

2019

# Strategies to Obtain Certification for Cocoa Bean Production

Emmanuel Adem Opoku  
*Walden University*

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# Walden University

College of Management and Technology

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Emmanuel Adem Opoku

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Walden University  
2019

Abstract

Strategies to Obtain Certification for Cocoa Bean Production

by

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MS, University of Ghana, Legon, 1999

BS, University of Ghana, Legon, 1990

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

April 2019

## Abstract

Leading cocoa-consuming countries have declared that in the year 2020, they will permit imports of sustainably sourced cocoa beans only, threatening the sustainability of the cocoa farming business. Certification offers enhanced market access for sustainability of the business of cocoa bean producers in Ghana. The purpose of this case study was to explore the strategies that farm managers used to obtain certification for cocoa bean production. Seven farm managers of a cocoa producer's cooperative located in the eastern region of Ghana who consistently produced certified cocoa beans for at least 5 years participated in the study. Deming's quality management theory served as the conceptual framework for this study. Semistructured interviews constituted the primary technique for data collection. Additional data from UTZ-certified documents and the archives of the cooperative supported the process of achieving data saturation. Data were analyzed using Bengtsson's manifest content analysis framework of decontextualization, recontextualization, categorization, and compilation to arrive at conclusions. Three themes emerged from data analysis: training in farming practices and certification code of conduct, management discipline, and environmental and social sustainability. The implications of this study for social change include the potential that certification might influence a positive change in the farming practices of Ghanaian cocoa farm managers. Social change might be reflected in the adoption of sustainable production practices, improved living conditions of producers, and biodiversity conservation.

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## Dedication

To my family, Patience, Wendy, Nana Kwame, Stephanie, and a special friend and mentor who wishes to remain anonymous, and hardworking Ghanaian cocoa producers. Your tenacious encouragement, individual prayer support, kindheartedness, and hard work underline my motivation to complete this doctoral project. Sincerest thanks to you for your inspirational support during this doctoral process. God bless you.

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## Section 1: Foundation of the Study

### **Background of the Problem**

The leaders of major cocoa consuming countries declared that in 2020 they would permit imports of sustainably sourced cocoa beans only (Rueda, Helberg, Morisse, & Krain, 2014). Sustainably sourced means the production practices satisfy the principles of environmental, economic, and social sustainability (Tscharntke et al., 2015; Wessel & Quist-Wessel, 2015), including ethical labor. The U.S. government officials cautioned that they will issue a prohibition order against cocoa producing countries that show no commitment to reduce the worst forms of child labor in cocoa (United States, 2008). Certification will assure that the suppliers of agricultural produce implemented sustainable practices in the production process (DeFries, Fanzo, Mondal, Remans, & Wood, 2017; Qiao, Halberg, Vaheesan, & Scott, 2016).

The producing countries affected by a prohibition order cannot export cocoa beans to the United States (United States, 2008). The U.S. chocolate candy traders cannot import chocolates or cocoa-based products from outside the United States without certification that the cocoa beans used are free from worst forms of child labor. Responding to the consumer concerns about the suppliers' sustainability practices, the managers of chocolate manufacturing chains have resolved to use 100% sustainably certified cocoa beans by 2020 (Ricketts, Turvey, & Gomez, 2014; Rueda et al., 2014). Many managers of cocoa farms in Ghana have not obtained certification to produce cocoa (Barrientos et al., 2015; Rueda et al.,

2014). My objective in this study was to explore the strategies that cocoa farm managers use for obtaining certification to produce cocoa beans.

### **Problem Statement**

Certification offers enhanced market access for sustainability of the business of cocoa beans producers in Ghana (Fenger, Bosselmann, Asare, & de-Neergaard, 2017; Ricketts et al., 2014; Rueda, Thomas, & Lambin, 2014). Less than 10% of the estimated 850,000 cocoa beans producers have gained certification (Fenger, Bosselmann, Asare, & de-Neergaard, 2017; Gockowski, Afari-Sefa, Sarpong, Osei-Asare, & Agyeman, 2013). The general business problem that I suggested in this study is that cocoa growers not certified in Ghana by the year 2020 cannot export cocoa beans to the United States and other major consuming countries. The specific business problem that I addressed in this study is that some cocoa farm managers lack strategies for obtaining certification to produce cocoa beans.

### **Purpose Statement**

My purpose in this qualitative case study was to explore the strategies that some cocoa farm managers use for obtaining certification to produce cocoa beans. The specific population was the managers at certified local cocoa growers' cooperative, cocoa cooperative alliance (CA), (pseudonym) in the eastern region of Ghana. The implications for positive social change from this study include the potential of certification to enhance the certified cocoa growers' competitiveness in the cocoa value chain, employment, and income opportunities, community development, and sustainable cocoa farming business.

### **Nature of the Study**

I conducted this study using the qualitative method. Qualitative research methodologies allow researchers to capture firsthand the informants' views and actions and construct these live events and behaviors from within (Lee, 2014). A researcher examines the data and provides interpretations based on the informants' account of real-life events (Gelhorn et al., 2016). In contrast, quantitative researchers rely on numerical data and apply statistical or mathematics tools to arrive at findings (Claydon, 2015; Rissman & Gillon, 2017; Westerman, 2014). A mixed-methods approach is a combination of qualitative and quantitative methods (McCusker & Gunaydin, 2014) and was not appropriate for this study. In this study, I investigated the strategies and techniques that the managers of cocoa farms in Ghana need to obtain certification. The qualitative method suited the investigation of the real-life events of a successful cocoa farmers' cooperative in-depth to identify and communicate their strategies.

A case study design was appropriate. Case study, phenomenology, ethnography, narrative, and grounded theory are suitable designs for qualitative research (Brooks & Normore, 2015). Selection of the precise design depends on the research question (Lewis, 2015). A case study design is suitable when the researcher addresses questions such as "how" and "why" (Yin, 2017). A case study contributes to the knowledge of a group and enables the researcher to preserve the essential characteristics of the group's life-cycle (Yin, 2017). A multicase study differs from a single case design because the researcher addresses two or more individual cases in one research (Hyett, Kenny, & Dickson-Swift, 2014).

Phenomenology involves in-depth investigation of lived experiences of a group (Marshall & Rossman, 2016; Schwarz & Lindqvist, 2018). Ethnography, related to the study of cultural practices of a group, grounded theory, and narrative designs, was not suitable for this study. Using a case study design, I focused on the farm managers and explored the strategies they use for obtaining certification to produce cocoa beans.

### **Research Question**

The primary research question that I explored in this study is: What strategies do cocoa farm managers use for obtaining certification to produce cocoa beans? I asked the following interview questions that I used to address the central research question of the study:

### **Interview Questions**

1. What specific strategies did the organization implement for obtaining certification to produce cocoa beans?
2. How did you learn about these strategies?
3. What steps did you follow in implementing the strategies?
4. What governance structure/system guided the implementation process?
5. What strategies did you not know about that would have helped the organization obtain certification to produce cocoa beans?
6. What are the benefits of implementing the strategies required for obtaining certification to produce cocoa beans?



7. How do you manage your business to maintain membership of the certification standard?
8. What institutional measures regulate the managers' performance in the certification business?
9. What environmental practices do you implement to maintain the certification to produce cocoa beans?
10. What strategies for obtaining certification to produce cocoa beans led to implementation barriers?
11. What extra information would you like to share about the strategies you pursued to obtain and maintain your certification?

### **Conceptual Framework**

The foundation of this study was the quality management theory. Quality management expert Juran (1986) shared the theory propounded by Deming (1981). The theory underlines the concept of total quality management (Heavey, Ledwith, & Murphy, 2014; Jaca, Viles, Mateo, & Santos, 2012; Mosadeghrad, 2014). The theme in Deming's theory is that quality management in a production process underlines the business's competitiveness and sustainability. Continuous improvement in quality results in high productivity and profitability (Deming, 1981; Heavey et al., 2014; Juran, 1986). According to Deming, the quality management theory applies to all business processes without exceptions. Improvement of the production process raises the consistency of outputs, minimizes slipups and reduces waste of material inputs, person-hours, and machine-hours.

Successful waste reduction transfers person-hours and machine-hours from the production of undesirables to additional outputs (Deming, 1981). The benefits include significant gains in market position and profitability. Rungtusanatham et al. (2003) described quality management theory as consisting of a set of 14 theoretical principles, complemented by seven “deadly ills” that impede performance. The 14 principles are a command that should provide a cure for the seven ills and assist organizations to deliver high-quality product offerings (Deming, 1981). The thrust of the 14 principles is that managers exhibit constancy of purpose on product improvement, transformational leadership in new economic age, and stop dependence on mass inspection. Deming encouraged managers to introduce quality in product buildup, avoid business decisions based solely on the price tag, and focus on minimizing total cost of production through long-lasting business relationships with one supplier. Others included continuous improvement in product quality, exemplary supervision to improve labor and machine productivity to reduce production cost, efficiency on the job, and a vigorous program of education. In Deming’s sense of quality management, managers’ responsibility needs a change from setting numeric goals to a focus on continuous improvement in product quality to secure competitive advantage. Certification may assist the farm managers to focus on continuously improving the quality of cocoa beans production through the adoption of sustainable practices.

Managers of high-value food crops recognize the economic significance of the environmental quality, particularly the conservation focus of certification (Ibnu, Glasbergen, Offermans, & Arifin, 2015). Cocoa certification has the potential for sustainable

environmental performance (Burivalova, Hua, Koh, Garcia, & Putz, 2017; Ricketts et al. 2014). The certification design supports the production of consistently high-quality cocoa beans, improved productivity, and enhanced income for the farms business (DeFries et al. 2017). Making inferences based on Deming's theory, about cocoa certification, can be an essential instrument in quality management. The managers aim to use certification to improve the farm business process by implementing the practices that can assure the supply of sustainably certified quality cocoa beans.

### **Operational Definitions**

*Certification:* Certification is a procedure by which a third party gives written assurance that a product, process, or service conforms to certain standards (Food and Agriculture Organization of the United Nations, 2007).

*Certification standard:* Certification standard means independent and publicly determined standards that have, as primary criteria of compliance, multiple aspects of sustainability defined as specific social, environmental, and economic guidelines that feature transparent auditing and more credible third-party enforcement mechanism (European Commission, 2013a; Tschardtke et al., 2015).

*Green supply chain management:* Green supply chain management (GSCM) is the management of a firm's internal, upstream, and downstream supply chain concurrently to prevent a potential adverse influence of the supply chain actors' actions on the environment (Yu, Chavez, Feng, & Wiengarten, 2014).

*Quality management:* Quality management is the implementation of a set of principles in a production or business process to raise the consistency of outputs, minimize defects, and reduce waste of material inputs, person-hours, and machine-hours to uplift the organization's competitiveness (Deming, 1981). Quality management and sustainability constitute the first concepts underpinning cocoa certification. The conceptual framework for this study is Deming's quality management.

*Standard:* A standard consists of a set of rules, guidelines or characteristics for products or related processes and production methods for a common and recurrent application that entails mandatory compliance (European Commission, 2013b).

*Sustainability/Sustainable development:* Sustainability and sustainable development are the development that meets the needs of the present generation without compromising the ability of future generations to respond to their needs (United Nations, 2007).

*Sustainability standard:* Consists of a set of social, environmental, and economic principles that define best practice in primary production, processing, trading, and consumption of goods (Tschardt et al., 2015).

### **Assumptions, Limitations, and Delimitations**

I identified the assumptions to moderate the biases in my flexibility. Researchers who use the qualitative research process must identify the underlying assumptions to moderate the biases in the researcher's reflexivity (Hibbert, Sillince, Diefenbach, & Cunliffe, 2014). Those assumptions enable scholarly minds to enrich the process through constructive analysis to enhance rigor and validity of the outcomes. Assumptions are facts assumed to be

true about a research process that the researcher may not be able to substantiate (Foss & Hallberg, 2014). Researchers approach their work with a host of assumptions to explain their philosophical worldview (Sharp, Lawlor, & Richardson, 2018). In the next section, I describe the underlining assumptions, limitations, and delimitations of this study.

### **Assumptions**

Assumptions are the ideas that a researcher considers to be facts and acceptable as relevant in the research process (Foss & Hallberg, 2014). The assumptions supporting a study shape the research method (Goodwin & Dunn, 2018). I assumed that cocoa beans producers could obtain certification to produce cocoa beans. I also assumed that the individuals would implement the standard's code of conduct on their respective farms and offered truthful answers to the interview questions concerning the strategies they used to obtain certification.

### **Limitations**

The limitations of a study describe the boundaries and prompt readers to appreciate the limits within which the results can apply in other situations (Marshall & Rossman, 2016). Projecting the limitations of a study demonstrates the researcher knows the research process and acknowledges the weaknesses of the approach (Tesfaye, Abera, Balcha, Nemera, & Belina, 2015; Velte & Stawinoga, 2017). In this case study, the cocoa growers' cooperative is the focus. A limitation of this study was the small size of the participants, the managers of a cocoa cooperative in the Suhum District of Ghana. Relying on the small population would not permit generalizability of the findings. An additional limitation was the restrictive nature

of the participant selection. Only the managers with 5 or more years of experience in a certified cocoa beans production business participated in this study. The findings are not generalizable because the design focused on the managers of one certified cocoa cooperative. A reader can decide to transfer the results of a qualitative case study to other settings (Marshall & Rossman, 2016). This study involved one cocoa growers' cooperative whose managers volunteered as participants. These members may work under production methods, and growing conditions different from other cocoa producers and their views may not necessarily represent the general views of Ghanaian cocoa growers or farmers outside of Ghana.

Yin (2017) cautioned the potential elements of bias in a research approach and data analysis. To circumvent this challenge, I adopted the process of methodological triangulation with data from multiple sources and member checking. I obtained additional evidence from the group's past meeting records and my reflective journal, and then validated the findings using the process of participants' validation. By this method, I addressed the limitation that challenges the credibility and dependability of the data and findings (Yin, 2017).

### **Delimitations**

Delimitation is a condition in which the entire participant population fails to secure an equal chance of selection because of researcher restrictions (Banski, Degorski, Komornicki, & Śleszynski, 2018; Sampson et al. 2014). The participants of this study were the managers of a cooperative that self-selected to pursue certification to produce cocoa beans. Restricting the participants to only the managers of one cocoa producers' organization

in the Suhum District of Ghana introduced bias in the selection process and limits the case study. Another delimitation was that the selection excluded potential managers outside of the cooperative with equal or better performance characteristics and experienced certified cocoa producers.

### **Significance of the Study**

In this study, I examined the strategies cocoa growers use for obtaining certification to produce cocoa beans. The results of this study contribute to the literature concerning enhancing the market opportunities for Ghanaian cocoa beans producers using certification. The involvement of independent auditors in certification upholds the reliability of the market claims of the quality and sustainable practices of the production process (Potts et al., 2014). Managers of certified cocoa farms can benefit from enhanced market opportunities (Rueda et al., 2014) for their produce, increase the returns from investments, and improve business practices (Karipidis & Tselempis, 2014). The farm managers can understand the strategies and expertise required of a leader to obtain and maintain certification to produce cocoa beans for business sustainability. Kariuki (2014) observed that managers' knowledge of technical information and farm assets that can support the production of quality, reliable, hygienic produce, and scale economies are essential strategies to successful certification.

### **Contribution to Business Practice**

The results of this case study may influence business leaders in cocoa production to develop a positive attitude toward cocoa certification in response to the modern trends in customer demand. Research evidence indicates increasing numbers of consumers are seeking

environmentally friendly food products (Burke, Eckert, & Davis, 2014; Grzybowska & Rudzewicz, 2015). Company leaders encourage upstream suppliers to adopt sustainable practices in food production as a strategic supply chain management decision to create competitive advantage (Burke et al. 2014). As business leaders downstream of the cocoa value chain show the preference for sustainably sourced cocoa, certification offers a sustainable solution for the producers' businesses.

### **Implications for Social Change**

The results of this study may exert a positive influence on environmental governance and investment returns when cocoa producers implement the certification standard. Certified cocoa growers earn a significantly higher average income and promote a sustainable environment than their traditional counterparts (Tayleur et al. 2017). The findings of this study may contribute to positive social change by guiding farm management practices that promote environmental, economic, and social sustainability. Farm managers adopting environmental governance systems may produce higher earnings from superior quality cocoa and ethical business practices. The benefits may include grower sensitivity to social responsibility, business management (Karipidis & Tselempis, 2014), and better-quality living standard (Quaedvling, Roca, & Ros-Tonen, 2014). Socially sensitive growers will show an inclination to hiring adult labor in the communities rather than engaging child labor unethically to work on the farms. The findings and recommendation from this study may contribute to the existing literature on cocoa farming models that influence changes in



ethical behaviors toward the environment and society. Consumers will be confident of the quality of the chocolate they consume and contribute toward sustainable development.

### **A Review of the Professional and Academic Literature**

The review of the professional and peer-reviewed literature establishes the basis that affirms the results and knowledge obtained from academic research (Hart, 2018; Morey et al., 2016). The literature review involves the synthesis of the existing literature using the technique constant comparison of the research findings, classification, analysis of the field of the study's focus, and identifiable themes (Cheng et al., 2015). Qatawneh and Noor Khan (2015) used a literature review to establish that managers would need to apply value-added thinking, process management, performance measures, and environmental analysis to achieve a successful quality supply chain integration. As the firms' environment varies, innovative strategies that factor the variabilities in the decision-making process would help the managers find sustainable solutions.

Sources for the literature review included peer-reviewed research articles available from the Walden University Library and Google Scholar search engine. Databases from the Walden Library including ScienceDirect, Emerald Management, Sage Premier, Springer, Taylor and Francis Online, United Nations, The United States Government and European Union sources, and some related libraries provide the content for the literature review. Other sources include documentation from the websites of certification standards: UTZ Certified, Fair-Trade, and Rainforest Alliance. Google Scholar, Academy of Management, and the *Journal of Environment and Development*. Keywords such as *sustainability*, *certification*,

*including Fairtrade, rainforest alliance and UTZ Certified, quality management, sustainable development, environmental management, economic and social sustainability, and qualitative research* constituted the terms for content searches.

The sources used in this literature review are from peer-reviewed journals, and the remaining literature is from scholarly and professional books. I searched the websites of the journals for publications pertinent to the research question: What strategies do cocoa growers use to obtain certification for cocoa beans production? The publication dates comply with the 3- to the 5-year requirement for the study. The references that I used in this study total 268, consisting of 239 peer-reviewed articles, 12 seminal books, three certification reports, and others (see Table 1). The others comprise of reports of the United Nations affiliates, government, and professional textbook. Of the 268 sources, the publication dates of 239 (89.18%) range from 2014 to 2018, a period within 5-years of the anticipated completion date.

Table 1

*Frequencies of Sources by Publication Date*

Sources	Before 2014	2014	2015	2016	2017	2018	Total
Peer-reviewed articles	18	67	65	38	30	21	239
Seminal books	5	1	1	2	1	2	12
Certification documents	-	1	2	-	-	-	3
Others	12	-	1	-	-	1	14
Total	35	69	69	40	31	24	268

### **Sustainability Certification and Quality Management**

My objective in this study was to identify the strategies that cocoa growers use for obtaining certification to produce cocoa beans. The targeted population was managers of a certified local cocoa growers' cooperative, cocoa cooperative alliance (CA), (pseudonym) in the eastern region of Ghana. Production agriculture raises greenhouse gas emission (Powlson et al., 2014). Climate change poses a serious threat to sustainable cocoa production in West Africa (Schroth, Läderach, Martinez-Valle, Bunn, & Jassogne, 2016) and production agriculture (Ockenden et al., 2017). Certification can help sequester carbon to mitigate the environmental impact of agriculture because the standard requires strict environmental governance system. Cocoa and coffee thrive under similar climatic conditions and suffer the consequences of global warming. Beside climate conditions, the producers of cocoa and coffee share similar characteristics defined by the cultural practices to produce the two

primary commodities. The majority of farmers are smallholders, cultivate either cocoa or coffee, and live primarily on the annual incomes from the crop (Rueda et al., 2014).

Unsustainable production practices can aggravate the effects of climate change on the growers' farm business (Rueda et al., 2014).

Academic research findings indicate a rising trend in consumption behaviors that promote environmental, social, and economic sustainability (Burke et al., 2014; Englund & Berndes, 2014; Kariuki, 2014; Xie, Wang, Yang, Wang, & Zhang, 2015). Certification of food products assure that the producers of agricultural commodities implemented sustainable practices in the production process (DeFries et al., 2017). Certification of agricultural commodities offers an attractive bargain to increase agricultural value and assures producers of sustainable incomes through better market access (Rueda et al., 2014). Certification promotes sustainable development by ensuring significant environmental benefits while improving the well-being of producers and their communities (DeFries et al., 2017).

The Brundtland Commission provided a comprehensive definition of sustainability to mean sustainable development (United Nations, 2007). Sustainability has multiple dimensions that include environmental, social, and economic. The three sustainability principles are interrelated. To realize total development, the results of the three sustainability principles must be concurrent (Danciu, 2013; MacDicken et al., 2015). The environment principle reflects the maintenance of environmental quality to promote long-term productive life for humans and businesses (MacDicken et al., 2015; Rueda et al., 2014). The social dimension emphasizes the pursuit of quality societal values while the economic principle

focuses on business excellence (MacDicken et al., 2015). Business excellence in the sense that introducing quality culture in the production process tends to improve profitability through cost reduction from defects and failures (Deming, 1981).

To make sustainability decisions, the choices of economic activities and social ethics that define human relationships with the environment must promote long-term productivity and a viable ecosystem (MacDicken et al., 2015). Sustainability of businesses underlines strategy formulation and public policy for economic development (Witjes & Lozano, 2016). Sustainability represents a chance for process and product innovation and differentiation (Cavaliere, Peri, & Banterle, 2016). To succeed in a sustainability project will require effective collaboration among the supply chain actors (León-Bravo, Caniato, Caridi, & Johnsen, 2017). Starting from the upstream supplier, collaboration by the actors enhances traceability, product safety, and quality assurance. The demand for certification and producers' desire to distinguish their products from competitors, and sources that quality problems persist influence business leaders to implement quality management systems (Tselempis, Karipidis, Pavloudi, & Semos, 2015). Producers and retailers strategize and introduce environmental and social attributes in the design of the food product attributes (Cavaliere et al., 2016). The retailers plan to meet consumers' preferences informed by concerns about health and longevity related to how the producers preserved the environmental quality (Cavaliere, Ricci, Solesin, & Banterle, 2014; Pétursson, 2018). One milestone of quality management is the long-term productivity and economic viability of business operations (Deming, 1981). The productivity and ecosystem goals establish

inextricable linkages between the principles of quality management and certification. The viewpoints from the afore-stated studies suggest quality management underlines the sustainability of the relationships between the upstream producer, firms, and the downstream consumer. This emerging relationship provides the foundation for further work to expand in-depth on how quality management in certification can affect stakeholder interest in value chains. Using Deming's (1981) approach, quality management can establish excellence in business relationships and provide the yardstick for evaluating stakeholder interest in value chains.

To achieve sustainable development require three sustainability principles must be concurrently met (United Nations, 2007). Economic sustainability demands lower environmental costs of economic activity and improvement in the living standards of the larger society (King, 2008; MacDicken et al., 2015). King (2008) and MacDicken et al.'s (2015) perspectives liken sustainability to holistic human development rather than merely realizing higher gross domestic product per capita. Concerning this viewpoint, sustainability is a forward-looking concept that should prioritize both the current and future. Sustainable development becomes distorted when a crisis state arises that unsettles the balanced ecosystem (Tkhakushinov, Zarubin, Nekrasova, Kuizheva, & Ovsyannikova, 2015). Danciu (2013) conducted a study of sustainability strategies for improving the contribution of firms to sustainable development. Danciu (2013) performed a content analysis of the literature regarding sustainability theory and found that firms contributed to sustainable development if the business practices achieved economic efficiency, social equity, and environmental

sustainability concurrently. Relating the Brundtland Commission report (United Nations World Commission on Environment and Development, 1987) to King (2008), Danciu (2013), and MacDicken et al. (2015), the three sustainability principles interplay in quality management to create excellence in business.

One objective of setting up sustainability certification schemes for agricultural commodities is to control undesirable socioeconomic practices and environmental consequences (Englund & Berndes, 2014). Another objective is that business leaders adopt certification strategically to secure a competitive advantage (Tselempis et al. 2015). Other researchers such as Cavaliere et al. (2016) cited safety and quality levels of the product; Fernqvist and Ekelund (2014) attributed to notions of health and safety. The certification seal affirms the quality of certified products and assures consumers that the production process enforced sustainable practices (UTZ Certified, 2015). Certification schemes enhance producers' social welfare, quality of life, and self-confidence to effect change (Quaedvling et al., 2014). The social goals make certification schemes essential for public authorities and business management (Karipidis & Tselempis, 2014). Business leaders achieve planned social goals through the social responsibility projects they implement in communities where they source raw materials. Judging from the observations of these researchers, the underlying social goals of certification can facilitate both business and economic development. The developmental potential can be advantageous for producer governments as a mechanism for promoting small businesses and developing self-confidence of producers to effect social change (Quaedvling et al. 2014). Producer governments can intervene in

markets when conditions do not favor the implementation of certification as part of measures to achieve the developmental goals.

Chin, Sulaiman, Huam, and Zainon (2015) used different methods to investigate the relationship between GSCM practices and environmental sustainability to promote efficiency, value, and quality. Yu et al. (2014) analyzed a conceptual framework that investigated how the three dimensions of integrated green supply chain management (iGSCM) relate to multiple aspects of operational performance. The measures of multiple operational performances include quality, delivery, flexibility, and cost (de Carvalho, Ignácio, Esposto, & Ometto, 2016). Yu et al. (2014) examined how cross-functional integration within a firm and integration with suppliers and customers relate to minimizing environmental impact. The elements of the iGSCM included the company's internal environmental management practices, GSCM with downstream customers, and GSCM with upstream suppliers (Diab, AL-Bourinias, & Rumman, 2015). Synergies between firms' internal GSCM and external GSCM with vendors and clients enhance their supply chains to achieve sustainable performance (Yu et al. 2014). This type of firm-customer-supplier relationship establishes the framework for transparent supply chain processes with shared responsibility and boost supplier confidence to deliver quality.

Sustainability certification is the process firms adapt to manage external GSCM with upstream suppliers to address stakeholder concerns (Englund & Berndes, 2014). Yu et al. (2014) explained how integrated GSCM relate to influence product quality, delivery, flexibility, and cost and sustainable firm performance. Later studies by Mohamad and



Koilpillai (2016) and Feng et al. (2018) affirmed that green supply chain management improves both environmental and operational performance, and positively influence the financial performance of firms. De-Carvalho et al. (2016) found that green logistics management had positively affected firms' environmental and operational performance. Just-in-time replenishment and lean supply chains can incorporate the GSCM approach into the operations of businesses. Collaboration between businesses and their suppliers and customers to preserve the environment improves operational performance (Diab et al., 2015; Khaksar, Abbasnejad, Esmaili, & Tamošaitienė, 2016). Yu et al. (2014) extended the studies of GSCM by testing an integrated framework that incorporated the firms' internal GSCM and the GSCM of suppliers and customers concurrently. Product quality improvement, delivery, flexibility, and cost reduction are the results of the implementation of the principles of quality management. By implementing quality management principles, managers can avoid the causes of loss-making (Deming, 1981). Quality management practices can guide managers to minimize waste and cost of operations, and increase their firms' profitability (Deming, 1981). Contributing to knowledge, Yu et al. (2014) showed how synergies between firms' internal GSCM and external environmental management practices with suppliers and customers work to enhance sustainability. Although Yu et al.'s study was about 126 Chinese automotive manufacturers, the results indicated how the firms' environmental management practices improved sustainability. Manufacturing and agricultural industries are two significant sources of greenhouse gas emissions. Whereas the manufacturing sector is the leading source of CO<sub>2</sub> emission, the agricultural sector

contributes one-third of the global greenhouse emission (Tubello et al., 2015). The sustainability practices of the firms operating in these two sectors must be similar if leaders tend to address environmental health concerns. The managers relied on the certification standard to authenticate output quality and assured customers of sound environmental practices of their production processes. Quality management of the production process of every business promotes sustainable performance (Deming, 1981).

Firms have the potential to attain green supply chain (GSC) innovation if the partners pursued sustainable environmental practices (Khaksar et al., 2016). Achieving sustainability will require active collaboration between firms and their suppliers, retailers, and customers (Diab et al., 2015; Yu et al. 2014). As they demand eco-friendly raw materials from suppliers, leaders must invest in waste recycling technologies, competitive labor pricing, waste reduction, and innovation (Chin et al. 2015). These characteristics improve the production process to drive profitable operations and constitute the critical pathway in quality management. The certification standard places limit on material use and performance practices to drive efficiency and profitability (Rueda et al. 2014). By restricting material use and setting performance criteria, the standard places emphasis on using supply chain quality management to drive sustainable development.

Englund and Berndes (2014) investigated the extent to which nine agricultural sustainability standards supported biodiversity conservation. They found that Fairtrade (FT) and Sustainable Agricultural Network/Rainforest Alliance (SAN/RA), and Organic certification were better at promoting ecosystem conservation. When matched against

benchmark motivations to conserve biodiversity, the results indicated that the nine agriculture standard achieved 61% compliance. The FT, SAN/RA, Roundtable on Sustainable Palm Oil (RSPO), and Roundtable on Responsible Soy (RTRS) standards were rigorous. In contrast, Green gold label S5 (GGLS5), PEOLG, Global Partnership for Good Agricultural Practices (GLOBALGAP), European Union Organic (EU Organic), the National Organic Program (NOP), Green Gold Label S2 (GGLS2), and International Sustainability and Carbon Certification (ISCC) were not strict. Of the nine certification standards investigated, the cocoa industry in Ghana recognizes FT, SAN/RA, and organic. FT and SAN/RA included the six standards identified as rigorously addressing biodiversity conservation partly because of the stringent implementation criteria.

By assessing the extent of support for biodiversity conservation, Englund and Berndes (2014) measured which standards among the nine were effective to address environmental sustainability concerns. FT, SAN/RA, and organic certification were better at promoting ecosystem conservation and consequently environmental quality. They found Fairtrade and SAN/RA rigorous in their demand for maintaining biodiversity conservation. It follows those managers that implement any of the four certification standards contribute to high-value conservation while producing cocoa beans with high-quality characteristics. The sustainability certification standards noted to boost biodiversity can potentially solve conservation problems. To achieve that goal requires adherence to the standards' requirement encouraging the cultivation of unmanaged lands with a robust program to maintain the ecosystems' properties.

Despite the important benefits of certification, several barriers discourage grower participation. Among the obstacles are high implementation cost and administrative complexities (Rueda et al., 2014). High implementation cost (Vellema, Casanova, Gonzalez, & D'Haese, 2015), unattractive market premiums, and inadequacy of market opportunities for certified produce discourage grower participation. For example, Grunert, Hieke, and Wills (2014) observed that the certification seal on a food product without a promotional advertisement might not elicit the desired consumer patronage. In Ghana, some licensed cocoa buying companies dealing in certified cocoa beans are unable to find buyers for the entire purchases from producers. The lack of proper marketing planning may explain the companies' inability to find buyers. Regardless of the failure to secure deals with off-takers, a company may not dishonor the contractual certification premium payable to the producer. Such failures of value chain arrangement may strain the relationship between the producer and the companies. Although promotion raises production cost, a well-managed campaign will offer long-term benefit for the business.

Sustainability certification enables organizations to reduce greenhouse gas emissions, waste, resource consumption, general environmental effects and improve product quality (Chin et al., 2015). Quality improvement reduces waste, enhances productivity, and decreases costs (Deming, 1981). Other scholars such as Karipidis and Tselempis (2014) argued that leaders could explore certification to create a competitive advantage for their products.

In business practice, the need to study opportunities for competitive advantage compels innovation. Quality management is a strategic tool that firms can integrate into their supply chain networks to create competitive advantage (Deming, 1981; Smith & Rupp, 2015). Deming (1981) applied quality management theory to explain how firms in any industry can employ quality management principles in a holistic effort to achieve competitive advantage, noting that the adoption of quality management principles should be comprehensive and implemented in a long-term plan to realize lasting benefits. Deming compared the Japanese and United States automobile industries and argued the Japanese success story is traceable to the latter's decision to adopt quality management principles. Deming demonstrated that quality management is universal and applicable to all industries. High-performing firms that implement Deming's quality management principles remained on a sustainable growth trajectory. By strictly applying the philosophy, not-performing firms can recover to sustainable growth.

The philosophy of Deming's (1981) theory suggests quality management results in a reduction of waste and cost and improved efficiency in resource allocation. The other critical points include enhanced employee performance through continuous training and development. Smith and Rupp (2015) adopted supply chain management and quality management principles (Deming, 1981) to develop a conceptual framework for supply chain quality management. Using the literature, they delineated the constructs of supply chain management and quality management practices to achieve the research objective. Strategic business competition demands the commitment of the partners within the network from

upstream producers to downstream customers (Smith & Rupp, 2015). Based on the philosophy of Deming's (1981) theory, cocoa processing firms can collaborate with upstream producers and implement the quality management principles in the cocoa supply chain. In this instance, certification will assure customers of the quality of the cocoa beans and that the producers observed sustainable environmental practices. By engaging in supply chain partnerships, the processing firms with their B-2-B customers will be exploring the strategic advantage of quality management over their competitors (Fawcett, Ellram, & Ogden, 2014).

The processing of certified quality cocoa beans has cost reduction potential. Consistent with Deming's (1981) theory, quality material reduces the firm's cost of production. For example, processing companies can avoid high-energy cost for cleaning poor quality cocoa beans. A processing company would use electric energy to clean a batch of cocoa beans that contains pieces of stones before the processing operation commences. The cost of cleaning the beans adds to the operating cost of the factory, while the operation increases energy consumption, and reduces the company's operating profit. Lower energy cost will minimize environmental footprint and promote sustainability.

By implementing internal environmental management practices and collaborating with upstream suppliers and downstream customers, firms can improve sustainability (Green, Zelbst, Meacham, & Bhadauria, 2012; Yu et al. 2014). Relating the concept to the cocoa industry, chocolate confectionery manufacturers and consumers constitute downstream customers while cocoa growers constitute upstream suppliers. Collaboration

among supply chain partners initiated by cocoa processors involving cocoa producers, buyers, and chocolate confectioners will enhance the delivery of certified quality cocoa beans. Through training, growers can improve their skills and capacity to gain certification to deliver quality raw materials (Deming, 1981) such as cocoa beans. An active relationship between cocoa processing firms, upstream suppliers, and downstream customers will promote sustainable cocoa supply chain management and environmental sustainability. Yu et al. (2014) noted that managers enhance environmental sustainability if they integrated internal GSCM and GSCM with customers and suppliers. The effect of this relationship is an improvement in the operational performance of cocoa processing firms, chocolate confectioners, and enhanced incomes of cocoa growers. Enhanced benefits will improve grower capacity to be competitive and socially responsible, improve community livelihoods, and influence social change.

### **Determinants of Firms' Sustainability Decisions**

Perez-Batres, Doh, Miller, and Pisani (2012) posited that concerns about how stakeholders rated their environmental performance underline decisions of leaders to pursue substantive efforts toward sustainability. Perez-Batres et al. used the UN global compact and global reporting initiative (GRI) to investigate the firms' strategic choices of substantive corporate social responsibility activities. Customer perceptions and economic outcomes were critical influences on the environmental sustainability investment decisions of a firm (Perez-Batres et al., 2012). Consumer concerns about ethical practices and environmental footprint related to cocoa production obliged cocoa processing companies to demand certification

(Gockowski et al., 2013). The certification seal is an affirmation that the production process satisfies acceptable sustainability standards and quality (Grunert et al., 2014). In another study, in a multi-case study, Vlachos (2014) analyzed how the introduction of private labels affected the governance of the food supply chain in the United Kingdom (UK). Vlachos (2014) found that retailers select suppliers based on the vendors' compliance with quality assurance, reputation, credibility, among other factors. Focused on cheese production, Vlachos established that retailers would make an effort to satisfy core customer demand by setting the desirable standards for suppliers.

Firms are likely to join voluntary certification if stakeholders believed that industry's operations leave an environmental footprint with far-reaching costs to society (Goedhuys & Sleuwaegen, 2016). They observed that international standards certification stimulates firms' exports. By this process, firms could raise productivity and minimize transaction cost. Prado and Woodside (2015) identified a firm's size and the primary export markets for its products as triggers of the number of certification standards that businesses will pursue. The awareness level of the trade's standards and the level of market diversification are factors that will influence the company's decision. Concerning the firm size, Shokri, Oglethorpe, and Nabhani (2014) found differences among groups of fast food businesses in the UK that showed concerns and practice of sustainability. Medium-sized fast food dealers showed high environmental and social concern but weak sustainability performance (Shokri et al., 2014). Larger retailers and fast food chains exhibited conscious social and ecological awareness and practice, suggesting an indication of sensitivity to customer concerns.



In the UK, large retailers and fast-food chains are major retailers of chocolate confectionery. The willingness to retail chocolate made from certified cocoa beans shows sensitivity to customer demands. Shokri et al. (2014) affirmed the findings of Perez-Batres et al. (2012) that stakeholder concerns about a firm's environmental performance exert a positive effect on the enterprise's sustainability performance. In these studies, Perez-Batres et al. (2012), Shokri et al. (2014), Prado and Woodside (2015) provided a deeper understanding of how stakeholders can influence decisions regarding CSR compliance. Perez-Batres et al. (2012) and Gockowski et al. (2013) contributed to the literature about the sustainability behavior of corporate organizations and consumers by providing the grounds for further studies on corporate behavior toward customer concerns. Of particular interest, will be the levels of investments that firms will commit to satisfy customer concerns about environmental health and how these affect business profitability.

Vieira, De Barcellos, Hoppe, and da Silva (2013) investigated how retailers managed wholesalers and small producers in an organic brand of fresh products supply chains. In a study of the Brazilian organic supply chain, Vieira et al. observed that retailers transferred the responsibility to manage small organic producers to wholesalers; however, the retailers retained most of the utility value that consumers accorded the brands. The principle of transferring responsibility to wholesalers applies in the Ghanaian cocoa supply chain. The smallholder growers are not well-resourced financially to absorb the cost of certification (Rueda et al., 2014). The usual practice is that either the marketing companies or organization with prior agreement to deliver sustainably sourced cocoa beans pre-finance the

growers to obtain certification. Krauss (2017) observed that the production cost of certified agricultural commodities is prohibitive, at least, not within reach of the smallholder farmers.

The high cost of certification tends to minimize the net benefits from the price premiums (Vellema et al., 2015). The pricier the certification process, the fewer will be the organizations capable of affording certification (Auriol & Schilizzi, 2015), and possibly establish a monopolist power unsuitable for a competitive business environment. Hernandez-Aguilera et al. (2018) examined a business model that promoted long-term relationships between coffee buyers and smallholder producers centered on product quality. They found that the adoption of good agronomic farming practices and shade-grown systems to raise coffee quality could stimulate sustainable business strategies of smallholder producers. The results of another comparative study of Rainforest Alliance (RA) regarding conventional hi-tech with shade and quiet shade cocoa systems in Ghana by Gockowski et al. (2013) indicated that fair trade would yield sustainable earnings.

A study of the Brazilian organic market indicated that individual consumers relied on the inherent utility value to make consumption decisions about organic foods (Vieira et al., 2013). Retail managers observed consumer attitudes and responded to satisfy the market's demand for organic foods. In such a competitive environment, business leaders will prefer retailing well-managed brands to satisfy customers. The preference for the attractive brands exposes wholesalers to a competitive retailers' market that demands transparent supply chain relationships. Transparency in the supply chain enhances the product quality (European Commission, 2013c) as the network partners sign social contracts to avoid information

asymmetry. The successful wholesalers need to demonstrate a commitment to working with the smallholder producers to develop and maintain brands tailored to meet consumer demand.

In the food product market, certification is an acceptable approach to convince retailers of the brand quality and transparent supply chain (Rueda et al., 2014). A fruitful working collaboration of firms with upstream suppliers and downstream customers would develop a sustainable supply chain (Vieira et al., 2013; Yu et al., 2014). In a survey involving 4,408 respondents across 7 Western European countries, Grunert et al. (2014) established that consumers showed concern about sustainability issues relating to food production. Consumers would not make purchasing decisions of food products merely on the presence of sustainability labels (Grunert et al., 2014). Although the researchers found evidence of a high preference for sustainably sourced food products, promotional campaigns underpinned the decisions to purchase certified foods. Hierarchical regression analysis established that differences in country demographic characteristics and ethical values influenced consumers' decisions about food choices. The outcome suggests a switch to using the sustainability labels in future choices for food products would depend on how active the consumers' concern for sustainability turned into actual practice. The certification seal on food products may not elicit the desired patronage. Managers must invest additional resources in promotions to espouse the distinctive qualities of the products.

Investment in sustainability initiatives can improve the financial performance of the firm (Burgos-Jiménez, Vázquez-Brust, Plaza-Úbeda, & Dijkshoorn, 2013; Feng et al., 2018).

Capability-oriented companies that prioritize environmental and social sustainability initiatives in business strategy perform better in short and long-term operations (Al-Khattab, Abu-Rumman, & Massad, 2015; Longoni & Cagliano, 2015). Burgos-Jiménez et al. (2013) examined 2,122 Welsh firms and found a positive influence on the firms' environmental proactivity and financial performance. The practical implication is that businesses will attract more customers if they invested in environmental protection projects. Investment in environmental protection projects has a therapeutic effect on biodiversity (Feng et al., 2018) and enhances product quality (Deming, 1981). In practice, such investments require long-term efforts to realize the benefits, and demand top management commitment and efficient use of resources (Burgos-Jiménez et al., 2013).

Environmental and social supply chain management initiatives enhance financial performance and profitability of the firm (Feng et al., 2018). Using data from top 500 U.S. companies, based on Newsweek's green ranking, Feng et al., 2018 examined the sustainability practices of the firms and their relationships to profitability. The empirical results led to the conclusion that company's external supply chain management related positively to return on assets (ROA) and return on equity (ROE). In effect, the positive effect on ROA and ROE can have at least a two-year time lag (Feng et al., 2018). A time delay of at least two years to realize the positive effect on financial performance is consistent with the findings of the Burgos-Jiménez et al. (2013) and Longoni and Cagliano (2015) studies. Burgos-Jiménez et al. cautioned that it requires long-term investment efforts to start realizing returns on environmental initiatives. These two findings are consistent with Deming's (1981)

quality management principles. Deming noted that the benefits from quality management take longer to realize and cautioned managers to exercise some restraint and maintain focus during implementation. Because Feng et al., (2018) relied on three-year data notably insufficient, the findings may not produce conclusive evidence. Regardless, there is an inextricable link between the findings and the results of prior studies such as Burgos-Jiménez et al. (2013).

By contrast, Dam and Petkova (2014) observed a significant adverse stock price reaction to firms' disclosure about participation in environmental supply chain sustainability programs (ESCSPs). The study involved a 2-way analysis of involvement in the carbon disclosure project of 66 multinationals. First, using an event study and a 2-equation Hackman modeling showed that firms with a record of customer discontentment refrained from public disclosure about participation in ESCSPs. Because investments in environmental health improve performance, leaders must be sensitive to their environment in going public about ESCSPs. The revelation offered valuable insights to investors, practitioners, and policymakers about how the financial markets react to disclosures of firms' participation in ESCSPs. Unless the investor regulatory environment prohibits the suppression of information, most companies will undertake ESCSPs investments under some cover. When no such regulations exist, concealment of information about sustainability programs may conflict with the fiducial responsibility principle of the stakeholder theory (Jones, Wicks, & Freeman, 2017)

Consumer preferences can also influence the firms' decision-making related to the adoption of sustainability initiatives. Positively oriented customers patronized ethical products for reasons ranging from the effect on health, personal relevance, and quality (Burke et al., 2014). Burke et al. investigated consumers' reasons for and against ethically produced foods. Analyzing an online survey of 'for and against' response, they employed the best-worst scaling technique to determine the reasons that best explained ethical consumerism. The negatively oriented consumers showed indifference to ethical products, with some claiming ethical choices are expensive and doubting the truthfulness of the claims. As the majority of the respondents showed a preference for ethical consumerism, the findings create a business opportunity for firms to explore competitive positioning strategies. Managers can understand the factors that influence consumer choice and position their companies to create competitive advantage. Evidence from the literature indicated leaders consider factors such as external perceptions about environmental performance, financial expectations, quality, and health in sustainability investments decisions. Also significant is the company's commitment to community development as CSR. In summary, the desire to ensure sustainable sourcing motivates firms to invest in sustainability initiatives.

### **Business Case for Conventional Practices versus Certification**

Gockowski et al. (2013) used the discounted cash flow method to analyze the economic viability of three cocoa production systems under a scientifically controlled environment in Ghana. The three systems involved extensive cultivation, high-tech with heavy fertilizer application, and rainforest alliance certified cocoa (RA-cocoa). Analysis of

the cash flow over 21 years using net present value (NPV) and internal rate of return (IRR) showed the high-tech yielded the highest economic returns. RA-cocoa produced 78% of the profitability of the high-tech system. The extensive cocoa, representing the conventional system, generated the lowest return equivalent to 28% of the RA-cocoa yield. The study covered Ghana's western region that produces about 50% of total national output, and the main occupation of the inhabitants is cocoa cultivation. Although RA-cocoa returned positive yield, the results identified the high-tech less shade growing system as returning the highest rewards. Fertilizer response increased with decreasing levels of shade (Gockowski et al., 2013); however, unlike RA-cocoa, the less shaded high-tech cocoa system is environmentally unsustainable with far-reaching consequences for the business of farmers. Attaining sustainable supply of cocoa beans hinges on the ability to mainstream environmental quality in production practices to raise productivity (Gockowski et al., 2013). The argument by Gockowski et al. is congruent with the theme in Deming's proposition that productivity increases with an improvement in quality.

The Ghanaian cocoa sector has a mean per capita income of \$0.63 per day (Barrientos et al., 2015). The low rate of adoption of certification is mainly because of the lack of capital to finance innovative ventures (Barham, Chevas, Fitz, Rios-Sala, & Schecter, 2014; Gockowski & Sonwa, 2011). Although RA-cocoa offers long-term environmental benefits (Englund & Berndes, 2014), the rationale grower delighted in high returns will find no incentive to switch over from the high-tech system. The advantage explains grower unwillingness to change expressed in Gockowski and Sonwa (2011) and affirmed by Zeitlin

(2012). Zeitlin (2012) observed the growth of cocoa supply in Ghana emanated largely from rapid expansion rather than intensive cultivation. Zeitlin argued that low output returns among adopters of certification in Ghana resulted in low program retention rates.

Growers would need an intensive education to appreciate the benefits of certification for a sustainable cocoa production business. Well-informed growers will be inclined to enroll in certification programs to produce cocoa beans. Policymakers can initiate such a program by influencing dialoguing among stakeholders about the long-term environmental benefits. Similar dialoguing has been ongoing in Ghana; the effect on grower certification adoption decisions remains unknown. DeFries et al. (2017) found environmental benefits, improved the well-being of producers and their communities, and price premiums influenced adoption decisions by the certified producer. As the sole factor, price premium could not explain producer certification retention and upgrading decisions. DeFries' findings underpin the relevance of information flow and dialoguing among the stakeholders.

The use of experimental plots of the Cocoa Research Institute of Ghana (CRIG) by Gockowski et al. (2013) for modeling the economic returns was significant. The plots under scientific observation received equal attention to avoid treatment bias. The primary challenge is that while the experimental plots received sound technical support from a scientist, in practice on growers' plots, the educational background may affect adversely on performance. Gockowski and Sonwa (2011) observed a low innovative capacity among Ghanaian cocoa farmers. Farmers with higher academic qualifications performed relatively better. Gockowski and Sonwa observation that education background established differences



in grower performance are consistent with the findings of Zeitlin (2012). Among others, Zeitlin observed the educational level or farmer education background influenced the productive capacity of Ghanaian cocoa farmers. The results indicated that individual farmers level of education could affect their ability to innovate. Further, differences in education may influence grower capacity to self-select and enroll to gain certification.

The model Gockowski et al. (2013) adopted for the cost-benefit analysis and estimation of economic returns to the three cocoa growing systems was appropriate and consistent with the literature. The discounted cash flow valuation analyzes the present value of future cash flows from the investment (Ross, Westerfield, & Jaffe, 2013). The assessment procedure considers the time value of money and converts the stream of future cash flows from the investment into present value (Ross et al., 2013).

Certification encouraged farmers to specialize in coffee cultivation and increased coffee income (Vellema et al., 2015). In a study involving a group of Columbia coffee growers, Vellema et al. noted that specialization failed to boost total household income in the short term. To attain higher profits from certified coffee required time and effort at the expense of other activities. Analysis of the outcome suggested that the substitution effect offsets the income effect resulting in no gain in household income. The net effect raises concern about claims that certification offers improvements in smallholders' household income.

Smallholder certified organic coffee farmers engaged in contract farming in Uganda realized improved revenues, partly linked to higher yields (Chiputwa, Spielman, & Qaim,

2015). The inability to trace the financial gains to grower adoption precludes direct attributions to treatment effect. Considering the outcomes from another angle, suffice to suggest that because the growers are self-selected, the yield gains may reflect the selection effect of high naturally performing coffee growers. As more productive growers, they may desire to use certification as a strategic tool to advance in the coffee business. The researchers adopted a stratified cluster sampling plan to minimize the effect of the differences in the characteristics of the treatment and control groups on the validity.

Other researchers found gains traced to higher yields by certified growers other than the direct effect of adoption (DeFries et al., 2017). These mixed results emanated from studies conducted at different geographical locations. Perhaps the differences in the local settings influenced the outcomes, yet a need exists for further investigations to draw firm conclusions. The findings challenge attempts to draw firm conclusions about the benefits of certification to growers. The different observations raise caution that individuals making an economic decision to adopt certification in a geographical location must consider the local circumstances. Despite what may seem to discourage mass adoption, certification has net environmental benefits (Rasmussen, Bierbaum, Oldekop, & Agrawal, 2017).

### **Certification**

Certification is a voluntary sustainability standard (Tschardt et al., 2015). Certification requires producers to adopt voluntary standards and codes of behaviors that ensures the production practices minimizes environmental footprint (Levy, Reinecke, & Manning, 2015). A recognized body or institution sets and approves the standard, including

audit verification procedures (Giuliani, Ciravegna, Vezzulli, & Kilian, 2017). The European Commission (EC) has identified 129 public and private sustainability certification schemes available at the European Union (European Commission, 2013a). Judging by the EC description, certification is a standard set and approved by an organization through a transparent process. Certification provides assurances on the regenerative capacity of the environment to support human lives and businesses in the current and future periods (MacDicken et al., 2015). The seal assures ethical consumers that the practices at the source of food products align with increasingly sensitive consumer values (Haynes, Cubbage, Mercer, & Sills, 2012; Tscharrntke et al., 2015). The consumption of food commodities brought into line with sensitive consumer values is ethical consumerism (Burke et al., 2014). Ethical consumers are quality conscious in their selection of food products. They seek confirmation that the production practices of certified food products minimize injuries to life and the natural environment (Papaoikonomou, Valverde, & Ryan, 2016). Ethical consumers as a group are influential and efficient at creating a social circle (Burke et al., 2014). Through group social interactions, ethical consumers can influence new learning within the ethical community (Papaoikonomou et al., 2016). Resolute in decisions about food choices, ethical consumers pay premiums in return for the social contract with suppliers to maintain quality standards. The standards enshrined in the social contracts are categorical in sustaining environmental quality. While the social contracts obligate the producers to deliver, they lacked details on whether the producer's share of the premiums would offset the costs incurred (Burke et al., 2014).

To sustain the farm enterprise, producers must cover costs and make reasonable profits. Papaioikonomou et al. (2016) and Burke et al. (2014) focused on the environmental benefits and consumer expectations without addressing the profitability concerns. A need exists to satisfy the economic, environmental, and social pillars concurrently to achieve sustainability (King, 2008; United Nations, 2007). Further investigation could confirm whether ethical food producers can absorb the cost of certification programs with the premiums earned without financial aid. Research evidence shows that agricultural commodity producers can realize business returns from voluntary certification programs. DeFries et al. (2017) showed evidence from the review of 2,600 peer-reviewed studies that certification of agricultural commodities improved the businesses of smallholder producers as well as the environmental conditions. Although they discovered that the findings of some of the studies had established negative outcomes for the businesses, a test proved the effect was statistically insignificant. The findings suggest that voluntary certification of agricultural commodities can contribute significantly to sustainable business growth and community development goals.

Product certification focuses on encouraging the responsible management of natural resources to promote sustainable business operations (Lewis & Davies, 2015). Certification represents three sustainability goals; economic, environmental, and social sustainability (Englund & Berndes, 2014; Lewis & Davies, 2015; Meyer & Priess, 2014). Seven voluntary sustainability standards are organic, Fair Trade (FT), Rainforest Alliance (RA), Forest Leadership Council (FLC), Ethical Tea Partnership (ETP), global good agricultural practices

(GlobalG.A.P.), and UTZ certified (Giovannucci, von Hagen, & Wozniak, 2014). In Ghana, cocoa growers pursue either one or a mélange of the four leading voluntary certification standards; organic, FT, RA, and UTZ certified. In this study, I intend to explore the strategies growers use to gain cocoa certification and review the four standards in the literature.

### **Certification: The Benefits to Producers**

Certification has increased in coverage involving a broad range of agricultural commodities mainly coffee, forest products, and cocoa (Giovannucci et al., 2014). The growth emanates from rising consumer consciousness about the social, economic, and environmental impacts related to the production practices (Barham et al., 2014). Certification is creating new prospects for stakeholder involvement in supply chain decision-making (Potts et al., 2014). Third-party certification informs consumers of a product's primary attributes such as quality characteristics and sustainability (Darnall & Vázquez-Brust, 2018; Giacomarra, Galati, Crescimanno, & Tinervia, 2016). In orthodox commercial relations, buyers and sellers reach an agreement by the standard regulatory framework; however, the procedure varies in commercial relations involving standard-compliant products. Supply chain partners from upstream growers to downstream consumers collaborate in a transparent process to guarantee traceability and quality (Yu et al., 2014).

Bray and Neilson (2017) reviewed several empirical research studies, examining the lived experiences of smallholder producers enrolled in certification programs to assess the programs' impacts on the changes in livelihood assets resulting from certification. Although

they were unable to establish causation, they found several of the studies identified enhanced livelihood assets arising from certification under specific institutional and contextual settings. They found that some of the studies reported neutral or mixed influences, while a small number reported adverse effects. A notable fact the reviewers established is that there was no consensus among the researchers concerning livelihood impacts of all the certification programs. The question of availability of effective institutional support systems for producers enrolled in certification programs arises. Availability of institutional support in training, coaching, and identifying market opportunities (Grunert et al., 2014) may enhance positive experiences for the producers.

The standard practice, certified through third-party audit, has been structured to involve the supply chain partners in decision-making. As supply chain partners strengthen relationships through the process of independent audits, the practice upholds the reliability of the market claims (Potts et al., 2014). Snider, Gutiérrez, Sibelet, & Faure, (2017) observed that certified growers might be more efficient in managing the business, particularly, in controlling member involvement and the supply of certified produce to the market when they operate as a cooperative. The cooperative system enhances agricultural practices through opportunities for training and access to inputs (Verhofstadt & Maertens, 2014). At the upstream, the producer cooperative system can enhance governance mechanisms, local decision making, knowledge sharing for productivity, and livelihood improvement (Potts et al., 2014). Voluntary certification offers critical input to green economy (Potts et al., 2014). Certification can facilitate investments in sustainable practices and technologies; however,

an assumption that certification delivers sustainable development may be erroneous. To drive certification to achieve sustainable development will require policy intervention that ensures economic, social, and environmental sustainability (MacDicken et al., 2015).

Forests cover 30% of the world's land area (Keenan et al., 2015). As the population grows with the associated demand for settlement expansion, managing human dependence on the limited forest resources is an enormous task. Depending on the effectiveness of the effort of producers to promote and package the quality attributes, certification can lead to the creation of a brand (Kontogeorgos, 2012). From a study of Greek agricultural cooperative firms, Kontogeorgos found that consumers showed a positive attitude toward branded products; in their lackadaisical attitude toward adopting brands, the companies failed to explore the potential economic advantage in an emerging business opportunity. The author did not conduct an empirical evaluation to identify the factors underlining the cooperatives' failure to respond promptly to the emerging business opportunity. Kontogeorgos proposed strategies to overcome the slow attitude of the cooperative firms not based on an empirical evaluation of the problem. The future research focus in this critical area may assist in identifying the underlying causes and provide a scientific basis for policymakers to redirect policy focus.

In practice, while the study focused on the Greek agricultural sector and the results not necessarily applicable to other economies, by implication the author exposed some financial benefits of certification. A study of coffee producers in Brazil, Columbia, Costa Rica, Guatemala, and Mexico indicated that certified cooperatives demonstrate an enhanced

environmental performance than non-certified farmers (Giuliani et al., 2017). Evidence from empirical studies by the researchers showed a stronger positive relationship between eco-certification and environmental performance of the producers in countries with weak institutional control for managing the environment. They found no significant relationships suggesting the certified producers offered better social support than their non-certified counterparts. Instead, the certified producers in countries with effective institutions demonstrated richer social conduct. The research findings show the critical importance of institutional support in ensuring communities realized the benefits of certification programs.

Quality certification schemes provide consumers additional guarantees about trusted labels (Elfenbein, Fisman, & McManus, 2015). While the markets accept the certification process as an assurance of a product's quality, critics have expressed reservations about the transparency of the requirements. Consequently, European Union (EU) policymakers agreed with calls for the appropriate mechanisms to protect consumers from exploitative tendencies. Kontogeorgos revealed the EU had initiated a debate, the green paper, with the objective of addressing those customer concerns.

A goal of certification is to establish a market for agricultural commodities in which the producers adopt verifiable social, economic, and environmental sustainability standards (Snider et al., 2017). An internal reward system agreed by the value chain actors is available to incentivize producers that satisfy the standard (Rice, 2015). Certification can assist adopters to earn higher income from certified produce and improve the quality of household life (Karipidis & Tselempis, 2014). For example, the storage and application of the approved



agrochemicals according to the manufacturer instructions reduces households' exposure to harmful substances. By following the directives, the farm manager adopts safer storage practices and application methods to prevent health hazards and environmental cost.

Applying Deming (1981) principles, producers can reduce production cost by preventing excess agrochemicals use. Reduction in waste translates into cost savings; enhanced produce quality for safer consumption, and increased profitability for the producer (Deming, 1981).

This method of managing harmful chemicals tends to minimize health hazards and translate to a quality life for household members. Holzapfel and Wollni (2014) found that group GlobalGAP certification inspired the creation of new institutional arrangements for Thai smallholder fruits and vegetable growers, exporters, and donors. Through this establishment, the exporters and donors channeled support that enhanced farmer adoption and maintenance of certification.

Principally, the institutional establishment offered the platform for building the stronger association, enhancing grower trust and confidence, and transparent supply chain network. In the same vein, supermarket chains and retail firms can leverage the process to create brands and set the produce' safety and quality standards (Darnall & Vázquez-Brust, 2018; Hou, Grazia, & Malorgio, 2015). The practical implication is that certification offered primary stakeholders, Thai flower and vegetable growers, exporters, European supermarket chains, and retail firms the platform to communicate their quality. Certification also enabled consumers to confirm the quality of the products offered by supermarket chains and retailers (Karipidis & Tselempis, 2014).

The certification label can represent a symbolic character of a product and lay the foundation for branding (Starr & Brodie, 2016). Such features may form an identity conferred on the product by its unique social status and environmental sensitivity to patrons (Giuliani et al., 2017). Consumers can rely on third-party judgment to confirm the quality attributes of a product and establish the grounds for quality premium. Certification encourages firms to be socially responsible (Ibnu et al., 2015; Karipidis & Tselempis, 2014). Although certification confers some benefits to producers, such benefits can remain an imagination until the producers have successfully packaged and communicated the product's attributes to the market (Grunert et al., 2014; Kontogeorgos, 2012). Consumers show the preference for certified food products at higher prices when well-packaged product information is available (Jaffry, Glenn, Ghulam, Willis, & Delanbanque, 2016). Producers need an understanding of the market environment and customer requirements to tailor products to meet customer needs. Certification exerts a positive influence on the farmers' health (Karipidis & Tselempis, 2014). The health benefits include a reduction in contacts with harmful pesticides as the farmers complied with the standard's requirements. Kariuki and Loy (2016) found that certification of the horticultural value chains led to a decline in crop rejections while the managers gained from the forward pricing of certified crops. The managers of firms in certification programs can rely on the advantage of forward pricing to access pre-export trade finance facility to plan business growth strategies.

## **UTZ Certified; Better Farming for Better Future**

UTZ Certified is a program and label for sustainable farming (UTZ Certified, 2015, p. 4). UTZ Certified is a certification standard and has a set of broad protocol and code of conduct for the applicants to implement. The certification protocol is a standard for producers or groups of producers. It specifies better farming methods and working conditions including practices for environmental sustainability. The UTZ philosophy is that agri-food producers follow proficient guidance on better farming practices, working conditions, and environmental management to supply quality products, healthier ecosystem, and a better life for society (Vanderhaegen et al., 2018). To gain UTZ certification, growers must implement the requirements stated in the code and submit to an audit performed by an approved certification body (CB). An auditor is a qualified individual that performs audits on the authority of a CB by a standard procedure (UTZ Certified, 2015). The audit entails the collection of audit evidence to evaluate and confirm the applicant has fulfilled the standards criteria. The audit is a systematic, sovereign, and standard procedure for gathering and examining audit evidence to verify the applicant has met the requirements for UTZ certification. Confirmation that the applicant has fulfilled the requirements qualifies the group to receive a certificate and adopt the UTZ Certified label on the produce (UTZ Certified, 2015).

### **The UTZ Certification Process**

UTZ Certified has two distinct certification standards. They include the code of conduct (Code) and the chain of custody standard (ChoC) (UTZ Certified, 2015). The

procedure for gaining UTZ certification is comprehensive and laborious with several steps. UTZ certified requires producers or producer groups willing to obtain certification in either of the standards to enroll as UTZ members, study the applicable standard and work to satisfy the requirements. To secure a license, an approved CB shall affirm by a written assurance that the product, service or system meets the explicit requirements for certification. The CB submits a report of the audit against the requirements of the Code or ChoC for UTZ Certified to issue the certificate. Producers or producer groups that applied to sell their produce as UTZ Certified receive certification against the Code. Conversely, producers or producer groups that apply to perform physical handling operations not stated in the Code or purchase UTZ certified product from other UTZ certified members receive ChoC certification.

In supply chains, UTZ requires producer or producer groups to be certified against the Code while the supply chain actors (SCA) excluding producers or producer groups must secure ChoC certification. SCA are firms that take legal ownership of UTZ certified products, physically handle UTZ certified products or make product claims about UTZ Certified (UTZ Certified, 2015). A transaction is acceptable if the member referred to UTZ Certified or responsible sourcing in communicating the product's characteristics to a customer. The communication mode includes point-of-sale, advertisements, online or press statement in all business-to-business and business-to-customer transactions (UTZ Certified, 2015).

Under the UTZ certification program, the certificate holder must ensure the subcontractor, for example, a transporter complies with the applicable requirements of

transporting the products. The transporter must ensure the evacuation arrangement would not cause loss of traceability of the product. Where the product involved is cocoa, the CB can conduct a physical audit of the subcontractor engaged to perform the physical handling activities. This requirement applies in the case of cocoa and coffee, tea, rooibos, and hazelnut. Retailers of UTZ certified products are not required to be UTZ certificate holders; however, brand owners of UTZ certified products are required to register as members. They are duty bound to comply with the UTZ Certified labeling and trademark policy (UTZ Certified, 2015).

### **Approaches to UTZ Certification**

A prospective member fills out a registration form on the UTZ Certified website. UTZ Certified confirms the new member registration in the good inside portal (GIP) with an ID, username, and password. The prospective member selects a CB and request for an audit of the conditions for UTZ Certified registration. The selection of a CB is always at the discretion of the applicant and advisedly depends on cost-effectiveness. The new member signs a contract with the CB upon receipt of certification protocol, Code, and (or) ChoC documents from the latter. The new member is responsible for conducting self-evaluation and complying with the standard. The member submits a report with documents on the self-evaluation against the UTZ Certified checklist. Where the applicant declares to engage a subcontractor, the accompanying documents include a self-assessment of the subcontractor(s) and documentation on any previous audits by different CBs.

The CB performs the annual audit against the requirements of the Code or ChoC. When non-conformities show up during the inspection, the member receives notification to implement corrections for reconfirmation. The CB conducts follow-up audit and makes the certification decision no later than 20 working days after the member has addressed non-conformities. The CB will communicate the certification through the GIP by email to the member. If the application is unsuccessful, the CB informs the member and UTZ Certified through the afore-stated procedure. An unsuccessful applicant can reapply by following the same procedure or can contest the CB's decision by completing a complaint form in an appeal to the CB.

The CB notifies the successful member of the decision and requests from UTZ Certified a license for the member in the GIP, not more than five working days after the decision. UTZ would review the information in the license and activate the license upon confirmation that the conduct of the audit is in line with the certification protocol, and the content is correct, complete, and precise. At this point, the CB sends the certificate to the member to complete the certification process. The member maintains records of the transactions in the GIP and informs the CB of any subsequent changes in the certification information.

### **Fair Trade Certification**

Fairtrade (FT) is a social movement organized under self-governance system to promote standards for production practices and delivery procedures (Fairtrade International, 2015). FT is a partnership in international trade controlled by dialogue between producers

and consumers, openness, and in search of fair dealings (Ibnu et al., 2015). The FT movement began certification with coffee growers' cooperatives in the late-1980s (Dragusanu, Giovannucci, & Nunn, 2014). The organization supports farmers and workers to earn fair compensation for the trade. FT demands from consumers, the payment of reasonable prices to the producer (Pyk & Hatab, 2018). Through the standard's procedures, FT members secure the empowerment to control their livelihoods and demonstrate they are socially and environmentally responsible. The FT movement focuses on partnerships between producers and consumers (Pyk & Hatab, 2018). Good working conditions and fair compensation for labor, environmental preservation, and the pursuit of social policies in supply chains are the primary FT goals (Fairtrade International, 2015; Ibnu et al., 2015).

The primary focus of FT is the empowerment of small producers to develop their communities. Mook and Overdevest (2017) employed three analytical tools to assess a cross-section of Fairtrade certified producer organizations with the objective of comparing the individuals' expectations with satisfaction levels. The statistical tools, importance-performance analysis (IPA), principal component analysis (PCA) and ordered logit regression analyses produced significant results concerning the producers' performance and expectations. They found that Fairtrade empowered women, promoted democratic decision-making, and reduced child labor. Analyzing the implications, the researchers suggested that the producers were satisfied with Fairtrade certification as social justice mechanism. They established that producers rated Fairtrade as high importance, low performance as a market mechanism, and least as a sustainable agriculture mechanism. The FT standard covers

various agricultural products including cocoa, coffee, sugar, bananas, tea, cotton, cut flowers, and honey (Fairtrade International, 2015). Fairtrade International (FLO) is the organization responsible for setting the global FT standards. Twenty national initiatives in Europe, North America, and the Pacific constitute FLO International. FT has an elected board composed of five initiatives, four producer groups, two importers, and two consumer group representatives; however, a unit of FLO, FLO-Cert, certifies and monitors producers and importers, and ensure they comply with the standard.

The FT standard for cocoa requires the members to organize into small farmer cooperatives and adopt communal labor practices (Bacon et al., 2014; Haynes et al., 2012). Communal labor is a form of shared labor practices by the membership. One FT cooperative, Kuapa Kokoo Union, in Ghana's cocoa sector has a total membership of between 45,000 and 60,000 across five of the six cocoa regions (Tallontire, 2014). The Kuapa Kokoo Union is a part owner and sole supplier of cocoa beans to the Divine chocolate brand, produced by a committed fair trade firm registered in the United Kingdom (Tallontire, 2014). The members organize into labor gangs and assist one another in turns to maintain their farms. This strategy of engaging labor is effective at preventing growers from adopting unfair labor practices including child labor in cocoa. The FT standard prohibits any form of unfair labor practices in the cocoa value chain. By choosing shared labor, FT members save cost and maximize the returns from cocoa production (Pyk & Hatab, 2018).

Economic factors of sustainability motivated farmers to pursue Fairtrade certification (Pyk & Hatab, 2018). The researchers discovered that the growers were less concerned about



environmental factors informing their decision making about Fairtrade certification. As smallholders, the presumption is that the growers generated insufficient returns from coffee production. As rationale economic units, the knowledge that Fairtrade can assist them in generating additional income offers a sufficient incentive to enroll in the certification program. Chiputwa et al. (2015) found that Fairtrade certification increased household living standards by 30% and minimized the occurrence and severity of poverty among Ugandan smallholder coffee producers.

On the contrary, they found no significant impacts of certification on poverty reduction among Organic and UTZ certified farmers. Factors such as the age, gender, education of household head, and farming experience influenced the certification decision-making. Other dynamics of certification membership decision-making include farmers' social connections, accessibility to cooperatives, and land property (Mojo, Fischer, & Degefa, 2017). Chiputwa et al. (2015) observed that smallholder farmer participation in FT supply chains opened valuable prospects to improve household income. Using propensity score matching, they assessed the influence of FT certification on producers' wellbeing. The propensity score matching approach allowed the authors to compare significant differences between FT and non-FT producers that shared similar characteristics.

The FT principles ensure the movement dedicates special effort to assist producers exporting from developing countries (Elder, Zerriffi, Billon, 2013). As a movement pursuing social policies, FT makes provision to support the economically disadvantaged producers (Pyk & Hatab, 2018; Vellema et al., 2015). Transparency and responsibility, training to build

member capacity, fair price for producers, gender equity, healthier working conditions, and environmental safety are fundamental FT principles (Fairtrade International, 2015; Pyk & Hatab, 2018). Producers and consumers are abreast of the selling price, including premium to provide better planning (Pyk & Hatab, 2018). These principles offer FT growers the opportunity to access credit and reduce risk (Gockowski et al. 2013; Vellema et al. 2015).

Langen and Adenaueer (2013) investigated German consumers' perception of fair pricing of FT coffee. Using face-to-face interviews of the participants in a study conducted in 2008, the authors made some staggering observations. Privy to allegations of inefficiencies in the distribution of price premiums, They examined what sharing ratio satisfied consumers' expectations. While the results established consumers' view of fair trade meant paying fair prices to producers, their perception of fair connoted different interpretations. A majority representing 60% agreed any amount above 50% of the extra Euro paid by consumers to the producer was fair. Twenty-three percent thought 80% of the extra income was a fair deal while 10% argued farmers deserved 90%. Four percent accepted less than 20% as efficient. Considering the diverse views of the respondents, the Langen and Adenaueer measure of the consumers' willingness to patronize FT products relies on the depth of information flow. Information asymmetry within the certification system will soar speculations, negative perception, and suspicion (Barham et al., 2014). The practical implication is that the lack of transparency can act as the nemesis of the growth of certification and the farm business.

The business of certified farmers will be unsustainable in an environment heightened by doubts and uncertainties (Barham et al., 2014). Access to credit is an essential criterion for farmers' business growth and development (Vellema et al., 2015). On the contrary, the credit system cannot rely on insufficient market information to support the farmers to grow their businesses. The market needs an acceptable mechanism for certification premium sharing to sustain stakeholder confidence that can help the farmers' businesses. Future evaluation of the effect of information flow will be particularly valuable if such studies can quantify the benefits of market transparency to certification adoption decisions.

Cocoa growers involved in FT certification pursue the fundamental objective to secure enhanced income and social well-being. Researchers of FT certification for agricultural products have noted the importance of the fair deal concept in strengthening producer organizations (Gockowski et al., 2013; Vellema et al., 2015). Countless challenges hinder the rapid expansion of the FT movement. The fundamental problem relates to the inability of FT producers to sell their entire harvests in FT markets (Potts et al., 2014), hindering sustainable growth prospects. While some researchers relied on the environmental benefits to encourage certification (Barham et al., 2014), Potts et al. (2014) argued the producers' inability to secure fair market for the whole production is a potential disincentive to maintain the program. This debate will continue until rigorous discourse and evaluations of these sustainability projects establish the effects to the stakeholders (Barham et al., 2014). The potential risk as Barham et al. noted is that critical evaluation can elicit consumer doubts about claims of certification benefits. This threat notwithstanding, objective assessment in

line with the deliverables will help ameliorate stakeholder confidence in certification programs.

### **Motivates of Farmer Adoption and Intention to Maintain Certification**

Researchers adduced evidence to affirm farmers have diverse motivations for adopting or maintaining certification. The post-certification experiences of farmers are necessary for their future decisions to continue with a scheme (Karipidis & Tselempis, 2014). Post-certification experiences may be either positive or negative, and that can influence farmers' choices to stay or exit. Undesirable experiences such as the lack of adequate extension services to assist farmers to gain self-confidence can exert an adverse effect on the understanding of certification (Pongvinyoo, Yamao, & Hosono, 2014).

Karipidis and Tselempis (2014) examined the intention of Greek farmers to continue with quality certification schemes they had joined and the factors underlying their choices. They argued the utility derived from certification influenced farmers' intention to continue the scheme or exit. The point of Karipidis and Tselempis' argument is that differences in the conditions across farms can influence farmers' choices.

Evaluating the rationality of Karipidis and Tselempis (2014) observation, arguably the producer makes sound economic decisions. A household will maximize the utility it derives by selecting and using the desirable quality inputs so that it can satisfy the requirements of a certification scheme. The utilities that the agricultural household derives become the motivation and underline the intentions to adopt and stay with the certification scheme. Karipidis and Tselempis linked utilities to improvements in the whole farm

organization. The practical implication is that if the expected market value of the output brings some improvements to the entire farm organization, the managers will invest to maintain quality certification. Locate these improvements in the enablers and results fields of the EFQM excellence model.

The EFQM excellence model is a practical and non-prescriptive framework for assessing business excellence, including environmental performance (Calvo-Mora, Navarro-García, & Periañez-Cristobal, 2015). Regardless of sector, size, structure or maturity, the EFQM enables leaders to assess the position of their organizations on the path to excellence (Calvo-Mora et al., 2015). By applying the model, leaders can appreciate their firms' position of strengths and identify performance gaps as they relate to the stated vision and mission. With a picture of operational performance, managers can integrate ongoing and intended initiatives, identify potential gaps, and avoid repetitions. EFQM excellence model, referred to as the European Foundation for quality management, is comprehensive in its application. The model factors all the characteristics of sustainable practices that lead to operational excellence in business. In their study, Karipidis and Tselempis (2014) adopted the EFQM model as the criteria for developing and implementing an integrated quality and environmental management system. By relating and grouping agricultural household improvements under the enablers and results fields of the EFQM excellence model, Karipidis and Tselempis showed the robustness of the method. Because of its all-inclusiveness, the model has been proven useful for a wide variety of enterprises, and its use for this study was appropriate.

Karipidis and Tselempis (2014) measured farmer intentions using the five-point Likert scale and adopted the ordinary least squares (OLS) approach in the estimations. The use of OLS to estimate the model provided a baseline estimate for the nine fields of improvements (Yang, Hu, Mupandawana, & Liu, 2012). The main shortcoming with the OLS regression is that it cannot take care of uncertainty or deal sufficiently with bi-directional movements in the tails; however, the validity of the model using the appropriate tests minimized such inherent challenges. The improvements in farm organization represent the certification outcomes seen as utility values to the farm household and expected benefits from the market. The benefits constitute farm income from easier access to new markets and household health. The improvements are the benefits that drive the farmers' intentions. Karipidis and Tselempis (2014) made interesting observations about farmers' intention to maintain certification. When an appointed successor exists to continue with the farm, the intention decreases because the farmer leaves the decision to the successor. Conversely, the intention reduces in cases where the farmer increases the land area cultivated. Karipidis and Tselempis found no contradictory evidence to the findings of previous studies on certification adoption decisions.

Haynes et al. (2012) investigated the prospects of using both organic and fair trade certification for enhancing environmentally and socially responsible trade of cocoa from Costa Rica. Using a case study method, Haynes et al. focused on cocoa supply chain actors in Costa Rica and the United States. Most participants indicated their motivation was to use both certifications to achieve better product differentiation and marketing than either system

had made previously. Other respondents considered the better appreciation of individual growers and the unique value of their cocoa in the value chain more helpful than certification for small companies in the cocoa supply chain. The results provided some indication that the supply chain actors desired a new marketing strategy for their cocoa. In particular, a new approach that integrates the story of growers and consumers' commitment and dedication to promoting social and environmental sustainability. A few contrasts separate fair trade from organic certification. FT certification emphasizes fair compensation for growers that commit to pursuing social and environmental sustainability goals (Fairtrade International, 2015; Mook & Overdeest, 2017). Patrons of FT products are socially conscious consumers with incontestable ethical values (Haynes et al., 2012). They share a common mindset underlining the FT emblem; guaranteed floor price to absolve growers from the risks of producer price fluctuations (Haynes et al., 2012). Organic certification on the other hand strictly forbids the application of chemical fertilizer and synthetic chemicals to control diseases and pests (Ayuya et al., 2015). The primary objective of organic certification is to promote the preservation of the environment and its ecosystem. In return, organic farmers receive relatively higher organic premium than other certifications.

The literature has revealed several factors that motivate farmer certification adoption decisions. While the factors influence farmer certification decision making, they are not sacrosanct. Public authorities, certification bodies, and value chain players must collaborate to work out strategies to promote adoption. An intervention by public regulatory authorities will provide regulatory support (Elder et al., 2013). Certification service providers must

provide training while the value chain players offer the critical backstopping in funding to increase coverage and enhance farmer participation. If carefully coordinated, this strategy stands a chance to encourage more growers to register to gain certification.

Jena and Grote (2017) analyzed the effect of smallholder coffee farmers, and the role quality certification played in upgrading value chains. They concluded that FT farmers earned higher prices than noncertified producers but not up to the prices of private labeled coffee. Private label coffees are notably superior in quality and higher yields. A similar comparison in Ghana by Gockowski et al. (2013) showed FT cocoa growers earned higher prices and yields than non-certified traditional growers. Gockowski et al., 2013 and Jena Grote (2017) pursued different research objectives. Whereas Jena and Grote (2017) compared noncertified, FT and growers of private label coffee, Gockowski et al. (2013) compared noncertified, FT, and less shade intensive cocoa. The similarity associated with the two studies is that their authors compared non-certified and FT growers. Although the two studies took place in different geographical locations of Nicaragua and Ghana, the results were similar in context. One can infer from the results that regardless of the geographic location and its challenges, certified cocoa and coffee growers could achieve higher prices, at least from higher yields (Barham et al., 2014; Elder et al., 2013).

Producers of successful brands are more likely to maintain certification. In a study of Greece agricultural cooperative firms, Kontogeorgos (2012) found the majority of the companies that grown registered brands implemented at least a quality assurance system; however, the majority of the agricultural cooperative firms could not manage registered



brands. While well-recognized product quality was relevant for the business to establish in the minds of consumers and market success, qualities like leadership, innovativeness, and supply chain relationships remained fundamental elements. By Kontogeorgos' observation, the high-quality attribute of a product alone will not be sufficient for grower associations to create market success. Factors including managerial competence, leadership, and financial resources are fundamental to market success. O'Neill, Sohal, and Teng (2016) found evidence of a relationship between managerial competence and leadership to quality management in supply chain quality management.

In a study to examine the factors influencing Greek peach farmers' adoption decisions of organic farming, Ullah et al. (2015) found the principal reasons as environmental and ideological. They established the lack of scientific support networks, technical and economic reasons, and subsidies influenced farmer adoption decisions. In the same study, the farmers cited economic reasons, with less emphasis on environmental consideration, as their motivation to adopt integrated crop management (ICM). Organic farmers believed ICM was no different from conventional farming and would not be enticed by economic factors to adopt ICM. Based on the findings, notably policy measures targeted at promoting sustainable agriculture should focus on offering technical support to growers. Whereas organic premiums can help offset the high cost of managing pests, diseases, and low yields, the initial cost of implementation constitutes the primary challenge to adoption. To address this challenge requires policy intervention to integrate economic and environmental issues in policy formulation strategies in organic and integrated agriculture.

Boiral, Guillaumie, Heras-Saizarbitoria, and Tene (2017) concluded the perceived higher farm income from certification was a factor influencing adoption decisions. Other factors were rather insignificant suggesting a need for improved communication and education on sustainable farming practices and market opportunity.

Herzfeld, Drescher, and Grebitus (2011) examined the adoption by farmers of BRC food technical standard and GlobalGAP certification at an aggregated cross-country level. They found farmers in developing countries faced potential barriers in accessing the two private certification standards. The obstacles are mainly cost related to the initial implementation and the annual maintenance of the certification system. Heras-Saizarbitoria, Boiral, and Arana (2016) found the high initial cost of compliance was a constraint to smallholder bean growers' compliance with EureGap Certification. The factors noted as influencing compliance are socioeconomic and farm characteristics including area under cultivation, household size and access to technical information. To gain certification for any agricultural product, the growers need to invest additional resources that promote environmental management, social, and animal welfare. Karipidis and Tselempis (2014) noted the cost included the procurement of less harmful agrochemicals, the hiring of extra labor, the construction, and management of the recommended grading and sanitation facilities.

Documentation to preserve traceability, third-party auditing and the management of hazardous substances are other cost centers. Jena and Grote (2017) argued the benefits derived from quality certification are related to the cost of initial implementation and the

subsequent annual maintenance cost. The growers expect the income from certified produce to exceed the aggregate cost of adopting and maintaining certification (Holzapfel & Wollni, 2014; Prado & Woodside, 2015). Jouzi et al. (2017) suggested growers aimed at maximizing utility will shift to organic certification if the utility derived exceeded the utility of a conventional grower. Ayuya et al. (2015) established significant economic gains by certified producers of organic foods over non-certified growers. They concluded that non-certified smallholder coffee producers in Kenya could improve on their incomes if they switched to certification. Hagggar, Asigbaase, Bonilla, Pico, and Quilo (2015), Hardt et al. (2015), and Giuliani et al. (2017) linked certified producers' biodiversity conservation practices to reduction in deforestation.

Holzapfel and Wollni (2014) analyzed GlobalGAP adoption by small-scale fruit and vegetable farmers in Thailand focusing on GlobalGAP group certification. They found donor and exporters support and public-private partnerships essential to adoption by smallholder farmers. The authors established demographic, and farm characteristics influenced farmer adoption. GAP training attended, prior participation in high-value supply chains, exporter and donor support to cover the costs of compliance, technical advice, and training in quality management service influenced GlobalGAP adoption.

Xu, Huet, Poix, Boisdon, and Deffuant (2018) investigated Norwegian farmers' reasons for exiting from grain, sheep, dairy, and vegetables organic farming. The results of their study reaffirmed a fundamental point that returns from certification should be sufficient to cover the cost of registration and maintenance to motivate grower adoption and

continuation (Karipidis & Tselempis, 2014). Admittedly, organic and quality certification may be different. A determinant of adoption remains the utility value derived by the grower. The test is whether the utility value exceeds the initial and maintenance costs.

### **Maintaining Commodity Certification: Significant Challenges**

Despite the important benefits of certification identified in the literature, some researchers and market watchers have raised counterclaims that deserve attention. Pongvinyoo et al. (2014) found inadequate extension education for farmers was detrimental to the development of voluntary standard such as GlobalGAP. Pongvinyoo et al. observation resulted from an investigation of the perceptions of Thai coffee growers' understanding of GAP and the main influences underpinning those perceptions. Others observed sustainability certification has failed to take vulnerable farmers out of poverty (Potts et al., 2014). In the state of sustainability initiatives review, Potts et al. made observations that confirm the benefits and others questioning the veracity. Potts et al. acknowledged the profoundness of the growth in voluntary sustainability standards in the global commodity markets within a decade. The study covered 16 voluntary sustainability standards operating across ten commodities with an estimated trade value of \$31.6 billion (Potts et al., 2014). Business value of such scale epitomizes the increasing relevance of sustainably sourced agricultural produce in the global commodity trade and developmental process. Among the ten standard compliant commodities, cocoa recorded a staggering 65% growth, surpassing the average 41% recorded across all product sectors and coming third after oil palm and sugar (Potts et al., 2014). The sustainable sourcing commitments that the manufacturers undertook

influenced significant market penetration in some commodities markets; whereas sustainable coffee recorded 40% of global coffee supply, sustainably sourced cocoa reached 22% of world supply in 2012 from 3% in 2008 (Potts et al., 2014).

With such impressive growth statistics, cocoa growers would desire a fair share of the value and significant transformation in their living standards. Instead, output growth without a corresponding increase in sales resulted in an oversupply of standard-compliant commodities. The lack of market access compelled the producers to sell up to 50% on the conventional commodity markets (Aidoo & Fromm, 2015). The practical implication is that the producers lose the promised certification premium from the downward pressure on market prices. The real gainers are the wealthy nations that own the resources to create value for these primary commodities. The effect is that certification defeats the original objective of using sustainability certification to improve the earning capacity of the impoverished growers of primary commodities. This observation represents a major setback to the growth of sustainably sourced agricultural commodities in developing countries. The development can adversely affect producer interest in gaining cocoa certification. To address the challenge calls for particular attention to open market access if policymakers wish to use voluntary standards as a poverty eradication strategy.

### **Intensification Agriculture and Sustainability**

Researchers found evidence indicating that through intensification agriculture, producers can achieve higher yields without deforestation (Godfray, 2015; Nijbroek & Andelman, 2015; Frank et al., 2017). Cocoa yields decline non-linearly with increasing

shade cover (Blaser, Oppong, Yeboah, & Six, 2017). Bennetzen, Smith, and Porter (2016) found the production and application of fertilizers increased the volume of greenhouse gas emissions; however, the net effect of increased productivity reduced carbon emissions.

Byerlee, Stevenson, and Villoria (2014) argued intensification is not sufficient to halt deforestation. Historical evidence indicated a combination of investments in labor, key inputs, and technology, enabling a reduction in area under cultivation. Increased efficiency in production practices can generate profitability and agricultural expansion in areas with growing demand and labor availability (Clark & Tilman, 2017). The results of a study regarding agricultural productivity gains on greenhouse gas emissions globally indicated income and population growth could influence greenhouse gas emission. Income and population growth usually create high demand for food and space leaving behind some significant environmental effects. For these reasons, Byerlee et al. (2014) argued that effective governance by all stakeholders in the commodity supply chain is an essential condition to enhance the sustainability of production. Sustainability interventions such as forest policies, certification programs, among others must focus on reducing deforestation by pursuing a combination of intensification strategies and expansion into non-reserve areas. Cocoa agroforestry intervention can reduce deforestation. Whereas yields decline non-linearly with shade (Blaser et al., 2017), managers can design optimal agroforestry systems capable of sustaining high yields. Byerlee et al. (2014) observed despite the increased scope of supply chain interventions; limited information exists about interventions to achieve a significant reduction in the loss of tropical forest landscapes.

Research evidence existed that point to an inverse relationship between greenhouse gas emissions and increased agricultural productivity (Bennetzen et al., 2016). Cocoa plantations in semi-deciduous forests in Cote d'Ivoire degraded ecosystem diversity, species richness loss, and degraded lands (Tondoh et al., 2015). Bennetzen et al. (2016) investigation of alternative crop production growth in the United States showed emissions from crop production, and forestry decreased with productivity. They observed a minimal increase in GHG emissions under lower productivity growth. The evidence the researchers adduced, based on statistical data of crop yields from 1960 to 2009, showed a radical improvement in GHG mitigation with higher productivity (Bennetzen et al., 2016). Results of the study indicated potential rewards for using, for example, increased the productivity of cocoa landscapes to mitigate GHG emissions.

Gockowski et al. (2013) found that in Ghana fair trade cocoa certification led to significant productivity gains over the traditional farming practices. The Bennetzen et al. (2016) and Gockowski et al. studies in the United States and Ghana respectively served different purposes. The latter indirectly suggests cocoa certification holds the potential to mitigate GHG emission. DeFries et al. (2017) analyzed 347 peer-reviewed research on voluntary certification of tropical crops including cocoa for evidence of improved environmental, economic, and social benefits. They concluded that 34% of the studies established certification has positive environmental sustainability outcomes. By adopting certification, cocoa growers impliedly take intensification approaches that aim to achieve higher productivity while contributing to reducing GHG emissions from cocoa landscapes.

Because the certification standard prohibits expansion into reserves (UTZ Certified, 2015), growers undertake to maintain their original cocoa landscapes. Restriction into forest reserves encourages cocoa farmers to intensify production through certification.

Technology-driven agricultural intensification influenced land saving and environmental protection (Byerlee et al., 2014). Byerlee et al. observed that intensification driven by bullish market conditions for exportable commodities caused rapid land expansion and deforestation. Byerlee et al. examined whether intensification agriculture as a policy can save cropland from further deforestation. They affirmed technology-driven intensification could influence environmental sustainability in a regime where policy-makers passed a legislative instrument to legalize it. In practice, the findings established a need for research and development in the official pursuit of sustainable development. As the world's population increases, demand for sustainable sources of food becomes most critical. Growers will need to be innovative to increase productivity in a protected environment.

Agricultural activities contribute to greenhouse gas emissions and climate change and pose serious threats to sustainable agribusiness (Vetter et al., 2017). The activities including fertilizer, food, and livestock production contribute at least one-third of global greenhouse gas emission (Tubello et al., 2015). Cocoa is agricultural produce; achieving sustainable supply amid the afore-stated evidence will thrive only on the synergies between climate control programs and production policies. McCright, Dunlap, and Marquart-Pyatt (2016) showed the interventions to address climate change are political instead of organizations voluntary social responsibility initiatives. They argued successful interventions



depend on power relationships among different actors, in particular, governments and organizations involved in implementations of climate policies. By implication, Vetter et al. suggested neither the state nor the private sector can act independently to address the challenges of climate change pose within the agricultural sector. Policies to mitigate climate change effects must consist of voluntary CSR and state regulation.

The literature reviewed showed evidence of the potential benefits that certification of agricultural and consumer commodities can offer producers, businesses, and the environment (Gockowski et al., 2013; Perez-Batres et al., 2012; Vlachos, 2014). Some of the benefits identified included higher consumer rating (Perez-Batres et al., 2012), better financial performance (Feng et al., 2018), and higher returns to investment (Gockowski et al., 2013). Certification can facilitate the creation of a brand (Kontogeorgos, 2012). Certification promotes stakeholder involvement in supply chain decision-making (Potts et al., 2014). The commitment of the partners in the supply chain delivers significant positive effects on environmental sustainability. Communities, where producers initiate certification projects, benefit from the firms' CSR projects. The certification standard may require the members to invest a part of the certification premiums in CSR projects for the community (Fairtrade International, 2015).

Certification can help improve the quality of health of certified growers through standard regulation of the management of harmful chemical substances (Karipidis & Tselempis, 2014). This observation suggests utility is the motivation for farmers to decide to enroll, maintain or exit certification. Growers cannot simply realize the certification benefits

unless the program receives managerial competence, leadership, and financial resources (Kontogeorgos, 2012) with policy support (Sahide, Burns, Wibowo, Nurrochmat, & Giessen, 2015). The literature provided additional information indicating stock prices can react negatively to some sustainability initiatives of firms (Dam & Petkova, 2014). Dam and Petkova found new evidence suggesting stock prices of companies in certain industries might decline in reaction to news of the firms' investment in carbon disclosure projects. Such companies may refrain from disclosing information about involvement in carbon disclosures projects and avoid the penalty.

Certification has a direct relationship with Deming's quality management concept. Certification is a concept that enhances product quality and sustainability. Deming's (1981) quality management theory delineates the process of improving and sustaining product quality for long-term benefits. The UTZ Certified standard enforces the concept of continuous improvement through third-party auditing (UTZ Certified, 2015). The underlining objective is to maintain the quality assurance concept as suggested in Deming's (1981) theory. Third-party auditing is the process that assures consumers of a product's quality standard and offers an assurance that the production process observed the highest ethical standard. This highest level of quality assurance is the theme in Deming's quality management theory.

## **Transition**

Section 1 was an introduction of the subject of certification about the supply of certified cocoa beans from Ghana for the global chocolate industry. Beginning with the general and specific business problems, Section 1 included the challenge of undersupply of certified cocoa beans amid growing demand by the chocolate industry. Explanations of the purpose and nature of the study, statement of the underlining research questions, and the theoretical framework follow in chronological order. The key terms of this study, assumptions, limitations, and delimitations are in this section. The literature review concludes Section 1, providing a detailed background of the literature on sustainability certification standards, procedures for gaining UTZ certification, firms' sustainability decision makings, benefits, and challenges of certification. An outline of the qualitative single-case study is in Section 2. The presentation addresses the core of the study including (a) purpose statement, (b) role of the researcher, (c) participants, (d) data collection, and (e) ethics relating to the research. In this section, I explain the techniques for collecting and analyzing the participants' responses to generate an understanding of the strategies cocoa producers use to gain cocoa certification. The process that establishes the validity and reliability criteria to affirm the rigor of the case study concludes Section 2. In Section 3, the focus will involve examining the findings for explanations based on the literature and document the implications for business and society.

## Section 2: The Project

### **Purpose Statement**

My purpose in this qualitative case study was to explore the strategies that some cocoa farm managers use for obtaining certification to produce cocoa beans. The targeted population were the managers at certified local cocoa growers' CA, (pseudonym) in the eastern region of Ghana. The implications for positive social change is that certification might enhance the growers' competitiveness in the cocoa value chain, employment, and income opportunities, community development, and sustainable cocoa farming business.

### **Role of the Researcher**

A researcher acts as the principal instrument for collecting, analyzing, and interpreting qualitative case study data (Marshall & Rossman, 2016; Yin, 2017). As the primary data collection instrument, face-to-face verbal communication with participants allows the researcher the benefit of securing thorough information about their experiences (Rossetto, 2014). Through rich dialoguing with the participants (Yin, 2017), an understanding of the techniques the managers use to obtain certification to produce cocoa beans emerged. As a management member of the cocoa industry, my role as the researcher presented an advantage in the data collection process. With several years of working relationship with cocoa growers, I gained the trust and confidence of the farm managers who offered the information relevant to this doctoral study. In qualitative research, prior knowledge of the subject and familiarity with the context can be advantageous provided the researcher maintained objectivity (Bengtsson, 2016).

Intense listening and sensitivity to the interest of the respondents (Yin, 2017) underline the strategy that I used to mitigate personal bias. Attentive listening created a favorable atmosphere to capture the exact words of the managers and observed their disposition. The interview data coupled with the cooperative's internally generated documents established reliable evidence to deduce the meanings intended by the respondents. In a qualitative study, the researcher can prevent personal biases by avoiding the imposition of personal beliefs (Roulston & Shelton, 2015).

An explanation of the respective roles of the researcher and respondents in the research process informed the farm managers of their rights, including prevention of physical harm as instructed in the Belmont Report (U.S. Department of Health and Human Services, 1979). By clarifying the risk-benefits associated with participation in this study, I satisfied the Belmont Report ethical requirement of magnanimity, respect, and justice to human subjects. Participants' interviews constitute the appropriate technique for data collection in qualitative studies (Rossetto, 2014). I acted as the instrument for collecting data in semistructured interviews. An interview protocol provided the essential guide to circumvent personal bias (Goodell, Stage, & Cooke, 2016; Kallio, Pietilä, Johnson, & Docent, 2016). An interview protocol (see Appendix A) is necessary for increasing the reliability of the case study findings (Cronin, 2014; Yin, 2017). Qualitative researchers share summaries of the data with participants and use member-checking to validate the findings (Thomas, 2017). The validation process ensures that the identified themes represent the participants' real experiences (Winter & Collins, 2015). To satisfy this requirement, I

summarized only the information the farm managers shared without making personal interpretations.

### **Participants**

The eligibility criterion for participation in this single qualitative case-study is that the target population consist of the managers of one certified cocoa growers' cooperative. The managers joined the cooperative in the same year and retained membership of the certification program for 5 years sequentially. The age limit for participants ranged between 22 and 59 years. Age requirement was essential to restrict eligible participants to farm managers of the legal working class. In Ghana, the legal working age starts from 16 to 60 years (retiring age). At 22 years old, a manager can satisfy the minimum selection criterion of 5 years as a certified cocoa grower. The members received the same technical instructions on certification to produce cocoa beans at the same time from a certified instructor. The cooperative consistently satisfied annual renewal eligibility criteria to maintain the certificate. The participants of this study consisted of seven managers of one cocoa growers' cooperative. Case study research requires a small number of participants (Yin, 2017). A researcher sets the rules to guide the case selection and selects a case that meets those requirements (Harrison, Birks, Franklin, & Mills, 2017; Marques, Camacho, & de-Alcantara, 2015). The sample is a small number that I selected purposefully (Cleary, Horsfall, & Hayter, 2014; Sim, Saunders, Waterfield, & Kingstone, 2018) on the strength of the members' knowledge and expertise (Yin, 2017) as growers of quality certified cocoa. I

selected a cocoa cooperative that sets quality as their primary goal and consciously works to maintain quality certification.

I selected the population from one organization among a list of cooperatives registered as producers of certified cocoa beans in the Suhum cocoa district of Ghana. In case study research, the researcher can investigate a single phenomenon (Cronin, 2014). Selection of participants with unique knowledge of the phenomenon is fundamental to conducting a successful study (Cleary et al., 2014; Marshall & Rossman, 2016). I invited the farm managers of the target cooperative through the president, requesting the members to volunteer participation in the study (see Appendix B). Included in the letter was a statement of the research purpose and assurances of upholding ethical procedures that guarantee the members' privacy and safety (Yin, 2017).

The strategy for establishing working relationships involved the dispatch of consent letters to the individual farm managers, delineating the responsibilities of the researcher and respondents. The consent letter conveyed further assurances of confidentiality of the participants' identities (Beskow, Check, & Ammarell, 2014) with an appeal to the individuals to sign and return the consent form. On the consent form was a statement affirming participation is voluntary. Participants may exercise the free will to discontinue at any point during the process by declaring their intentions to withdraw. I have stored the interview data securely in a safe for a minimum period of five years (Walden University, 2014). When the 5-year period has elapsed, I will shred the paper interview data and erase the electronic records permanently. Assurances to the farm managers of confidentiality of

the information helped in building trust (Hardy, Hughes, Hulen, & Schwartz, 2016) and encouraged the farm managers to speak freely about the certification process. Cocoa certification as a quality management concept satisfies the conceptual framework founded on Deming's (1981) quality management theory for this study.

### **Research Method**

I used the qualitative method for this case study research. Qualitative research methods are suitable for answering questions in “how” and “why” format (Smith & McGannon, 2018; Yin, 2017). Qualitative research involves exploration and accepting the importance groups or individual ascribe to a social or human problem (Dennis, 2014). Qualitative research as an interpretive process relies on the researcher as the sole interpreter of the phenomenon and data saturation (Sankar, Ramanathan, & Kutty, 2017). A qualitative researcher focuses on providing an in-depth explanation of the complex processes and practices that occur within an organization, institution, or a group (Lee, 2014) and produces rich data (Ganong & Coleman, 2014). Qualitative research is suitable for exploratory studies in diverse areas of research (Marshall & Rossman, 2016). A study is qualitative if the data consist of textual documents, images, and sounds from which the researcher generates results (Nassaii, 2015).

A quantitative researcher uses conceptual arguments and statistical analysis to measure and interpret the relationships between variables (Molina-Azorin, 2016). The researcher relies on numerical data and applies statistical or mathematics tools to arrive at findings (Molina-Azorin, 2016). Mixed-methods approach is suitable for a study in which



the researcher believes quantitative and qualitative methods combined will address the research objectives effectively (Green et al., 2014; Sparkes, 2015). The strengths of one method complement the weaknesses of the other. There is no required statistical analysis. I conducted a case study situated in a social constructivist paradigm; the qualitative method is appropriate (Harrison et al., 2017; Sparkes & Smith, 2015).

A qualitative method is suitable when a researcher inquires about a subject to understand a bounded case (Yin, 2017). Qualitative research helps overcome the complex challenges in business that a researcher cannot address via the techniques of quantitative analysis (Woodside, 2016). Qualitative research methodologies allow researchers to capture firsthand the participants' views and actions and construct these live events and behaviors from within (Lee, 2014). Ensuring proper fit of the research method to the research question is critical to research quality. To achieve a methodological fit, the research question, literature review, data collection and analysis, and contribution to knowledge must align (Knapp, 2016). Qualitative study approaches facilitate the collection of critical information about events occurring in their natural settings (Cahyadi & Prananto, 2015).

### **Research Design**

In this study, I used the case study design using multiple strategies including participant interviews, analysis of archival records, and member checking to ensure data saturation. A case study design is preferable in a qualitative study that focuses on interviews to understand a phenomenon (Yin, 2017). A case study is an inquisition and analysis of a single or multicase to explain a complex phenomenon (Hyett et al., 2014). A researcher can

analyze data systematically and meticulously using multiple lines of evidence and examine every aspect of the case in-depth (Cronin, 2014). In alignment with the research question, a case study researcher has a level of flexibility to conduct a detailed investigation (Hyett et al., 2014). Drawing on the suggestions of Hyett et al. 2014 and Cronin (2014), I examined the strategies that the farm managers of a cocoa farmer cooperative use for obtaining certification to produce cocoa beans. Facilitating the strategies for gaining certification is central to sustainable cocoa business operations.

Demonstrating rigor requires alignment between the research question and conceptual framework, research question and data, and between the data and conclusions (Knapp, 2016). The lack of details explaining the design and prove of procedural integrity to the reader affects the quality and credibility of the research findings (Lub, 2015). Procedural details include triangulation (Fusch & Ness, 2015). Data triangulation involving reliance on multiple sources of evidence and member checking enhances rigor to achieve construct validity (Cronin, 2014; Fusch & Ness, 2015). To achieve triangulation, I relied on additional evidence from the UTZ Certified (2015) code of conduct for group certification and the achieved records of the groups regular and training meetings.

Researchers use one of five research designs, including case study, ethnography, phenomenology, narrative, and grounded theory in qualitative research. The researcher's objective influences the choice of design (Hyett et al., 2014). A case study design is suitable when a researcher is investigating a business or practice (Yin, 2017). Ethnography involves the study of human culture in which the researcher scrutinizes the actions and interactions of

human groups to understand in what way they practice and preserve their culture (Marshall & Rossman, 2016). Through participant observation strategies, ethnographers collect data focusing on the interactions among the people to analyze and describe behavioral patterns. In a phenomenological study, the researcher examines the meanings of individuals or groups lived experiences (Marshall & Rossman, 2016; Schwarz & Lindqvist, 2018 ). The researcher engages the study participants who had experienced the phenomenon under consideration in long sessions, in-depth interviews focusing on life as lived and analyzes their lived experiences (Marshall & Rossman, 2016). Grounded theory is an inquiry purposed on developing an explanation of social phenomena by working from data analysis into developing theories (Marshall & Rossman, 2016). The descriptions of the three approaches, ethnography, phenomenology, and grounded theory do not suit the intended purpose of this study.

The focus of this study was explicit; the strategies that the managers of a farmer cooperative use for obtaining certification to produce cocoa beans. The cooperative is the unit of analysis and suits the description of a bounded case in Yin (2017). The flexibility of case studies offers the advantage to introduce multiple sources of data and various explanatory approaches to examine the case in-depth (Guercini, 2014; Hyett et al., 2014; Yin, 2017). A case study design allows the integration of new revelations during data collection professionally without compromising the integrity and rigor of the research (Yin, 2017). I interviewed the farm managers in depth to extract the strategies they used to gain and maintain certification for producing high-quality cocoa beans for readers' information.

For data saturation in this case study, I engaged the participants in prolonged interviews by following the interview protocol to exhaust the questions, probed their responses in-depth, and returned the summarized data to the individuals for member-checking. I reviewed the certification standard's code of conduct for supporting information and analyzed the archival records of the cooperative's meetings for additional evidence. Saturation in qualitative data collection occurs when the respondents repeat the same responses to the research questions (Saunders et al., 2018). The procedure would ensure rigor (Cronin, 2014; Houghton, Murphy, Shaw, & Cassey, 2015; Yin, 2017), strengthen the integrity of the data, and create a process trail that affirms the conduct of the study (Brooks & Normore, 2015).

### **Population and Sampling**

The population of this study was the managers of a certified local cocoa growers' cooperative, CA, in the eastern region of Ghana. A purposeful sample involving seven farm managers and signed-up members of the cooperative constituted the target participants. In qualitative studies, a small sample size of three to 16 participants is adequate to conduct the study (Robinson, 2014). The key concept underpinning the sample size of a study is saturation (Malterud, Siersma, & Guassora, 2016). A researcher needs to appreciate the information requirements to select the sample size appropriate to answer the research question satisfactorily (Krippendorff, 2018). A purposeful sample is a sample of settings, persons or events selected intentionally with the objective of securing information not obtainable from other choices (Kavoura & Bitsani, 2014; Palinkas et al., 2015). The logic

behind the selection of purposeful sampling is to ensure the study yields the finest results to address the knowledge gap that accentuates the lack of strategies to gain cocoa certification (Miles, Huberman, & Saldaña, 2014). Hyett et al. (2014) selected three high-impact qualitative journals purposefully to review and establish whether the authors of 34 empirical case studies provided adequate methodological justification. Using purposive sampling, a researcher can gain a thorough understanding of respondents' information not available from random sampling (Iversen, Midtgaard, Ekelin, & Hegaard, 2017). Using purposive sampling, researchers can select cases with information content that offer rich understanding into the research question (Miles et al., 2014).

Qualitative research relies on a small number of participants to depth and data saturation through prolonged engagements (Marshall & Rossman, 2016; Robinson, 2014). The focus of the sample design is to confirm consensus (Sankar et al., 2017). A purposive sample size of seven is permissible (Jeong et al., 2016). In one qualitative case study, Jeong et al. selected a purposeful sample of 15 participants to examine the psychologic discomfort and coping processes of health care workers that suffered needlestick injuries. The researchers' focus was health care workers that suffered injuries while on the job. In another study to explain the issues involved in the behavioral changes of consumers with a type of cancer, Logie-Maclver, Piacentini, and Eadie (2012) selected 40 participants who had received treatment in the case. They explored changes in the behavior of consumers who tested positive for minor bowel disease. The case was to understand behavioral changes in consumers with a specific cancer experience; the researchers drew the sample from

participants undergoing that cancer treatment. The participant selection criterion for the Logie-Maclver et al. study is comparable to this study. The sample consists of the managers of a cocoa growers' cooperative that had received treatment (certification training) and gained knowledge and expertise to produce certified cocoa beans.

Qualitative researchers use purposeful sampling to select participants because of their wealth of experience and understanding among the individuals (Koch, Niesz, & McCarthy, 2014). A researcher decides the number of participants appropriate for the study (Plano Clark et al., 2013). Taylor, Coates, Brewster, Mountain, Wessels, and Hawley (2014) purposively selected 84 nursing and other frontline staff and 21 managers from four community health services in England to examine the use of telehealth in the four communities. Purposeful sampling was suitable for selecting the managers of the cocoa farmers' cooperative to partake in the semistructured interviews. Jeanes (2016) used a purposive sample of 16 experienced authors of highly-rated journals to examine their ethics positions of research practices. The object of this case study is to generate understanding (Johnson, 2014) of the strategies used to obtain certification to produce cocoa beans. To address this purpose, the reliable sources of information were a certified cocoa grower cooperative with a solid performance record.

For data saturation in this case study, I interviewed the farm managers to redundancy. The procedure necessitated follow-up probing questions, archival analysis, and member-checking to confirm the transcribed interviews or offer new information until no new themes emerge (Marshall & Rossman, 2016; Sankar et al., 2017). The farm managers allowed

another opportunity in a one-hour session to confirm their responses to the transcribed interview. Saturation is the process of continuing the participants' interviews to the state in which the same information repeated in multiple times with no new themes emerging (Cleary et al., 2014; Sankar et al., 2017). Member-checking ensures content enrichment and credibility of the research findings (Fusch & Ness, 2015). Using a small number of participants and triangulation of data from the three sources helped reach saturation (Marshall & Rossman, 2016).

The overarching criteria for selecting participants comprised of factors that suggest the presence of quality management principles (Deming, 1981) in the decisions on obtaining certification to produce cocoa beans. Alignment of the conceptual framework and primary research question is essential in qualitative studies (Knapp, 2016; Marshall & Rossman, 2016). The research questions focused on certification treatment, as in the case study of eco-label certification of seafood products by Vázquez-Rowe, Villanueva-Rey, Moreira, and Feijoo (2016), which addressed the certification process and quality management principles. The study participants were members of one cooperative, train, and practicing to producing certified cocoa beans for five years sequentially. Consistently, they receive the same technical instructions on certification to produce cocoa beans at the same time from an accredited instructor. The cooperative enforces sustainable business principles by ensuring the managers use the farming resources efficiently and consciously engage in environmental and social protection practices. The ages of participants satisfy the national labor law requirements, ranging from 21 to the retiring age of 60, within the active working class.

Evidence to confirm the afore-stated factors was present in the cooperative's archival records.

Deming's (1981) quality management theory constitutes the conceptual framework. The theme in Deming's theory is that quality management in a production process underlines the business's competitiveness and sustainability. The cooperative's ability to demonstrate consistency in output quality is fundamental to high productivity and profitability (Deming, 1981; Heavey et al., 2014). Improvement in the production process may help maintain the consistency of cocoa beans' output and reduce wastefulness of material inputs, for example, over-use of pesticides and fertilizers, person-hours, and labor cost. Deming (1981) observed that successful waste reduction transfers person-hours and machine-hours from the production of undesirables to additional outputs. To obtain the sample, I invited the cocoa cooperative through its president to participate in the study. Attached to the invitation letter was a statement of cooperation, entreating the president to confirm the cooperative's participation by returning the signed statement.

### **Ethical Research**

In qualitative research, systematic application of ethical principles throughout the research process underpins trustworthiness of the results (Marshall & Rossman, 2016; Patton, 2015). Maintaining ethical principles affirm the researcher's sensitivity to the views of participants and a focus on their experiences (Yin, 2017). Ethics involve showing kindness, justice, non-maleficence, respect for the rights of participants, and their freedom through the entire research process observable to readers (Haahr, Norlyk, & Hall, 2014;



Marshall & Rossman, 2016). The researcher takes steps to ensure sound ethical preparation before initiating the participants' interview and retains the same values throughout the study (Haahr et al., 2014; Goodell et al., 2016). Comprehensive preparations cover designing the ethics procedures for protecting human participants and communicating this information to secure the Institutional Review Board (IRB) approval (Johnson, 2014).

The informed consent process involved an invitation with a consent form to seven farm managers of the certified cocoa cooperative, requesting their involvement in a study to examine the strategies for obtaining certification to produce cocoa beans. I used the initial contacts to build warm, trustworthy relationships with the participants by sharing the objectives and answered questions they asked about the process. They indicated that the members had reduced to nine from 15, but seven were active and available to participate in the study. To satisfy the requirement of protection of human subjects, Childs, McLeod, Lomas, and Cook (2014) advised qualitative researchers to seek the individuals' consent. The consent statement included a declaration of assurance that participation is voluntary, the purpose of interview data, and meeting duration would last an hour (Johnson, 2014; Marshall & Rossman, 2016; Yin, 2017). The individual managers that accepted to participate in the study signed the consent form that spelled out their rights, extent of obligation, and my role as the researcher. I collected the signed consent documents a day after delivery to the participants who raised no objections or set conditions. The researcher protects the identities of participants and absolves them from any risk of harm related to participation (Marshall & Rossman, 2016; Rossetto, 2014).

On the consent form, I included a statement that participants reserve the right to withdraw from the study at any point with no obligation to state the reasons (Walden University, 2014). One argument in qualitative research interview is that large amounts of financial incentive can induce predictable responses and render the process unethical (Marshall & Rossman, 2016). To avoid running into an unethical conundrum, I restricted payouts to GHC20.00 (\$5.00) per interview. The money served as a token gift for time spent (Williams & Walter, 2015) and the recipients acknowledged by signing a form as proof of payment. Because qualitative research involves in-depth probing questions and exhaustive, courteously a researcher offers a token thank you gift to participants (Williams & Walter, 2015).

To secure IRB approval, I invited the potential participants selected from a record of certified cocoa producers in the Suhum district by letters to confirm participation. I traveled to the community and explained the doctoral process to the participants after securing the approval. To complete the process to commence the fieldwork, I spoke to participants in person and set suitable interview dates and sites. The information package included contact details to enable the participants to address their concerns before the meeting dates (Johnson, 2014). I assured the farm managers of absolute confidentiality of their identities.

Further assurance of anonymity was the use of pseudonyms (Jeanes, 2016) to identify the certified cocoa cooperative. The managers had an opportunity to review the interview transcripts and modify their statements appropriately. During member-checking, the farm managers confirmed the summarized interview data without significant modifications. Ethics

address the question of relationships with, and protection of the privacy and rights of the study's participants (Marshall & Rossman, 2016; Staneva, Bogossian, & Wittkowski, 2015).

Before interviewing, I obtained the approval of the Walden University IRB approval number 01-19-18-0414666, assuring through the preparations that the research process would respect the protection of human dignity. The final doctoral manuscript includes the Walden IRB approval number 01-19-18-0414666. With the permission of participants, I recorded the interviews and transcribed for the study. To protect the rights of participants, I have stored the interview data in a secure safe for five years and will dispose of data by erasing the content after the period has elapsed. I interviewed the cooperative under a pseudonym and coded the managers to ensure their identities remained confidential and anonymous. Ensuring the anonymity of participants in qualitative studies is fundamental to the protection of their human rights and privacy (Jeanes, 2016). Carr (2015) suggested that coding would conceal participants' identities and protect the confidentiality of sensitive information in qualitative research. Mindful of the need to balance the desire to secure a depth of knowledge and the participants' human rights (Haahr et al., 2014), I offered the managers the opportunity to review the findings. Using the member-checking strategy added to ensuring data saturation, and confidentiality of sensitive private information (Yin, 2017). The interview record excludes private discussions with the participants (Johnson, 2014).

### **Data Collection Instruments**

I was the principal data collection instrument. According to Collins & Cooper (2014), as the primary instrument for data collection, a researcher ethically develops

concepts from data gathered during field interviews. This case study explores the strategies that the managers of the cocoa growers' cooperative use for obtaining certification to produce cocoa beans. Underlining the strategies are best practices concerning quality management (Deming, 1981). Semistructured questions was the appropriate technique to collect relevant data for the study (Yin, 2017). Semistructured interviewing allows a logical and iterative gathering of data (McIntosh & Morse, 2015). By using this data technique, the researcher can arrange the research questions in a protocol that evokes quality data and enhances efficient data analysis (McIntosh & Morse, 2015). The central focus of this study was examining the strategies cocoa growers use for obtaining certification to produce cocoa beans. Use of open-ended qualitative questions facilitates the collection of critical information about events occurring in their natural settings to allow the researcher to present real-life experiences (Cahyadi & Prananto, 2015; Weller, 2017). Use of semistructured interviews provides the researcher with the opportunity to secure critical information about specific questions without interfering with the organization's business practices (Cohanier, 2014). A semistructured interview approach enables a researcher to extract the reasons underlining the participants' responses to the research questions (Cohanier, 2014).

Using the principal research question, I developed 11 open-ended, semistructured interview questions for this study (see Appendix B). Field interviews to collect data began after the IRB had approved the research proposal. Preplanning for data collection in qualitative research is essential to realize the study's objectives and secure the cooperation of participants (Marshall & Rossman, 2016; Yin, 2017). I prepared a checklist to set the

appropriate systems implemented before setting off to the interview site. The farm managers indicated the preference to communicate in the local language. I adopted the local *twi* language (mother tongue) as the medium of communication during the interview process and transcribed. Morgenstern, Hegele, and Nisker (2014) recommended the use of mother tongue and possibly an interpreter to collect qualitative data as the strategy to encourage retention of participants. To ensure the validity of the findings, I returned the transcribed interview to the members to confirm the content represents their actual responses to the questions. Interview transcript review, member checking, and archival analysis techniques would enhance reliability and validity of information from the interviews (Cleary et al., 2014; Fusch & Ness, 2015; Yin, 2017). Analysis of the interview data supported by evidence from the cooperative's archived records related to the certification process and member checking would triangulate the findings (Brooks & Normore, 2015). I secured the group's archived records upon a request and made copies for the data triangulation during analysis of the interview data. See Appendices A and B for the interview protocol and interview questions respectively.

### **Data Collection Technique**

Researchers obtain data for qualitative studies either through direct interviews, company documents, participants' observations, or archived records (Yin, 2017). Alignment between the qualitative data and the overarching research question ensures rigor of the findings of qualitative research (Cridland, Caputi, Jones, & Magee, 2016). The primary data collection technique for this study was semistructured interviews. Semistructured interview

technique is a technique for collecting data in qualitative research (Brooks & Normore, 2015; Marshall & Rossman, 2016). Other data collection methods include archival analysis and observation to assist a researcher to explore the research questions to saturation (Brooks & Normore, 2015). Semistructured interview involves administering a set of questions developed along specific themes and solicit in-depth responses in a consistent and orderly routine (Cahyadi & Prananto, 2015). Semistructured interview procedures enable a researcher to address the research question(s) and gain insights into the subject of inquiry (Childs et al., 2014). Using semistructured questions to solicit responses, the farm managers described the strategies to obtain certification to produce cocoa beans as accurately as possible. Relationships based on trust encouraged the managers to share personal experiences regarding the certification process. Good manners, interest in the individual's farm work, and attentive listening to their experiences facilitated trustworthy relationships. Albuquerque, Ramos, de-Lucena, and Alencar (2014) suggested that geniality will encourage interview participants to offer information willingly without holding back.

With the managers' consent and upon the assurance of confidentiality of personal identities, I recorded the interviews with a smartphone (iPhone) at locations suggested by the participants. Individual interviews lasted not more than one hour to avoid subjecting the members to undue stress and fatigue. To prevent sudden disruptions in scheduled interviews, I traveled to the meeting sites with standby backup recorder and power band to provide a consistent power supply. At the request of the participants, I conducted the interviews at a quiet environment in the community for effective audio recording. Cahyadi and Prananto

(2015) suggested the use of a digital audio recorder to capture participants' interviews lasting about an hour and later transcribe for the analysis. A backup recorder was essential to avoid abrupt termination of interviews (Marshall & Rossman, 2016). Although I provided a backup recorder on standby, the recorder was not useful during the exercise. Using Microsoft word, I transcribed the interview data into a word document. Transcribed interview data enhances the analysis and enables the researcher to confirm the report through member checking (Harvey, 2015).

I conducted the interviews in the local language to encourage free expression and allow the farm managers flexibility to convey their message in clarity. Marshall and Rossman (2016) and Morgenstern et al. (2014) suggested the use of local language in qualitative research interviews to allow free expression and clarity in the participants' message. Focus on the farm managers, attentive listening, discipline, and good manners guided the conduct of the interview. These attributes are essential to prevent an adverse influence on the data quality (Albuquerque et al., 2014). By following an interview protocol (see Appendix A) the interviews traveled orderly, without biases, and undue influences that could affect data quality (Cohanier, 2014). Researcher adherence to research protocols during qualitative data collection and good listening skills enhance the neutrality and credibility of the findings (Yin, 2017).

The characteristics of the farm managers, i.e., the gender, age, and differences in educational background can affect the data. According to Brooks and Normore (2015), group characteristics resulting from differences in age, gender, education, and social experiences of

participants can influence the data collected. Using data triangulation, I minimized the adverse effects arising from the differences in the participants' background. In addition to semistructured interviews, I examined the archived records of the cooperative regarding the certification processes to elicit additional information. Minutes of the cooperative's meetings, records of procedures followed during training, and training manuals supported the triangulation process. The websites of UTZ Certified provided matching information to complete the triangulation process. The collection of data from multiple sources enforces data triangulation (Marshall & Rossman, 2016). Data triangulation is critical to achieving rigor in qualitative case study research (Fusch & Ness, 2015; Yin, 2017).

To achieve redundancy in data collection, I returned to the interview site with synthesized reports of the transcribed interview data and requested the individuals to confirm the content reflects their responses to the questions asked. This process involved a discussion of the interview findings and further questioning of the participants to explain or expand any record not captured properly. I scheduled a maximum time of one hour to complete a member-checking session. In practice, the individual sessions lasted less than one hour. The discussion yielded no new evidence as the participant repeated their earlier responses. At the state of data saturation, there would be a depth of information sufficient to replicate the study (Fusch & Ness, 2015). Saturation is the state of a data collection process in which the ideas repeat in multiple times with no new themes emerging (Marshall & Rossman, 2016; Sankar et al., 2017). The member checking and analysis of the cooperative's archived documents techniques enhance the reliability and validity of information from the interviews



(Cleary et al., 2014; Fusch, 2014). Reliance on multiple sources of evidence for this study led to a better appreciation of the strategies the managers use for obtaining certification to produce cocoa beans. I relied on the UTZ Certified code of conduct for group certification and the group's archived documents as additional sources of information to complete the data triangulation process. Triangulation and member checking ensure data saturation, reliability, and trustworthiness of case study research findings (Yin, 2017).

### **Data Organization Technique**

Coding ensures an orderly organization of the transcribed interview data of qualitative research (Stuckey, 2015). I arranged the managers' responses in order of meeting, assigned identification codes, and saved as participants' responses using electronic folders for efficient data management. To preserve data privacy, I labeled each of the seven responses transcribed in a word document as R1, R2, R3 . . . R7 chronologically to identify the individual managers interviewed. Labeling of members' responses in chronological order was the strategy for upholding participant confidentiality (Damianakis & Woodford, 2012). Using Microsoft Word immediately after a meeting, I wrote down a detailed description of what happened reflecting on my perspectives of the interview. The reflective journal notes provided additional insights during the analysis of the data. Electronic and non-electronic methods of recording and storing a large amount of data generated from qualitative interviews will preserve the data quality (Cliggett, 2013). The interview responses regarding the strategies for obtaining certification to produce cocoa beans in electronic folders enhanced the management and expert analysis of the interview dataset. Organized textual

data in electronic folders aid easy access and analysis (Hardy et al., 2016). This technique allowed the efficient application of qualitative data management software (Edwards-Jones, 2014; Smith & McGannon, 2018) to analyze the textual interview data. To protect informants' privacy, I did preserve the data including the audio records in a secure safe for five years. When the five-years elapse, I will destroy the records permanently by erasing their content. I used NVivo 11 Pro to help organize the data to aid effective analysis. Qualitative researchers can use the NVivo software to organize the interview data for analysis (Edwards-Jones, 2014).

### **Data Analysis**

The collected data was analyzed using Bengtsson (2016) four staged manifest content analysis framework. Content analysis is suitable for case study research (Bengtsson, 2016; Krippendorff, 2018). The manifest analysis is one of several approaches to content analysis (Krippendorff, 2018), of which the researcher derives the findings based on the actual responses of the interviewees. To understand the strategies for obtaining certification from the perspective of the individual farm managers, I organized the interview data individually and adopted decontextualization, recontextualization, categorization, and interpretation techniques to conclude (Bengtsson, 2016). I transcribed the audio data and conducted member-checking to validate the content, coded the transcripts, identified common themes, and compiled the results. The member-checking yielded no significant information to change the substance of their responses. Prolong engagement with probing questions and member checking improve rigor in qualitative case study research (Harvey, 2015). Data coding and

identification of common themes enhance holistic analysis to derive results (Lee, 2014; Wutich & Bernard, 2016; Yin, 2017). I compared the practices the farm managers adapted to meet the performance criteria of the certification standard outlined in the UTZ core code of conduct for a group and multigroup certification. The comparison with the interview data was a methodological triangulation (Taylor, Bogdan, & DeVault, 2016), enhancing the credibility of the findings.

### **Decontextualization of Transcribed Interviews**

The transcribed interviews were assigned identification numbers (R.1, R.2, R.3, R.4, R.5, R.6, & R.7) and uploaded into a qualitative analytical software, NVivo 11 Pro. Each transcript was coded inductively and deductively into child nodes under the parent node labeled “Strategies for obtaining certification to produce cocoa beans.” Coding reduced the transcripts to quotes, sentences, and paragraphs relevant to answering the overarching research question; What strategies do cocoa farmers use for obtaining certification to produce cocoa beans? The codes identified the specific strategies the farm managers indicated as the essential steps to gaining and retaining certification. The codes were labeled to describe specific strategies indicated in the quotes. Repeated review of the codes ensured no omission of significant quotes relevant to the study’s findings. In content analysis, the researcher must repeat the process at each stage to maintain the quality and rigor of the findings (Bengtsson, 2016).

### **Recontextualization of Quotes into Themes**

To gain certification for cocoa beans production, a farm manager ought to satisfy a specific code of conduct (UTZ Certified, 2015) classified into four blocks namely farming practices, environment, management, and working conditions in the literature. The blocks constituted the child nodes to which the strategies were assigned. Twenty-eight grandchild nodes identified as the strategies the farmers use to obtain certification were coded and grouped under farming practices, environment, management, or working conditions. The specific strategies as identified in the data and grouped under the parent node altogether address the research question; strategies the farm managers use to obtain certification to produce cocoa beans.

### **Categorization**

I sorted the codes into sub-themes depending on their similar contribution to satisfying the requirements of the broader themes. The broader themes of this case study represent the code of conduct that establishes the criteria to obtain certification. I classified the sub-themes based on their similar contribution to attaining one of the four blocks that constitute the requirements for certification as broader themes. During this process of classification, I categorized each quote under one of the four blocks; environment, management, working conditions, and farming practices and grouped quotes that satisfied the particular operational description of one of the four blocks. For example, environment captured the quotes that describe specific strategies the farm managers use to satisfy the environmental codes required for obtaining certification to produce cocoa beans. Farming

practices categorized quotes on good agronomic practices (GAPs) and other practices recommended on farm sites to produce distinctive quality cocoa beans. The working conditions category gathered quotes describing the farm managers' adherence to the prescribed labor practices, including no child labor, and standard employer and employee working relations. I arranged the quotes representing management strategies under the code of conduct titled 'management.' The practices grouped under the four blocks (farming, environment, management, and working conditions under the parent node) constituted the strategies the farm managers used to obtain certification to produce cocoa beans. Concluding the categorization process, I reviewed the quotes and removed those text that did not relate directly to the description of the sub-themes in the certification literature. In the process, I reassigned some of the texts by re-coding them to other sub-themes that suited the particular code of conduct.

## **Reliability and Validity**

### **Reliability**

Qualitative research is reliable when other researchers can follow the same procedure to replicate the study regardless of the conditions of implementation (Krippendorff, 2018). This study will be reliable when other researchers can uphold the results independently with the available evidence (Noble & Smith, 2015), reminiscent of a systematic raw data collection process (Webster, Bowron, Matthew-Maich, & Patterson, 2016). Ensuring the reliability, rigor, and trustworthiness of the research data will be essential (Lewis, 2015). I addressed reliability and trustworthiness of the findings by submitting the synthesized

transcript to respondents' validation process. In qualitative research, reliability establishes the dependability of the findings (Noble & Smith, 2015). To validate the findings, I invited the farm managers to confirm the interpretations assigned to their responses represented their expressed views. Member-checking with follow up interviews to ensure the transcript reflects the express views of the participants and perceptions enhances validity (Andrasik et al., 2014; Jennings, Edwards, Jennings, & Delbridge, 2015). Member checking the synthesized reports is an essential technique for ensuring data saturation (Fusch, 2014; Fusch & Ness, 2015). Lincoln and Guba (1985) proposed four criteria, dependability, credibility, conformability, and transferability to uphold the quality, trustworthiness, and rigor in qualitative research.

### **Dependability**

Dependability refers to the consistency of the research data (Lincoln & Guba, 1985). To ensure the findings satisfy the dependability criterion, I used multiple sources of data collection. Data triangulation involving the analysis of farm managers' responses to the interview questions, review of documentary evidence from the cooperative's certification training sessions, and certification service providers provided multiple evidence. A review of the group's archived documents confirmed the work done as certification training, a record of attendance to meetings, and peer auditing meetings on members' farms. The documentary evidence confirms the practices the managers had narrated during the interview and trustworthiness of the findings. On completing member-checking, I related the findings to the standard's code of conduct for multigroup certification and organized the codes under

farming practices, management, environment, and working conditions. By this process, I arranged the codes to correspond to their proper themes.

Selection of seven participants for this case study aligned with qualitative research (Ando, Cousins, & Young, 2014; Cleary et al., 2014) and enhanced the collection of sufficient data to achieve saturation. Coding and recoding of the interview data (Krippendorff, 2018) during data analysis strengthened the authenticity of the findings. Subjecting this study's findings from multiple sources of data to participants' validation enhanced dependability and rigor. Strategies to ensure rigor in qualitative case study research include data triangulation, member checking, and prolonged engagement of participants (Houghton et al., 2015).

### **Credibility**

Credibility refers to demonstrating the significance and trustworthiness of the findings of a study (Lincoln & Guba, 1985). Ensuring credibility enforces the integrity of case study research findings (Plamondon, Bottorff, & Cole, 2015). To ensure the credibility of this study involved engaging the farm managers in extended sessions of interviews and member checking until no new themes emerged. The lack of new data or themes emerging is indicative of the state of data saturation (Fusch & Ness, 2015; Houghton et al., 2015). Spending longer time at the research site endears the researcher to the locals and establishes a bond devoid of threats, suspicion, and intimidation (Lincoln & Guba, 1985). The bonding relationship encourages participants to volunteer information freely (Lundy & Drouin,

2016). Member validation of the transcribed interview affirmed their approval and rigor of the study's findings.

Additional sources to enhance credibility were supplementary data from the cooperative's archival records on cocoa certification training and documentary evidence from the service providers. Data triangulation enriches trustworthiness and rigor of case study evidence (Yin, 2017). The triangulation process guarantees the exhaustive nature of the data obtained about the phenomenon (Tran, Porcher, Tran, & Ravaud, 2016). Multiple sources of data ensure completeness and raise readers' confidence in the credibility of the findings (Kavoura & Bitsani, 2014). Each of the three methods of collecting data offered a distinct advantage. The farm managers provided direct evidence while the archived records revealed additional data about some practical steps toward certification. Documents about the cocoa beans certification process from service providers disclosed some essential facts about the classification of the code of conduct to assist in grouping the strategies from the transcribed interviews. The multiple sources of evidence ensured completeness and data saturation.

### **Transferability**

Transferability refers to the extent to which another researcher can apply the findings of a research study to other settings or groups (Maree & Potgieter, 2018). Transferability in qualitative research discusses whether readers can transfer the results to another context (Garside, 2014; Houghton et al., 2015). The purpose of this study is to examine the strategies farm managers of a cocoa cooperative (CA) use to obtain certification to produce cocoa



beans. Readers may decide the suitability of applying the findings to other settings. Marshall and Rossman (2016) suggested a qualitative researcher does not aim to transfer the results and conclusions. Transferability is the prerogative of the reader who may desire to apply the findings to other situations than the original case investigated (Lincoln & Guba, 1985).

A case study might represent an example of a larger population (Yin, 2017). The case is the one cocoa producers' cooperative in the Suhum District of Ghana, a unit of the larger population of cocoa farmers in Ghana. Regarding this study, the possibility of transferring the findings to the larger group may be significant. Based on the argument raised by Stake, under the same climatic and cultural conditions, it should be possible to apply the findings to other cocoa farmers in Ghana. However, as the dominant view in the qualitative literature suggests, the researcher provides thorough descriptions of the phenomenon to the reader (Lincoln & Guba, 1985; Marshall & Rossman, 2016). Readers of this case study research will make informed decisions about the transferability of the findings and conclusions to satisfy their specific interest. The researcher provides adequate contextual information about the fieldwork and allows the reader to apply to other situations (Lincoln & Guba, 1985).

### **Confirmability**

A systematic presentation outlining the steps leading to the decisions and conclusions of this case study established a basis for confirming the methodological rigor (Houghton et al., 2015). NVivo showed evidence of the logical steps to constructing the strategies the farm managers use for obtaining certification to produce cocoa beans. The content analysis framework provided a trail of established evidence detailing the analytical processes to make

the findings dependable (Bengtsson, 2016; Elo et al., 2014). Transparency of the analytical procedures of qualitative research enhances the quality and confirmability of the findings and helps to avoid conclusions based on personal biases (Trainor & Graue, 2014). The process of participant validation, triangulation, and data saturation confirmed the rigor and findings of the study (Morse, 2015). Comprehensive documentation of the data collection and analysis process enhanced the rigor of qualitative studies (Symon, Cassell, & Johnson, 2018). The procedures as mentioned earlier constituted a sufficient test confirming the validity of the conclusions regarding the strategies to obtain cocoa certification.

Triangulation of evidence from the farm managers' interviews, archived training records of the certified cocoa cooperative, and certification documents from the service providers contributed significant sources to reach data saturation. Prolonged engagement with the managers and member checking to validate the responses to the questions asked ensured data saturation (Cleary et al., 2014; Houghton et al., 2015). Data saturation is the state of redundancy when no new information, patterns, or themes emerge from further engagement (Marshall & Rossman, 2016; Nelson, 2016) of the farm managers. The iterative procedure for collecting a case study evidence ensured depth, data saturation, and rigor of the results (Symon, Cassell, & Johnson, 2018).

### **Transition and Summary**

The objective of Section 2 was to discuss my role as the researcher, present the justification of the research method and design, and followed with procedures for selecting population and sampling. I addressed the ethical issues of qualitative research participants

and discussed the techniques for collecting data, data analysis, and reliability and validity of the research. Section 3 comprise of the findings of this case study research and how they can influence professional practice in the certified cocoa farming business. The content includes the implications for social change and recommendations for a future research study.

### Section 3: Application for Professional Practice and Implication for Social Change

#### **Introduction**

My objective in this qualitative case study was to explore the strategies that some cocoa farm managers use for obtaining certification to produce cocoa beans. Analysis of the interview data produced the results of this case study research. UTZ Certified core code of conduct document for group and multi-group certification version 1.1 provided additional resources (UTZ Certified, 2015). The farm managers fulfilled four stringent conditions that UTZ Certified categorized as farming practices, management, environment, and working conditions to obtain certification. Improved fermentation and sun-drying practices produced distinctive flavor quality cocoa beans and attracted market demand for the certified produce. The process improvement strategies are consistent with Deming's (1981) recommendation to business managers to improve the quality of output. Lessons from training sessions assisted the farm managers to specialize in process improvement strategies from farm establishment to the post-harvest management of the cocoa beans. Managers' expertise in technical information and farm assets can support the production of quality, reliable, and hygienic produce to achieve successful certification (Kariuki, 2014). While working toward certification, the lack of understanding of the standard's requirements emerged as the key challenge that some of the farm managers encountered. The farm managers recorded increased yields, adopted ethical labor policy, learned to avoid health hazards associated with mishandling of agrochemicals, supported community development, and increased their knowledge in cocoa farm business management.

## **Presentation of Findings**

The overarching research question of the study was: What strategies do cocoa farmers use for obtaining certification to produce cocoa beans? Three major themes emerged from the study: farming practices, management, and environment and social sustainability. By understanding and implementing GAPs, the farm managers fulfilled the code of conduct for farming practices. The group adopts management strategies to ensure the individual farm managers stay focus in complying with the requirements in the collective interest of the organization attaining and sustaining certification. The environment and social sustainability theme revealed the farm managers' strategies ensured that production practices exerted minimal influence on household and farm environment. Discipline and commitment to the course, support for community development, and environmental preservation underline the managers' motivation to pursue the strategies. Adherence to on-farm and household environmental sustainability practices satisfies the environment requirements of certification core code of conduct. Regulatory rules of engagement regarding ethical labor practices create the required working conditions on farm sites in conformity to the standard working relations. To gain certification the strategies that the farm managers adopted complement one another to address the requirements of the major themes. I provide detailed descriptions of the ways the findings confirm and extend knowledge in quality certification in the three subsections that follow.

### Major Theme 1: Farming Practices

The farm managers specialized in the adoption of GAPs in farm establishments and production of quality cocoa beans. Table 2 presents the specific farming practices that the farm managers implemented along with the frequency of adoption.

Table 2

#### *Specific Farming Practices Implemented*

Farming practices (GAPs)	R.1	R.2	R.3	R.4	R.5	R.6	R.7	Frequency
Quality improvement process	*	*	*	*	*	*	*	7
Managing cocoa tree height and weeds	*	*	*	*		*	*	6
Adherence to agronomic calendar work plan	*				*		*	3
Lining and pegging	*	*	*		*	*		5
Permanent shade cover for farm	*		*		*	*	*	5
Managing pesticides application and disposal	*				*			2
Temporal shade establishment	*	*	*	*			*	5

GAPs by Ghanaian cocoa producers, notably, control of diseases, fertilizer application, and pruning influenced farm productivity improvement (Kongor et al., 2018). The strategies the

managers use to fulfill the farming practices code of conduct included quality improvement process, managing cocoa tree height and weeds, adherence to agronomic calendar work plan, and lining and pegging. Others are the establishment of temporal shade, permanent shade cover, pesticide application, and managing disposal of left-over pesticides and emptied containers. The farm managers admitted adopting quality improvement practices that produced cocoa beans of exceptional quality flavor that the cocoa processing industry desires. Deming (1981) and Heavey et al. (2014) noted that continuous improvement in quality results in high productivity and profitability for the producer. Answering the questions, R.1 stated,

In the past, before we gained certification, we fermented cocoa beans for only three-four days and started drying. However, we learned from the extension officers that fermentation of cocoa beans should last seven days in total. On the third day, you turn the upside of the heap down to allow the cocoa beans on-topmost area to turn and get properly fermented. Repeat the process on the sixth day, and on the seventh day transfer the fermented cocoa beans to the drying mat to commence the sun-drying process. Seven days of fermentation has enabled us to produce the desirable flavor quality for our buyers.

Similarly, R.3 and R.5 also commented,

Well, I also gained new knowledge on managing the drying process of fermented cocoa beans. On the drying mat, we keep cleaning the cocoa beans of unwanted foreign materials and turn them upside down regularly during the first three days.

When the beans clean completely of the unwanted matter, I collect them into jute sacks and gently step on the bags repeatedly. The continuous stepping adds on some minimum pressure to help remove the rest of the unwanted matter around the cocoa beans to enhance the beans' physical appearance (R.3).

R.5 stated,

The well-informed farmer would produce clean cocoa beans of the highest quality both in physical appearance and flavor. What makes the difference is the knowledge obtained from the GAPs training the cocoa farmer adopted. For instance, our group members would detach the placenta from the cocoa beans after breaking the pod. They would as well remove broken pieces of the cocoa pod or foreign materials that may mix up with the beans before commencing the fermentation. The practice of cleaning the beans produces a unique flavor quality during fermentation. The uninformed farmer is incapable of producing the same quality.

The processes of fermentation and handling of the cocoa beans during sun-drying on mats by the farm managers connote a sequence of quality management practices analogous to the recommendations in Deming's (1981) theory. The final product is an output uniquely distinct from the cocoa beans produced by the noncertified peers. Transparent, well-documented, and verifiable, the practices yield an output with a distinctive flavor quality. As noted in the literature review, supply chain partners from the upstream producers to downstream consumers work together to promote the transparent process that guarantees traceability and quality (Yu et al., 2014). Stricter food safety and traceability standards by



the major importing countries underscore the rising producer interests in certification (Kleemann, Abdulai, & Buss, 2014). The traceability of the food chain assures the consumer of the quality standard of the production process.

The verifiability of the quality management practices allows processors of the certified cocoa beans to tell a story about the source and uniqueness of the production practices to create a niche market. In the retail food chain, providing transparency of the production processes allows manufacturers and retailers to craft a story in the hope of attracting consumers (Pétursson, 2018). Food products branded with logo certifying the conservation of nature influenced the food choices of consumers (Temperini, Limbu, & Jayachandran, 2017). The researchers found that Italian consumers believe in the quality of food products branded with the conservation logo and would willingly pay a premium price to conserve nature.

The compelling reason behind the storytelling is the longing to create competitive advantage and promote sustainability of the business of upstream suppliers and the supply chain. Quality management practices in this sense is a collaboration established among the farm managers, processors, and downstream retailers. After going through the rigorous process of quality improvement, the quality product yields a higher return to the farm business. Product quality standard allows the processor to avoid waste, enhances profitability (Deming, 1981), and assures the consumer of the safety levels to address their health concerns (Cavaliere et al., 2016). Successful waste reduction transfers person-hours from the production of undesirables to additional outputs and increases the profitability of the

business (Deming, 1981). The high-quality characteristics alone are not sufficient for the group to create market access for the certified cocoa beans. Managerial competence and leadership are fundamental to secure market access (Kontogeorgos, 2012). The training lessons assisted the farm managers to develop the competence required to engage the buyers of the cocoa beans in a transparent trading relationship.

R.3 and R.7 reaffirmed Deming's recommendation when they stated,

Before we met the extension officers, we were using machetes to break the cocoa pods . . . Again, that method makes the pod breaking go faster than before and avoid wasting some of the beans through accidental cutting with the machete. (R.3).

R.7 stated, "For instance, the use of wooden pod breakers instead of sharp machetes prevents waste resulting from unintended cutting through good beans and loss of income." The farm managers gained new knowledge from the certification lessons to help improve the businesses income earning potential. Certification of the horticulture value chain led to a decline in crop losses by Kenyan farmers (Kariuki & Loy, 2016).

The training helped the farm managers to acquire the essential skills for controlling and managing the height of the cocoa trees and weed. Chiputwa et al. (2015) observed that certification enhanced producers' access to agricultural extension service and built institutional capacity (Altenbuchner, Vogel, & Larcher, 2017). Pruning of undesirable branches and basal chupons were the chosen strategies to control the growth of mistletoe and height of cocoa trees. Six of the seven farm managers reported using the strategy to maintain optimal tree height and weed control.

R.1 stated,

The manager must ensure the farm is clean-weeded at all times. Removal of chupons and undesired branches remains a regular practice and critical to maintaining good farm health and high yield. Good pruning practices will ensure the cocoa trees do not over-grow in height as we did previously. After implementing the GAPs consistently over time, now when you visit the farm, you can observe a complete change in physical appearance.

R.2, R.3, and R.4 added,

They explained that the undesired branches consume a part of the energy of the cocoa tree. Removal of the chupons improves the tree health and high yield. We maintain a constant focus on keeping the height of the cocoa trees to reduce the loss of energy. (R.2).

Also, I used to clear the undergrowth of the farm once yearly. The officers taught us to adopt a thrice-yearly weeding plan to maintain sanitation of the cocoa farm. We learned to control the cocoa tree height to prevent the tree from excessive height gain. After adopting these strategies, our farms look sanitized and uniform in height (R.3).

I maintain a clean cocoa farm by controlling weeds, prune the undesirable branches (chupons) and parasitic plants every season. I apply fertilizer timely after the pruning and follow a regular application of pesticides according to the instructions of farm maintenance based on GAPs (R.4).

Temporal and permanent shade provide cover for both the young and mature cocoa to thrive sustainably. Shade trees promote sustainable cocoa farming (UTZ Certified, 2015). Promoting shade tree cultivation is a climate change adaptation strategy (Abdulai et al., 2018). Shade trees reduce sun penetration, farm temperature, and protect the soil against erosion from heavy rainfall (UTZ Certified, 2015; Abdulai et al., 2018). The practice stimulates soil moisture and biodiversity conservation, and protection of cocoa trees from moisture stress. The provision of optimal shade cover underlines UTZ sustainable cocoa farming systems. Demonstrating an understanding of the code of conduct, the farm managers cultivate plantain for temporal shade during farm establishment and high-value forest tree seedlings for a permanent shade over the farm.

R.1, R.3, R.5, R.6, and R.7 made statements concerning shade cover for the cocoa farm by stating that, “We planted nine tree seedlings on every one-acre cocoa farm.” (R1). R.3 and the others stated,

Also, we learned to maintain an optimal number of economic value trees to provide shade and control the spread of the shade over the cocoa farm. We learned to avoid doing shade less cocoa because, without the shade trees, the cocoa trees will suffer from water stress and wilt during the dry season (R.3).

The group learned about the type of tree species to plant for permanent shade alongside the temporal shade of plantain suckers and cassava under the young cocoa

farm. The farm managers implemented GAPs strictly to satisfy the standard's requirement and realized the coaching has been beneficial (R.5).

We protect the optimal number of shade trees on the farms particularly trees that provide unlimited benefits to the farm. Anytime the certification officers visit our farms, they attest to the good achievement of the members (R.7).

Lining and pegging the plot at the onset of establishing the cocoa farm enabled the farm managers to plant the recommended number of seedlings per hectare. Compared with a cocoa farm planted disorderly, the farm managers experienced higher yields. Lining and pegging made identification of seedlings that failed to establish and gap filling easier.

R.2 noted,

The agents assisted us in doing lining and pegging of the entire farm, an important good agricultural practice we had not done in the past. We realized that the method of cultivating cocoa was different from our old practice. The lining and pegging planting method made the cocoa farming easier because without difficulty you can identify and replace the seedlings that could not survive after transplanting (R.2).

I learned that planting cocoa seedlings in lines are the best method to achieve optimal results. After adapting to the advice, I can confirm the results have been better than before. I consider the benefits derived from the current practices outweigh the returns from my past farming practices (R.3).

Proper application of pesticides and disposal management reduced environmental footprint and health hazard to the farmer and household members (Karipidis & Tselempis,

2014). Reduction in health hazards derives from less contact with harmful pesticides.

Among the findings of their study, the researchers attributed improvements in farm organizations to certification outcomes and described as the utility values to the farm households from easy access to new markets and improved household health. By controlling the types and volumes of agrochemicals application, the farm managers successfully curtailed their employees and household members' exposure to harmful chemical substances.

R.2 and R.3 shared health benefits of proper application and handling of pesticides,

I recall that in the past we could contract certain strange diseases under unexplained circumstances out of ignorance. As we began this program, we learned that the mishandling of agrochemicals was the cause of those unexplained medical conditions. Unconsciously, you expose the human skin to all kinds of dangers if you spray agrochemicals on your farm without wearing adequate protective clothing. Your skin reacts to the chemical by itching or develops skin rashes (R.2).

We receive further instructions on managing and keeping healthy lifestyles. The instructions include proper storage of chemicals to prevent pollution of the environment and accidents that can affect the health of our families or the community members (R.3).

Good agronomic practices include the control of cocoa diseases and pests. The farm managers indicated they "implemented rigid disease control practices, including the removal of trees that serve as alternative hosts of diseases according to extension advice . . . (R.5).

Certification influenced farmers' adoption of alternative host tree removal (Andres et al., 2018). By relating the findings to the literature, I established that the managers farming practices to obtain certification enhanced institutional capacity building (Altenbuchner et al., 2017) and the post-harvest handling processes to produce a distinctive quality of cocoa beans (Deming, 1981). Other findings showed the adoption of new farming practices (Abdulai et al., 2018) to minimize diseases (Andres et al., 2018), maximize output (Kariuki & Loy, 2016), and improve environmental preservation practices (Karipidis & Tselempis, 2014). The findings confirm the literature and expand knowledge of quality certification practices of Ghanaian cocoa beans producers.

### **Major Theme 2. Management**

Managerial and leadership competencies are fundamental to a successful certification endeavor and access to a secure market (Kontogeorgos, 2012). The farm managers trained and implemented successful management practices as preconditions for qualification to the group certification program. Discipline, commitment to the goals of certification, the unity of purpose, and respect for the individual's rights facilitated the group's successful endeavor.

When managing the certification process, the farm managers commit to promoting transparency in the cocoa production process including sales of cocoa beans' harvests. Consequently, the individuals exercise their right to fair trading practices when selling the harvest to a marketing clerk. Certification promotes dialogue between producers and consumers, openness, and in search of fair dealings (Ibnu et al., 2015). A respondent confirmed this assertion with a statement that:

I weighed some cocoa beans ready for sale at home before heading to the store of the purchasing clerk. At the store, it turned out the same parcel of cocoa beans weighed lower than its actual weight. I told the marketing clerk that I would not sell him cocoa beans anymore. Since then, I sell to the certification partner buyer. They have given us a weighing scale to check the weight of our cocoa beans before sending the parcel to the marketing depot for sale (Respondent 3).

Table 3 below presents the management practices as reported by the respondents.

Table 3

*Management Practices of the Group*

	R.1	R.2	R.3	R.4	R.5	R.6	R.7	Frequency
Management								
Transparency in the sales of cocoa beans			*					1
Knowledge retention to obtain certification	*	*		*	*			4
Regulation and Sanctions		*			*		*	3
Social Sustainability practices		*		*	*		*	4
Record Keeping	*			*		*		3
Peer Audit discipline					*	*	*	3
Labor practices				*		*		2
Farm audit	*				*		*	3
Compliant audit	*				*			2
Cocoa beans quality audit	*			*				2

The group adopted a regulatory and sanctions charter to control the manager's behavioral practices and penalize noncompliant individuals (UTZ Certified, 2015;



Observation, February 28, 2018). Other strategies for managing the process include retention of the knowledge gained from certification training, social sustainability practices, record keeping, peer auditing, labor practices, farm audit, compliant audit, contribution to social development, and auditing the quality of cocoa beans (Observation, February 28, 2018). At the group training sessions, after treating a particular topic, the farm managers would schedule meetings to revise notes and ensure the members gained a complete understanding of the subject (Observation, February 28, 2018). In cases that required field practice, they would visit a cocoa farm as a group to conduct a practical demonstration for the benefit of the members. Respondent 1 affirmed the group's strategies to retaining knowledge gained at training sessions by declaring that; "When we attend meetings, we recap what we have learned previously by trying to answer some questions. By this approach, we learn from one another and remind ourselves of all the training instructions." R.1 added another statement; "We write down notes, for example, certification training, and improved farming practices, during meetings and revise at subsequent meetings to recap what we learned."

On the same subject, R.2 stated that,

The steps involved regular meetings with the extension officer and keeping good records of the new instructions. At a later date during the group's regular sessions, we revise and discuss the notes and practice the instructions strictly on our farms.

Our strategy helped the members to advance in the new cocoa farm business.

Similarly, R.4 and R.5 shared the group's knowledge retention strategy stated below:

During our regular meetings, we usually review the topics treated at training and discuss the various issues in-depth, including the implementation on our farms. We take a further step to ensure the individuals understand the concepts and practical steps to follow in implementing the knowledge (R.4).

. . . For example, when we complete the treatment of one subject say pruning in one month before we change to treat a new subject the following month, we revise our notes from the previous topic. The revisions will precede the treatment of new subjects (R.5).

The respondents' statements affirmed the group's commitment to using training as a specialization instrument to secure the certificate as certified cocoa beans producers. A study of certified producers, Vellema et al. (2015) found that certification encouraged coffee growers to specialize in coffee production and earned increased income from the certified produce. Certification enhanced producers' managerial competencies and access to credit to support the business operations (Hernandez-Aguilera et al., 2018).

The motivation of producers of certified agricultural commodities is an investment in more sustainable practices in return for greater access to markets and price premiums (Ibanez & Blackman, 2016). In the literature review, I referenced research finding that certification encouraged organizations to be socially responsible (Ibnu et al., 2015). Giuliani et al. (2017) found that countries that established effective institutions exert a positive influence on the social conduct of certified coffee producers. In their responses, the farm

managers shared stories about their awareness and inclination to social responsibility and contribution toward community development projects.

R.1, R.2, R.4, and R.5 described instances of their contributions toward the community's social development goals,

The group has decided to set aside some regular contributions to finance social work in the community. We spend some money to support needy children in schools in the community. Further, the group uses some of its saving to finance a planned project or for community improvement project (R.1).

First of all, we have agreed collectively to support community development programs. For example, when the community school needed a computer, we offered financial contributions to purchase one for the school. We also conduct peer audit to ensure that every group member is implementing the standard practices. If we found a member not working to the instructions, we step in to assist. Also, the group has agreed to support parents who cannot afford the basic material needs such as school uniforms for the children to find no excuse not to attend school. Our group will procure the school uniform and invite the child's parents to the school for counseling. At the school, the teacher would explain why the child must remain in school, and the parent's responsibility for ensuring the child gets ready and attends school daily. When we see a child loitering during school hours, we call on the parents to demand explanations (R.2). "Our group donated a computer for the community school and paid the cost of electrical wiring of the school for electricity supply" (R. 4).

R.5 stated,

As a group, we maintain a social responsibility fund set up with a part of the certification premium. From this fund, we contribute toward social projects in the community. Specifically, the group funded electrical wiring of the community school and supported children whose parents could not provide uniforms to attend school. Additionally, the group donated two computers to the community's primary and junior high schools.

Apart from being a good management practice, documentation and records management is fundamental to many certifications and compliance programs (International Organization for Standardization & International Electro-Technical Commission, 2018). The farm managers acknowledged the relevance of record keeping in the campaign to obtain certification. Two farm managers attested that record keeping was a component to attain certification.

R.4 and R.6 stated,

The steps involved regular meeting with the extension officer and keeping good records of the new instructions. At a later date during the group's regular sessions, we revised and discussed the notes and applied the instructions strictly in practice on our farms. The strategy helped the members to advance in the new cocoa farm business (R.4). "The auditors would pay farm visit and inspect the activities record book to confirm the farm's inputs application program" (R.6).

To gain UTZ certification, growers must implement the requirements of the code and submit to an audit performed by an approved certification body (UTZ Certified, 2015). Farm managers submitted to an external auditor from the certification body who conducted compliant audit and cocoa beans quality audit. To ensure the individuals passed the tests, they instituted internal audit mechanisms which include peer audit discipline to prepare the farm managers sufficiently before submitting to an external audit. The underlining principle behind both external auditing and internal audits was to ensure compliance with the required certification standard practices. By the peer audit discipline, farm managers belonging to the same certification group visited the farms of other members to check for compliance with farming practices, environment, and working conditions.

R.5, R.6, and R.7 share their experience of peer audit discipline,

We pay periodic visits to the members' farms in turns to observe the progress of work. If we discover a member's performance falls short of the standard's requirement, we take immediate corrective measures to return the situation to normalcy. The peer visits approach helps the members to stay committed to implementing the standard's instructions (R.5).

It is the group's policy to visit the member's farm in turns every month to conduct an audit confirming the farmer has implemented the coaching instructions about farm activities on schedule. If a member's performance falls below expectation, the group will offer the necessary assistance and make follow-ups to ensure total compliance.

This type of monitoring helps to improve the members' business performance and

enhances the chances of securing the renewal of the group's certification license (R.6).

We use the peer visits method to check and confirm the members are maintaining the standards. We visit as a group to the individual's farm to audit and ensure that the member is following the instructions accurately. During a visit, the members will ensure that their peer has carried out the instructions accurately. For instance, if we found undesired branches on the farm, the farmer would be asked to prune. This peer visits method puts members on alert to avoid embarrassment. We learned this strategy from the training programs. The peer visit arrangement is a group policy (R.7).

Certification consists of a code to which the farmers must comply and verifiable by an independent audit (Winters et al., 2015). Independent auditors conduct periodic audits of the farms and the managers' households to verify compliant with the code of conduct. Two respondents described compliant audits by indicating that the auditor examines the physical appearance of the beans to confirm they exhibit the desired color and flavor characteristics. Two respondents reported an auditor inspected the farm to inspect quality management practices and the cocoa beans to affirm the physical appearance characteristics. "The officers want to see only healthy pods on the trees at any time they visit. We remove black pods on the cocoa trees in the farm at all times and bury such pods in the soil" (R.1). R.6 stated that "Physical evidence of the cocoa pods on the trees showing no signs of disease presence such

as black pods or yellowing of cherelles (immature pods) are some of the characteristics of good cocoa.”

The strategies that the farm managers employed to satisfy both farming practices and management demonstrate a robust quality management content and suggest the aspiration to fulfill the criteria for quality certification. Annual renewal of the certificate demands the implementation of management practices that conformed to the code. Working with the same strategies, and safeguarding the common practices without failures, the group successively passed the annual renewal tests to retain the certificate.

On the preparation to acquire the certification, the managers encountered challenges of varying degrees, involving the lack of knowledge of safer handling of agrochemicals and maintenance of cleaner household and the surrounding environment. Unfamiliarity with the implementation procedures, labor scarcity, farmer credit risk, record keeping, concerns over weather risk and crop failure, and access to credit are notable barriers the individuals encountered. Whereas unusualness with the execution processes, preserving cleaner household surroundings, and record keeping are internal and can overcome by training, the others are external to the managers. The difficulty of surmounting the barriers outside of the managers’ control could delay the process of obtaining certification to produce cocoa beans.

The statements that follow capture the respondents’ expressed barriers and some strategies they adopted to overcome the challenges. “R.2 stated that, “. . . Also, the requirement to collect and destroy emptied cans and sachets of agrochemicals to avoid reuse was another challenging task.”

The main challenge I encountered was maintaining a clean surrounding around my household to meet the audit standard. A neighbor who was not a member of the group would leave his surroundings unclean and frustrated my efforts to maintain cleanliness. The neighbors' acts were disconcerting because an audit inspection of the uncleaned surrounding could result in the withdrawal of my certificate (R.3).

Barriers depend on the individual members' level of understanding of the concepts and their abilities to apply the instructions. Some members understood and implemented the standards without challenges while others encountered minor challenges. The few members that disregarded some instructions caused the entire group to fail to obtain the certification in the first year of application. To prevent such situations from delaying the group's progress, we adopted the peer audit review approach to achieve the common goal the following year. The other challenge was that the group could not receive the promised supply of agrochemicals to control pests and diseases of the cocoa pods (R.5).

At a meeting, the members accepted the challenge that the monthly dues represent the security of group unity. The ability to sustain and keep the group going is the commitment to honor the monthly dues. One strategy the organization adopted is that the members pledged a part of their certification premium to defray outstanding dues. The premium amount a member earns depends on the individual's volume of certified cocoa beans sold in the year (R.6).



According to R.7, “the main implementation barriers we encountered in this community is labor scarcity and financing.” To overcome the implementation management barriers, strategies such as peer audit review provided an essential reference point to check member compliant to the code and commitment to honor monthly dues to maintain group cohesion. Training and coaching assisted the managers in acquiring the strategies.

Certification promoted farmer specialization (Vallema et al. 2014) in cocoa beans’ quality management and enhanced managerial competence (Hernandez-Aguilera et al. 2018). Independent auditors certified the quality and sustainability practices (Winters et al., 2015) of the producers. The certification process boosted dialoguing and fair deals (Ibnu et al. 2015) between the farm managers and buying agents in cocoa beans marketing transactions. The availability of institutional guidance (Ibanez & Blackman, 2016) improved market access by the farm managers and the opportunity to negotiate certification premiums. The findings from the study align with the outcomes of scholarly research and help expand the knowledge of managing certification in cocoa beans production.

### **Major Theme 3. Environment and Social Sustainability**

In Ghana, the suitable vegetation for a sustainable cocoa production is the moist semi-deciduous forest and high rainforest agro-ecological zones (United Nations Development Program, 2012). Initially, the cocoa cultivation practices maintained the dense forest cover and the forest ecosystem. Progressively, the growers shifted to a less shaded cocoa system as production expanded to the Western Region (Gockowski et al. 2013) and elicited rapid deforestation (Keenan et al. 2015). Certification enhances conservation

practices for the benefit of communities (Burivalova et al., 2017). Voluntary certification offers critical input to green economy (Potts et al. 2014). The UTZ Certified core code of conduct for group certification recommends environmental sustainability practices to restore ecosystem services and promote biodiversity conservation (UTZ Certified, 2015). Reaching the environmental goals of the standard required some concrete actions by farm managers to prevent pollution, protect valuable tree stock, and promote wildlife conservation practices.

The literature shows research evidence of an inverse relationship between carbon emission and increased agricultural productivity (Bennetzen et al. 2016) as well as the significance of forests in mitigating carbon emission (Keenan et al. 2015). Further empirical evidence indicates certified agricultural producers demonstrate better environmental conduct (Andres et al., 2018; Giuliani et al., 2017). Consumers exhibit a preference for food products produced with a high content of environmental quality preservation practices (Fernqvist & Ekelund, 2014). Cocoa plots on certified organic farms displayed significantly higher tree species richness and stored the highest amount of carbon than cocoa plots on non-certified farms (Jacobi, Andres, Schneider, & Rist, 2013). When they recognized the importance of environmental sustainability in satisfying the core code, the farm managers devoted to implementing the compulsory requirements relating to preservation of the farm, household, and surrounding environment, these environmental strategies are summarized below.

Table 4

*Environment and Social Sustainability*

	R.1	R.2	R.3	R.4	R.5	R.6	R.7	Frequency
<b>Environment</b>								
Safer environmental management	*	*		*	*	*	*	6
Protection of wildlife				*	*	*		3
<b>Social</b>								
No child labor		*		*			*	3
Improvement in personnel's health care		*		*		*		3
Ethical labor	*					*		2
Social and community development		*		*				2

Haggar et al. (2015) found that farmers involved in organic sustainability certification of coffee planted more trees to provide shade for their crops than the conventional growers. Other studies identified the consumer willingness to pay a premium price for food products branded with a quality logo affirming the producer's preservation practices of ecological habitat (Temperini et al. 2017). Increased efficiency in agricultural production practices can generate profitability (Byerlee et al. 2014).

The statements by R.4, R.6, and R.7 sum up the group's policy on wildlife conservation. "We further take the necessary measures to protect wildlife especially if we are not hunting for food" (R.4).

The group pursues a policy of safer use of livestock or game hunting for food. By this policy, members cannot hunt for game or slaughter animals during certain periods of the year to allow the animals to procreate for a sustainable environment. (R.6).

“Concerning the environment, we make conscious efforts to preserve the ecosystem and wildlife by following the recommended practices” (R. 7).

Quotes by R.1 and R.2 declares the group’s preservation strategies for promoting environmental sustainability.

During farm visits, they ask questions and demand we explain the disposal method with evidence. Further, the officer demands evidence of proper disposal of the empty cans and sachets of pesticides and fungicides. During audit visits, they look for evidence of unapproved methods of disposal of empty cans and sachets of fungicides on the farm (R.1).

We learned about the recommended number of trees to maintain on the farm. We ensure strict compliance with the recommendation of protection for trees. If any member decides to fell a mature tree for economic use, the member plants a new tree seedling in place of the harvested tree. ...Currently, the economic value tree seedlings are the tangible things we plant to provide long-term shade for the established cocoa farms. Additionally, we receive regular counseling from the extension agents to protect the trees in our communities and maintain environmental cleanliness to prevent the mosquito from breeding to cause malaria disease (R.2).

The quotes of the two respondents manifest the commitment to safeguarding biodiversity (UTZ Certified, 2015) and healthier community devoid of the prevalence of malaria cases. Product certification encourages the responsible management of natural resources to promote sustainable business operations (Lewis & Davies, 2015). Additional

evidence indicates that certified organic farmers planted more trees to improve tree diversity and shade for their coffee crops (Hagggar et al. 2015). R.4, R.5, R.6, and R.7 share the safer disposal methods of the emptied containers of the recommended agrochemicals used for the control of insect pests and fungal diseases.

The statements affirm the acceptance of policy and accountability to an environmental governance system that prevents ecological disasters. The members' motivation to produce certified cocoa beans inspired them to commit to the environment core code. The quote of R.4 below,

Further, we enforce the policy of controlled felling of trees. Concerning this practice, our group has taken a further step to explain to the community members outside of our group about the need to control tree felling to prevent degradation of the environment. We enforce a policy of replanting trees harvested or felled to prevent degradation and sustain the environment.

This statement sums up the group's commitment to achieving the objective of the environment compliant audit. Cocoa in West Africa is vulnerable to climate change, and shade trees in cocoa farms are essential adaptation strategies to minimize water stress experience during dry seasons (Schroth et al. 2016). Hardt et al. (2015) found that certified Brazilian organic coffee farmers contributed significantly to deforestation control than non-certified farms. Respondent 4 makes a further declaration that "members maintained the clean household environment. Without the enforcement of these strict measures, the qualification of the group as certified cocoa beans will be impossible." The responses

endorse the members' belief in the strategies used to achieve the group's certification goals. Through the field experiences from the training lessons, the managers acquired the expertise from which evolved the strategies to produce certified cocoa beans. In the literature, expertise in technical information is essential strategies for a successful certification program (Kariuki, 2014). Producers successful in voluntary certification programs obtain adequate extension education (Pongvinyoo et al. 2014). As organized along a cooperative system, the governance structure enhances good agricultural practices by creating opportunities for training (Elder et al., 2013; Verhofstadt & Maertens, 2014).

In the words of R.5 and R.6, the security of the environment remains the group's priority expressed in the following quotes:

We plant and maintain trees of high economic value to promote ecosystem restoration. When we first settled in this community, there were several species of high-value trees growing in the forest. Regrettably, we lost the forest through the work of illegal and legal logging. The tree planting strategy will help in restoring the integrity of the environment. Members whose farms lie close to river bodies leave a reasonable buffer from the edge of the farm to the river to prevent contaminating the river with the agrochemicals (R.5).

We enforce strict practices concerning the proper disposal of emptied agrochemical containers, ensuring that our members do not litter the environment. Failure to store agrochemicals notably the toxic substances in secure storage can cause avoidable accidents and environmental contamination. Our group enforces the policy of secure

storage for all kinds of agrochemical substances used for the farm operations to prevent access by unauthorized persons. We construct proper sanitation facilities to prevent open defecation and possible spread of diseases or public health catastrophe. When spraying agrochemicals, the members oblige by setting a buffer of 10 ft. to the bank of a nearby stream or river to avoid accidental contamination and environmental disaster. Other practices include controlled felling of trees to promote a safer ecosystem and biodiversity and the possible adverse effect on the rainfall pattern in the community (R.6).

### **Social sustainability**

The core code of conduct demand of cocoa producers to create good working conditions for workers by adopting ethical labor practices with no child labor (UTZ Certified, 2015). In a decent working environment, labor receives commensurate compensation for services to promote a sustainable supply of cocoa beans. Producers respect the principle of economic, environmental, and social sustainability in producing cocoa beans sustainably (Tscharntke et al., 2015). The United States (U.S.) government laws classify the engagement of child or slave labor in agricultural production as unethical. Countries that allow worst forms of child or slave labor in producing cocoa beans risks the government's prohibition order (The United States, 2008). Likewise, the major cocoa consuming countries frown upon child labor or any forms of unethical labor practices (Rueda et al., 2014). By 2020, the major cocoa consuming countries will permit imports of sustainably sourced cocoa beans only.

Adoption of ethical labor practices with emphasis on no child labor and improvement in personnel healthcare featured most in the responses. The farm managers noted that respect for ethical labor and decent working conditions (Table 4) are critical to securing sustainable market opportunities for certified cocoa beans. Support for social development and community improvement such as scholarships for needy children attending the community school is a strategy the managers adapted to retain the certificate. Action to support social change is obligatory for the retention of certification (UTZ Certified, 2015).

Five of the seven respondents confirmed the group maintains a firm commitment to ethical labor practices and actions that enhance improvements in the farm workers' healthcare. In affirming the group's revulsion for child or unethical labor practices in the cocoa production operations, R. 4 stated that:

The group pursues a policy to assist parents who genuinely cannot provide essential logistics such as school uniforms for the children to attend school. For such parents, our policy allows the leaders to spend a part of the group's certification premium to offer a one-year scholarship to fund the needy children's education.

R.1 had earlier stated, "Since I obtained certification, I hire labor to clean-weed the farm twice yearly." ". . . I do earn enough from the business sufficient to finance the labor cost of managing the farm and make a profit." The social responsibility attitudes the managers demonstrated confirmed the literature evidence that certification encourages firms to be socially responsible (Ibnu et al., 2015; Karipidis & Tselempis, 2014).



Good working conditions and fair compensation for labor, environmental preservation, and the pursuit of social policies in supply chains are the primary goals of certification (Ibnu et al. 2015). Improvement in personal healthcare enhanced the quality of life of the managers, family and household members, and the farms' fieldworkers. Post-certification experiences of farmers are necessary for their future decisions to continue with a scheme (Karipidis & Tselempis, 2014). Improved quality of health experiences indicated by the farm managers underscores their motivation to continue with the certification program.

On the campaign to obtain certification, the farm managers desire to supply superior quality cocoa beans as a business strategy to leapfrog other producers and promote their cocoa business beyond the year 2020. The managers' intentions align with research findings that a collaborative relationship to enhance environmental and community practices between organizations and upstream actors in food supply chains is transactional (León-Bravo et al., 2017). They implement sustainability practices in return for economic opportunities while maintaining a governance system to enhance environmental and social conditions. Creating a sustainable collaboration depends on the effectiveness of the relationship established with the trainers and the buyers of the certified cocoa beans. The rise in private retailer safety criteria compel the supply chain actors of agricultural commodities to pursue third-party certification to assure consumers of the quality standards of the production process (DeFries et al. 2017).

In summary, certification enhances ecosystem services for the benefit of communities (Burivalova et al. 2017) and offers critical input to green economy (Potts et al., 2014). Certified agricultural producers demonstrate better environmental conduct (Andres et al., 2018; Giuliani et al. 2017). The tree cover helps in mitigating carbon emission (Keenan et al. 2015). Certification minimizes cocoa farms vulnerability to the effects of climate change (Schroth et al. 2016). Producers adopt the principle of economic, environmental, and social sustainability (Tschardt et al. 2015). Consumers demonstrate a preference for certified food products in support of producer sustainability practices (Temperini et al. 2017). Certification helps to improve the working conditions of producers, employees, and social sustainability (Ibnu et al. 2015). Employing child labor in cocoa production exposes the farm manager to business risk of loss of competitiveness because of the tag of unethical labor practices against the social norms (The United States, 2008).

### **Relating Findings to the Conceptual Framework**

The findings of this study connect to the conceptual framework - the quality management theory. Quality management in a production process underlines a business's competitiveness and sustainability (Deming, 1981). Consistency in quality improvement practices facilitates successful business operations (Deming, 1981; Heavey et al. 2014; Juran, 1986). In practice, the quality management theory applies to all businesses process without exceptions (Deming, 1981). High-performing organizations that implement Deming's quality management principles can record the sustainable growth of their business. Deming encouraged business managers to introduce quality principles in product buildup

and focus on minimizing the total cost of production through long lasting business relationships with one supplier. He emphasized continuous improvement in product quality, exemplary supervision to improve labor and machine productivity can reduce production cost, and efficiency on the job. Continuously improving product quality results in the long-term productivity and economic viability of the business operations (Deming, 1981).

The findings indicate that the managers' desire to satisfy the quality preference of the upstream consumers and firm beliefs in the positive effects of biodiversity conservation practices on sustainable cocoa beans supply chains informed the certification decisions. The productivity and ecosystem goals establish inextricable linkages between the principles of quality management and certification. This point suggests quality management underlines the sustainability of the supply chain relationships between the cocoa producer, processing firms, and the downstream consumer.

Quality management practices result in a reduction of waste, cost, and improved efficiency in resource allocation (Deming, 1981). The other notable outcome is enhanced employee performance through continuous training and development. The findings of the study show that the farm managers' new strategy of breaking cocoa pods with wooden pod breakers instead of sharp machetes minimize the losses of good beans which would end up as waste. Waste reduction transfers the good beans saved to higher productivity and profit for the producers' businesses. Detaching cocoa beans from the placenta before commencing the fermentation process enhances the flavor to the desirable quality. The act of unceasing cleaning and removal of foreign matter from the cocoa beans during sun-drying is a

continuous quality improvement process that improves the beans' physical appearance. The managers acquired the expertise through the certification training programs on the concept of continuous improvement in post-harvest handling of the cocoa beans. Certification can assure customers of the quality of the cocoa beans and that the producers observed sustainable environmental practices (Ibanez & Blackman, 2016). By engaging in supply chain partnerships, the processing firms with their B-2-B customers will be exploring the strategic advantage of quality management over their competitors (Fawcett et al., 2014).

The processing of certified quality cocoa beans has cost reduction potential. Consistent with Deming's (1981) theory, quality material reduces the firm's cost of production. For example, processing companies can avoid high-energy cost for cleaning poor quality cocoa beans. Lower energy cost will minimize environmental footprint. By implementing internal environmental management practices and collaborating with upstream suppliers and downstream customers, firms can improve sustainability (Green et al., 2012; Yu et al., 2014). Relating the concept to the cocoa industry, an active relationship between cocoa processing firms, upstream suppliers, and downstream customers can promote sustainable cocoa supply chain management and environmental sustainability.

Evidence from the study shows that the farm managers use intersected quality management strategies acquired through off-field and on-field training to obtain certification to produce cocoa beans. The farm managers use a rigorous fermentation process to produce cocoa beans of distinct flavor desired by manufacturers for the growing market of quality conscious chocolate consumers. Adopting Deming's (1981) theory enabled me to explore

the quality management practices of farm managers in the certification program.

Certification can help upstream farm managers in transforming the cocoa farm business in Ghana to establish a competitive advantage for sustainable cocoa production. This emerging relationship provides the foundation for further work to expand in-depth on how quality management in certification can affect stakeholder interest in the cocoa value chain.

### **Relating Findings to Effective Business Practice**

Certification may exert a positive effect on the business practices of cocoa beans producers. Some research results point to positive outcomes; alluding certification improved businesses practice resulting in productivity gains and environmental sustainability practices (Ibanez & Blackman, 2016). The findings show that the farm managers reduced waste resulting from a change-over from machetes to use wooden cocoa pod breakers. Producers of agri-foods involved in voluntary certification programs can record productivity gains and farm incomes, protect ecosystems, and reduce carbon emission (Vanderhaegen et al., 2018). The continuous improvement practices in the fermentation of cocoa beans resulting in the reduction in waste, distinctive quality cocoa beans, and productivity gains support the conceptual framework. Deming's (1981) quality management theory recommends continuous process improvement by business managers for sustainable profitability.

Sustainable cocoa production hinges on the producers' commitment to the environmental and social indicator goals. The findings established the consistency of the farm managers to implement good agronomic practices to satisfy biodiversity conservation. The managers also followed ethical working conditions to realize the businesses certification

objectives. By satisfying the three principal pillars of sustainability via the consistent implementation of the code of conduct, certified cocoa beans producers might enhance the farm business practice. Better access to markets and certification premiums are some of the positive returns for delivering quality output and contribution to sustainable development. By implication, cocoa producers can strengthen their businesses competitive position in the marketplace. As the core code of conduct focuses on social, economic, and environmental sustainability goals (Tschardt et al., 2015), voluntary certification can promote trade in agricultural value chains in developing countries (Beghin, Maertens, & Swinnen, 2015). I discuss the four emerging themes and their influence on effective business practice.

**Farming practices.** In Ghana, there are concerns of cocoa output declining because of unsustainable farming practices, diseases, and pests devastation (Wessel & Quist-Wessel, 2015). Implementing the code of conduct on farming practices involving good agronomic practices may help transform the cocoa farm business outcomes. A transformation of cocoa agriculture has attracted the interest of the value chain actors because of the rising consumer concerns about food safety, quality, and environmental sustainability (Aung & Chang, 2014). Sustainable farming practices can improve the traceability of supply chains to satisfy governments' regulatory controls (Narsimhalu, Potdar, & Kaur, 2015), the environmental outcomes, and profitability of their business (Dragusanu et al., 2014). The farm managers employ several good agronomic strategies, including effective weed management, control of the height of cocoa trees, planting in lines, and the establishment of optimal shade over the cocoa farm.

Enhanced cocoa farming practices may create market opportunities because they address the concerns of the value chain actors about the sustainability of supply, biodiversity conservation, and sustainable farm business. Hernandez-Aguilera et al. (2018) examined a business model that promote long-term relationships between coffee buyers and smallholder producers centered on product quality. They found that the adoption of good agronomic farming practices and shade-grown systems to raise coffee quality could stimulate sustainable business strategies of smallholder producers. The findings underscore the relevance of environmental preservation practices in the sustainability of businesses. Further, the findings partly explain the reason underlining the certification bodies demand on producers to satisfy the code of conduct on the environment.

**Management.** Certified agricultural producers satisfy the acceptable managerial practices that promote the environmental, economic, and social principles of sustainability. By satisfying the managerial performance standard, certified food producers may establish a competitive advantage for their businesses through better market access. UTZ Certified coffee producers in Kenya earned higher returns from increased farm productivity and easy market access (Rijsbergen, Elbers, Ruben, & Njuguna, 2016). The findings of this study show that the certified farm managers earn price premiums from sales of cocoa beans, and that enable them to contribute to funding community development projects. Improved management practices enabled some producers of certified coffee to earn higher prices than non-certified producers and business performance (Haggar et al., 2015). The results of the study show that working as a cooperative enhanced the farmers managerial skills as a group

and as individuals. The peer audit strategy for ensuring compliant to the code instilled corporate discipline and the determination by the members boosted the group's chances of gaining and retaining certification. Mojo et al. (2017) found that Ethiopian rural cooperative coffee producers exhibited a quality managerial performance than producers that did not join associations. Snider et al. (2017) observed when certified agricultural commodity growers operate as a cooperative; they may be more efficient in managing the supply of the certified produce to the market. Working as a cooperative may enhance the learning experiences and managerial capacity of cocoa farm managers to improve business performance. Effective management in a cooperative set up may influence a successful campaign by farmers who wish to obtain certification to produce cocoa beans.

**Environment.** Shade trees in cocoa farms are essential climate change adaptation strategies to minimize water stress experience during dry seasons (Schroth et al., 2016). The environmental preservation strategies the farm managers implement in their production practices may exert a positive influence to maintain the ecosystem services for a sustainable cocoa farm business. Tayleur et al. (2017) reviewed 12 major crop standard certifications worldwide and found that the individual standards had directives that promoted biodiversity conservation. They observed that certified production of cocoa, coffee, tea, and palm oil increased afforestation by 11% in 113 countries with more than half of the growth recorded in developing countries. Concluding the study, the researchers recommended the adoption of certification standards to enhance the transfer of the rich environmental potential to the countries. Hagggar et al. (2015) compared certified farmers pursuing five different



certification and non-certified growers on environmental performance. They found that the farms treated under five different certification standards exhibited higher environmental characteristics than the non-certified farms. A certification standard sets stringent environmental performance criteria (UTZ Certified, 2015) and causes an audit to confirm the conservation practices can support sustainable production systems. By implication, managers of certified cocoa farms can leapfrog competitors in the value chain and secure sustainable market opportunities. To achieve that objective may require collaborations between the state and non-state agencies in national and international sustainable agriculture policy formulation.

**Social Sustainability:** The results showed that the farm managers maintained ethical labor practices and using peer review strategies, ensured that the individuals remained committed to the code. Knowledge of the significance of child protection in socioeconomic development encourage the managers to set funds aside from their business incomes to support the education of vulnerable children. The strategy of shared labor may help reduce the cost of labor for farming operations and increase business profitability. Use of proper protective clothing during pest control operations may minimize prone to disease conditions, prolong the life expectancy of the managers, household members, and farm employees.

### **Applications to Professional Practice**

Production of certified cocoa beans can enhance the competitiveness of the producers' business and the welfare of the workers because the standard sets strict compliant procedures for sustainable cocoa production. The purpose of this qualitative case study was

to explore the strategies some cocoa farm managers use to obtain certification for cocoa beans production. Continuously improving quality practices of a production process results in high productivity and profitability for the producer (Heavey et al., 2014). Enriched quality practices convert waste to profit (Deming, 1981). Findings from this case study showed that employing the strategy of using wooden pod breakers to break cocoa pods instead of machetes may improve the business practice. The approach enabled the producers to reduce waste by converting the good cocoa beans which would turn castoffs into worthy products and increase profitability. The results of this case study are essential in providing cocoa farm managers who intend to apply for voluntary certification with the expertise to supply their clientele quality certified cocoa beans and gain competitive advantage. Organic certified farmers in Wanzai County, China, earned higher annual returns on the farm investment than their non-certified peers (Qiao et al., 2018). Analysis of the producers' annual incomes revealed that the certified farmers in cooperatives did better than their compatriots who operate as individual certified producers.

The practice of detaching cocoa beans from the placenta before the fermentation process, continuous removal of foreign matter, and polishing during sun-drying on the mat produced a unique flavor cocoa beans for chocolate. These strategies may produce positive business practice for sustainable delivery of quality cocoa beans to customers. Vanderhaegen et al. (2018) found that certification standards improved productivity and farm business incomes of Kenyan coffee producers. The productivity gains resulting from better farming practices and waste reduction strategies may enhance the managers' business practice and

performance. Expertise in technical knowledge (Kariuki, 2014) attainable through training lessons and field practice is critical for sustainable certification. Ibanez & Blackman (2016) found that post-certification performance among coffee producers in Colombia led to a significant improvement in farming practices and productivity gains. Without the essential strategies, the farm managers may encounter barriers that can smother the campaign to qualify for certification to produce cocoa beans.

The UTZ core code of conduct for group certification recommends the implementation of environmental sustainability practices to restore ecosystem services and stimulate biodiversity conservation (UTZ Certified, 2015). Results from the study showed that the farm managers pursued safer environmental management strategies including the protection of wildlife and the maintenance of clean household surroundings. The construction of sewage drains in the community for the appropriate disposal of household waste enabled them to satisfy the standard's criterion for successful certification. Shade management help in promoting sustainable cocoa production (Abdulai et al., 2018). The shade management practices may enhance environmental services and the quality of the cocoa beans they produce and open better market access. Together with the strategy of storing agrochemicals away from households and bathing after the application of agrochemicals, the practices may improve the community's health status. The combined result of these strategies may enhance effective business practice because while in stable health condition; the managers can devote quality time in managing the farm operation. A group of Columbian certified coffee farmers ceased the disposal of sewage in and around

farm fields, increased adoption of organic fertilizer, and realized improved business and environmental conditions (Ibanez & Blackman, 2016). DeFries et al. (2017) showed evidence from a review of 2,600 peer-reviewed research that certification of agricultural commodities improved the business of smallholder producers as well as the environmental conditions.

The farm managers understudied use peer audit of the members farming practices, and institutional capacity building programs such as group organized training sessions. Other strategies include a commitment to implement policies and decisions, respect for leadership, and individual rights and liberties in managing effective group cohesion. Collective responsibility toward the organization's progress and discipline to implement policy decisions may enhance a sustainable cocoa farming business.

### **Implications for Social Change**

The businesses of the certified cocoa farm managers recorded some productivity gains attributed to the changes introduced in the farming practices in conformity with the certification standard. The standard's code of GAPs including improved planting methods and the establishment of optimal shade, biodiversity conservation, and prevention of child labor are essential sustainability strategies. These practices may influence positive social changes in cocoa farming in Ghana by promoting sustainable production, sustainable environment, improvement in the living conditions of producers, and social protection for children. Certification standards improve productivity, farm incomes, and biodiversity conservation (Vanderhaegen et al., 2018). Producers of certified tea in Asia recorded

significant financial benefits from the certification program (Qiao et al., 2016). They established that certification raised the net profit of organic tea producers in China and Sri Lanka and improved the living standards of cocoa producers. Ayuya et al. (2015) established in another research that certified farmers are less likely to experience multidimensional poverty compared to their uncertified peers.

Provision of financial support by farm managers to parents to maintain vulnerable children in the basic education program may prevent worst forms of child labor and enhance social protection. The engagement of the community in public education about safer management of agrochemicals and protection for trees and wildlife may enhance sustainable agriculture and livelihoods. In developing countries where generational poverty and economic hardship prevailed (Ayuya et al., 2015), social protection initiatives funded by farm managers influenced first on the welfare of the direct beneficiaries and broadly on the communities' coping toward socio-economic development. Altenbuchner et al. (2017) found that the training of smallholder farmers to produce certified foods minimized exposure to toxic substances, strengthened the communities, and promoted institutional capacity building. Certification enhanced some coffee producers access to credit, agricultural extension service, and improved the producers' living conditions (Chiputwa et al., 2015) and controlled forest degradation (Haggard et al., 2015; Hardt et al., 2015).

By the certification process, the farm managers learned about safer handling of agrochemicals different from the practices before certification. Storage of agrochemicals away from households and livestock may improve the living standards and life expectancy

of people in the community. The practices of promoting ecosystem services represent economic development and social wellbeing and are fundamental to sustainability (Rasmussen et al., 2017). While sharing lived experiences, the farm managers admitted that the occurrence of itching and other symptoms of skin conditions ceased when they conformed to the prescribed methods of handling agrochemicals. The knowledge gained from the certification training influenced social change affirmed by the healthier lifestyle of the producers.

When implementing the certification program; the farm managers adopt good agricultural practices leading to the delivery of superior quality cocoa beans. The new skills of quality management practices may influence a positive change in the value chain from the production and supply of cocoa beans. Other strategies include social responsibility toward community development projects, school infrastructure, and training of the residents to appreciate safer environmental practices for sustainable livelihoods. The benevolence of the farm managers may attract other cocoa growers to seek opportunities in the certification program to enhance their cocoa production performance. Certification improved the welfare of upstream agricultural producers through upgraded farming practices, quality output, and better market access (Rijsbergen et al., 2016). The social impact relates to the positive changes in the peoples' attitude toward sustainable environmental services resulting from the contribution made by the farm managers to educate and support the community.

### **Recommendations for Action**

Cocoa farm managers seeking to gain certification to produce certified cocoa beans satisfy the certification standard's code of GAPs, support ecosystem services, and undertake social responsibility. The practices of promoting ecosystem services represent economic development and social wellbeing and are fundamental to sustainability (Rasmussen et al., 2017). To conclude a research study, best practice demands the researcher to offer recommendations for action (Funder et al., 2014). Proposing actionable strategies on how to manage the process to gain certification to produce cocoa beans may help the managers of cocoa businesses in Ghana to understand the process effectively to achieve business sustainability. The recommended actions for the managers of cocoa farm businesses are: (a) Managers of certified farms must engage in continuous upgrading of the relevant skills to enhance the physical and flavor quality of the certified cocoa beans. (b) Successful farm managers must mentor others to gain certification. (c) Managers of certified cocoa farms must sustain the commitment to uphold ecosystem preservation. (d) Extension agents training farm managers to obtain certification for cocoa beans production must enforce the use of peer audit strategy to enforce adherence to the code of conduct. (e) Institutional support must be available to train and build the capacity of farmer groups producing or seeking the opportunity to produce certified cocoa beans. (f) Farm managers desirous of pursuing certification must self-select and approach the process as a cooperative.

Dissemination of research findings helps readers to gain new knowledge. Technical and general audiences constitute the best practices in disseminating research findings (Budden & Michener, 2018). The researchers recommended peer-reviewed journal articles

and technical reports as effective media to reach a wider audience with research results. I will disseminate the findings of this study through scholarly journals, technical reports, seminars, infographics, and training workshops for extension officers and cocoa farm managers. Extension officers may use demonstration plots to disseminate research findings (Kumar, 2014) to cocoa growers undergoing training in farmer field schools. I will share the findings with the participants to motivate them as recognition for excellence.

The managers of certified farms can share their experiences and the strategies they use to gain certification to produce certified cocoa beans. Sharing experiences can go a long way in assisting their compatriots in undergoing a successful certification training process. The expertise of technical knowledge and farm assets are essential strategies to pursue a successful certification that can support the production of quality, reliable, hygienic produce (Kariuki, 2014). The participants shared comments regarding their farm neighbors' recognition of the extraordinary differences separating the non-certified and certified farms. After the regular annual audit, the program auditors' express satisfaction with the state of the audited cocoa farms and made complimentary remarks to confirm their accomplishment. Certification set apart farms with restored environmental characteristics and management (Haggar et al., 2015). In their confident mood, the farm managers recommend training for the managers of non-certified farm and indicate a willingness to offer leadership in training other farmers in sustainable cocoa production. To promote the rapid expansion of sustainable cocoa farming, I recommend that the managers of certified cocoa farms may use their experiences in mentoring other growers to obtain certification.



I recommend that the managers of certified cocoa farms upgrade their skills and capacity continuously and build on the knowledge base and productive competences. The world cocoa economy represents a dynamic marketplace driven by changing stakeholder quality preferences for the beans and environment. As such, managers of the certified cocoa farm must meet the growing demand for the higher quality benchmarks set by the standards to manage the cocoa business sustainably. Continuous training can enhance the business skills (Deming, 1981) and experience of farm managers to focus on ethical practices, and guide farm employees to conform to the standard. Capacity building of employees is a sustainable business solution (Chang, Huang, & Kuo, 2015).

Managers of certified cocoa farms must work to sustain ecosystem services. Consumer concerns over the sources of agri-foods and environmental sustainability practices of the producers underline the growing interest of industry value chains to encourage producers to obtain certification (Potts et al., 2014). Certification can contribute to mitigating the trade-off between environmental and economic benefits (Haggart et al., 2015). Certified farms demonstrate superior environmental conduct than non-certified farms, particularly, if the farmers belong to a cooperative association (Giuliani et al., 2017). Evidence from the literature indicates that actors of the food value chain accept certification as fundamental to ecosystem preservation and global food security. To gain certification, the farm managers implemented the core code of conduct, assuring stakeholders that the farming practices promote environmental services preservation. The continuous sustenance of the ecosystem

services by the farm managers can safeguard the sustainability of supply and the businesses of cocoa beans producers.

I recommend the strengthening of institutional support systems to provide effective training services for farm managers. The study participants recount the training sessions, and coaching guidance from the cocoa extension agents enabled them to qualify for certification. Heavey et al. (2014) identified expertise and farm assets as critical resources for farmers to cope with the compulsory code of conduct of certification. As the farm managers secured institutional support from the public extension system and the certification body, they showed limitless abilities to achieve the certification goal. Snider et al., (2017) found that the high cost of training compelled grower cooperatives in Costa Rica to sponsor a portion of their members to obtain certification to produce coffee. Effective institutional support systems may facilitate resource acquisition and capacity development programs that can stimulate farmer interest in certification for the production of cocoa beans.

I recommend that organizations interested in assisting the managers of cocoa farms in obtaining certification must direct the resources to support self-select producer groups. Evidence from the study indicates that the group members self-selected after the initial contacts and counseling by extension agents of the certification body. They use strategies such as peer visits to conduct self or in-house audit ahead of the external farm audit. If they operate as independent farm managers, they would be no such opportunity as peer farm visits to review in-house performance audit. Managing a certification process would be

effective if the producers worked as a cooperative (Aidoo & Fromm, 2015; Snider et al., 2017).

### **Recommendations for Further Research**

The purpose of this qualitative study was to examine strategies that farm managers use in obtaining certification for cocoa beans production. Recommendations for future research are

- Limitation of this study was the small sample-size which restricts generalization of the findings. A researcher may not generalize the findings of a qualitative study. Instead, the researcher allows readers to make an informed decision to transfer the findings to address specific situations (Marshall & Rossman, 2016). To address the limitations of this study, future researchers may consider using a quantitative research method to investigate the effectiveness of the strategies that Ghanaian farm managers use to obtain certification for cocoa beans production.
- Wessel and Quist-Wessel (2015) observed that Ghanaian smallholder cocoa producers do not earn enough to purchase extern farm inputs. On the contrary, the farm managers understudied claim certification helped improved earnings from their farms. Future researchers may investigate the economic and financial viability of the certification program, and the optimal farm size that returns business profits.

- Four themes, farming practices, working conditions, environment, and management strategies emerged. Each theme identifies several strategies that the farm managers use in attaining certification, the benefits, and challenges. Future researchers may focus on the challenges unique to each of the themes. A study focusing on the themes may help track the experiences of farm managers in the pursuit of certification and design some guides in overcoming the challenges.
- This qualitative study is the original inquiry into the strategies cocoa farm managers use to obtain certification for cocoa beans production. Future researchers may build on the literature by focusing on the economic contributions of the high-value forest trees to the business. (e) Future researchers should consider studies on the labor productivity of certification to produce cocoa beans. (f) Researchers may investigate the strategies that return the most valuable support to the certification process.

### **Reflections**

This doctoral study at Walden University has helped me to identify my innate strengths in a professional job and achieved a lifelong ambition to impact society. A doctoral degree with a wealth of industry experience, the stage is set to share the industry experience on an academic platform to help raise upcoming professionals and talents. The journey presented several challenging times, loss of motivation, financial hitches, and the struggle of combining academic work and career demands. Family prayer support, motivation, and support of my spouse, Patience, coupled with a determination to earn the degree helped me

to reach the goal. I had the honor of interviewing the managers of cocoa farms at the community level and learned from their rich experiences in producing cocoa. Until the first contact, I had personal misgivings about the farm managers' commitment to the process. However, the commitment they exhibited to assist in collecting the interview data to advance the literature in certification to produce cocoa beans is commendable. Offering their support, the farmers indicated they felt privileged to offer the 'little' contributions to the body of knowledge of sustainable cocoa production. As an industry official, I gained in-depth knowledge of the strategies cocoa farm managers use to obtain certification to produce cocoa beans.

### **Conclusions**

A substantial body of empirical and qualitative literature exists that certification contributes to sustainable environmental, economic, and social performance as well as the standard of living of producers (Ayuya et al., 2015; Snider et al., 2017; Vanderhaegen et al., 2018). The farm managers' primary focus is the production and supply of cocoa beans of unique flavor quality for the processing industry using certification. Evidence from the study indicates that training commitment to implement good agronomic practices and the standard's code of conduct, managerial and member discipline, and respect for organizational rules and procedures are fundamental strategies to obtain certification. Other virtues including leadership and respect for individual rights are essential. They employed these strategies to satisfy the code of conduct grouped under the themes of farming practices, management, environment, and working conditions. While the literature concerning certified

cocoa beans production may be scanty, research evidence of the certification outturns of similar cash crops, particularly coffee, is definite that producers can use the process to improve quality management of natural resources. The results from the study add to the available evidence and the literature on certification. Of particular relevance are the strategies that Ghanaian producers may use to facilitate the campaign to obtain and produce certified cocoa beans.

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## Appendix A: Interview Protocol

Interview date \_\_\_\_\_

\_\_\_\_\_ Location \_\_\_\_\_

Interviewer \_\_\_\_\_

Interviewee \_\_\_\_\_

## Guidelines for the Interview

1. Explain to the participant the purpose of the study.
2. Repeat confidentiality statement and have the participant sign the consent form.
3. Exercise sensitivity, maintain calmness, and make sure you do not direct influence an answers.
4. Set the audio recorder to audiotape each interview. Assign a number to each recording in chronological order.
5. Write down participant's identification number next to name.
6. Probe the participant, seek further explanations into their meanings.
7. Record the responses, and transcribe verbatim.
8. Pay the token amount (GHC20.00), request signature to acknowledge receipt, and thank the participant for participation.

After transcription and synthesis, I will invite the participant to complete member checking process.



## Appendix B: Interview Questions

- i. What specific strategies did the organization implement to obtain certification to produce cocoa beans?
- ii. How did you learn about these strategies?
- iii. What steps did you follow in implementing the strategies?
- iv. What governance structure/system guided the implementation process?
- v. What strategies did you not know about that would have helped the organization gain cocoa certification?
- vi. What are the benefits of implementing the strategies required to gain cocoa certification?
- vii. How do you manage your business to maintain membership of the cocoa certification?
- viii. What institutional measures regulate the managers' performance in the certification business?
- ix. What environmental practices do you implement to maintain cocoa certification?
- x. What strategies to obtain cocoa certification led to implementation barriers?
- xi. What extra information would you like to share about the strategies you pursued to obtain and maintain your certification?