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DEPARTMENT OF MARKETING AND CORPORATE STRATEGY

A STUDY ON STAKEHOLDER ACTIVITIES IN THE COCOA INDUSTRY: EVIDENCE FROM THE WESTERN NORTH REGION

BY

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A THESIS SUBMITTED TO THE DEPARTMENT OF MARKETING AND CORPORATE STRATEGY, KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

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DECLARATION

I, Tandoh Eric Theophilus, hereby declare that this thesis/dissertation is the result of my own original research and that to the best of my knowledge and belief no part of it has been presented for another degree in this University or elsewhere, except where due acknowledgement has been made in the text.

Tandoh Eric Theophilus	…….	…….
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Head of Department	Signature	Date

DEDICATION

I dedicate this thesis to my wife, Lilian Oduro Mensah and my late father, for giving me the strength, wisdom, knowledge, understanding and other resources to successfully complete this project work.

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To Almighty God I give all the glory. My sincere appreciation goes to my supervisor Dr. Martin Owusu Ansah, whose contribution, guidance, insights, ideas, criticism and encouragement pushed me to expend the kind of efforts I have exerted to make this work successful.

My utmost regard also goes to my family, who laid the foundation for my education giving all it takes to see me through my education.

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ABSTRACT

Cocoa is a crucial commodity that confers several socioeconomic benefits to nations. The cocoa growing industry has many players or stakeholders who play specific roles to ensure efficiency and enhanced productivity within the industry. The aim of the current study was to explore the activities of the stakeholders within the cocoa industry in the Suaman District of the Western North Region. To achieve this goal, the study employed an exploratory research design and collected primary data to test the relationships of interest through the administration of questionnaires. A total of 100 participants comprising 50 local cocoa farmers and 50 staff of various LBCs were recruited for the study using the convenient and purposive sampling technique. Statistical Package for Social Sciences (SPSS) was used for the analysis of the data gathered. Analysis of the results revealed that "planting shading trees or plants as protective cover for seedlings" was the most performed activity among cocoa farmers while "creating of fire belt around cocoa farms" was the least performed. In terms of activities of stakeholders, "in the event of accident your company shares risks with COCOBOD" recorded the lowest mean score while "your organization is affected by the overall outputs of cocoa farmers" had the highest mean score. The study recommends that future studies must use wider geographical area to explore the relations of interest. Future studies must also include other stakeholders within the cocoa industry to ascertain their roles in enhancing or disrupting the sustainability of the cocoa sector. Also, COCOBOD and LBCs must increase sensitization of local cocoa farmers to encourage them to use good farming practices. Finally, more agricultural institutions must be established to accommodate more extension officers who will facilitate the education and sensitization of stakeholders in the cocoa industry.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

During the period between 2005 – 2015, most Sub- Saharan countries experienced significant economic growth at an accelerated pace (Rodrik, 2014). Much of this growth was accredited to roles played by the agricultural sector (Aryeetey and Baah-Boateng, 2015), although the role played by agriculture in the socio-economic development of nations differ significantly, especially in developing countries where economies are mostly agrarian (Asuming-Brempong, 2004). Usually, the nature and implications of the role played by agriculture is dependent upon the ecological zone in which the country finds itself. Ghana's economy is fundamentally agrarian with agriculture occupying the largest sector of the economy. The dominance of agriculture on the nation's socio- economic growth has always had important connotations on economic policies.

Basically, the performance of the agricultural sector has generally geared the gross economic performance of the nation since independence (Asuming-Brempong, 2004). A significant proportion of the revenue generated by the agricultural sector to government is obtained primarily through duties on exportation of agricultural products, mostly cocoa as well as the maintenance of foreign exchange by making import-substituting food and raw materials (Bymolt et al., 2018).

Cocoa (*Theobroma cacao*) is an extremely important global produce which serves as a significant cash crop for countries that produce it, while also serving as an important commodity of high value for processing and consuming countries (Vogel et al., 2020). West African countries contribute nearly 70% of global market share of cocoa, yielding notable revenue for countries in this region (Schroth et al., 2016). Ameyaw et al., (2018) report that Ivory Coast leads the way in the production

of cocoa, followed by Ghana. In their report, Ameyaw et al., (2018) also mention other countries that are known for cocoa-production such as Liberia, Togo and Sierra Leone. Across the globe, the cocoa industry has been credited to employing a large number of people, with nearly 3.2 million individuals being employed by the cocoa sector (Essegbey and Ofori-Gyamfi, 2012).

Over the years, the cocoa industry of Ghana has been of strategic significance to the socio-economic growth of the country, serving as one of the most important pillars to economy growth (Lundstedt and Pärssinen, 2021). Some of the benefits of the cocoa industry to Ghana's socio-economic development include the role it plays as a crucial source of the country's foreign exchange revenue, contribution to the national Gross Domestic Product (GDP), as well as its employment capability. For instance, the cocoa industry employs approximately one million jobs for Ghanaian natives with over six million dependents in the cocoa growing regions in the country (Asamoah and Annan, 2012). Cocoa thus serves as a major source of income to governments and individuals.

Despite the extensive importance of cocoa to the nation's development, cocoa production in Ghana has had its challenges over the years. For instance, during the mid- 1960s, cocoa production in Ghana declined considerably, attaining its minimum peak in the early 1980s. Despite various governmental reforms and policies to revive cocoa production, it is still less than the levels attained in the mid-1960s (Dormon et al., 2004). In Ghana, discrimination by Ghanaian farmers with regards to agricultural policies, diseases and pest infestation, climate and soil quality as well as setting cocoa producer price are the major challenges attributed to cocoa production in Ghana (Aneani et al., 2011). Other documented factors that have been attributed to the decline of cocoa production in the country include the general reduction in the areas for cultivation, decreased yields per hectare, low producer prices, incidence of pests and diseases as well as ignorance or non-

compliance to research recommendations by the various stakeholders in the cocoa sector (Breisinger et al., 2008). Lack of incentives for farmers to reinvest in their farms, over reliance on traditional methods, government pre-determination of producer price for Licensed Buying Companies (LBCs), lack of access to roads to cocoa growing communities to ensure evacuation as well as governments sole regulation of cocoa exportation have also been documented to be challenges faced by the cocoa industry in Ghana (Asamoah and Annan, 2012).

Stakeholders of the cocoa industry refer to the main people or organizations within the industry whose actions and/ or inactions have the tendency to affect the fortunes of the cocoa sector (Baah and Anchirinah, 2011). The various stakeholders play specific roles to ensure the conservation of the cocoa supply chain as well as attaining maximally the governmental as well as individual benefits associated with the production of the crop. Some of the main actors or stakeholders of the cocoa industry of Ghana include the Ghana Cocoa Board (COCOBOD), The Cocoa Marketing Company (Ghana) Limited, Licensed Buying Companies (LBCs), Cocoa Research Institute of Ghana (CRIG), Ministry of Food and Agriculture (MOFA) as well as farmers and farmer organizations (Aneani et al., 2017b).

1.2 Statement of the Problem

Worldwide, the demand for cocoa influences many economies, particularly those within the African continent. On an individual level, cocoa also affects several livelihoods with some families basically relying on cocoa for the income and sustenance of their respective households (Acheampong, 2008).

For several decades, the economy of Ghana has been severely influenced by cocoa which serves as an important backbone. Some reports indicate that the production of cocoa is the most predominant activity in the agricultural sector of Ghana offering significantly to the overall GDP of the nation (Amoah, 2013). The importance of cocoa may also be seen in its role in the provision of employment opportunities, generation of foreign exchange, education and development of infrastructure (Awuah- Gyawu et al., 2015). Based on the stated importance of cocoa to the economic development of the nation, a decline in cocoa production typically relates to concomitant negative repercussions on the growth and development of the economy.

Despite playing diverse roles, stakeholders of the cocoa industry play vital roles in the ultimate yield and quality of cocoa produced. Some of the roles played by some of the stakeholders in the cocoa industry include the production of cocoa beans by small scale farmers, purchasing, gathering, and haulage of cocoa beans by Licensed Buying Companies (LBCs) and quality controlling, warehousing and exportation by the Ghana Cocoa Board (Armah, 2008) among other functions.

Recent years have seen a gradual decline in cocoa yield of Ghana when compared to that of other cocoa producing countries (Dormon et al., 2004). Malaysia, Ivory Coast and Indonesia all have a higher average cocoa yield per hectare than Ghana (Opoku-Ameyaw et al., 2010). In comparison to the annual productivity rate of competitor countries such as Ivory Coast (600kg/h) and Indonesia (1000kg/h), the productivity rate of Ghana is relatively low even though most of our agricultural lands are committed to growing cocoa (Franzen and Mulder, 2007). Several reasons have been documented to be causes of the low productivity of Ghana's cocoa (Dormon et al., 2004). Of particular interest is the impact of activities of stakeholders in the cocoa industry of Ghana. For instance, a recent report suggests that poor farm maintenance practices, inefficient control of pest

and diseases and planting of low-yielding varieties by farmers contribute to the overall low yield of cocoa (Amoah, 2013). Other researchers such as Anang et al., (2011) also argue that poor farm maintenance practices result from the low producer prices that are given to the cocoa beans by other actors such as the Licensed Buying Companies (LBCs) and COCOBOD. The fall in cocoa yield in Ghana motivates the researcher in the current study to explore into the activities of the key stakeholders in the cocoa industry of Ghana and their role in achieving maximal yield.

1.3 Objectives of the Study

The main objective of the study is to investigate the activities of the stakeholders within the cocoa industry in the Suaman District of the Western North Region.

The specific objectives of the study are:

1. Investigate the key activities of cocoa farmers in the Suaman District of the Western North Region
2. Explore into the activities of LBCs in the Suaman District of the Western North Region
3. Evaluate the impact of stakeholder activities on cocoa productivity

1.4 Research Questions

1. What are the activities of cocoa farmers in the Suaman District of the Western North Region?
2. What are the activities of LBCs in the Suaman District of the Western North Region?
3. What is the impact of stakeholder activities on cocoa productivity?

1.5 Significance of the Study

Despite the well-established significance of cocoa stakeholders in cocoa productivity, no study has been conducted to evaluate the activities of cocoa stakeholders in the Suaman District of the Western North Region of Ghana. As such, in terms of academia, the current study thus seeks to bridge this gap and add more knowledge to existing literature on the activities of stakeholders in the cocoa industry of Ghana.

The outcome of the study will also be useful in boosting the agricultural sector, particularly in terms of cocoa production through farmers.

Recommendations made from the study will also provide holistic knowledge of information to various policy makers and other stakeholders of cocoa about ways of improving productivity.

1.6 Scope of the Study

The current study critically explores the activities of stakeholders within the cocoa industry in Ghana. As such, the target population of the study comprises all actors within the cocoa industry in Suaman District of the Western North District.

1.7 Brief Methodology

The current study employed the descriptive research design to evaluate the various activities of stakeholders within the cocoa industry of Ghana. Quantitative research methods were used to obtain and analyze data while primary data was the main type of data used (Barnett et al., 2021). Primary data was collected using questionnaires to address the research problem and objectives. The present study also employed the purposive and convenient sampling techniques in gathering

the data from cocoa stakeholders within the Suaman District (Akhtar, 2016). Questionnaires for the study were personally administered by the researcher. The obtained data was recorded, cleaned and analyzed using the Statistical Package for Social Sciences (SPSS) version 20 software. Pearson correlation and other inferential statistical tools were used to analyze the relationship between the study variables. Statistical significance for all analysis was set at $p< 0.05$.

1.8 Organization of the Study

The present research is categorized into five major chapters. The first chapter begins with a brief introduction, the statement of problem, objectives, research questions, significance of the study as well as the organization of the study. Chapter two presents a review of pertinent theoretical literature on the activities of cocoa stakeholders and their impact on cocoa productivity. Some key concepts used in this thesis are also discussed in this chapter. The chapter also depicts a brief history of cocoa production in Ghana and its role in the development of Ghana. A discussion of the empirical literature on stakeholder activities and cocoa yield is also presented in chapter two. Chapter three describes the methodology used for the study. The research philosophy and design are presented; this is followed by the description of the data employed in the study and their sources; and the statistical techniques employed in the study. Chapter four presents the results as obtained from the current study and its analysis. The final chapter discusses the results of the study, makes some recommendations for future researches as well as draw suitable conclusions from the present study.

1.9 Ethical Consideration

Saunders *et al*., (2009) define ethics as the efforts made by the researcher to consider to rights of the participants in a study. To attain satisfactory results on ethical concerns, the present study with performed based on the guidelines as stipulated by the KNUST Graduate School manual for the organization of postgraduate thesis.

Notably, the study considered safeguarding the privacy of participants throughout the conduct of the study. Ethical approval was also sought from the necessary bodies before the commencement of the study. Additionally, the researcher administered the questionnaires personally with the aim of safeguard participant confidentiality.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The current chapter reviews pertinent literature related to the topic under study. The role of agriculture, cocoa productivity in Ghana and the activities of stakeholders in the cocoa industry of Ghana are all discussed in detail in this chapter.

2.1 Stakeholders in the Cocoa Industry

Stakeholders refer to an individual or a group who exhibit important interest in any decision or activities which are related to an organization. To put differently, stakeholders refer to individuals who either care about or show vested interest in a project or organization or industry (Asamoah & Annan, 2012). In the cocoa industry, stakeholders refer to the various groups or individuals who are involved in policy-making and implementation with the main aim of enhancing cocoa cultivation (Amoah, 2013). Stakeholders of the cocoa industry refer to the main people or organizations within the industry whose actions and/ or inactions have the tendency to affect the fortunes of the cocoa sector (Baah and Anchirinah, 2011). Cocoa stakeholders play specific roles to ensure the conservation of the cocoa supply chain as well as attaining maximally the governmental as well as individual benefits associated with the production of the crop.

In Ghana, the cocoa industry has a number of stakeholders that include the Ghana Cocoa Board (COCOBOD), The Cocoa Marketing Company (Ghana) Limited, Licensed Buying Companies (LBCs), Cocoa Research Institute of Ghana (CRIG), Ministry of Food and Agriculture (MOFA) as well as farmers and farmer organizations (Aneani et al., 2017b).

2.1.1 Activities of Stakeholders in the Cocoa Industry of Ghana

In Ghana cocoa farmers, COCOBOD and LBCs represent the major stakeholders within the cocoa growing sector. Beside these major actors of the sector are other equally important stakeholders. Notable examples include governmental and business agencies that offer extension services for cocoa farmers. In addition, banks and other credit facilitators also play crucial roles in the cocoa sector. Furthermore, two major subsidiaries of COCOBOD, the Cocoa Service Division (CSD) and Cocoa Research Institute of Ghana (CRIG) provide important help for cocoa farmers in the country (Asamoah and Annan, 2012).

A summary of the main functions of the various stakeholders in the cocoa industry of Ghana is presented in Table 2.1 below.

Table 2. 1 Functions of Major Stakeholders within the Cocoa Industry of Ghana

No.	Stakeholders	Role
1.	The Ghana Cocoa Board (COCOBOD)	The function of COCOBOD is to formulate policies, monitors and regulates the operations of the cocoa industry in Ghana.
2.	Licensed Buying Companies (LBCs)	The LBCs are responsible for domestic purchasing and hauling of cocoa beans to the port for export.
3.	The Cocoa Processing Company Limited (CPC)	CPC processes raw cocoa beans into semi-finished products such as cocoa butter, liquor, cake or powder.
4.	The Cocoa Research Institute of Ghana (CRIG)	CRIG investigates problems of diseases and pests of cocoa, soil fertility, and good agricultural practices. They also develop planting materials for use by farmers such as cocoa seedlings with the aim of increasing yield and farmers‟ income. They also conduct research into the development of other products from cocoa waste and by-products,
5.	The Quality Control Company Limited (QCCL)	QCCL is responsible for inspection, grading, and sealing of cocoa, coffee and sheanut for export; and for fumigation and storage of cocoa.

6.	Farmers	Responsible for the actual cultivation and/ or growing of cocoa at the farm level.

Source: Aneani *et al*., (2017)

2.2 Agriculture in Ghana

Similar to the economy of most African countries, agriculture contributes significantly to the socio-economic development of Ghana. In terms of Gross Domestic Product (GDP) contribution, the agricultural sector contributes about 22.7% to the total GDP of Ghana while the other sectors of the economy, that is, industry and service sectors contributes 27.3% and 50% respectively to national economy (Enu, 2014). The agricultural sector is also the second largest employer in Ghana employing nearly 42% of the entire population (Ghana Statistical Service, 2015).

In Ghana, the agricultural sector is sub grouped into various components such as the cocoa crops, livestock, non-cocoa crops, fishing, forestry and logging (MOFA, 2020). Despite the well-known fact that Ghana is an agriculture-dependent nation, several barriers to the smooth practice of agriculture exist in the country. In recent times, certain adaptation measures have been implemented by stakeholders to ease the challenges the sector faces. Some of these measures include the adoption of modern agricultural technologies and cultural practices like application of fertilizers, use of resistant varieties of crops, irrigation and suitable planting and harvesting times (Enu, 2014). However, the adoption of these adaptation measures is sometimes hampered by the relative high cost involved. In addition, the challenges faced by the agricultural sector of Ghana is not only limited to cultivation but also exist with the processes involved in post-harvest storage as well as marketing (Asianmah and Darko, 2016).

2.2.1 Cocoa Tree and Cocoa Beans

Cocoa, ***Theobroma cacao***, is a crucial crop, typically of the equatorial region that has an enormous commercial significance. The crops preference for equatorial region is due to the presence of favorable climatic and environmental conditions such as high annual rainfall and an average temperature of 25.5 – 26.5 Degree Celsius (Amoah, 2013). Cultivated is cultivated in extensive proportions in areas bordering the Gulf of Guinea in the Western part of Africa. Countries such as Ghana, Nigeria, Ivory Coast, Liberia and Cameroon have been associated with the cultivation of the crop (Sakpaku, 2007).

Ghana is the second largest producer of cocoa, behind its West neighboring nation, Ivory Coast. Evidence suggest that the smuggling of cocoa from Ghana to Ivory Coast is an important cause of Ivory Coast's current position, in terms of cocoa productivity (Asamoah and Annan, 2012). In Ghana, the cultivation of cocoa crop usually occurs in the rain forest regions of the country such as Brong Ahafo, Eastern, Ashanti, Volta and Western Regions (Wessel and Quist-Wessel, 2015). The average annual rainfall in these areas is usually between 1000 and 1500mm/ annum.

Based on the size of the crop, harvesting of cocoa usually occurs between the months of September and January. Harvesting may be performed using a metal hook. Under normal circumstances, family members of cocoa farmers are the main providers of labor on farms (Amoah, 2013). The harvested beans are then subjected to fermentation under wrapped, air-tight conditions using plantain leaves for about a week. Subsequently, the beans that are fermented are dried. Dried beans are then packaged in mini or maxi bags of 30Kg and 62.5Kg respectively. LBCs are the most common local buying agents from cocoa farms. They are ten weighed, graded and bought at the prices fixed by COCOBOD, which is the main regulator of cocoa prices. Most cocoa production in Ghana is carried out by peasant farmers on plots of land less than 3 hectors (Sakpaku, 2007).

The characteristics of cocoa are quite peculiar. Unlike most other tropical crops, cocoa requires a much-extended production cycle with new hybrid forms characterized by at least five years to come into production and a decade and half years for the tree stock to reach its full bearing potential (Dawoe, 2016). Cocoa production also requires adequate climatic conditions. For example, it has been suggested that average temperature of 27^{o}C and average rainfall of 12cm are the optimal conditions necessary for maximal output of cocoa. Other requirements include protection from extreme winds and sunshine, as well as well-drained soil (Hartuti et al., 2019).

2.2.2 FoB Price

FoB is an acronym that stands for Free on Board. FoB is a term used in transportation to mean the price of goods including delivery at the expense of the seller to a particular point and not any further (Caroline Banton, 2019). In the cocoa industry, the FoB price refers to the price at which cocoa is sold by the government to foreign buyers and includes, apart from the profit margin, all cost incurred in buying and transporting the beans to the port (Dormon et al., 2004).

2.3 History of Cocoa Production

Cocoa is a crucially important crop due to the fact that it is source of income, food, employment, industrial raw materials as well as resources for poverty alleviation for a significant number of people and global economies (Dormon et al., 2004). Originally, cocoa production began in the headwaters of the Amazon in South America before subsequently spreading to the Central and Western Amazonia and northwards to Central America (De Souza et al., 2018). In the 16th Century, the Spanish also began large-scale production of cocoa. In due course, the production of cocoa extended to British and French territories during the 17th Century. In the 18th Century, Brazil also

began the cultivation of cocoa. Eventually, cocoa cultivation also spread to Fernando Po and Sao Tome in the 1840s (World of Cocoa Foundation, 2018). From there, cocoa cultivation spread to some regions of West Africa such as the Gold Coast, Nigeria, and Ivory Coast (Shashi Kolavalli and Vigneri, 2011).

Although Tete Quarshie is credited for the evolution of large-scale cocoa cultivation in Ghana, evidence suggests that Dutch missionaries are responsible for planting cocoa in the coastal regions of Ghana during the early 1800s, whiles in 1857, Basel missionaries also started planting cocoa at Aburi (Bangmarigu and Qineti, 2018). Nonetheless, extensive cocoa production only began upon the import of Amelonado cocoa pods from Fernando Po by Tete Quashie, in the year 1879 (Peprah, 2019). Large- scale cocoa production eventually extended to other parts of the country such as the Western, Eastern, and Ashanti regions. In most cocoa producing countries, cocoa cultivation became a major source of income and livelihood for many natives some of whom took this work as their main source of employment. In addition, cocoa rapidly became the major source of foreign exchange generation through exportation for West African economies in particular, due to the demand of it from American and European countries (Essegbey and Ofori-Gyamfi, 2012).

Although cocoa production in commercial quantities is credited to Tetteh Quarshie 1876, the first documented shipment of cocoa from Ghana was in January, 1993, when only two bags were sent from Accra to Hamburg (Asiedu, 2017). The volume of cocoa export rapidly increased to 20,000 metric tonnes. In the early 1920's' Ghana produced 165,000 – 213,000 metric tonnes and contributed about 40% of the total world output of cocoa. In 1940, government set up the Produce Control Board for West Africa which eventually led to the creation of the Cocoa Marketing Board (CMB) in the year 1947. A major function of the CMB has been the authorization of several buying agents to manage the marketing processes of cocoa internally.

In the late 1970s, the government got rid of the multiple buying system which allowed only the Produce Buying division of COCOBOD to be the only agent responsible for buying cocoa in Ghana for exportation. Nevertheless, from 1992, the multiple buying system has since been restored and Ghana cocoa is now being purchased by the Produce Buying Company as well as several other LBCs (Asiedu, 2017).

2.3.1 Global Cocoa Production

Ambani and Fiona (2012) report that the first exportation of cocoa to Europe occurred in the year 1585 from Veracruz to Cadiz in Spain. Ever since then, cocoa cultivation has been practiced extensively in many parts of the world. According to De Souza *et al*., (2018), cocoa emanated primarily from Mexico although certain parts of tropical America has also been credited. Other regions such as the Western part of Africa and the equatorial region are also involved in substantial cocoa production (Kenneth, 2014). In fact, Schroth et al., (2016) report that nearly 70% of global cocoa output is provided by countries from West Africa. Tropical regions of the world including Brazil and Indonesia also participate in extensive cocoa cultivation (Schroth et al., 2016).

Global cocoa production is mainly undertaken by local cocoa farmers with only a few recognizable large- scale organizations involved in cocoa cultivation (Asamoah and Annan, 2012). For instance, a 2002 report indicate that an estimated 1.6 million small-scale cocoa farmers are involved cocoa cultivation in Ghana (ESDD, 2002).

Several factors affect the productivity levels of cocoa around the globe. Buxton (2018) classify these factors as being genetic and environmental. Although good varieties of the cocoa crop affect the sustainability of cocoa production, approximately one-third of cocoa acreage produced fall under specified varieties (Paltasingh et al., 2012).

Reidsma et al., (2007) concur that, cocoa farmers and some selected agricultural agencies cultivate genetically modified crops with the aim of controlling pests and diseases. Nonetheless, it is important to note that cultivating genetically modified cocoa crops need to be performed appropriately, bearing in mind the influence of genetically modified crops on the environment, and the consumer as well (Reidsma *et al*., 2007).

The environment plays an important role in cocoa production. For instance, several components of the environment including climatic variables (temperature, humidity and rainfall among others) and the soil are crucial factors that must be considered in the cultivation of cocoa. In terms of rainfall, many publications have reported the impact of inadequate rainfall on cocoa yield. Peprah (2014) found that in years following high rainfall years, cocoa yield is generally high, although this association is not necessarily true for all years. In other publications, the relationship between rainfall and cocoa yield has generated mixed results.

In terms of temperature, Salifu (2013) contend that optimal temperatures required for cultivating enhanced high yield of cocoa ranges between 10 – 30 ^{o}C. Van Aalst et al., (2008) also report in a Ghanaian study that flushing usually coincides with high temperature periods.

2.3.2 Cocoa Production in Ghana

Cocoa remains the backbone of Ghana's economy despite the recent discovery of oil in commercial quantities. The social and economic benefits of cocoa to the economy of Ghana are numerous. Some of the benefits of the cocoa industry to the economy of Ghana include creation of job opportunities for citizens, notable addition to GDP and generation of foreign exchange revenue (Asamoah and Annan, 2012).

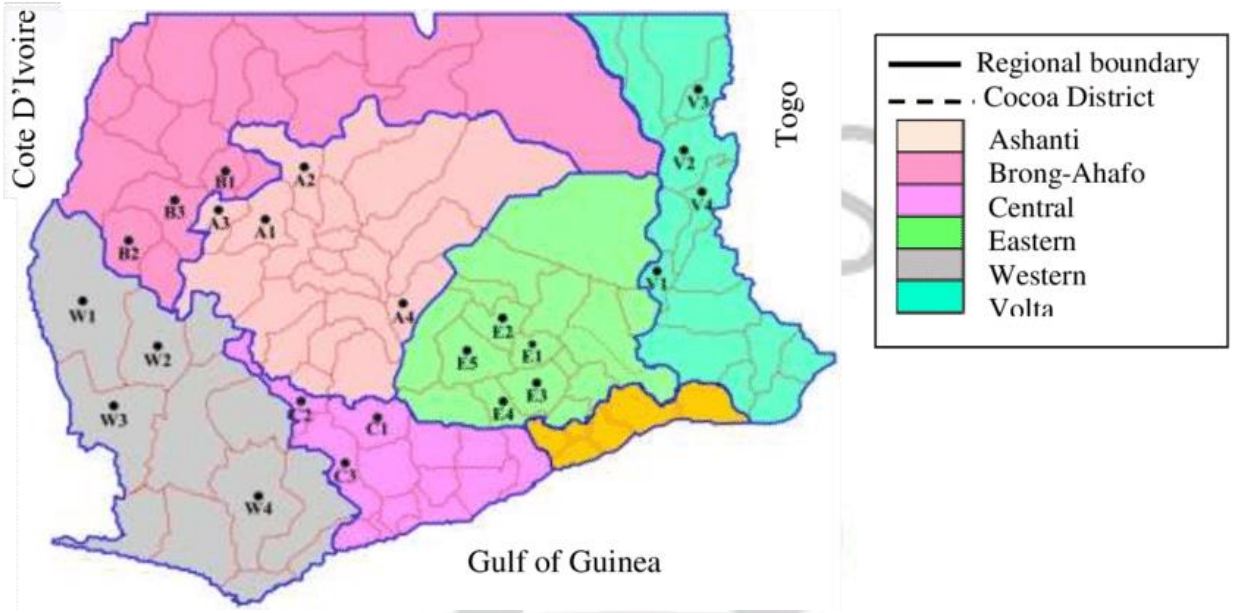

Figure 2. 1 Cocoa Growing Areas in Ghana (shown in dots)

(Adopted from (Amoako-Attah et al., 2016)

With a life-cycle of nearly 25 – 30 years, cocoa may be classified as a perennial crop. Depending on the particular variety of cocoa, the average years taken between planting and when the first pods are borne ranges between 3 – 6 years. During the earlier stages after planting, cocoa may be mixed cropped with certain staple food crops such as maize, cassava and plantain. The essence of this farming technique is typically to provide shade for the young trees (Amoah, 2013).

Different species of cocoa require specific length of time to bear fruit. In Ghana, the Amelonado type of cocoa, which is credited as being the initial cocoa type to be introduced in Ghana requires less than five years to bear fruits (Abdul-Karimu *et al*., 2007). Other types of cocoa such as the Amazonia, introduced in Ghana in the 1950s, requires 3 – 4 years to mature. In more recent times, the hybrid cocoa variety which is high yielding and early maturing has been introduced in most Ghanaian farms (Amoah, 2013).

The cultivation of cocoa has experienced four main phases since it began in the 17th century. The first major change in the cocoa production process saw the introduction and exponential growth phase between the years 1888 and 1937. After the nation gained independence in 1957, cocoa production experienced a brief slowing up phase, followed by a sharp growth between 1938 – 1964. Between the years 1965 and 1982, the cocoa producing industry experienced a near collapse stage in its history. The fourth major phase in the history of cocoa cultivation in Ghana was experienced between 1983 – 2008 following the execution of the Economic Recovery Program (ERP) (Kolavalli and Vigneri, 2011). The ERP ensured that local cocoa farmers in Ghana were paid relatively more compared to their counterparts from neighboring countries. Additionally, the ERP also ensured that compensation packages were offered to local farmers who were involved in getting rid of cocoa trees that were infected with the swollen shoot virus and also planting new healthy varieties of cocoa (Osei, 2017).

During the 2001 – 2002 cocoa growing season in Ghana, the government implemented several initiatives aimed at promoting the frequency of farmers in using high quality fertilizer on their farms. In the same period, the activities of Cocoa Diseases and Pests Control (CODAPEC) program, as well as the notable increment in global cocoa prices served as an important motivation for many individuals to get involved and increase their production of cocoa. The above-stated intervention measures ensured a huge increment in the overall national output of cocoa from 380,000 MT – 500,000 MT in the next cocoa growing season (Amon-Armah *et al*., 2011).

In Ghana, the average rate of cocoa productivity is nearly 400kg per hectare (kg/h), and creditable to various governmental initiatives that motivate farmers and enhance production levels (Aneani and Ofori-Frimpong, 2013). Even though most of the agricultural lands of Ghana are committed to cultivating cocoa, Ghana has a relatively lower annual average of cocoa productivity than other

cocoa growing nations such as Ivory Coast (600kg/h) and Indonesia (1000kg/h) (Anim-Kwapong and Frimpong, 2010; Franzen and Mulder, 2007). Moreover, in a study that assessed the technical efficiency among cocoa producing communities in West Africa, Ghana had the least efficiency of 44% with Nigeria having the highest of 74% efficiency (Oguntade *et al*., 2012).

The relatively low productivity of cocoa in Ghana is linked to many factors. In a study conducted by Osei (2017), the common factors that negatively affect cocoa yield in Ghana include variabilities in climate conditions, substandard farm practices, bushfires, pest infestation and illegal mining activities among others. These factors were also stressed as negatively impacting factors by Tawiah (2015). Some diseases may also be responsible for the low yield of cocoa in Ghana. Notably, Anim-Kwapong and Frimpong (2010) report that the highly contagious black pod disease is the most damaging disease that affects the development and ripping of the cocoa pod. Lawal and Emaku (2007) concur that the incidence of black pod disease in Ghana is high because of the existence of high humidity in the country.

Judging from the discussion above, existing intervention measures implemented by the government to curb the challenges facing cocoa productivity in Ghana are inadequate. The inadequacy of intervention measures can be seen with regards to promotion on the part of government for local farmers to cultivate the hybrid type of cocoa. Unfortunately, the hybrid type of cocoa requires large amount of fertilizer for growth, in addition to being relatively expensive. This high cost of production signify that most farmers are unable to afford the hybrid type of cocoa, consequently leading to recurring low yields despite some supporting strategies at the individual farmers' level to boost their yield (Franzen and Mulder, 2007).

In Ghana, COCOBOD regulates and controls the activities of the cocoa industry. COCOBOD is a governmental agency whose regulation of the cocoa industry stem from the fact that the industry

serves important economic functions to the country. COCOBOD is also responsible for exportation and internal marketing of cocoa beans. Other functions of COCOBOD include hybridization of seeds, sale of seeds, extension services to farmers, quality control services and conducting agricultural research in cocoa (Ehiakpor et al., 2016). Over the years, COCOBOD has ensured sustainable growth and development in the cocoa industry of Ghana despite the relative lower productivity rate (Osei, 2017).

Following the introduction of competition in the internal marketing of cocoa, through the licensing of private companies to purchase cocoa, the Government decided to allow qualified licensed cocoa buying companies to export part of the cocoa they purchase (Adu-Appiah *et al*., 2013). In pursuance of the decision under section 34 of PNDC law 81, the Ghana Cocoa Board (COCOBOD) came out with regulations to guide the conduct of qualified exporters in the purchasing and marketing of cocoa. During the 1990s, the World Bank in collaboration with the government of Ghana made considerations regarding how domestic purchasing of cocoa may be privatized. In the 1992/1993 cocoa season, COCOBOD approved license of four private companies to buy cocoa from farmers at approved government prices for a commission (Komi and Gayi, 2019). It has been observed that though the reforms have been multifaceted, one change of a particular interest is the liberalization of the domestic cocoa purchasing market. The internal purchasing of cocoa is completely privatized, with about 25 or more LBC's competing at farm gate to buy cocoa from the farmer. The ensuing reform resulted in significant increment in the producer prices for cocoa (from 56% - 70%) of the FoB price over the period 1998/1999-2004/2005.

2.3.3 Sustainable Practices in Cocoa Production

Ghana's cocoa sector faces a number of challenges. For one, productivity levels are lower than they are in other countries. Ghana also faces the possibility that its quality advantage may disappear in the coming years. In addition, Ghana must determine how to keep its cocoa sector competitive as cocoa-producing household's change. Finally, the environmental impact of current farming practices may soon constrain cocoa production expansion is not efficiently addressed.

Sustainable practices may be defined as practices that are involved in making the necessary adjustment the needed climate variables and their possible consequences with the overall objective of preventing harm (IPCC, 2014). According to Codjoe et al., (2013), sustainable practices refer to policies that reduce the tendency of cocoa farms beings exposed to conditions of negative implications. Cocoa farmers all over the world are bound to experience significant challenges regarding the variability of climatic conditions. For this reason, it is important to develop strategic techniques to counter the adverse implications that would otherwise arise following these modifications of climate variables (IPCC, 2014). Just like other farm types, cocoa farmers also need to develop strategic measures in the face of existing challenges.

Nonetheless, the type of strategy that need implementing depends on a number of factors such resource allocation and resource availability (Berhe et al., 2017). Other factors that may influence the type of strategy implemented include site of farm and knowledge on available and future technology.

2.3.4 Cocoa Supply Chain in Ghana

Prior to the partial liberalization of the cocoa industry of Ghana, the sector was entirely monopolized by the Ghanaian government, typically through the operations of the Cocoa Marketing Board (CMB). The operations of CMB were also mostly conducted through Produce Buying Company (PBC) and the Cocoa Marketing Company (CMC), the major subsidiaries of CMB. Other notable subsidiaries of CMB, including the Quality Control Division (QCD), played important roles in ensuring that only high-quality cocoa was produced and sold. Since liberalization of the industry however, the sector has seen a significant shift from the previous monopolized system, allowing many cocoa LBCs the chance to get involved with domestic purchasing and exportation of cocoa (Asamoah and Annan, 2012).

nonetheless, during the season of 1984/ 1985 cocoa growing season, the first phase of the reforms was executed and essentially fixed on ensuring that the CMB was restructured. The commencement of the reform in the year 1984, as well as the subsequent reshuffling of the CMB saw a considerable reduction of the number of staff of the CMB from an initial 100, 000 to 6000 workforces. Meanwhile, the name CMB was also changed to Ghana Cocoa Board (COCOBOD) as one of the various modifications made to the CMB. Additionally, during the initial phase of the reformation, many attempts were made to restructure production by providing farmers with seedlings to replace old trees, promoting transport and sales by constructing and upgrading roads and putting greater emphases on extension services and the use of fertilizers and pesticides in production (Anthonio and Aikins, 2009).

Several activities take place in the cocoa sector including a network of economic activities that involve production, marketing, transportation and quality control of cocoa. The processing and/ or grinding of cocoa also demands very intense effort. For instance, cocoa processing involves the

transformation of dried cocoa beans into a variety of finished products including cocoa paste or liquor, cake, powder and butter. The quality of finished products of cocoa is usually dependent on the quality of raw cocoa used for the processing. As a result, cocoa processors demand high quality standards and expect COCOBOD, their suppliers to meet these standards.

Cocoa processing in Ghana is done extensively, with the nation responsible for processing an estimated 298, 000 tonnes of cocoa domestically, representing about 40% of Ghana's cocoa bean production. The processed materials of cocoa are usually exported to foreign lands by the government of Ghana which is the sole transporter of the crop (Asamoah and Annan, 2012). Also, due to the unique nature of the nation's partial liberalization program, Ghana's cocoa value chain is quite distinct from the cocoa Global Value Chain (GVC).

2.4 Liberalization of Domestic Cocoa Marketing

In the 1980s, several changes were executed to enhance the efficiency of COCOBOD. Some of the notable alterations that were made include the privatization of transportation, as well as phasing out of input subsidies (Shashi Kolavalli and Vigneri, 2011). In addition to these measures, stricter measures were adopted following the general elections in 1992. For examples, in the early 1980s, the total staff number of COCOBOD was reduced drastically by nearly 90%. The main reason for such alteration was to significantly cut down cost. In the year 2003, the ability to purchase Ghana cocoa was afforded to a number of private cocoa LBCs. COCOBOD ceased to be the sole purchasing of cocoa in the country although the specification of the minimum price of cocoa remained as the role for COCOBOD only. However, despite the minimum price being set by COCOBOD, buying companies are at will to pay fees that are higher than the originally set minimum prices (Amoah, 2013).

In addition, COCOBOD took up the role of offering funds at reduced rates to producers to help their operations. In addition to giving funds, COCOBOD also ensures that cocoa producers also operate with only high-quality cocoa beans.

Liberalization of the domestic cocoa markets has been hugely beneficial to farmers. For instance, it has resulted in more reliable payments to farmers. Another major benefit is the drastic reduction in corruption. In addition, even though LBCs do not necessarily engage in the competition of prices, occasionally, they render bonus in prices, subsidized inputs and credit extensions to local cocoa farmers (Laven and Boomsma, 2012). This new system surely puts a steadier stream of money into the hands of cocoa farmers, offering them improved capital to labor and other inputs when they need them (Vigneri and Santos, 2008).

Additionally, the partial liberalization has also ensured competitiveness of the internal marketing of cocoa since cocoa is now being produced by PBC, as well as other cocoa LBCs, with nearly 300 buying stations manned by purchasing clerks or individuals from cocoa communities who purchase cocoa on behalf of buyers. Although the total number of licensed buyers is relatively large, five dominate the market. They include the Produce Buying Company (PBC), Kuapa Kokoo, Olam Cocoa Processing Ghana Limited, Armajaro Ghana Limited and Global Haulage Company Limited (Shashi Kolavalli and Vigneri, 2011).

Another main benefit of liberalization may be seen in the improved efficiency of procurement and transport of cocoa. On the other hand, it remains unclear whether COCOBOD's costs have been reduced by surmounting procurement and transport and to what extent liberalization may have helped COCOBOD pass on a higher share of FoB prices to farmers. Notwithstanding, retaining control over exports and other aspects of marketing has enabled COCOBOD to support producers

in ways that would not have been feasible had it devolved these responsibilities to other organizations (Tsowou and Gayi, 2019).

CHAPTER THREE

METHODOLOGY

3.1 Overview

This chapter describes the step-by-step analysis of the methods that were utilized by the researcher in the current study to address the various research questions. The chapter is largely categorized into nine (9) sub-sections including research design, population and sample size, sampling frame, sampling technique, questionnaire design, measurement instrument, pilot testing, data collection procedure and data analysis plan. The study primarily utilized primary data to evaluate the activities of the stakeholders within the cocoa industry in the Suaman District of the Western North Region.

3.2 Research Design

In general, research design is a useful approach to consider when undergoing a study that seeks further insight into a research problem and also, when descriptions are provided concerning the variables that interest a researcher. Research design also involves using either qualitative methods, quantitative methods or both methods of research approach. Research design is defined as the processes involved in undertaking an investigation whose aim is to identify and evaluate variables and their shared relationships. According to Ocran (2011), research design also guides researchers in testing the hypothesis of a study as well as answer research questions. Researchers conventionally identify three main types of research designs which include causal, descriptive and exploratory research design (Moiseenko et al., 2016). The current study employed the exploratory research design.

The main attribute of the exploratory research design is to ascertain the perception of study participants on a particular subject. Exploratory studies also involve the use of sampling tools such as questionnaires and interview guides in gathering data about people and their thoughts and behaviors. The present study also employed the exploratory research design because it was the intention of the researcher to discover new things (Akhtar, 2016).

The current study also employed quantitative methods to evaluate the relationship between variables. Quantitative research designs refer to studies that employ structured questions with various responses for respondents to select from and are collected in large sample sizes. Quantitative studies allow researchers to explore the association between study variables using quantifiable or measurable constructs (Barnett et al., 2021).

3.3 Population and Sample Size

The population of a study represents the entire possible observations of the same kind that interest a researcher. That is, the total set of individuals who are the focus of the investigation and about whom the researcher wants to determine certain features or association (Sufian, 2015). According to Cella *et al*., (2015), identifying a suitable population is essential for any research because it is essential for the formulation and administration of theoretical tests. The aim of the present study was to explore the activities of the stakeholders within the cocoa industry in the Suaman District of the Western North Region. As a result, the target population for the current study comprised of all stakeholders of the cocoa industry within the Suaman District, including local cocoa farmers, Licensed Buying Companies (LBCs) and other intermediaries such as purchasing clerks.

Ideally, in order to obtain reliable, valid and accurate results, all members within a study population must be sampled and subjected to analyses in order for efficient conclusions to be made. In practice however, sampling the entire population to understand study variables is often times not feasible. As a result, a subset of the total population is usually studied by researchers in an effort to understand and make inferences about a population from which it was drawn. Thus, the sample size refers to the fraction of the total population that is used as a representation of the entire population (Taherdoost, 2016). Since the exact number of stakeholders within the cocoa industry in the Suaman District could not be determined, the researcher distributed 100 questionnaires and obtained a sample size of 100 for the current study.

3.4 Sampling Frame

According to Johansen *et al.*, (2010), the sampling frame for any research or study refers to the outline of sample units out of which the sample for the study is obtained. Sampling frame may also refer to the entire list of respondents who exhibit appropriate elements that interest a particular study (Taherdoost, 2016). In other words, sampling frame may refer to a group of subjects with well-defined characteristics that are eligible for a study. In the current study, the sampling frame refers to local farmers, as well as individuals or groups who work with various Licensed Buying Companies within the Suaman District of the Western North Region. The sum total of subjects within this specified frame was large enough for the researcher to obtain 100 participants as sample size for the study.

3.5 Sampling Techniques/ Method

The process of selecting an appropriate subset of observations within a population in order to make inferences about the characteristics of the entire population is described as sampling, according to Tashakkori and Teddlie (2010). Researchers usually restrict their data collection well-defined units within a population for several reasons such as convenience as well as necessity, particularly in instances where they are deprived of time and resources to collect data from the entire study population (Malott & Kohler, 2021).

The present study employed the purposive sampling techniques in gathering the data for the present study. Purposive sampling technique refers to a non-probability sampling method whereby researchers depend on their prior judgement to select participants for a study. In purposive sampling, researchers select the cases to be included in the sample on the basis of their judgment of a particular knowledge about an issue being investigated (Cohen, 2010). This technique also requires researchers to have some pre-existing knowledge about the objective of the study to enable them approach eligible participants for the study (Palinkas et al., 2015).

The main reason for using the purposive research design was to collect data from local farmers, managers and specific individuals who are important stakeholders of the cocoa industry of Ghana. Another merit for using the purposive study design was that it benefited the researcher in terms of saving cost and obtaining data from a large number of respondents. Questionnaires which were the major tool for gathering data for the study were personally administered by the researcher to individuals who matched the criteria of selection for the study.

3.6 Interview Guide

For the current study, questionnaires were used as the tool to collect data. A questionnaire was preferred for the present study due to its adequacy regarding the specifics of both the research topic and nature of data being sought (Navarro-Rivera & Kosmin, 2013).

The structured questionnaire used was developed to gather data in accordance with the study's objectives. Particular groups of interest were given specific questionnaires to ease data analysis. For instance, local farmers were given a different questionnaire compared to the questionnaire for LBCs. Additionally, certain considerations were upheld in the process of designing the questionnaires. For example, the issues of how to keep the questions simple and unambiguous were considered to avoid distortion of facts and findings.

The questionnaires used consisted of Likert-scales and closed-ended questions to explore the specified areas of the research. The questionnaires were also sub-divided into appropriate sections to aid the analysis of the data obtained. For instance, the questionnaire for small scale farmers had three (3) sections; A, B and C. While section A sought information about the background of respondents, section B and C evaluated farm characteristics of farmers and activities to increase cocoa yield respectively. For the questionnaires for LBCs, two sub-sections were defined: section A sought information about the demographic data while section B explored the relationship between LBCs and other stakeholders. The questionnaires were self-administered by the researcher to the respondents.

3.7 Measurement Instrument

Measurement instrument refers to devices or means through which data for any research may be obtained. Several instruments of data collection are available for use by researchers (Canals, 2017). The type or kind of data collection tool is dependent upon the kind of research or investigation being conducted (Osang et al., 2013). Notable among the data collection tools are interview guides, questionnaires, focus groups and survey. In the current study, the questionnaire was adopted as the principal instrument for measurement. According to Lavrakas (2008), a questionnaire refers to the technique that is employed to gather information from respondents concerning their knowledge, feeling or attitudes towards a phenomenon. Questionnaires have various merits compared to the other forms of measurement instrument including the ability to use anonymous responses, ease of use and the relatively inexpensive nature of the technique.

3.8 Pilot/ Pre-Testing

Pre-testing and pilot testing are crucial aspects of any study, enabling the researcher to make well-informed decisions concerning the study to be conducted. Pilot testing refers to initial testing or pretesting that is achieved using a relatively smaller sample size whereby the characters possess similar characteristics as that of the actual sample size with the aim of achieving an appropriate survey (Fraser et al., 2018). The benefits of pretesting or pilot testing are numerous and includes the following: researchers are able to identify errors and make corrections whenever necessary, thus drastically reducing the risk of bias and/ or errors that have the tendency to affect the entire outcome of the study (Malmqvist et al., 2019); pilot studies also help determine the overall feasibility of the actual study (In, 2017).

Whitehead *et al*., (2016) contend that the appropriate sample size for pilot study must fall within 10 to 30 participants. As such, the current study employed a total of 20 participants for the pilot testing. To select these individuals, convenience sampling technique was applied to select particular individuals who match the inclusion criteria for the study, who gave their opinionated feedback on the initially designed questionnaire.

The result of the pretesting indicated that respondents largely appreciated the questionnaire and suggested no major changes, with the exception of two instances where respondents suggested that the font sizes be increased.

3.9 Data Collection Procedure

The current study was conducted in the Suaman District of the Western North Region with the principal objective of exploring the activities of the key actors or stakeholders within the cocoa industry of Ghana. To achieve this objective, the study essentially adopted the use of primary data. Primary data refers to observations that are taken on-field by researchers to help them evaluate the relationship between study variables Saunders *et al*., (2009). Primary data are collected by researchers with the help of various instruments of data collection such as interview guides, questionnaires, focus groups and survey.

The main instrument used for the collection of primary data was questionnaires. A questionnaire was preferred for the present study due to its adequacy regarding the specifics of both the research topic and nature of data being sought. Questionnaires were also used because of its cost effectiveness. The researchers also used questionnaires to obtain primary data because it presents a convenient and accurate way of approaching participants.

Due to the sensitivity of some of the responses, the questionnaires were personally distributed by the researcher to assure respondents about the confidentiality of their responses. The questionnaires were labelled with number tags instead of respondents' names to ensure confidentiality. Also, to aid the analysis of the data obtained, the responses were coded and entered into SPSS where the various statistical tools were applied and analyzed.

3.10 Data Analysis Plan

For the analysis of data for the present study, Statistical Package for Social Sciences (SPSS) was the primary statistical software used. Tables were used to effectively order and summarize the quantitative data and also to systemically arrange and examine facts and figures. Data obtained from the present study were analyzed using descriptive and inferential statistics. Pearson correlation and other inferential statistical tools were used to analyze the relationship between the study variables. Statistical significance for all analysis was set at $p < 0.05$.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.0 Overview

The current chapter outlines the presentation, analysis and discussion of the results obtained from the present study. The chapter is summarized under various sub- sections. The initial part of the chapter summarizes the demographic characteristics of respondents, which is followed by statistical analysis of the existing interactions between the variables of interest based on the study's objectives.

4.1 Characteristics of Respondents

The characteristics of the study participants are presented in two main sections. While the first section presents the demographic and farming characteristics of cocoa farmers, the second section presents the respondent and firm characteristics of LBCs.

4.1.1 Demographic and Farm Characteristics of Cocoa Farmers

For the current study, age groups, education, marital status, gender and whether participants were natives of the community constituted the demographic characteristics of cocoa farmers. The essence of investigating these characteristics was the enable the researcher to make inferential conclusions about the population based on the results of the study. In addition, the study also investigated the farm characteristics of respondents. Refer to Table 4.1 and Table 4.2 for a presentation of the demographic and farm characteristics of cocoa farmers.

A total of 50 cocoa farmers were sampled for the current study. Out of these, 27 (54%) were males while 23 (46%) were females, suggesting that males dominate the sample of cocoa farmers used for the study. In terms of age distribution, majority of the respondents were older than 50 years old

(17, 34%) while 14 (28%) respondents belonged to the 31 – 40 age group. The 18 – 30 age group also had 10 respondents, representing 20% of the sample of cocoa farmers. Additionally, only one respondent was younger than 18 years old. Refer to Table 4.1. This suggest that cocoa farming in the area under consideration is mainly undertaken by individuals of the working class, that is, people who are older than 18 years of age.

Furthermore, it was revealed that 13 (26%) respondents were single, 33 (66%) were married while 4 (8%) were divorced. In addition, the study also revealed that most of the cocoa farmers had only basic education (28, 56%), while secondary level education, 12 (24%), was the second most common education level of the cocoa farmers. Only 2 (4%) cocoa farmers had tertiary level of education, suggesting that cocoa farmers in the area of study have an appreciable level of education. All cocoa farmers except 1 (2%) were natives of the municipality. See table 4.1.

Table 4. 1 Demographic Characteristics of Cocoa Farmers

Group	Indicator	Frequency	%
Age Categories	Younger than 18	1	2.0
	18 - 30	10	20.0
	31 - 40	14	28.0
	41 - 50	8	16.0
	Older than 50	17	34.0
Gender	Male	27	54.0
	Female	23	46.0
Marital Status	Single	13	26.0
	Married	33	66.0
	Divorced	4	8.0
Education	Basic	28	56.0
	Secondary	12	24.0
	Tertiary	2	4.0
	Non- Formal	8	16.0
Native of Community	Yes	49	98.0
	No	1	2.0

Source: Field Data, 2021

Table 4. 2 Farming Characteristics of Cocoa Farmers

Group	Indicator	Frequency	%
Years of farming experience	1 – 10	22	44.0
	11 – 15	7	14.0
	16 – 25	14	28.0
	Above 25	7	14.0
Type of farming	Mixed	35	70.0
	Mono	15	30.0
Labor employed	Family	25	50.0
	Hired	8	16.0
	Both	17	34.0
Who do you sell your cocoa to	LBCs	49	98.0
	Associations	1	2.0
Sold cocoa in the past 12 months	Yes	49	98.0
	No	1	2.0
Do your buyers change over time	Yes	23	46.0
	No	27	54.0
Does the quality of your cocoa change over time	Yes	3	6.0
	No	43	86.0
	Don't know	4	8.0
Do you get same price each time	Yes	44	88.0
	No	6	12.0

Source: Field Data, 2021

In Table 4.2, the farming characteristics of respondents is presented. In terms of the years of farming experience, respondents were fairly experienced. 22 (44%) respondents had experienced cocoa farming for a period between 1 – 10 years while 14 (28%) had been involved in farming for 16 – 25 years. Mixed farming, 35 (70%) was the most commonly practiced type of farming among the respondents. In terms of the type of the type of labor employed by farmers, 25 (50%) stated family labor while 17 (34%) employed both family and hired labor. Table 4.2.

Respondents mainly sold their cocoa to LBCs (49), representing 98% of the sample population. 43 (86%) of the respondents stated the quality of their cocoa does not change over time while 44

(88%) of farmers indicated that they get the same price each time for their cocoa. Refer to Table 4.2.

4.1.2 Respondent and Firm Characteristics of LBCs

Table 4.3 presents the firm and respondent characteristics of LBCs. A total of 50 staff from LBCs were sampled. Most of the respondents, 30 (60%) had first degree educational level. 10 (20%) had senior high education while 7 (14%) had post-graduate education.

In terms of the number of years worked at the LBC, 32 (64%) respondents had worked for 1 – 5 years, the 6 – 10 years group had 12 (24%) respondents. 6 (12%) respondents had worked for more than 11 years with their LBCs.

Regarding the annual tons of cocoa purchased, 28 (56%) respondents stated that their firmed purchased between 2000 – 3500 tons of cocoa at the end of each cocoa season. 20 (40%) indicated 3500 – 6000 while only 2 (4%) respondents chose above 6000 tons of cocoa. Refer to Table 4.3.

Table 4. 3 Respondent and Firm Characteristics of LBCs

Group	Indicator	Frequency	%
Education	Post-graduate	7	14.0
	First Degree	30	60.0
	HND/ Diploma	3	6.0
	Senior High	10	20.0
Number of years worked at LBC	1 – 5	32	64.0
	6 – 10	12	24.0
	More than 11	6	12.0
Average annual tons of cocoa	2000 - 3500	28	56.0
	3500 - 6000	20	40.0
	Above 6000	2	4.0

Source: Field Data, 2021

4.2 Analysis of the Objectives of the Study

This section illustrates a presentation of the descriptive statistics of the main constructs used for the study.

4.2.1 Activities of Cocoa Farmers

In this section, a detailed collection of the statistics of activities of cocoa farmers is presented. The mean values and the standard deviation of each instrument used is presented. Using a scale of 1 – 5, respondents were asked to grade their activities on their cocoa farms.

It was observed that the highest mean score (4.60, SD= 0.67) was observed for the instrument "planting shading trees or plants as protective cover for seedlings" while "creating of fire belt around cocoa farms" observed the lowest average score (2.38, SD= 1.07). This implies that when cocoa farmers were evaluated on the common activities that participated in on their farms, majority of the respondents stated that "we usually plant shading trees or plants as protective cover for seedlings". On the other hand, most of the cocoa farmers concurred that they "rarely create fire belt around their cocoa farms". See table 4.4.

The observations made from the study are in tandem with those made by Berhe *et al*., (2017), who argue that several activities and practices are implemented by local cocoa farmers and that the factors deployed are significantly dependent on various factors including traditional and modern institutions, resource availability and availability of other livelihood options as farmers' resource allocation decisions are determined by their resource endowment, social and institutional environment. Kurukulasuriya and Rosenthal (2013) also report on the various activities of local cocoa farmers.

Table 4. 4 Activities of Cocoa Farmers

Instrument	Position	Mean	Std. Dev
Adoption of improved cocoa variety	8	3.40	1.66
Increased and more frequently spraying of the cocoa farm	3	4.40	0.76
Increased use of fertilizer	7	3.54	1.37
Change of type of fertilizer and pesticides used on farm	5	3.96	1.47
Increasing of farm size	2	4.44	1.01
Mixed cropping cocoa with other crops	4	3.98	1.20
Creating of fire belt around cocoa farms	9	2.38	1.07
Use of manure and compost	6	3.78	1.53
Planting shading trees or plants as protective cover for seedlings	1	4.60	0.67

Source: Field Data, 2021

4.2.2 Activities of LBCs

Respondents were asked to rate the activities of their firms using a set of instruments on a scale of 1 – 5. Respondents basically ranked their firm's activities with mean scores ranging from 1.78 – 4.30.

The results obtained from interviewing respondents from various LBCs suggests that, in their daily operations, only a few respondents agree that "in the event of an accident their companies share risks with COCOBOD" (mean= 1.78, SD= 0.68). However, majority of the respondents stated that "our organization is affected by the overall outputs of cocoa farmers" (mean= 4.32, SD= 0.59). This suggest that output of cocoa farmers is a significant element affecting the activities of LBCs. Table 4.5.

The observations made in the current study are consistent with reports made by other researchers such as Aneani *et al*., (2017) who report on the various activities undertaken by stakeholders within the cocoa industry. In their report, Aneani *et al*., (2017) concur that LBCs are responsible for domestic purchasing and hauling of cocoa beans to the port for export.

Table 4. 5 Activities of LBCs

Instrument	Position	Mean	Std. Dev
Your organization or company assists cocoa farmers farming activities by giving them farm inputs or short-term loans	6	2.36	1.31
Your company periodically evaluates the importance of its good relationship with cocoa farmers	4	2.70	1.42
Your organization is affected by the overall outputs of Cocoa farmers' outputs	1	4.32	0.59
Your organization is satisfied with the role of COCOBOD as the regulator of Ghana's cocoa sector	5	2.42	1.40
In the event of an accident your company shares risk with COCOBOD	7	1.78	0.68
In the event of an accident your company bares risk alone	2	4.30	1.30
Your organization delays delivery of purchased cocoa to appropriate Cocoa Taken-over centers	3	4.10	1.52

Source: Field Data, 2021

4.2.3 Relationship between Activities of LBCs and Cocoa Productivity

In statistics, regression analysis is performed to ascertain the relationship between a dependent variable and a single independent variable or more. In the current study, regression was performed to determine the relationship between activities of LBCs and the tons of cocoa purchased at the end of each cocoa growing season.

Table 4.7 reveal that tons of cocoa purchased is significantly correlated to the activities of LBCs ($F= 7.966$, $p= 0.07$), with LBC activities explaining 12.4% of the variation in cocoa purchased at the end of a cocoa season. Refer to table 4.7.

The impact of the activities of cocoa Licensed Buying Companies on the productivity of cocoa was also studied by Asamoah & Annan (2012) who report that the role played by LBCs significantly influences cocoa productivity (Asamoah & Annan, 2012).

Table 4. 6 Impact of LBCs Activities on Cocoa Productivity

Variable	B	T	F	R^2	AR^2	Sig
Constant	1.063					
Activities of LBCs	0.154	2.822	7.966	0.142	0.124	0.07

Source: Field Study, 2021

4.3 Reliability of Study Variables

According to Noble and Smith (2015), reliability testing is an important element for a researcher to consider when analyzing data for a study. Reliability testing is also necessary to ensure that the level statistical confidence is improved. In this study, the use of Cronbach's alpha was performed to ascertain the how reliable the data was. In addition, Cronbach's alpha was also utilized to determine the reliability of the measurement instruments. Taber (2018) concurs that the value of Cronbach's alpha coefficient must be equal to or exceed 0.7. For the current study, Cronbach's alpha coefficients of 0.749 and 0.818 for activities of cocoa farmers and activities of LBCs respectively indicate that the minimum threshold of 0.7 was met, thus suggesting that the instrument used to collect data were reliable. See table 4.7.

Table 4. 7 Reliability of Constructs using Cronbach's Alpha

Variable	Number of Items	Cronbach's Alpha
Activities of cocoa farmers	9	0.749
Activities of LBCs	7	0.818
Total	16	

Source= Field Data, 2021

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter details a summary of the observations made from the study and draws the suitable conclusions. The chapter also presents some worthy recommendations for future studies and policy formulation.

5.1 Summary of Findings

The current study mainly sought to explore the activities of stakeholders within the cocoa industry of Ghana in the Suaman District of the Western North Region. In specific terms, the study aimed to explore the key activities of cocoa farmers, explore into the activities of LBCs in the Suaman District of the Western North Region, as well as evaluate the impact of stakeholder activities on cocoa productivity.

In order to achieve the objectives of the study, the researcher employed the use of a questionnaire to gather data for the study. Reliability testing was performed for two constructs with 16 items using the Cronbach's alpha reliability test. Cronbach's coefficient ranging between 0.749 and 0.818 were obtained suggesting a reliability of the variables used for the study, since Cronbach's alpha coefficients were higher than 0.7.

The study also employed 50 cocoa farmers as well as 50 staff who with various LBCs. Demographic studies of the cocoa farmers revealed that males mostly dominate cocoa farming in the Suaman District. In terms of education, cocoa farmers in the district commonly have an appreciable level of formal education with most farmers having at least a basic level of education.

Most of the farmers were also withing the working-class age groups with only one respondent - observed to be younger than 18 years old. Cocoa farmers were also mostly single or divorced, only 4 of them were divorced. Refer to Table 4.2. Characteristics of staff from LBCs also revealed that most respondents had a first degree and post-graduate education. In terms of years of working with LBCs, year group 1 – 5 had the most predominant members. The average tons of cocoa that was purchased the most at the end of each cocoa growing season was 2000 – 3500 tons. Refer to Table 4.3.

In terms of the activities of cocoa farmers, respondents were asked several items that could be used to enhance the general yield of agricultural produce and also to protect farms against controllable disasters. It was observed that respondents mostly agreed with the items that were used with the scope of average scores ranging from 2.38 – 4.44. This suggests that cocoa farmers in the Suaman District undertake several activities aimed at protecting their produce and improving their yield.

A list of items was also used to ascertain the various activities of LBCs that could enhance the productivity of such firms. Respondents scored these items on a scale of 1 – 5. The scope of average scores observed for the list of items ranged between 1.78 – 4.30. Respondents least agreed with the item "in the event of accident your company shares risks with COCOBOD". Nonetheless, respondents mostly agreed with the other instruments used for the study. This suggest that LBCs within the area of study actively participate in activities that have the potential to increase firm productivity (Table 4.5).

The relationship between the activities of LBCs and the tons of cocoa purchased at the end of each cocoa growing season was also investigated. Results revealed that a significant association exists between the two variables, with LBC activities found to explain 12.4% of the variation in the tons of cocoa purchased. See Table 4.7.

5.2 Conclusion

The cocoa industry of Ghana provides many socio-economic benefits to the nation's economy and must be safeguarded by all stakeholders. The activities of some stakeholders within the Suaman District of the Western North Region were explored by this study and the following conclusions can be drawn:

Males are the predominant players in the cocoa industry although an appreciable number of females are also involved in the cocoa producing process.

Cocoa farmers are currently adopting a number of beneficial practices or activities on their farms in order to safeguard their farm produce and also to improve upon their yield of cocoa.

To enhance their productivity, cocoa Licensed Buying Companies (LBCs) also engage in various useful activities, taking into consideration the need to protect the sustainability of their firms and the cocoa industry at large.

5.3 Recommendations

Ultimately, the results of the study must surely translate into improving the cocoa industry of the country. Entrenched upon the study's findings, the researcher proposes the following recommendations:

For the purposes of further research, the study recommends that a much wider geographical area must be used.

Future studies must also include other stakeholders within the cocoa industry to ascertain their roles in enhancing or disrupting the sustainability of the cocoa sector.

COCOBOD and LBCs must increase sensitization of local cocoa farmers to encourage them to use good farming practices.

Soft loans and credit facilities must be instituted with the help of farmers passbook and the Ghana card so that the farmers can be encouraged to produce more yield.

More agricultural institutions must be established to accommodate more extension officers who will facilitate the education and sensitization of stakeholders in the cocoa industry,

COCOBOD must also bare some of the risks associated with transportation of the cocoa.

The Agricultural Ministry must also review policies related to the investment made into fertilizers as well as the input of COCOBOD on the various stakeholders in the industry.

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APPENDICES

KNUST School of Business

Department of Marketing and Corporate Strategy

Cell: 0552502758

School Number: PG3634109

Dear Respondent,

A Study on Stakeholder Activities in the Cocoa Industry: Evidence from the Western North Region

I am Eric Theophilus Tandoh, a Master Student at the Kwame Nkrumah University of Science and Technology in Kumasi- Ghana. As part of the data collection process on the project titled "Activities of Stakeholders within the Cocoa Industry in Suaman District of the Western North Region: An Exploratory Study", I am writing kindly to request your participation in the survey by completing the questionnaire, which is purposely to sample views of stakeholders in the cocoa industry.

The purpose of this exploratory study is to 'evaluate the activities of stakeholders within the cocoa industry within Suaman District of the Western North Region'.

The findings of the study are expected to add knowledge to existing academic literature, which would be used for academic purposes, but also be useful in policy formulation that will ultimately boost the cocoa industry of Ghana.

No individual results will be disclosed and all results will be presented as an aggregate summary data for academic purposes. It will take a participant 10 – 15 minutes to fill out the questionnaire.

Thank you for your cooperation.

Yours sincerely,

_____

Eric Theophilus Tandoh (Student)

Email: somonkofiasante@gmail.com

Dr. Martin Owusu Ansah (Supervisor)

APPENDIX A: CONSENT FORM

I acknowledge that, I understand the research and that the study has fully been explained to me. I am also aware that, any information I offer to the researcher would be used in the research report. I further concede that the researcher has assured me the following:

- That my participation in this research is voluntary.
- That my personal details or information will remain anonymous throughout the research study as well as in the research thesis.
- That I can decline to answer any question about which I feel uncomfortable without any compulsion.

I hereby consent to being a participant for the research study titled: Activities of Stakeholders within the Cocoa Industry in Suaman District of the Western North Region: An Exploratory Study.

Signature ☐ **(Please Sign with an X)**

QUESTIONNAIRE FOR SMALL-SCALE FARMERS

A Study on Stakeholder Activities in the Cocoa Industry: Evidence from the Western North Region.

Please answer the following questions by marking the appropriate answer(s) with an **X.** This questionnaire is strictly for research purpose only.

SECTION A: BACKGROUND INFORMATION

The section is asking for your background information. Please indicate your answer by ticking **(X)** Or **(√)** on the appropriate box.

A1. Please indicate your gender

Male		Female	

A2. Please indicate your marital status

Single	
Married	
Divorced	

A3. Please indicate your age category (In years)

Less than 18	
18 – 30	
31 – 40	
41 - 50	
Above 50	

A4. Please indicate your highest level of education

Basic	
Secondary	

Tertiary	
Non-Formal	
Other (Please specify)	

A5. Are you a native of Suaman District?

Yes		No	

SECTION B: FARM CHARACTERISTICS

B1. Please indicate your years of cocoa farming experience.

1 – 10	
11 – 15	
16 – 25	
Above 25	

B2. What type of farming are you engaged in?

Mixed Farming	
Mono Farming	
Other	

B3. Please indicate your average annual tons of cocoa produced at the end of each cocoa season

2000 – 3500	
3500 – 6500	
Above 6500	

B4. What type of labor do you employ?

Family	
Hired	
Both	

B5. Have you or anyone in your household sold any cocoa in the last 12 months? (If no, end interview)

Yes		No	

B6. Who do you sell your cocoa to?

Individuals		LBCs		Associations		Groups	
Cooperatives							

B7. Do your buyers change over time?

Yes		No		Don't Know		Not Applicable	

B8. Do you receive same price for your cocoa each time you sell?

Yes		No		Don't Know		Not Applicable	

B9. Does quality of cocoa affect the price of your cocoa?

Yes		No		Don't Know		Not Applicable	

SECTION C: ACTIVITIES TO INCREASE COCOA YIELD

The following statements describe activities that increase the yield of cocoa on your farm. Using a 5-point Likert scale where ***1= Strongly disagree and 5= Strongly agree***, please provide responses to the items in the table below.

		Strongly disagree ⟷ Strongly agree				
	Measures Applied	1	2	3	4	5
C1.	Adoption of improved cocoa variety					
C2.	Increased and more frequently spraying of the cocoa farm					
C3.	Increased use of fertilizer					
C4.	Change of type of fertilizer and pesticides used on farm					
C5.	Increasing of farm size					
C6.	Mixed cropping cocoa with other crops					
C7.	Creating of fire belt around cocoa farms					
C8.	Use of manure and compost					
C9.	Planting shading trees or plants as protective cover for seedlings					

QUESTIONNAIRE FOR LBCs

A Study on Stakeholder Activities in the Cocoa Industry: Evidence from the Western North Region.

Please answer the following questions by marking the appropriate answer(s) with an **X.** This questionnaire is strictly for research purpose only.

SECTION A: DEMOGRAPHIC DATA

A1. Please indicate the name of your company. _____

A2. Please indicate your position/ title. _____

A3. Number of years worked with LBC

1 – 5	
6 – 10	
Above 11	

A4. Please indicate your educational qualification level

Postgraduate	
First Degree	
HND/ Diploma	
Senior High	
Other (Please specify)	

A5. Please indicate your average annual tons of cocoa purchased at the end of each cocoa season

2000 – 3500	
3500 – 6500	
Above 6500	

SECTION B: RELATIONSHIP WITH OTHER STAKEHOLDERS

The following statements describe the relationship of your company with other stakeholders. Using a 5-point Likert scale where ***1= Strongly disagree and 5= Strongly agree***, please provide responses to the items in the table below.

		Strongly disagree ⟷ Strongly agree				
	Measures Applied	1	2	3	4	5
B1	Your organization or company assists cocoa farmers farming activities by giving them farm inputs or short-term loans					
B2	Your company periodically evaluates the importance of its good relationship with cocoa farmers					
B3	Your organization is affected by the overall outputs of Cocoa farmers' outputs					
B4	Your organization is satisfied with the role of COCOBOD as the regulator of Ghana's cocoa sector					
B5	In the event of an accident your company shares risk with COCOBOD					
B6	In the event of an accident your company bares risk alone					
B7	Your organization delays delivery of purchased cocoa to appropriate Cocoa Taken-over centers					

Please if there are any comments, write them below.

Thank you for completing the questionnaire.