Elijah Ohimain, Cletus Emeti, Sylvester Izah and Dorcas Eretinghe, in their study to investigate the feasibility of small-scale palm oil processing in Nigeria. The study concluded that small-scale oil palm processing is profitable and can also be a source of employment (Ohimain *et al.*, 2014). Another study done in the Assin South by Zigah and Esela to determine the profitability and technical efficiency of small scale palm oil processors also confirmed that small scale palm oil processing is profitable. But was not in agreement with the findings of Adjei-Nsiah S., et al., (2012) who concluded in their research that the processing and sale of palm oil becomes a profitable business for

small-scale producers only during the peak yield period, that is from September to December. This means that profitability of the processing business is not a challenge for the processors and that with better improvement in the business through the processors organizations would increase the profit margins of the processors even more. This also means that palm oil processing has the potential to alleviate farmers from poverty especially women, since the industry is dominated by women (table 3) thereby helping Ghana to achieve the sustainable development goal one; no poverty and goal five; gender equality.

## **5.2. Challenges in the Value Chain Affecting Processors Organizations**

### **5.2.1. Market Access Problem**

The research revealed that inadequate effective marketing system for palm oil in Ghana had a role to play in the successful functioning of processors and their organizations in the palm oil value chain. The factors that contributed to this in the palm oil value chain are inadequate regulatory framework, poor infrastructure and policy environment that would support efficient market coordination.

The none existence of a regulatory framework in the marketing of palm oil in Ghana makes it difficult for actors within the palm oil industry to operate efficiently especially the smaller actors like the small-scale processors. Unlike cocoa, the pricing of the palm oil is not governed by any regulation. This puts small scale organizations at the mercies of the middlemen and traders in the chain. They determine the pricing of the palm oil and controls market information flows within the chain. This creates price uncertainties and makes it very difficult for processors to make projections on their production.

The lack of supportive regulatory framework negatively affected the organizations' access to markets. There is evidence that a lack of contracts and contract enforcement mechanisms have created insecurity within the market and hence, it has negatively impacted on the operations of the organizations, thus supporting Coulter and Onumah (2002) claims which states that the one means to improve agricultural marketing, is to develop regulated warehouse receipt (WR) systems. The system will curtail cheating on weights and measures; ease access to finance at all levels in the marketing chain and moderate seasonal price variability and promote instruments to mitigate price risks. This situation has created mistrust within the chain, as interviews with the processors and the some of the traders during the focus group discussion revealed that every actor within the chain felt that they were being cheated in the transactions that takes place within the chain. This lack of marketing regulatory framework within the chain had also created more actors in between the processors and the retailers, coupled with the inadequate market information reduced the value share of the processors since the palm oil had to pass through the hands of several middlemen or traders who virtually adds no additional value to the product. This was not consistent with the findings of Gumataw Abebe, Jos Bijman, and Annie Royer, whom in their research to analyze the factors affecting the farmers' decision to trade through middlemen and the impact of this choice on income and commercialization, found out that third trading via middlemen can enhance smallholder commercialization by linking low resource endowed farmers to traders and final markets. They also argued that direct trading with wholesalers seemed beneficial for relatively better-resource endowed farmers(Abebe et al., 2016).

Another challenge identified within the chain that has a telling effect on the small sale processors organization is poor infrastructure. The processors expressed their desire to store the palm oil for better price especially during the major season when the oil prices drop, but their challenge is where to store the oil. From observations made from the field as shown in figure 14, some of them have tried to put some up but are not up to standard. This according to them contributes to their inability to have a

bargaining power in the trading of the palm oil. The road networks linking the processors to markets and the farms they get their fruits from are mostly in bad shape as shown in the figure below. This increases their reliance on the middlemen in the marketing of their palm oil since they don't have the means to transport their products to the market. As a result, the organizations are still prone to exploitation by middlemen; hence reducing further their margins supporting what has been found by Mukhebi (Mukhebi, 2004).

**Figure 14: Poor Road Network**



**Source:** Field Observation, 2018

## **5.2.2. Processors Organizations Challenges to Support and Services**

The findings of this research show that processors organizations in the Adansi North district were constrained in terms of their accessibility to support within the value chain. The organizations could not easily access extension services, financial services, and support from the district cooperative office.

### **5.2.2.1. Extension Support**

Extension support to the organizations was found to be low with 33 members out of 60 members responding to have never had contact with the Agricultural Extension Agents in their locality and 45 members out of 60 members also responded to have never received services from the cooperative department. The leaders and members interviewed also attested to this that the organizations are not being supported by both the department of Agriculture and the department of cooperatives. In a commodity-based organization like these palm oil small scale processors organizations, extension needs to be integrated with all the other aspects of the organization to maximize the returns on the investment of the collective enterprise. In such organizations, extension is taken seriously by both the organization and its members because both derive direct and measurable benefits from it (FAO, 2002). This implies that for any farmer organization to be successful, extension services have a key role to play. Especially taking into consideration the level of literacy recorded in this study for the members of these processors groups.

From the formation stage till when they are strong and operational, they would need this support. During the focus group discussion, the processors that have tried forming such organizations but have failed, made it clear that for the organizations to be successful and thrive they would need guidance from the agricultural extension department. The problem with this service delivery is that, the agricultural extension department itself from the findings of this research is challenged with both human and material resources. The extension Agents to farmer ratio as at the time of conducting this research stood at 1:1000. This meant that the officers could not cover a wider area, moreover they didn't have the needed resources such as motorbikes to facilitate their operation and the necessary competence to support these groups, hence their inability to support the processors organizations. These findings were in line with a research done by Emmanuel Asiedu-Darko in his research to find out the factors that affect extension delivery in Ghana, concluded that there was a need to actively involve farmers in the extension delivery, also extension agents need to have the required competence to enable them deliver on their given roles as far as agricultural development is concerned(Asiedu-Darko, 2013).

#### **5.2.2.2. Financial Support**

All businesses, including cooperatives need financing. A cooperative uses capital to finance its operations, to invest in fixed assets such as buildings and equipment and to finance its operations. Its members also need finance to manage their individual businesses. The findings of this study revealed that small scale processors in the Adansi North district were challenged with accessing credit facilities. Only 23% of the processors had accessed credit from banks. With the banks interest rates ranging from 36% to 40% per annum and a maximum of two months grace period for commencement of repayment, the processors and their organizations had resorted to acquiring credit from traders. This increases their dependency on the traders and decreases their bargaining power when it comes to selling their products. From the interview with the key informant from the bank, it is risky to give credit to people in the agriculture sector since their business entails a lot of uncertainties especially farmers groups that engages in the production of one commodity like palm oil. Moreover, the farmers or processors have less knowledge about the requirements or what should be done to meet these requirements. Things like record keeping and book keeping of the agro-enterprise the farmers are involved. The farmers do not have the ability to keep. This was consistent with the findings of Eliana Wulandari, Miranda Meuwissen, Maman Karmana and Alfons, who in their study to compare farmers knowledge of the requirements to obtain finance with the actual requirement set by different finance provider types, found out that farmers generally have little knowledge of the requirements, which are important to each type of finance provider(Wulandari *et al.*, 2017).

## **CHAPTER SIX: CONCLUSION AND RECOMMENDATION**

### **6.0. Conclusion**

The objective of this study was to assess and identify the challenges of small-scale palm oil processors organizations and to come up with recommendations for improvement. A multiple case study and a survey was used. Four processors organizations, two active and two inactive, from four different communities in the Adansi North district were studied. The four processors organizations were selected based on their past performance prepared by the Ministry of Food and Agriculture. Sixty organizations members from six communities in the district were surveyed. The final conclusions of the findings are as follows;

All the processors organizations in the district are only in the first phase of the cooperative development life cycle framework, the economic justification phase. Although most of them are quite old, they are still in their design phase. They are characterized by simple organizational structure, 77% female participation, 92% economically active members (31 to 60 years), 75% of the members have basic or no education, 48% are oil palm farmers and the organizations were formed purposely to assist members to process their oil palm fruits. The study revealed that the processors organizations provided machinery services to its members but failed to provide marketing services to them.

The process involved in forming the organizations are marred with political interference and external support influence. The main challenges of small scale palm oil processing identified in this study in order of importance are market price fluctuation, limited access to credit, inadequate market information, training needs, poor road network, insufficient milling machinery, poor extension contact, use of low yielding varieties, competition from large scale processors, limited access to markets, high cost of labor, inefficient milling machinery, and scarcity of labor.

Small scale palm oil processing is profitable in both the major season and minor season in the Adansi North district and that the activeness of the processors organizations has an influence on the profitability of the venture.

The structure of the palm oil value chain in the Adansi North district is characterized by two value chains, that is the small-scale value chain and the large-scale value chain. The small-scale chain has a governance structure that is dominated by the middlemen and traders. The processors organizations are having difficulty accessing financial services, and extension services in the chain.

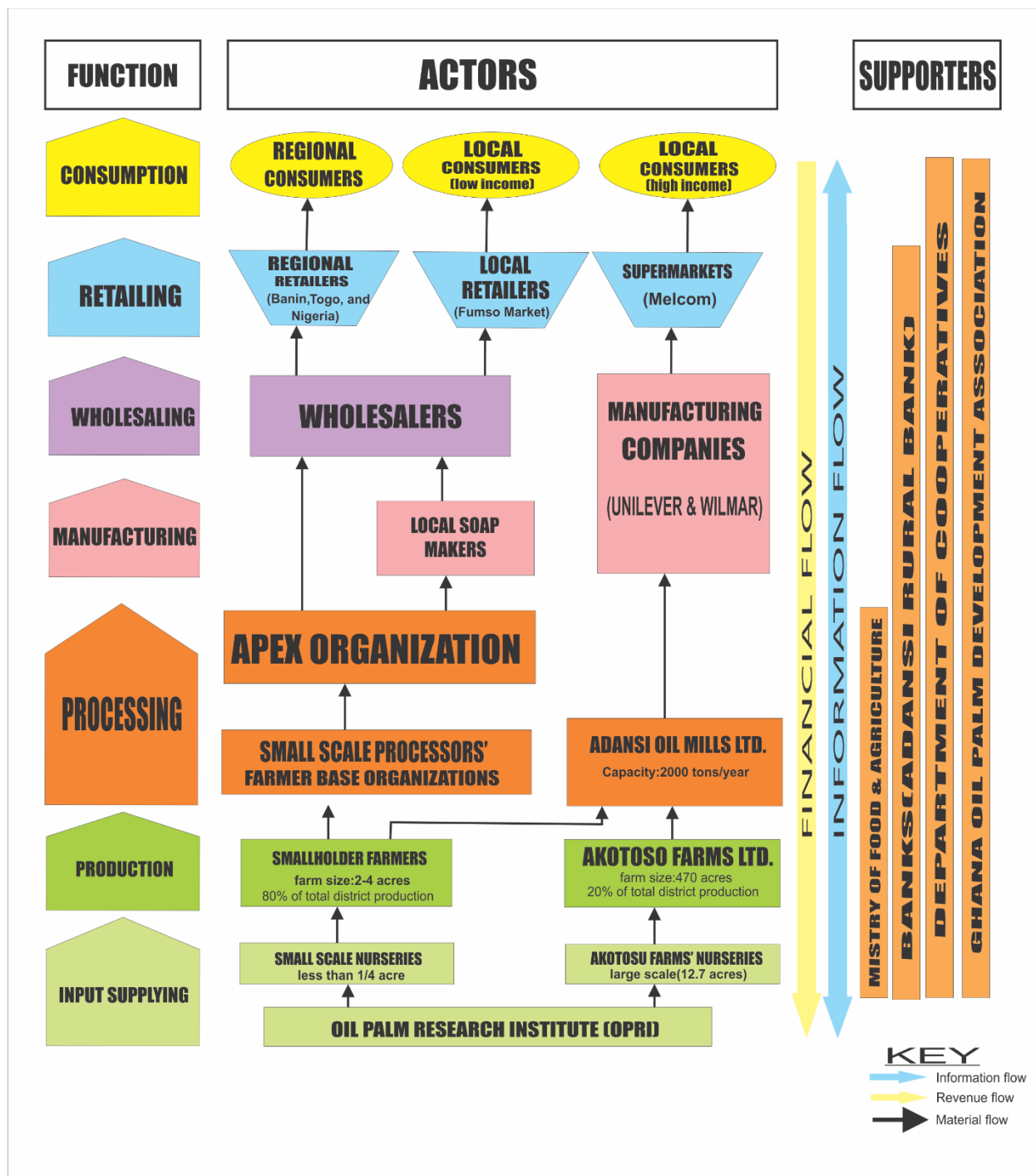
Finally, the challenges of the small-scale processors organizations in the Adansi North district are low literacy and training, poor managerial skills and business capacity, inadequate market supportive regulatory framework, poor infrastructure, incentive problems, market access problems, inadequate extension support and low financial support.

## 6.1. Recommendations

To strengthen small scale palm oil processors organizations and to position them to participate in the management of the palm oil value chain in the Adansi North district, there is the need to find strategies that would address the challenges confronting them. Based on these research findings, the following recommendations are provided to increase their opportunities for success and to make them more sustainable;

- To get farmers and processors continual participation in farmer-based organizations activities, the formation or strengthening of existing farmer-based organizations should be centered around empowering the organizations to address their immediate challenges, which are market price fluctuation, limited access to credit, inadequate market information, and training needs.
- An apex farmer-based organization needs to be formed at the district level to coordinate the market activities of all the farmer-based organizations at the local level, such as accessing market information, and serving as a united front when it comes to price negotiation with buyers. To serve as intermediate between the processors and the wholesalers. This would provide a good network amongst the farmer-based organizations, replace the middlemen with the apex organization in the chain as shown in the chain map in figure 13 below, thereby increasing their influence in the palm oil value chain and increasing their net value share.
- To increase the organizations level of competitiveness on the market, to benefit from economies of scale, and to meet buyers required volumes, there is the need for the organizations to engage in collective sales of their products.
- To promote farmer-based organizations activities in the district, the District Department of Cooperatives and the Ministry of Food and Agriculture needs to be equipped. More extension staff needs to be recruited and trained to reduce the extension officer to farmers ratio and to increase extension presence in all operational areas.
- Although cooperatives or farmer-based organizations are intended to be autonomous organizations, there is the need for them to be supported with administrative, financing and marketing issues which are beyond their capabilities. Therefore, the trained field Agricultural Extension Agents and Cooperative Officers needs to be involved from the formation phase through to when the organizations are strong enough to be on their own.
- Training programs targeting members of the small-scale processors organizations should be tailored to suit their level of education. Such trainings should be more hands on.
- To increase farmers or processors access to credits, banking policies needs to be designed to suit the agricultural sector. The Bank of Ghana should give opportunities to banks that want to venture into agricultural financing. To minimize the risk involved in agribusiness enterprises, financial institutions should not only give loans but build the capacity of farmers or processors to make good use of these loans.
- On the part of government, there is the need to continue sensitizing farmers or processors on the importance of joining cooperatives or farmers organizations but to ensure their sustainability, supports or incentives to these organizations should be aimed at strengthening them to be self-dependent, and should be properly targeted to ensure that it gets to the right beneficiaries. Such supports should be also aimed at providing not only machines but also storage facilities to help them in addressing their marketing challenges. In addition, there is need for a well-planned exit strategy for such assistance.

Figure 15: Proposed New Palm Oil Value Chain



Source: The Researcher, 2018



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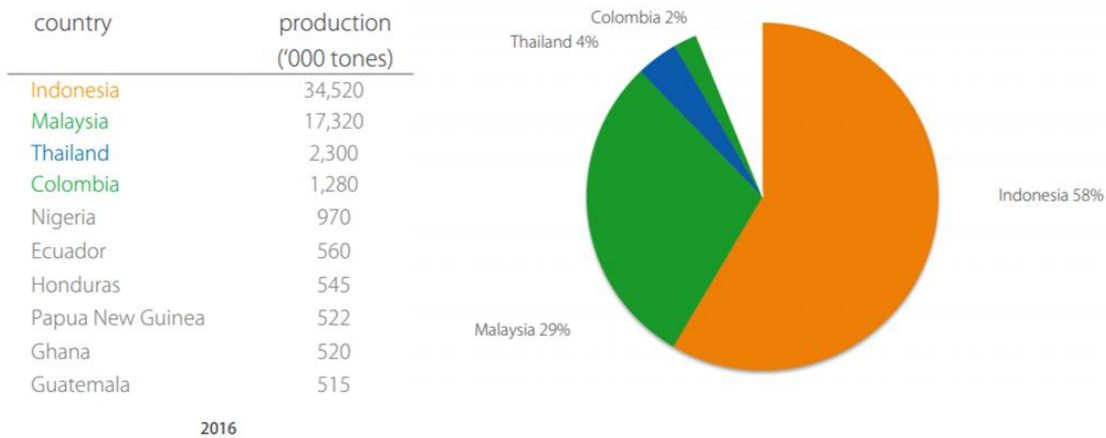
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## APPENDIX 1

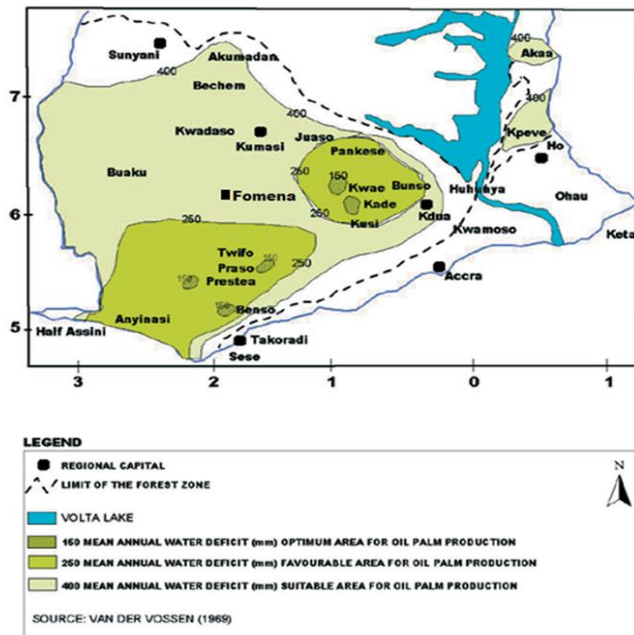
### TABLES AND FIGURES

(A) Top 10 Palm Oil Producers by Country 2016



Source: Essential Palm Oil Statistics (2017, p.7)

(B) Map of Ghana showing oil palm growing areas



Source: Oil Palm Industry Growth in Africa (2015, p. 350)

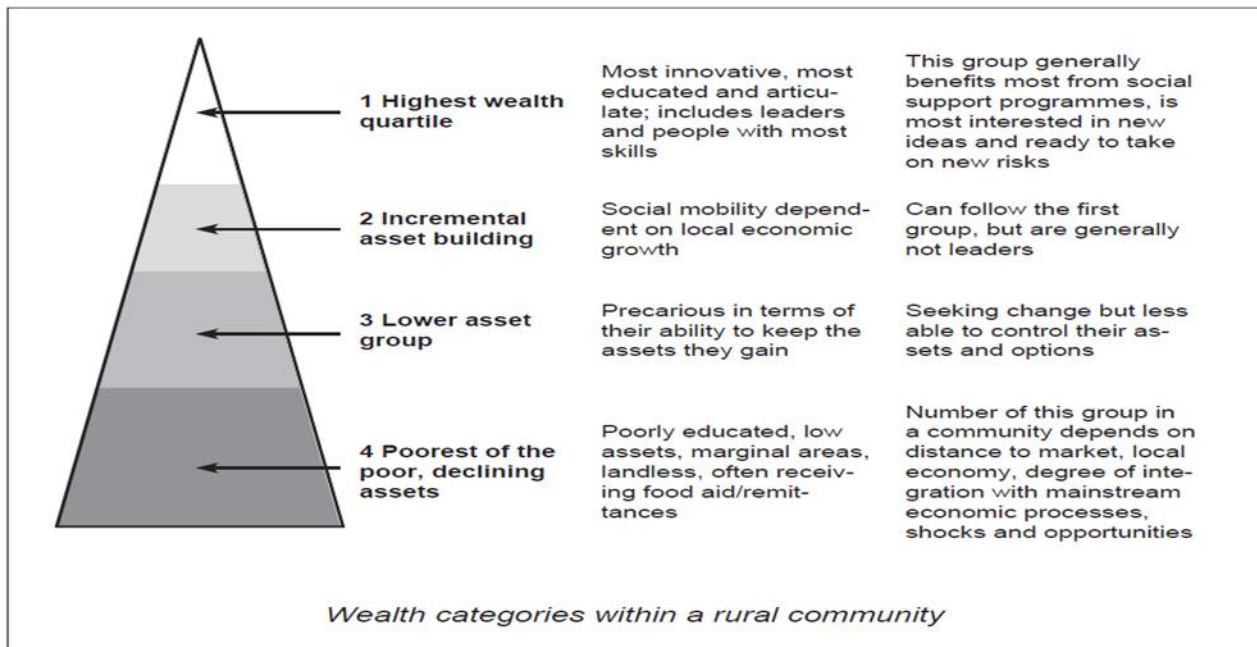


(C) Eight national socio-economic development plans and programmes implemented from 1959 to date.

- Five-year plan: 1959-64 (abandoned in 1961)
- Seven-year plan: 1964-70 (abandoned in 1966)
- Two-year plan: 1969-71 (abandoned during 1971)
- Five-year plan: 1975/76-1979/80
- Structural Adjustment Programme : 1982-1992
- Vision 2020 (abandoned in 2001)
- Ghana Poverty Reduction Strategy I
- Ghana Poverty Reduction Strategy II

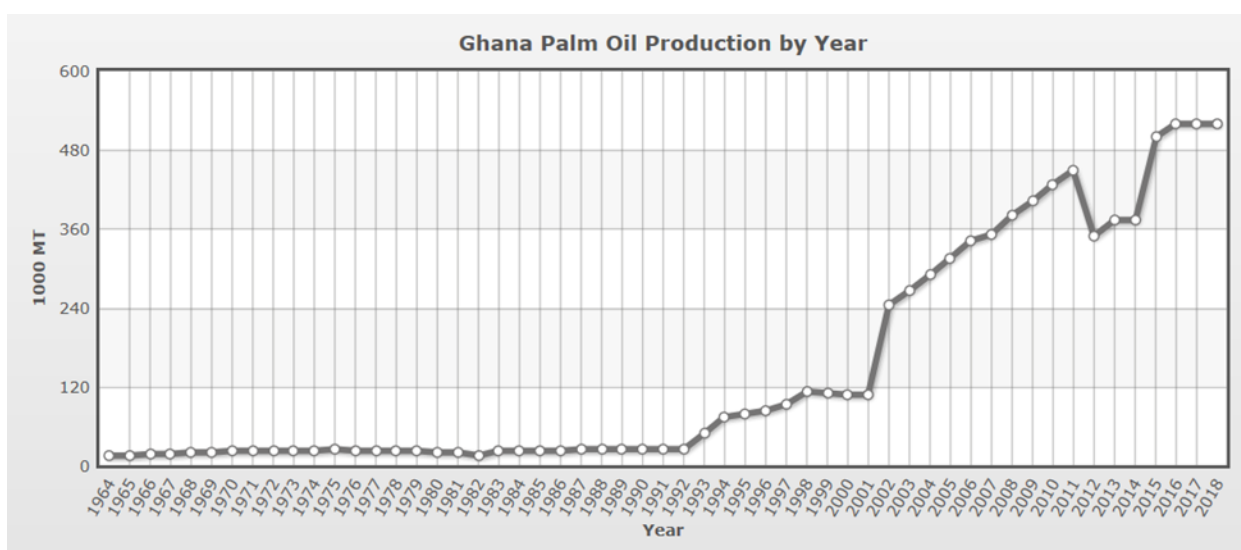
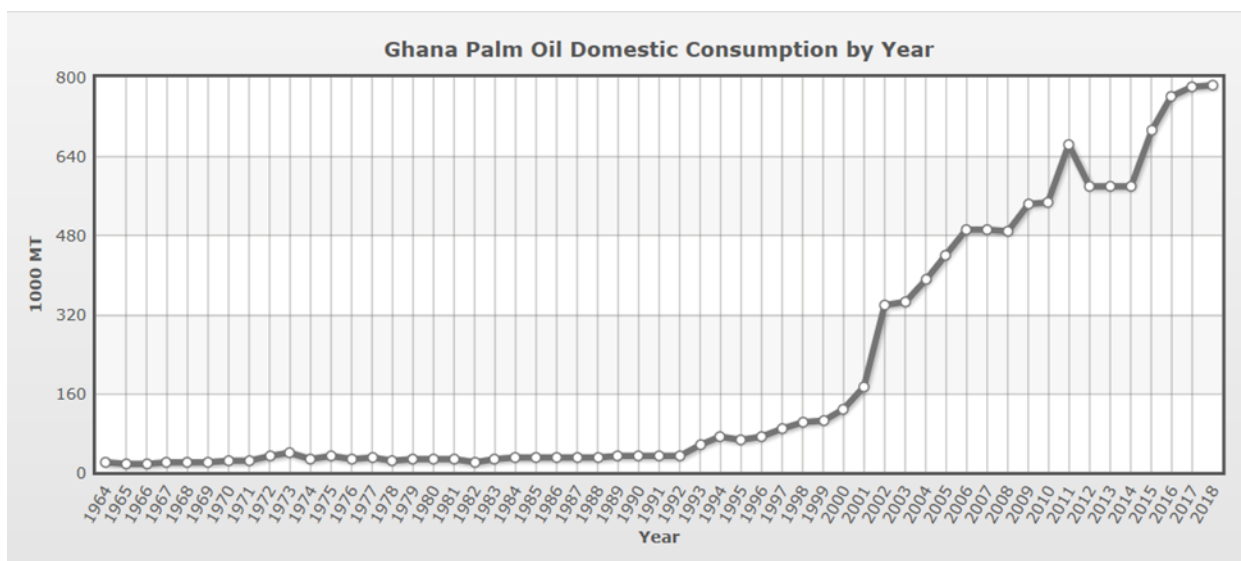
Source: Masterplan Study on the Oil Palm Industry in Ghana Report (2011, p. 1)

(D) wealth categories within a rural community



Source: Chain Empowerment (2006, p. 6)

(E) Ghana Palm Oil Domestic Consumption and Production by Year



**Source:** data compiled from Index Mundi (2018)

## APPENDIX 2

### DESCRIPTION OF CASES

This chapter gives a description of the four cases under study. Kusa Farmers' Co-operative and Fumso Agricultural Co-operative are the active cooperatives. Harris Cooperative and Brofoyedru Oil Palm Co-operative Growers and Processors limited are the inactive cooperatives.

#### **Kusa Farmers' Co-operative**

##### **Introduction**

Kusa Farmers' cooperative operates from Adansi Kusa which is about 2 kilometers from Fomena the capital town of the Adansi North district. The Kusa township is predominantly a farming community with farmers involved in cocoa, oil palm, rice, plantain, maize, and cassava farming. The cooperative according to the Chairman, Mr. Afoakwa, has been operating successfully for a period of fifteen years.

##### **Historical Development of the Co-operative**

The cooperative according to the Chairman was formed in the year 2002 as Cocoa Farmers Association under the guidance of FEDCO cocoa buying company. This was to help cocoa farmers in Kusa and its surrounding villages to get access to inputs, extension services and marketing of their cocoa beans, especially to position cocoa farmers in the area to benefit from the Cocoa Diseases and Pest Control Program (CODAPEC) which was run by the government to assist cocoa farmers with pesticides and extension services. According to the members interviewed it was also to build a good relationship between the cocoa buying company FEDCO and the farmers, as stated by Mr. Antwi a member:

*"FEDCO supported us a lot at the initial stages with funds and inputs in a way such that members agreed to always sell our beans to the company and this was enshrined in our constitution, up to now we all sell our beans to FEDCO and we are happy to do business with them"*

The group operated as Cocoa Farmers Association for five years. In 2007, the group changed its name to Kusa Farmers' Cooperative. This decision according to the Chairman was made to expand the membership base of the association to include oil palm farmers because oil palm is the second most cultivated crop in the community and besides most of their members were also oil palm farmers.

##### **Membership**

Membership is limited to individual farmers whose main occupation cocoa or oil palm farming and who operate and live within Kusa and its surrounding villages. Admission into the cooperative is by application, which is assessed and approved by the leadership. The current membership of the cooperative is 75 of which 23 are solely cocoa farmers and 16 are only oil palm farmers whilst the remaining 36 members are both cocoa and oil palm farmers. According to the Chairman at the initial stages when the cooperative was formed its membership was high but reduced after some few months and has stabilized in the last 14 years. As stated by Mr. Afoakwa the chairman:



*“Initially when the association was formed our membership was around 200. Most of the farmers joined thinking they were going to receive money from the government so after some time they left since their expectation was not met. Now we have 75 members who are highly motivated to be members.”*

### **Organizational Structure and Leadership**

The cooperative has a simple organizational structure with the chairman as the leader together with the secretary, and the treasurer form the management team for the cooperative. These leaders are supported by their deputies. The Chairman and the treasurer are males and the remaining 4 are females. The cooperative has also employed the services of one person who manages the processing mill and another who attends to the inputs shop. The chairman had a tertiary school education whilst the remaining are secondary school graduates. Although I was told leadership are chosen through a democratic process every four years. The current leadership have been at post for more than ten years. All the three members I interviewed were happy with the current leadership.

### **Present Activities**

The cooperative assist in the sales of members cocoa beans. The chairman who is a cocoa buying clerk for FEDCO in Kusa buys the cocoa of members and ensure they get a fair deal. The cooperative has an agro-input store where members buy their inputs at a reduced price. The cooperative owns a palm oil milling center where members process their fruits at a reduced price. The association assist in the sales of members oil by finding buyers for them but the members were quick to state that the price instability is their main problem.

*“the price keeps changing all the time as compared to cocoa price which is fix throughout the year. The market mommies (traders) are the ones who bring the price and its either you take it or leave it. This is a challenge for us”*

### **Funding and Support**

According to the Chairman, the cooperative received some financial support from FEDCO at the initial stages of the group’s formation and the palm oil milling machine was also given to the cooperative by the government of Ghana through the Adansi North district Assembly in 2007 as a component of the Presidential Special Initiative to develop the oil palm sector. Besides these supports, the chairman stated that the cooperative generates its own money by taking an agreed one percent from all sales made by members and from proceeds made from the inputs store and the processing center. He said members have been benefiting from credit facility from their bankers Opportunity International due to their good standing with the bank. He said that the cooperative supports members in times of bereavement or in need.

## **Fumso Agricultural Cooperative (FAC)**

### **Introduction**

Fumso Agricultural Cooperative is in Fumso the town that has the biggest and busiest market in the Adansi North district. The town is the trading center of the district. Every Thursday of the week is the market day at Fumso and traders and buyers from all parts of the country and even outside Ghana flood the Fumso market to trade. Residents of the town are mostly farmers, traders and processors. The cooperative was formed and has operated in this town for the past eleven years.

### **Historical Development of the cooperative**

The cooperative according to the respondents was first started by Mr. Awutey the current chairman and three other oil palm farmers in 2005. These three people as I was told by one of them took this initiative because they thought that when they come together as farmers they can share their experience to help each other in their farming. They informed other farmers and got 57 farmers registering as members. The chairman recalled that after some few months the membership started to decrease and eventually the cooperative collapsed in the same year it was started. He said in 2007, he was approached by a lady called Madam Lydia a palm oil trader who buys palm oil from Fumso to sell in Banin. She was willing to set up a milling center and get processors whom she will support to produce palm oil for her. It was from this idea that the current Fumso Agricultural Cooperative was formed. The cooperative now has a common processing center which is owned by the trader [Madam Lydia].

### **Membership**

The cooperative now has a membership of 62 of which 28 are males and 34 are females. He said 45 of their membership are oil palm farmers as well as processors whilst 17 of them are only into processing of palm oil. The criteria for being admitted to the cooperative is that you must be an oil palm farmer or processor.

### **Organizational Structure and Leadership**

The administration of the cooperative is done by six democratically elected leaders that is the chairman, the executive secretary, the financial secretary and their deputies. All the leaders are females except the chairman who is a male. According to the chairman the mill owner serves as their patron. Out of the six leaders two have senior high school as their highest level of education whilst the remaining four have basic school certificate as their highest level of education.

### **Present Activities**

The main activity of the cooperative is processing of palm oil. Members process their palm fruits at the center at a reduced fee and through mutual consent sell their oil to the mill owner. One of the members I interviewed was not happy about the price that the mill owner buys their palm oil. She stated;

*“we have worked with her [the mill owner] for a long time, she should give us a fixed price or give us the opportunity to negotiate with her for a good price. She buys our oil with the price that the other market mommies bring, which keeps changing, and sometimes even less”*

The members stated that considering the interest rate and the loan repayment terms from the banks it is difficult for them to access credit facility from the Banks but the mill owner [Madam Lydia] gives them interest free credit with repayment terms that suite the small-scale processors. The cooperative assists its members on their farms to do weeding, harvesting and planting which are very difficult and expensive to do by arranging for the group to work on one members' farm at a time. This is very helpful recounted one member;

*“as a woman harvesting of the fruits was a challenge for me but ever since I joined the cooperative, the group helps me to harvest my fruits. The work that I used to use a whole week to do, now I use just a day”*

The cooperative has established a three-hectare oil palm farm which according to the chairman is used to teach members the best practices in oil palm farming and generates income for the cooperative. The group works on their farm twice every month. The group provides social support to its members in times of need such the death of a loved one.

### **Funding and Support**

According to the chairman apart from the support they get from their patron, the cooperative has not received any support in the form of money or inputs from any organization. He accused political leaders, that some use fowl means to influence how governmental supports are distributed. He said in 2010 farmers groups were to be given processing machines from the government, according to him they applied but before they could realize the machines had already been given out to groups who associate themselves to some politicians. The cooperative generates money from their farm and from the monthly dues that members pay. The members I interviewed feel that the cooperative should buy the oil from members instead of the mill owner as they believe these oils could be stored and sold out only when the market price is good. That this will generate funds for the cooperative and give a better selling price for its members. The reasons given by management are that they do not have enough money to buy from members. On the other hand, members feel that mismanagement is the main problem. During interviews with the members, it is revealed that the cooperative has been facing leadership wrangles, due to benefits that the leaders are known to be receiving from the cooperative.

## **Harris Cooperative**

### **Introduction**

The cooperative is in Dompouse, the town that the Adansi Oil Mills limited operates from. Adansi Oil Mills is the largest palm oil milling company in the district. The residents of the town are predominantly farmers who are into cocoa, oil palm and vegetables farming.

### **Historical Development of the Cooperative**

The cooperative like the others described above is a formal cooperative, which was registered with the Department of Cooperative in 2002. The cooperative started informally in 2000 as association with the help of the Agricultural Extension Agent who was in the area at that time. It started with members of the Harris Church in Dompouse who were into oil palm cultivation. The aim was to help these farmers learn about successful ways of farming. The cooperative initially had 28 members of which 10 are males and 18

are females. So, in the year 2002 when the Presidential Special Initiative (PSI) for oil palm development was about starting the cooperative got registered officially as Harris Cooperative with the head Pastor as the chairman. Its membership grew from 28 to 126. According to the chairman between 2002 and 2008 the cooperative and its members benefitted a lot from PSI. He said the cooperative received an amount of money and a processing machine, and members were also given seedlings and money to establish their farms. He said within that period the cooperative was very vibrant and was even awarded the best District Farmer Based Organization in 2008. The cooperative since the year 2010 has seen its membership decreased to only 20. According to the members I interviewed, the cooperative has closed-down because they have not met since 2012 and the cooperative does not perform its activities any longer and that it is the chairman who is using the name to market his oil palm seedlings.

**Figure 12: the cooperative's old car and sign post**



**Source:** Observation from field work

### **Membership**

According to the chairman their membership now is 20 but after interviewing the members and going through the associations records, I realized that the 20 members if they even exist are not active members because the last time they met was July 2012.

### **Organizational Structure and Leadership**

The cooperative has a simple organizational structure with the chairman as the leader of the management team. Other members of the team are the secretary, the financial secretary and the organizer with their assistants. The chairman has senior high school education as his highest level of education whilst the rest are all basic school leavers. Out of the seven leaders there 5 males and two females. The members accused the leaders of not managing the affairs of the cooperative well and that is what has caused the cooperative's failure. The chairman was also of the assertion that the breakdown of the cooperative processing machine coupled with marketing challenges is the reason that their membership has declined. He said due to the challenges in the marketing of the oil a lot of people are replacing their farms with cocoa.

## **Present Activities**

Apart from the oil palm nursery, which the members claim is for the chairman, the cooperative is not involved in any activities. According to the respondents during its active years it was involved in 2 acres oil palm nursery, had a functional processing center where members used to process their fruits at reduced cost and other people who were not members at the full cost. Most of the members now do their processing at other milling centers.

## **Funding and Support**

The cooperative sources of funds were from the monthly dues that members used to pay, the returns from the nursery field and the processing center. The members accused leadership of misappropriation of the cooperative's funds and believe that is what has led to the collapse of the cooperative. The cooperative got a lot of support from the PSI project in the form of money, seedlings, training, and processing machines.

## **Brofoyedru Oil Palm Co-operative Growers and Processors Ltd.**

### **Introduction**

This cooperative is located at Adansi Brofoyedru, which is 8.4 kilometers from Fomena the district capital. It is a farming community with farmers cultivating cocoa, oil palm, maize, plantain, cassava, and vegetables but the dominant farming activities is cocoa and oil palm farming. The district cocoa office is in this community. The cooperative has been operating in this area since the year 2000.

### **Historical Development of the Cooperative**

According to the chairman of the cooperative, the cooperative started in the year 2000 but was unregistered until 2004. He said what led to the formation of the cooperative was that in the year 2000, they received information from their Agriculture Extension Agent (AEA) that an American organization was giving support to farmers organization and that to benefit they need to have one. He said with the help of the AEA they started the Brofoyedru Oil Palm Growers and Processors Cooperative with 74 members. They had regular meetings, paid monthly dues and opened bank account with the Adansi Rural Bank but was unregistered. After two years when members realized no support was coming, its membership declined and eventually collapsed in 2002. In 2003 they revived the cooperative again because the PSI project was being implemented and wanted to get support from it, he said. The cooperative was registered in 2004 and they eventually got support from the PSI project. He said they received processing machinery worth seven thousand Ghana Cedis (GH¢7,000) and members were also given seedlings and money to establish oil palm farms. At that time their membership grew to 174 members. The chairman admitted that the cooperative membership declined after the PSI project and even now members do not participate in the cooperatives activities except to process their fruits at the center. He stated:

*“it is really difficult to form and maintain farmers group here because all the members think of is to receive money from government”*

## **Membership**

According to the chairman their membership now stands at 67 of which 18 are males and 49 are females. But he said most of them are not active members. The members I interviewed were of the assertion that they don't see any use of contributing money or attending the groups meeting since leaders have refused to render accounts to members.

## **Organizational Structure and Leadership**

The cooperative has a simple organizational structure with the chairman as the head of the leaders assisted by the executive secretary, treasurer, and organizer. The chairman who is a retired civil servant, has a tertiary education, whilst the secretary and treasurer are high school leavers and the organizer a basic school leaver. All the leaders were males.

## **Present Activities**

As at the time of this research, the only activity of the cooperative was the running of the processing center. The center serves both members and non-members. According to the chairman, members pay one third the price that non-members pay.

## **Funding and Support**

As the time of this study, the only source of funds for the cooperative is the proceeds from the oil mill because members have stopped paying the monthly dues.

### APPENDIX 3

#### SURVEY QUESTIONNAIRE

Dear Respondent

My name is ..... and I am a student of the Department of Agricultural Production Chain Management (Horticulture) of Van Hall Larenstein University of Applied Sciences. The researcher/interviewer is conducting a study on the CHALLENGES OF SMALL-SCALE PROCESSORS ORGANIZATIONS IN THE ADANSI NORTH DISTRICT. The information required from you is for academic and research purposes. The answers you give will be kept confidential and anonymous. I would really appreciate it if you could spare some of your time for this interview. I am looking forward to your kind cooperation. Thank you very much.

Date of interview.....

Time of interview: Started.....Ended.....

Name of Zone: 1. Fomena [ ]      2. Asokwa [ ]

#### Section A: Personal and household characteristics

1. Name of respondent: .....

2. Gender:

(a) Male [ ]

(b) Female [ ]

3. Age: .....

4. Educational level:

(a) No formal education [ ]

(b) Elementary/JHS [ ]

(c) Secondary [ ]

(d) Tertiary [ ]

5. Marital status

(a) Single [ ]

(b) Married [ ]

(c) Divorced [ ]

(d) Separated [ ]

(e) Widowed [ ]

6. Household size:.....

7. Household head

- (a) Male
- (b) Female

8. Number of years in palm oil processing?.....

9. How long have you been a member of the FBO?.....

10. what are the reasons for joining the FBO?

.....

.....

.....

.....

11. Do you receive technical services through the FBO? Yes [ ] No [ ]

12. Do you receive machinery services through the FBO? Yes [ ] No [ ]

13. Do you receive credit facility through the FBO? Yes [ ] No [ ]

14. Do you receive market services through the FBO? Yes [ ] No [ ]

15. Do you pay dues to support the association? Yes [ ] No [ ]

16. Are you up to date dues paying member? Yes [ ] No [ ]

17. How often does the group meet?

- a) Very often
- b) Sometimes
- c) Rarely
- d) Never

18. How often do you partake in groups activities?

- a) Always
- b) Sometimes
- c) Rarely
- d) Never

19. How would you rate your group?

- 1- Excellent
- 2- Above average
- 3- Average
- 4- Below average
- 5- Very poor

20. what is your primary occupation?

- i. Oil palm farming



- ii. Palm oil processing
- iii. Cocoa farming
- iv. Citrus farming
- v. Palm oil trading
- vi. Others.....

21. Have you received formal training on palm oil processing? Yes [ ] No [ ]

22. How often does the Agric Extension Agent visits?

- 1. Weekly [ ]
- 2. Monthly [ ]
- 3. Quarterly [ ]
- 4. Annually [ ]
- 5. No visits [ ]

23. Have your FBO received any training on group formation before? Yes [ ] No [ ]

24. How often does the Co-operative Officer visits?

- 1. Weekly [ ]
- 2. Monthly [ ]
- 3. Quarterly [ ]
- 4. Annually [ ]
- 5. No visits [ ]

25. Has your group received any support from other organizations in the past? Yes [ ] No [ ]

a. If yes, from which institution?.....

b. what kind of support?.....  
.....

26. What is your main source of capital for palm oil processing?

- 1. Personal Savings [ ]
- 2. Borrowed funds [ ]
- 3. Both

27. From which source did you acquire loan last year?

- 1. Relatives [ ]
- 2. Money lenders [ ]
- 3. Credit Unions [ ]
- 4. Banks [ ]
- 5. Traders (pre-finance)

6. Others specify.....

28. What is the source of palm fruit for processing?

- 1. Owned farm [   ]
- 2. Purchase [   ]
- 3. Both [   ]

29. What is the size of your oil palm farm?.....

30. Which type of variety is grown on your farm?

- 1- Local variety
- 2- Improved variety
- 3- Both

31. Who is the owner of the processing machine?

- 1. The chairman
- 2. The association
- 3. Member
- 4. Non-member (Private businessman)

32. What type of labour do you use in your palm oil processing business?

- 1. Family labour [   ]
- 2. Hired labour [   ]
- 3. Both family and hired [   ]

33. Where do you sell your palm oil and kernel?

- 1. Processing centre [   ]
- 2. Village market [   ]
- 3. District market [   ]
- 4. Markets outside the district,

Specify.....

34. a. Does the organization assist in the sales of members palm oil and kernel? Yes[   ] No [   ]

35. Do you check for quality? Yes[   ] No[   ]

36. a. Do you have market access all year round? Yes[   ] No[   ]

b. what do you do when the market price is very low?

- 1- sells products cheaply
- 2- stores products
- 3- stops producing
- 4- others, specify

37. Who are the buyers of the processor's palm oil?

- 1- Mill owner
- 2- Local bulker
- 3- Buyers from major local markets in Ghana
- 4- Agents for Togo & Nigerian buyers

38. Who determines the price of the product?

- 1- The traders
- 2- The processor
- 3- The organization

39. Where do you access information on prices of palm oil and fresh fruit bunches?

- 1- processors at center
- 2- processors from other centers
- 3- Agents/Traders
- 4- Through the organization
- 5- others, please specify.....

40. What is the payment procedure?

- 1- payment at pick up
- 2- payment delayed for a week
- 3- payment delayed for 2 weeks
- 4- payment delayed for >2 weeks
- 5- 1 & 2

### **SECTION B: Problems facing small scale palm oil processors**

How do you RANK these problems often encountered in the palm oil processing Business? Indicate using numbers, where 1 indicates the most encountered problem, 2, the next and so on.

PROBLEM	RANK
Bad state of feeder roads for carting oil palm fruit	
Price fluctuation	
Limited access to credit facilities	
Scarcity of labour in the study area	
High cost of labour for processing FFB	
High cost of carting oil palm fruit	
Competition from large scale processors for palm fruit	
Limited access to market opportunities of palm oil	
Inadequate market information	
Insufficient milling machinery	
Inefficient milling machinery	
Poor agriculture extension contacts	
Limited training on quality standards and production techniques	
Use of low yielding varieties by farmers	

**SECTION C: Revenue and expenditure account for small-scale palm oil processors Prototype revenue and expenditure account for small-scale palm oil processing per production year.**

$$\Pi = TR - TVC - TFC$$

Components	Major Season Processing (Number of cycles in the Major season .....)			Total Revenue and production cost in the major season	Minor Season Processing (Number of cycles in the Minor season .....)			Total Revenue and production cost in the minor season
Revenue	Qty	p/unit	TR		Qty	p/unit	TR	
Crude Palm Oil(lit)								
Palm Kernel								
Fibre								
Variable cost	Qty	p/unit	TC		Qty	p/unit	TC	
Palm fruits (kg) (aboboyaa full load)								
Carted cost(tnt/trip)								
Threshing								
Winnowing								
Cost of water in litres								
Cost of firewood								
Extraction*(Digester and Presser)								
Cost of separation of kernel								
Clarification								
Firewood								
Labour(man-days)								
Cost of selling palm oil								

A bag of palm fruit=90kg

A tin of CPO=30lit

### SECTION D: Input usage by small-scale palm processors

Inputs used in processing	Quantity
Oil palm fruit ( in Kg)	
Labour (in man days)	
Water (in litres)	
Amount of loan borrowed GH¢	
Diesel/petrol (in litres)	
Firewood( in bundles)	
Depreciation of capital item	
Gallon (Gh5)	

Probe for input usage in processing a tonne of crude palm oil in the study area.

To calculate the depreciation value probe the processor for the following information

Name of capital item	Life span	Salvage value	Purchasing cost of item	Depreciated value
Bucket				
Head pan/Pan				
Tank/Boiler				
Wheel barrow				
Hand glove				
Shovel				
Threshing tools				

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## APPENDIX 4

### INTERVIEW CHECKLIST

#### INTERVIEW GUIDE-DISTRICT DIRECTOR OF AGRICULTURE

##### Introduction

Name:

Position:

Responsibilities:

##### About the Department

Brief background of the department

- History
- Mission
- Staff strength
- Services provision
- Coverage area

Challenges of the department

##### Farmer Based Organizations (FBOs)

Brief background of FBOs in the district

- Number of FBOs
- Type of FBOs
- The role they play in agriculture development in the district
- The prevailing situation of FBOs in the district
- Challenges of forming and maintaining FBOs in the district
- The involvement of the department in FBOs activities

Can FBOs be used as a tool for agricultural development in the district?

- In your opinion how could this be achieved?

##### Palm Oil FBOs

Who are the stakeholders in the palm oil industry in the district?

What role does the department play in the palm oil industry?

- What was the department's role in the implementation of the Presidential Special Initiative (PSI) project and the AGSSIP for palm oil?

Does the department work with palm oil processors FBOs?

- What are their main challenges?
- How is the department helping them to address these challenges?

In your opinion why is it that most of these FBOs don't last for long?

#### INTERVIEW GUIDE-AGRICULTURE EXTENSION AGENT (FIELD STAFF)

Name:

What are your main duties as an Agriculture Extension Agent?

What are the challenges you face in discharging your duties?

Have you received any training with regards to FBOs formation?

- By which institution?
- How often?

Do you have palm oil processors FBOs in your operational area?

How were they formed?

How often do you visit them?

What is their current situation, weak or strong?

In your opinion what has led to these situations?

In your opinion what can be done to improve the situation?

From your experience with small-scale palm oil processors, what are their main challenges?

How can these challenges be addressed?

#### INTERVIEW GUIDE-DISTRICT CO-OPERATIVE OFFICER

Name:

Brief background of the department

- History
- Mission
- Staff strength
- Activities/Services
- Coverage area

Challenges of the department

Number of co-operatives in the district?

Type of co-operatives in the district?

History and involvement with palm oil processors FBOs?

Evaluation of palm oil processors FBOs performance?

What can be done to improve their current situation?

From your experience what are the challenges involved in forming and sustaining palm oil processors FBOs in the district?



## INTERVIEW GUIDE-FINANCIAL INSTITUTION

Name:

Position:

Name of financial institution:

What financial services packages are available in your bank?

Who are your target groups?

Do you work with farmers?

What are the requirement criteria that a farmer must meet to access your services?

What are the repayment terms?

Do you work with farmers groups? (Palm oil processors)

What are the challenges you face working with farmers?

In your view what can be done to improve your accessibility to farmer?

## INTERVIEW GUIDE-ADANSI OIL MILLS (LARGE-SCALE PROCESSOR)

Name:

Position:

Brief background of the company

- Purpose
- Organizational structure
- Staff strength
- Production capacity
- Size of farm and nursery
- RSPO (Round table on sustainable palm oil) certification or any other certification scheme?

Brief description of the company's supply chain

The company's vision five years from now?

Does the company outsource from smallholder out growers?

- How many out growers?
- Their total farm sizes?
- Locations
- Do they have contractual agreement with the company?

What are the challenges working with smallholder farmers?

Has the company worked with smallholder FBOs in the past or even now?

From experience, can FBOs enhance the relationship between smallholders and the company?

What is the company's relationship with the small-scale processors?

What can be done to improve the palm oil sector in the district?

- Can FBOs play a role?

# Member Interview Checklist

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*Short introduction to explain who we are and why we are doing research.*

Name:

Age:

Educational level:

Crop(s) Grown:

Size of Farm:

Position of member:

## **General Information**

### **A: Cooperative Principles**

1. Which FBO are you a member of?
2. What is the purpose of the FBO?
3. Who was it founded by (members, government, NGO)?
4. And how? What was the process?
5. Is the co-op legally registered?
6. Is there a clear constitution? (**Democratic member control**)
7. Do you understand and accept the mission and vision of the FBO?
8. Is there a clear operational plan for the FBO?
9. Does the FBO has a marketing identity?
10. When did you join? (**Voluntary and open membership?**)
11. Why did you decide to join?
12. What is expected of you as a member of the FBO?
5. what are your service needs as a farmer?
6. What services do you obtain from the cooperative (input products, loans, marketing, processing)?
8. How have these services been able to help you?
9. Do you share the profits of the cooperative?
  - After how long is it before they share?
  - How? Proportionally? Per Farmer?
  - Where is the money kept? Bank account? Safe box?

### **B: Participation and Decision Making**

1 What is required for one to be a member (Annual Fee, Duties)?

2. How do you take part in decisions of the cooperative?

3. Were you involved in the process to decide the leadership?

-How/Why not?

4. Do you feel your views are represented?

- Why/Why not?

What factors hinders participation?

-interpersonal relationships

-trust and commitment

What factors promotes or can promote your participation?

### **C: Internal Communications**

1. How often do leaders listen to the input from members?

-In what form is this taken (meetings, informal discussion)

-How often do you participate in these discussions?

-Why/why not?

2. Is there a complaints procedure?

-Have you ever undertaken this procedure?

3. What is the disciplinary procedure for punishment of rule breaking?

4. Do you take part in any training processes?

-What are these?

-How often do they take place?

-Who leads them (NGO, cooperative, MoFA etc.)?

5. Do you see yourself in the cooperative for the long-term?

-For what reasons?

### **D: Influence of outside institutions**

1. Do you ever have any direct interaction with other bodies (government, NGO, agribusiness)

-What does this involve (selling, buying, training, other services)?

### **E: Influence on outside groups**

1. What is the perception of the cooperative from the local community?

-Does the cooperative carry out any activities which benefit the community directly?

-What are these?

2. Do you know any farmers who are not members of the cooperative?

-What are the reasons for non-members not joining?

**F: Final**

1.What have been the main benefits of you joining the cooperative?

**Interview with the Cooperative Leader**

Personal History

History and involvement in the cooperative

Role in cooperative Skills and experience and relation to the role

When the cooperative started

How the cooperative started and by who

Why it started (what lead to the decision to start the coop)

How many members and What has been the trend and why

What has been the progress from the start?

What activities are performed by the coop?

Type of produce and how much produce

Factors influencing effectiveness of the cooperative (Success or failure factors)

From internal

Organisational –leadership, communication, management,

Financial –sources of funding, financial performance, profitability, debts,

Operational- marketing efficiency, wastage, business contracts, competitiveness advantage, skills and experience strategies, alliances,

From external environment

Government policies- regulatory framework, pricing policies,

Market environment- competitors and type of players on the market, geographic location and how it impacts on the market costs. Other organization involvement

Opportunities created by the cooperatives

Challenges

Strategies to address both opportunities and Challenges

Cooperatives influence on the market prices

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