

Maintaining Quality Standards in the face of Internal Market Competition in Ghana's Cocoa Industry

Agambedu Abdul-Wahid

Institute of Distance Learning,

Kwame Nkrumah University of Science and Technology

Abstract

Cocoa purchasing in Ghana was privatised in 1992 following liberalisation of the cocoa sector. The privatisation brought in its wake intense competition among Licensed Buying Companies (LBCs) in the internal market for cocoa. Issues that bothered on the maintenance of cocoa quality came up in the wake of the privatisation as a consequence of competition. Quality is the secret behind the patronage for Ghana's cocoa. This research is a case study conducted into the impact/effects of liberalisation and privatisation on quality of cocoa purchased within the Offinso Municipality. The objective is to determine how liberalisation, privatisation and competition in cocoa marketing can be converted into high production, high product quality, and high producer prices for cocoa farmers. Non-scientific sampling techniques were used in selecting respondents, while both quantitative and qualitative methods of research were employed in the data collection and analysis. The findings are that privatisation and competition have improved farmers' earnings while quality standard of cocoa in the municipality is still high. Ghana's earnings from cocoa have also increased. However, to some extent the quality standard of cocoa has dropped due to some farmers and officials of QCC not living up to their responsibility of ensuring cocoa quality at the farm-gate. The problem has also been attributed to greed of LBCs in the municipality. The study concludes with a call on stakeholders in the industry to guard against any practice that will dent the reputation of Ghana as producer of best quality cocoa so as to maintain the quality premium we enjoy as a result. Recommendations have therefore been made to COCOBOD, QCC, LBCs, PCs and cocoa farmers to help maintain cocoa quality standard in the midst of the competition. Some recommendations have also been made to government particularly on how the cocoa sector in Ghana can be utilised effectively for national development.

Keywords: *Maintaining Quality Standards, Internal Market Competition*

1.0 INTRODUCTION

The cocoa industry is the backbone of Ghana's economy and a major foreign exchange earner. It is the most important agricultural export crop accounting for between 25% and 30% of total export earnings. It contributed about 10 percent to GDP in 2007. The industry employs over a million people in six cocoa growing regions of Ashanti, Brong Ahafo, Eastern, Central, Volta and Western, throughout the country (Canatus and Darkoa, 2009). According to Ghana Cocoa Board (n.d.), the commercial cultivation of cocoa in Ghana is attributed to Tetteh Quarshie, a native of Osu Accra, who had travelled from the Gold Coast to Fernando Po – now Bioko in Equatorial Guinea and worked there as a blacksmith. Tetteh Quarshie returned to the Gold Coast with Amelonado cocoa pods in 1879 and established a farm at Akwapim Mampong in the Eastern Region. Farmers bought the cocoa pods from his farm to plant and cocoa cultivation spread from the Akwapim area to other parts of the Eastern Region. The business of cocoa farming in Ghana has come to be associated with peasant farmers who cultivate the crop on plots of less than three hectares of land. With this humble beginning and through the efforts of these peasant farmers, Ghana rose to the position of the world's largest cocoa producer by the early 1960s.

However there was a significant downturn in the Ghanaian cocoa production by the early 1980s. According to Wikipedia (2008), the drop from an average of more than 450,000 tons per year to a low of 159,000 tons in the 1983/84 cocoa season was attributed to aging trees, widespread diseases, bad weather, low producer prices and bush fires which destroyed some 60,000 hectares of cocoa farms in 1983. Teal and Vigneri (2009) attribute the fall in Ghana's cocoa production to "the combination of an overvalued exchange rate and heavy taxation of cocoa by a monopsonistic marketing board". In 1984, some institutional reforms took place, aimed at subjecting cocoa purchasing and marketing to market forces. The role of the Ghana Cocoa Board (COCOBOD) was reduced and 40 percent of staff representing about 35,000 employees were retrenched. In 1992, cocoa marketing was privatised in Ghana and the monopoly of COCOBOD in marketing cocoa was shattered. The privatisation took the form of partial liberalisation where COCOBOD was given the monopoly of issuing licenses to private companies, called Licensed Buying Companies (LBCs). By the new arrangement LBCs were to compete in buying cocoa from the farmers for a margin. The margin is in the form of a minimum producer price as well as an additional fee to cover operating and transportation costs and to maximise some profit. COCOBOD still monopolised the fixing of prices, overseas shipment and export of the produce to ensure quality control. It was government of Ghana policy objective that

liberalisation and privatisation would improve the operational and financial performance of Ghana's cocoa marketing system so as to ensure higher and competitive producer prices.

However, the liberalisation and privatisation of cocoa purchasing seem to have led to declining quality and yield of cocoa, thereby adversely affecting farmers' and Ghana's earnings in terms of premium payment on the international market. Lundstedt and Pärssinen (2009), observe that though the quality level of Ghana's cocoa has still been high, there has been a decline in quality since the liberalisation of cocoa purchase. According to COCOBOD (2011), the standard against which all cocoa is measured throughout the world is that of Ghana's cocoa which has high content of theobromine. This makes it the best cocoa for high quality chocolates. The International Cocoa Standards (ICS) requires cocoa of merchantable quality to be fermented, thoroughly dried, free from smoky beans, abnormal or foreign odour and any evidence of adulteration. It must be reasonably free from living insects, broken beans and fragments, and the beans must be seasonably uniform in size. The Quality Control Company (QCC), previously Quality Control Division of COCOBOD (QCD), is responsible for ensuring high quality standards of cocoa over the years. However, Canatus and Darkoa (2009), observe that the QCC faces major challenges with the introduction of liberalisation. These include unhealthy competition among LBCs, the habit of LBCs tempering with sealed cocoa, and failure of LBCs to abide by the rules and regulations governing the internal marketing of cocoa. It is not only QCC which faces these problems. All major stakeholders are also concerned with the problems especially those related to maintenance of cocoa quality standards.

2.0 LITERATURE REVIEW

Crosby P.B. (1979), as cited by Wikipedia (August, 2001), with his principle of "doing it right the first time" (DIRFT), is one of the early contributors to quality management practice. Crosby talked about four major principles in quality management: the definition of quality is conformance to requirements; the system of quality is prevention; the performance standard is zero defects; and the measurement of quality is the price of non-conformance. This chapter gleans various literatures on quality issues to explore more into the subject matter of quality in order to enhance an effective outcome of the study.

2.1 The Concept of Quality

It is often said that quality is 'conformance to requirements' (Crosby, P. 1979), quality is 'fitness for use' (American Society for Quality, 2008); quality is 'the result of care' (Pirsig, R.M. 1974); and quality is 'the degree to which a set of inherent characteristics fulfills requirements' (ISO 9000, 2005), all above cited by Wikipedia (February 2009). The other aspect of quality is that it is defined entirely by the customer or end user, and is based upon that person's evaluation of his or her experience as a consumer. According to Drucker, P. (1985), cited by Wikipedia, (February, 2009), quality in a product or service is not what the supplier puts in. It is what the customer gets out and is willing to pay for. In marketing sense, the customer is not interested in the product that is being sold. He is rather interested in what benefits he will derive from the product.

According to the Commonwealth of Learning study kit on Marketing Management, (2008), a product should be viewed as a bundle of benefits or satisfaction offered to a customer. Product quality therefore includes ensuring product benefits and the satisfaction it gives to the customer. There are two common quality-related functions within a business. One is quality assurance which is the prevention of defects, such as by the deployment of a quality management system and preventive activities. The other is quality control which is the detection of defects, most commonly associated with testing which takes place within a quality management system. (Wikipedia, February 2009)

2.2 Characteristics of Product Quality

According to the Commonwealth of Learning as cited in the Study Kit for CEMPA 557: Operations Management (1999, P. 22), customer satisfaction is achieved through product features. Products having good features in the eyes of the customer is said to have good quality of design. The dimensions of design quality include performance, reliability, ease-of-use and reputation. Products that possess these features have the tendency of commanding high price and market share and therefore earning higher revenues. On the other hand products having less deficiency are said to have good quality of conformance. Lower deficiencies arise through waste reduction leading to lower costs thereby yielding higher profits. Freedoms from deficiencies or conformance to standards are necessary at delivery, during use, and during servicing.

There is one common characteristic of product quality, referred to as modern quality. In the past, quality of a product was typically defined as producing fewer defective parts. In an attempt to improve quality, it was done at the expense of increased cost, increased task time, and longer cycle time among others. Achieving fewer defective parts, lower cost and shorter cycle time at the same time used to be very difficult if not impossible. However, when modern quality techniques are applied correctly to business, engineering, manufacturing or assembly processes, all

aspects of quality namely customer satisfaction, fewer defects/errors, decreased task time, shorter cycle time and decreased total cost, must all be achieved. Or if one of these aspects does not improve, it must at least stay stable and not decline. This is often referred to as modern quality. So, modern quality has the characteristic that it creates AND-based benefits, not OR-based benefits and so can be described as universal. (Wikipedia, February 2009)

2.3 International Quality Standards

According to Wikipedia (2010), June edition, the International Organization for Standardization (ISO) 9000 family of standards relate to quality management systems and are designed to help organizations ensure that they meet the needs of customers and other stakeholders. Ghana Cocoa Board (n.d.), indicates that just as the ISO 9000 is designed to help meet quality standards, the International Cocoa Organisation (ICCO) has a similar mandate and has outlined the quality requirements of cocoa beans. Cocoa of merchantable quality should be well fermented, thoroughly dried, free from smoky beans, free from abnormal or foreign odour and free from any evidence of adulteration. The beans must be reasonably free from living insects and must not include broken ones or fragments, and must as well be seasonably uniform in size. Ghana's cocoa continues to enjoy high premium on the World's Commodities Markets because it is considered as "gold standard cocoa", against which cocoa from other countries are judged and differential prices paid.

According to QCC Quality Manual, (n.d.), the main criterion of quality for all types of cocoa used by all chocolate manufacturers is the flavour which is developed when the cocoa is roasted and processed. The flavour partly depends on the genetic constitution of the tree from which the cocoa comes, and partly on the treatment the cocoa receives at harvest, and during fermentation and drying. However, in testing for quality, physical examinations such as dryness test and cut test are used. This is because flavour is a subjective judgement and so cannot be measured objectively to enable the limit of satisfactory flavour be specified on paper for the purpose of grading cocoa.

2.4 Legislations on Cocoa Quality Standards

By Ghana Cocoa Board Law, the objects of Ghana Cocoa Board (COCOBOD) include to purchase, market and export cocoa produced in Ghana which is graded and sealed under the provisions of Cocoa Industry (Regulation) Consolidation Decree, N.L.C.D. 278 (1968) or any other enactment, as suitable to secure the most favourable arrangements for the purchase, inspection, grading, sealing and certification, export and sale of cocoa. (P.N.D.C Law 81, 1984). In an effort to meet the quality standards of cocoa set at the world commodities market, the Cocoa Industry (Regulation) Consolidation Decree, N.L.C.D. 278, (1968), and the Cocoa Industry Regulations, L.I. 598, (1968), spell out the criteria for achieving the best quality of cocoa produced in Ghana. The rules regarding the handling and inspection of cocoa for quality, as well as how and where cocoa should be stored, have been outlined under these laws. N.L.C.D. 278, (1968) paragraphs 1 to 7 dealt with the handling and inspection of cocoa to ensure quality, while paragraph 13 outlined penalties for quality standard offenders. N.L.C.D. 278, (1968) paragraph 2 states that "No person other than a grower of cocoa who is transporting his cocoa from the land on which it was grown to his premises for the purpose of fermenting and drying, shall transport cocoa which has not been thoroughly dried". It is also stated in paragraph 3 that, "No person shall export or cause or permit to be exported or attempt to export any cocoa unless and until the same has been Inspected by an inspector who shall have affixed to each bag a seal and grade-mark." (N.L.C.D 1968)

Paragraphs 4 to 7 of the law give the Inspector enough power to be able to carry out his duties effectively. It is stated in paragraph 5, that "An Inspector May at all reasonable times enter any premises in which cocoa is kept or suspected of being kept and inspect any cocoa found therein and may affix, remove or alter any seal or grade-mark on any bag containing such cocoa". However, the power of Inspectors is limited by relevant sections of the law in order to prevent them from abusing the law. Paragraph 9 of L.I. 598, (1968), states that inspectors should not sample or inspect any cocoa if that cocoa in whole or in part is not thoroughly dry, or free from foreign matter and smoky beans ..., until the defects have been remedied. The condition of buildings in which cocoa should be stored has also been specified under paragraph 1(1) of L. I. 598, while occupiers of such buildings have additional responsibility to ensure that cocoa stored in their buildings are kept in good condition. (N.L.C.D.278, 1968)

Lundstedt and Pärssinen, (2009) indicate that in order to obtain a purchase licence, LBCs who want to enter into the cocoa purchasing industry must comply with a criteria set up by COCOBOD. The criteria relates to organisational structure, operational strategy and financial strength of potential companies. In addition, applicants are required to demonstrate that they have access to tools of trade, warehousing facilities and vehicles or transport facilities. The location and condition of the warehousing facilities must be approved and certified by the QCC. According to them, there are also some operational requirements of the LBCs concerning the type of bags to use, grading and sealing procedure, minimum capacity of the sheds, and when to disinfect sheds among other things. The applications are reviewed by the Cocoa Sector Marketing Committee (CSMC), consisting of representatives of the

Board of Directors of COCOBOD, banks, University of Ghana and farmers, which makes recommendations to COCOBOD's Board of Directors.

2.5 Motivation and the Individual's Performance at Work

Motivation is defined as the force within a person that establishes the level, direction and persistence of effort expended at work. Studies have shown that when individuals perceive that compensation and reward systems are equitable, they have greater levels of job satisfaction and are willing to commit to organisational objectives. (Study Kid for CEMPA 553, Management and Organization). Vroom H.V. (1964), cited by Wikipedia (2012), January edition, defines motivation as a process governing choices among alternative forms of voluntary activities, a process controlled by the individual. According to Vroom, work motivation is determined by an individual's beliefs regarding effort-performance relationships and work outcomes. In his 'expectancy theory', Vroom introduces three variables which are valence (V), expectancy (E) and instrumentality (I), explained as follows:

- i. **Expectance** = the person's sense of the probability that he/she can actually do the work, in terms of his ability, expressed as a number between 0 and 1;
- ii. **Instrumentality** = the person's perception of the probability that doing the work will actually result in the desired outcome, expressed between 0 and 1;
- iii. **Valence** = the value the person attaches to the actual outcome of his effort. expressed between -1 and +, where -1 = not desired and + = very desirable.

Mathematically, motivation M , = $E \times I \times V$. This implies that the individual is motivated by expectancy (can I do it?) times instrumentality (will it get me what I want?) times valence (how badly do I want it?). If the farmer's instrumentality in achieving cocoa quality is zero, it means his motivation $M = E \times 0 \times V = 0$, meaning no motivation for him to produce quality cocoa.

Laven A. (2006) observes with particular reference to the internal market reforms in the cocoa sector in Ghana, that there is lack of incentives for good quality production. The reforms have resulted in higher volumes in cocoa production. However, there are difficulties such as high production costs, financial constraints inadequate extension services, and lack of farmer organisations. According to Laven, liberalisation has led to intense competition among local buyers who compete on volume, not on price. There is a resultant collusion between QCC and buyers who wrongly adjust their scales while farmers receive little or no support from buyers. All these combined, have made it difficult to control quality.

2.6 Pricing as a Motivating Factor

According to Norde D.J. and van Duursen J.A. (2003), the world commodities market considers Ghanaian cocoa as "gold standard cocoa", against which cocoa from other countries are judged. Norde and van Duursen stated that cocoa is traded at quality premiums at the international trade, with the price differential reflecting the intrinsic value of the bean based on its country of origin. In line with this observation cocoa is graded in Ghana in terms of their quality standards as cited in the Cocoa Industry Regulations, L.I. 598, (1968). L.I. 598, (1968) paragraph 11(1) states that cocoa shall be inspected and graded as follows:-

- (a) Grade I ... Cocoa which is thoroughly dry, free from foreign matter, smoky beans and any evidence of adulteration, and which contains not more than three per centum (3%) by count of mouldy beans, not more than three per centum (3%) by count of slaty beans, and not more than three per centum (3%) by count of all other defects.
- (b) Grade II ... Cocoa which is thoroughly dry, free from foreign matter, smoky beans and any evidence of adulteration, and which contains not more than four per centum (4%) by count of mouldy beans, not more than eight per centum (8%) by count of slaty beans, and not more than six per centum (6%) by count of all other defects.
- (c) Sub-Standard ... All cocoa which fails to reach the standard of Grade II will be regarded as sub-standard cocoa and marked "SS".

Apart from grading cocoa based on the degree of defect, the chocolate manufacturer requires that cocoa should be uniform in size. As cited by QCC Quality Manual, Offinso (n.d.), normally beans of smaller sizes mixed with bigger ones get burnt when roasted. Burnt beans are bitter and of discoloured chocolate. To achieve uniformity, selective grading is done. The cocoa beans are segregated and graded according to beans size. The segregated beans are put in categories depending on the number of beans contained in 100g weight per a given sample.

Table 2.1: A Table Showing Category of Cocoa in Selective Grading

| Bean Count Per 100g | Bean Size Category |
|---------------------|------------------------|
| Up to 90 | Super Main Crop Beans |
| 91 to 100 | Main Crop Beans |
| 101 to 110 | Super Light Crop Beans |
| 111 to 120 | Light Crop Beans |
| 121 to 130 | Small Beans |
| 131 to 150 | Type 4 Beans |
| 151 to 180 | Remnant Beans |

Source: QCC Quality Manual, Offinso (n.d.).

In all circumstances cocoa prices in Ghana should differ based on the grades of quality as specified by L.I. 598, 1968. However, Zeitlin (2005), states that LBCs almost never offer a higher price than the floor price fixed by COCOBOD. Again, Lundstedt and Pärssinen (2009), state that the producer price of cocoa is substantially lower in Ghana than in other cocoa producing countries. These authorities state that the producer price has been fairly constant since 2003, increasing from as low as US \$320 /tonne in 1993 to a top level of US \$1 010 /tonne in 2003. They attribute the stability in producer price to the cocoa marketing sector reforms. They added that Ghana receives quality premium in the world market with COCOBOD taking a high share of the world market price and benefiting most from the premium. However, the quality premium is not passed on to cocoa farmers.

2.7 Quality Standard Approaches

Lundstedt H. and Pärssinen S. (2009) indicated in their study that there are different institutional approaches in the various cocoa producing countries for achieving product quality. One way is the free market approach where market forces determine prices and quantities of cocoa produced. This system is characterised by monopoly of the private sector and little intervention from the government. Producers often receive higher prices for their harvests, but are also exposed to the volatility of the market price. Another approach is the marketing board system where the state controls production methods and the internal market chain of cocoa, while the government sets producer prices and handles exports. In the middle of these two extremes is the system with a stabilisation fund where producer prices are also determined by the government and the fund handles exports and domestic markets.

2.9. Role of Cocobod in Ensuring Cocoa Quality Standards

In Ghana the marketing board system is practiced. The Ghana Cocoa Board (COCOBOD) is responsible for cocoa production, marketing, price determination, quality control and export. The quality control aspect is handled by its subsidiary the Quality Control Company (QCC) which was previously called the Quality Control Division (QCD). More than a decade of market competition, Ghana's cocoa is said to be of premium quality in the world commodities market. This is often attributed to the diligence and hard work of staff of the QCC. The role of COCOBOD in maintaining cocoa quality standards is indicated in a lot of literature. Osei I. (2006) for example argues that the premium quality of Ghana's cocoa has not changed due to the efforts of COCOBOD and that Ghana still ranks top on the quality score in the international market. He notes that COCOBOD, with support from the government, has the capacity to check any acts or commission by any player along the production chain, to compromise the quality of the produce. Lundstedt H. and Pärssinen S. (2009) however express a contrary view with regards to the quality standards of cocoa. They are of the view that though the quality level of Ghana's cocoa is still high, there has been a decline in the quality since the liberalisation of internal marketing. Canatus and Darkoa (2009) observe that since the introduction of liberalisation, the QCC faces major challenges in ensuring quality standards of cocoa due to unhealthy competition among LBCs, who sacrifice quality in their quest to buy more cocoa. They also temper with sealed cocoa and fail to abide by the rules and regulations governing the internal marketing of cocoa.

2.9 Marketing Strategies Used By LBCS in the Competition

Laven A. (2007) observed that as part of their competitive strategies LBCs have found ways to ensure that farmers sell cocoa to them preferentially. Some of the strategies include prompt payment for cocoa purchased, asking farmers' community representatives to help select their purchasing clerks, social involvement with farmers' communities such as attending funerals, the provision of services, and offer of subsidised inputs or credit. According to Wikipedia (August, 2008), Microeconomic theory posits that due to competition, firms develop new products,

services and technologies, which would offer their consumers better choices. Competition results in better products and affordable prices compared to what the products were when there was no competition.

2.10 Consumers Concern for Quality

There have been a lot of issues about the falling quality stands of the Ghanaian cocoa, emanating from the consumers of the product. Japan in particular came into the cocoa consumer market with high quality specifications which triggered a lot of complaints from other consumer countries regarding quality. The major consumer complaints were that there were high chemical residue in the cocoa, high moisture, and admixture among others. The Japanese demanded that the required quality standards be met to guarantee their continuous patronage of the commodity. In the view of Wikipedia (August 2008), higher conformance of a product to customer specifications means fewer complains which implies greater customer satisfaction. However, the opposite is the case in this situation. There have been many complaints from the consumers which implies lower conformance of our cocoa to their specifications, and for that matter less satisfaction to them. The situation led to stiffer measures from COCOBOD to ensure that Ghana does not lose its reputation as the world's best quality cocoa producer and for that matter lose the quality premium to the disadvantage of the economy.

In an effort to maintain quality standards, COCOBOD tasked QCC to sit up to ensure that the required quality standards are met. A lot of calls emanated particularly from the QCC to cocoa farmers and all stakeholders in the cocoa industry to sit up and work tirelessly to protect Ghana's image in the world commodities market. Gokeh Sekyim (2009) urges LBCs to educate cocoa farmers to use recommended pesticides and fertilizers to eliminate pesticide residue which has been a problem facing the cocoa industry. Bissiw, (2006) expresses concern that the use of unsuitable agro chemicals by cocoa farmers to spray their farms has resulted in reported cases of high chemical residue in the cocoa, while Amponsah (2010) emphasises the need for the cocoa beans to be taken through proper fermentation practices. He cautions farmers not to allow the intense competition among LBCs to adversely affect the standards of cocoa quality. Fofie (2011) expresses concern about the increasing rate at which the quality of Ghana's cocoa is dwindling as a result of the competition, and underscores the pragmatic steps being undertaken by (COCOBOD) to address this worrying quality problem.

2.11 Producers' Concern for Ensuring Quality

Laven A. (2007) argues that due to the reliability of the marketing system, COCOBOD has a good reputation for fulfilling its contracts and maintaining quality standards in the product. However, the risks involved for farmers could be outweighing some of the benefits. The production of premium quality cocoa benefits farmers, but also entails a cost as it requires adequate fermentation and drying techniques. The increase in production costs has led to a situation where farmers work longer hours and have to recruit family members who would not normally be involved in the business. Under normal circumstances there should be an assessment of the risk in terms of the additional labour and cost to farmers, so as to be able to determine what assistance should be given to them to mitigate these risks that they are exposed to in their efforts to maintain high quality standards of cocoa.

LBCs are not left out of the exposure to risk resulting from the consumer's concern for quality. In the words of Laven, "LBCs are locked into a system with few incentives for high performance, and little financial scope for establishing strong relations with farmers, while LBCs are given more responsibilities without being able to generate increasing returns". In Anna Laven's findings during the 2004/2005 cocoa season, there were serious quality problems where the beans became infected with the purple disease, resulted in less flavoursome and more acidic cocoa liquor. The problem was blamed on LBCs which are responsible for the first quality check of cocoa, for failing to encourage farmers to continue their traditional good farming practices. In response, COCOBOD declared all bags of cocoa with more than 25% purple beans as sub-standard, and paid the LBCs only half of what they were due. The LBCs were unable to recover their costs and so most of them temporarily stopped buying cocoa, with knock-on effects on other economic activities in cocoa-growing areas. This also affected the livelihood of many farmers as they were not able to sell or store their cocoa and lost their main source of income. (Anna Laven, 2007, P 3)

2.12 The Role of Cocoa in the Ghanaian Economy

The cocoa sector offers many economic and social advantages to the Ghanaian economy due to the high quality standard of Ghana's cocoa. Canatus and Darkoa, (2009), argue that the cocoa industry is the backbone of Ghana's economy. Again, contrary to economic indices which label gold as the largest foreign exchange earner, Tutu (2011), cited by the Ghana News Agency, (2011), 15th February edition, observes that cocoa is the largest foreign exchange earner for Ghana. He posits that an investment of one dollar (\$1.00) in the minerals sector earns two dollars (\$2.00) while the same amount of investment in the cocoa sector earns about seventeen dollars (\$17.00). On the social sector, cocoa employs an estimated 800,000 farmers with about 3.2 million farmhands, and 6,121 staff of COCOBOD. The

mining sector on the other hand employs 27,481 workers with an estimated 500,000 small scale miners. He noted that the environmental problem from cocoa was the conversion of forest into cocoa farms but it has added benefit of tree cover that compensates partly for initial conversion, while social and environmental problems from gold include diseases like malaria, schistosomiasis, respiratory problems, resettlement problems, deforestation, land degradation, soil erosion, and soil and water pollution. While cocoa has higher economic and social benefits than gold and timber, the latter have serious environmental cost.

In addition to the above advantage, many Ghanaians are increasingly being catered for by the cocoa sector as evident by the remarkable increases in cocoa production and producer prices over the years as shown on Table 2.2 below.

Table 2.2: A Table Showing Cocoa Production (Tonnes) and Producer Price % of FOB Price (1995/96 to 2004/05 cocoa seasons)

| Crop Year | Production (Tonnes) | Producer Price /Tonne (GHc) | % Of FOB |
|-----------|---------------------|-----------------------------|----------|
| 1995/96 | 403,872 | 84.00 | - |
| 1996/97 | 332,488 | 120.00 | 50.79 |
| 1997/98 | 409,383 | 180.00 | 54.00 |
| 1998/99 | 397,675 | 225.00 | 56.12 |
| 1999/00 | 436,947 | 225.00 | 73.97 |
| 2000/01 | 389,772 | 347.50 | 67.00 |
| 2001/02 | 340,562 | 438.40/620.00 | 69.09 |
| 2002/03 | 496,846 | 850.00 | 68.11 |
| 2003/04 | 736,975 | 900.00 | 69.00 |
| 2004/05 | 599,318 | 900.00 | 73.01 |
| 2005/06 | 740,458 | 900.00 | 72.66 |
| 2006/07 | 614,532 | 915.00 | 72.19 |
| 2007/08 | | 950.00 | 70.97 |

Source: Notes from COCOBOD Presentation.

3.0 RESEARCH METHODOLOGY

This research is a field study which used exploratory and descriptive methods for data collection. It took the form of a case study which was used to explore the methods which stakeholders embark on ensuring cocoa quality standards in the Offinso Municipality. As a case study it provides a systematic way of looking at events, collection and analysis of data. (Wikipedia, January, 2011). The method has the advantage of enabling the researcher to gain proper understanding of the cocoa industry in the Municipality. It also paves way for the important areas of the problem to be noted for a more extensive research in the future. A case study of this nature gathers a mixture of quantitative and qualitative methods for data collection and analysis. Non-probability sampling method was used to select respondents and in collection of data.

The population of this study consisted of all individuals and organisations, departments and agencies that are associated with cocoa production, marketing and quality control in the Offinso Municipality. These agencies are COCOBOD, the QCC, LBCs, and individual respondents such as District Managers, Purchasing Clerks (PCs), Cocoa Farmers as well as others in the civil society. The procedure adopted by this research for obtaining the sample from the population of study is based on non-probability sampling technique due to the nature of the study as described under the research design. The composition of the population is not simple so as to use random sampling technique. Convenience sampling method was rather used because the population cuts across different parameters. It became necessary to adopt this method so that all units of the population that are found within the Offinso Municipal area can be considered for selection to form part of the sample. There were other considerations that were factored into the choice of convenience sampling method. The Offinso area is noted for its prowess in cocoa production and so findings made about the issue of cocoa quality in the area can be fairly representative of the national situation of cocoa quality. The limitations of time and resources were also factored into the choice of sampling technique. The use of a probability sampling method would have called for sampling designs for the various categories of samples involved in the study. This might be very difficult if not impossible considering the time and resources at the disposal of the researcher.

3.3 Classification of Respondents and Sample Size

Since the sample was selected from different categories of respondents based on non-probability sampling method, it became necessary to classify and categorise respondents into the various sample units and their sample sizes that constituted the total sample. The respondents were classified and categorised as on Table 3.2 below.

Table 3.2: A Table Showing the Categories of Respondents in the Study.

| Category of Respondents | Number Selected |
|-----------------------------------------|-----------------|
| Officials of Ashanti Region COCOBOD | 5 |
| Licensed Buying Companies (LBC) Members | 5 |
| Quality Control Company (QCC) Members | 5 |
| Purchasing Clerks (PCs) | 15 |
| District Managers (DMs) | 5 |
| Cocoa Farmers | 40 |
| Civil Society Organisation Members | 20 |
| Total sample size | 95 |

Source: Researcher's sample design

In all a sample size of 95 was arrived at with the belief that responses of these respondents received as well as the conclusions drawn would be representative of the whole research population. Information was obtained from two main sources - secondary and primary sources. The secondary source provided information from records, documents, books, journals, bulletins, Newspapers, World Wide Web, and the Internet. The primary data was collected through the use of questionnaires, face-to-face interviews, discussions, one-on-one interactions with focus groups made up of cocoa farmers and community members, telephone conversations and personal observations.

The following research instruments were used to gather data for the study: questionnaires – open-ended or unstructured questionnaires; interviews – conducted with individual respondents and in administering questionnaires; observations – made through visits to farms, buying centres, grading centres and depots; focus group discussions – held with farmers groups in farming communities; round-table discussions – held with selected respondents; and telephone conversations – made with respondents to clarify information.

In collecting data for the study, questionnaires were prepared and administered to staffs of COCOBOD, QCC, LBC members, District Managers, Purchasing Clerks, cocoa farmers, and members of the civil society in the Offinso Municipality. After preparation and design of the questionnaires, they were pre-tested to assess their suitability, relevance and validity before they were administered to respondents.

The results for pre-test were analysed and this led to some significant changes in the questionnaires and questions posed. It was realised that in most cases similar questions needed to be repeated to different categories of respondents due to the complementary nature of the data involved. Some questions were also found to be repetitive and so were deleted. There were also some questions that were found to be ambiguous. Questions considered ambiguous were clarified in order to make them easy for respondents to understand and also to avoid inappropriate responses.

The questionnaires administered to officials of LBCs and COCOBOD were posted while all other questionnaires were either sent personally to respondents or administered through face-to-face interviews. The distribution of questionnaires to the various categories of respondents is shown on table 3.3 below

Table 3.3: A Table Showing Number of Questionnaires Administered

| Categories of Respondents | No of *Qs Sent | No of Qs Received | No of Qs. Rejected | Remarks |
|---------------------------|----------------|-------------------|--------------------|--------------------------------|
| COCOBOD | 5 | 3 | 2 | 2 Qs re-sent and received |
| QCC Staff | 5 | 5 | 0 | Qs sent & collected personally |
| LBCs Staff | 5 | 3 | 2 | 2 Qs re-sent and received |
| Dist. Managers | 5 | 5 | 0 | Qs sent & collected personally |
| Purch. Clerks | 15 | 15 | 0 | Qs administered face-to-face |
| Cocoa Farmers | 40 | 40 | 0 | Qs administered face-to-face |
| Civil Society | 20 | 20 | 0 | Qs administered face-to-face |
| Total | 95 | 91 | 4 | |

* Qs = questionnaires

Source: Researcher's Data Collection Design (2011)

Questionnaires that were sent personally to respondents or administered through face-to-face interviews had 100 percent recovery rate while those that were posted to COCOBOD and LBCs staff had two each not returned. However, another two questionnaires each were re-posted to different respondents in the two categories and were received. The administration of questionnaires and interviews took a lot of time due to the varied nature of the sample. These were done with the help of two research assistants who were first of all taken through some guidelines on how to approach respondents, how to ask questions and how to write responses. The research assistants also helped a lot during interviews and discussions held with respondents.

The questionnaires administered to members of the civil society as well as PCs and cocoa farmers were done through face-to-face interviews. This was done with the help of the research assistants where the respondents were approached and interviewed and the responses recorded. Officials of LBCs and QCC were also interviewed with the help of interview guides to obtain information to supplement what was obtained through questionnaire administration.

Some opinion leaders were also interviewed, though not using interview guide. This type of interview was conducted in the form of non-formal interaction with Assemblymen, Unit Committee members, and executives of farmers' associations in the cocoa farming communities. The essence was to crosscheck the information given by respondents in those communities and to fish out for additional information. In Anyinasuso a cocoa farming community, a group of ten farmers were engaged in a focus group discussion on how cocoa is fermented and dried in order to achieve quality. Similar discussions were also held in Worapong and Anwherekrom, both cocoa farming communities in the area.

Members of the group were approached and pre-informed about what the discussion was all about. This was done to avoid a situation where they may be skeptical in given information. During the discussion there was open floor for members to express their opinion one after the other, on the processes farmers take the cocoa beans through before they are ready for sale. Through the narrations given, the most important processes mentioned include fermentation and drying.

Other issues were also discussed using the same method of open floor. Farmers seem to complain so much about issues affecting them such as their plight during the lean season. They also complained that the spray gang and those who distribute chemicals often neglect those who have small cocoa farms. These practices according to them also contribute to the quality problems.

The researcher visited cocoa farming communities, buying centres and grading centres where observations were made on cocoa harvesting, fermentation, drying, as well as grading and sealing. The researcher participated in the drying process during a visit to one of the farming communities. In the process of drying, foreign materials, germinated beans, black beans and flat beans among others were picked from the cocoa. The farmers also rub the cocoa beans against the mat to remove unwanted substances and to polish the beans up to make them look attractive to prospective buyers.

In one buying centre the researcher observed transactions between farmers and the PC when a numbers of farmers came with cocoa to sell. One significant thing about quality that was observed is that the PC complained about the dryness of the cocoa. In most cases the beans were poured on the tarpaulin in the sun and re-dried.

During grading and sealing of cocoa in one of the depots, the researcher participated in an exercise known as bean count which determines the category of cocoa involved, and in fixing the seals to the bags. The researcher also asked questions and learned more about cocoa quality. The produce inspectors use chalk marks to identify cocoa that has failed the quality test and which must be reconditioned. They also use the horn to bore big holes in the sack for the same purpose. The problems identified this way include NTD, black beans and admixture.

Round-table discussion was held with respondents who are produce inspectors of the QCC to complement information obtained through the other sources. The discussions centred on how the farmers are supposed to treat the cocoa beans as per the QCC's recommended procedures in order to ensure quality.

Some selected respondents were contacted through telephone conversation whenever there was the need to get clarifications on some responses received through questionnaires administration, interviews or discussions held.

4.0 DATA PRESENTATION AND ANALYSIS

This chapter deals with the presentation and analysis of the data gathered in the study. The demographic characteristics of respondents and the data obtained through field work have been presented in the form of tables, graphs, charts as well as in statement form. The chapter also examines and analyses the information presented.

4.1. Demographic Characteristics of Respondents

4.1.1 Sex of Respondents

Apart from farmers and member of the civil society, the other categories of respondents in the survey made up of PCs, DMs and members of the QCC are male dominated and this explains why the sex distribution of respondents is skewed towards the male population.

Table 4.1: A Table Showing Sex of Respondents

| Sex | Number of Respondents | Percentage |
|--------|-----------------------|------------|
| Male | 68 | 71.6 |
| Female | 27 | 28.4 |
| Total | 95 | 100 |

Source: Researcher's Field Work, June, 2011.

4.1.2 Age of Respondents

Over 90% of the respondents are below the age of sixty years, of which 62.1% fall within the age range of eighteen to fifty (18 – 50) years. This age range can be described as the active population in the cocoa industry. The age structure is an indication that more youth are involved in the cocoa sector. This shows a healthy sign as far as quality cocoa production is concerned. The table also shows that respondents between the ages of 41 – 60 years are in the majority and this is very significant in quality maintenance since they are likely to have enough experience in the cocoa business. Table 4.2 below shows the age distribution of respondents.

Table 4.2: A Table Showing Age Distribution of Respondents

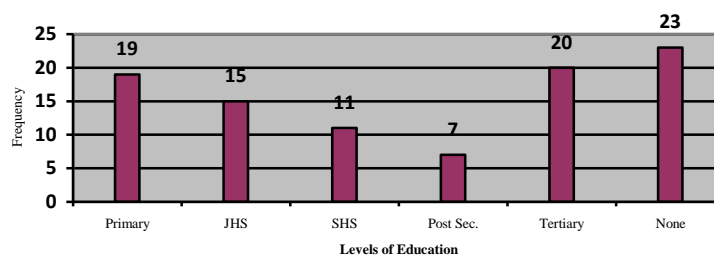
| Age Range | Number of Respondents | Percentage |
|--------------------|-----------------------|------------|
| 18 – 30 | 14 | 14.7 |
| 31 – 40 | 25 | 26.3 |
| 41 – 50 | 20 | 21.1 |
| 51 – 59 | 27 | 28.4 |
| 60 Years and Above | 9 | 9.5 |
| Total | 95 | 100 |

Source: Researcher's Field Work, June, 2011.

4.1.3 Education Levels of Respondents

The questionnaires submitted by respondents showed that apart from the workers of COCOBOD, LBCs and DMs, some respondents who are cocoa farmers interviewed were degree and HND holders. This explains why in the survey tertiary level has a high frequency. The bar chart below shows responses' level of education.

Figure 4.1: A Bar Chart Showing Education Level of Respondents



Source: Researcher's Field Work, June, 2011

The trend in the respondents' levels of education shows that majority of them either do not have any formal education or have only basic level education. For the sake of effective dissemination of information, it is significant to note this trend so that in case of any education on quality maintenance by the QCC or any of the stakeholders, the local dialect should be used as the medium of communication.

4.1.4 Experience of Respondents

Respondents' experience profile was limited to only cocoa farmers, Purchasing Clerks and Quality Control Officers. These are the categories of respondents who are directly involved in cocoa quality maintenance. In all, 65% of the respondents have more than ten years experience in the cocoa business as cocoa farmers, Quality Control Inspectors, Quality Control Officers, or Purchasing Clerks (PCs).

In the case of respondents who are farmers it means that 65% of them have had over ten years experience in harvesting, fermenting and drying of cocoa beans such that it maintains its traditional quality as handed down to them by their parents and older relatives. Also 65% of QCC members have over ten years experience in monitoring and control of quality in cocoa beans while PCs have similar experience in buying cocoa and can therefore easily tell if the beans are of quality standards. Table 4.3 indicates the experience of respondents in maintaining cocoa quality.

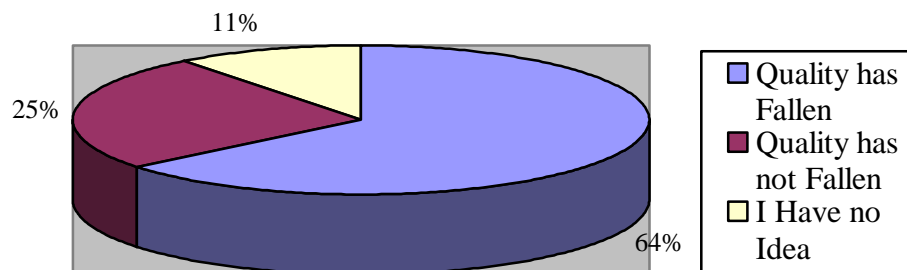
Table 4.3: A Table Showing Experience of Respondent

| Experience | Number of Respondents | Percentage |
|---------------|-----------------------|------------|
| Below 5 Years | 5 | 8.3 |
| 5 – 10 Years | 16 | 26.7 |
| 11 – 20 Years | 15 | 25 |
| Over 20 Years | 24 | 40 |
| Total | 60 | 100 |

Source: Researcher's Field Work, June, 2011

Respondents' opinions were sought on whether or not they agreed that the quality of Ghana's cocoa has fallen. 64% of them agreed while 25% did not agree. 11% however said they had not noticed whether there is any change in the quality of cocoa or not. For those who agreed that the quality standard has fallen, they attribute the problem to the competition in purchase. The views of respondents on the quality standard of Ghana's cocoa are shown in Figure 4.2 below.

Figure 4.2: A Pie Chart Showing Respondents' Views on the Quality of Cocoa



Source: Researcher's Field Work, June, 2011

In the view of respondents who agreed that there has been fallen standard in quality of cocoa beans, the causes of the problem was alluded to production lapse on the part of farmers due to the competition. The major factor mentioned by respondents in the survey was the hasty manner in which farmers rush to sell their cocoa which prevents them from treating the beans properly for quality. Other factors mentioned by these respondents as causes of fallen

standard of quality in cocoa include PCs buying cocoa irrespective of quality and QCC compromising on quality principles. Responses of respondents are shown on Table 4.4 below.

Table 4.4: A Table Showing Respondents' Views on the Causes of Fallen Quality Standards of Cocoa

| Responses (Respondents' Views) | Number of Respondents | Percentage |
|---------------------------------------|-----------------------|------------|
| Farmers' haste to sell their cocoa | 36 | 59 |
| PCs buy cocoa irrespective of quality | 10 | 16.4 |
| QCC compromise on quality principles | 8 | 13.1 |
| COCOBOD's failure to motivate farmers | 7 | 11.5 |
| Total | 61 | 100 |

Source: Researcher's Field Work, June, 2011

However, the respondents who said that quality has not fallen also gave reasons. They think that high prices of cocoa and quality control measures by QCC among others have enhanced cocoa quality. Their views are on Table 4.5 below.

Table 4.5: A Table Showing Respondents' View on Factors that Accounted for the Maintenance of Cocoa Quality under Market Competition.

| Responses | Number of Respondents | Percentage |
|------------------------------------------|-----------------------|------------|
| Farmers motivated by high prices | 7 | 29.2 |
| LBCs ensuring quality checks on farmers | 2 | 8.3 |
| QCC intensifies quality control measures | 12 | 50 |
| QCC embarks on farmers' education | 3 | 12.5 |
| Total | 24 | 100 |

Source: Researcher's Field Work, June, 2011

The issue of cocoa quality hinges on certain elements of defect which when found in the cocoa makes it of bad quality. A question was posed to 79% of the respondents consisting of QCC, COCOBOD, LBCs, DMs, cocoa farmers as well as PCs to mention some of the defects which indicate low quality in cocoa. The cocoa defects as mentioned by these respondents are the following:

- i. Not Thoroughly Dry (NTD) – Cocoa beans with high moisture content;
- ii. Admixture also known as Average Tolerance Level (ATL) – a mixture of cocoa beans of different sizes or a mixture of uneven/unusual beans;
- iii. Mould – cocoa beans that become mouldy, tastes bitter and lacks flavour;
- iv. Weevil – cocoa beans infested with weevils and cocoons, damaging the food;
- v. Purple – cocoa beans in purple colour and tasting bitter and flavourless;
- vi. Foreign material – cocoa beans mixed with debris, stones, or cow dung etc.;
- vii. Flat beans – beans that are very light in weight due to smaller food in them;
- viii. Smoky beans – cocoa beans contaminated with smoke ; and
- ix. High chemical residue – cocoa beans contaminated with chemicals due to the use of unapproved chemicals by farmers to spray on their farms.

It was observed however, that this particular defect (high chemical residue) was mentioned by a small percentage of the respondents. Respondents explained that the problem of high chemical content found in the cocoa was a recent development.

As to the causes of cocoa defects, respondents who are cocoa farmers as well as members of QCC and COCOBOD mentioned some of the causes of cocoa defects as shown in Table 4.6 below.

Table 4.6: A Table Showing the Causes of Cocoa Defects as given by Respondents

| Cocoa Defect | Cause of Defect |
|--------------|-------------------------------------------------------------------------------------------------------------------------------|
| Mould | Prolonged fermentation; improper drying and storage; stacking cocoa on bare floor; wetting by rain in transit; overripe pods. |
| Weevily | Under-fermented beans; diseased pods; delay in breaking; storing cocoa for too long; cracked and germinated beans. |

| | |
|------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Germinated beans | Wasting too much time before breaking; hasty fermentation; and harvesting of over ripped pods. |
| Slaty beans | Harvesting of immature pods, diseased pods or pods attacked by rodents; lack of proper fermentation. |
| Flat beans | Undeveloped pods and heavy pods |
| Smoky beans | Beans smoked on fire to obtain dryness; and by direct or indirect contamination with smoke during storage. |
| Foreign matter | Drying or storing cocoa in unhygienic places. Placenta of the cocoa; stones, pieces of wood, animal dung mixed with cocoa. |
| Purple beans | Insufficient fermentation; harvesting cocoa not well ripped. |
| NTD | Hasty drying; insufficient fermentation; lack of bulking. |
| Admixture | Mixing different beans sizes during breaking; failure to pick out small or unusual beans during drying; insufficient water intake. |

Source: Researcher's Field Work, June, 2011

In response to a question as to what remedies are there in converting cocoa beans having these defects into good quality beans, respondents who are DMs, PCs and QCC members mentioned some of the remedies such as re-drying, fumigation, and sieving. Remedies mentioned by respondents are shown in Table 4.7 below.

Table 4.7: A Table Showing Measures Required in Converting Defective Cocoa Beans into High Quality Beans

| Cocoa Defect | Required Curative Measure |
|------------------|------------------------------------------------------------------------------------------------------------------|
| NTD | Re-drying and general bulking of cocoa. |
| Purple beans | No curative measure and should better be prevented. Cocoa is graded as sub-standard cocoa if purple is high. |
| ATL/ Admixture | Sieving, segregation and hand picking of unusual beans. |
| Mould | Re-conditioning if not too serious. Discard cocoa if mould is very serious. |
| Cocoon infested | Spraying, fumigation, discarding infested sacks and re-bagging cocoa into new sacks. |
| Germinated beans | Hand picking of germinated beans from normal beans. |
| Black beans | Hand picking of black beans and general bulking. |
| Dampness | Re-drying and storing at worm temperature. |
| Foreign matter | Sieving of cocoa to remove rubbish. Hand picking of all pieces of placenta, sticks, stones and animal excrement; |

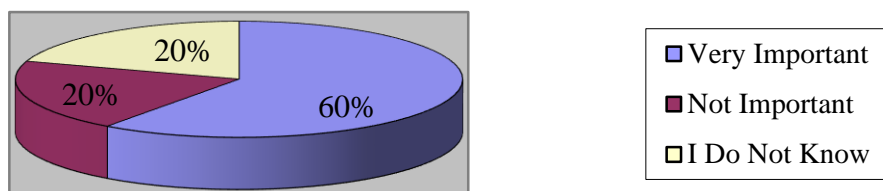
Source: Researcher's Field Work, June, 2011

As to factors that account for low quality of cocoa, respondents mentioned the following:

- i. Harvesting of unripe cocoa pods or overripe cocoa pods
- ii. Poor or insufficient fermentation
- iii. Improper or hasty drying
- iv. Poor storage of dry cocoa beans.

60% of the respondents are of the view that proper fermentation, drying and storage are very essential in ensuring cocoa quality. The views of respondents are shown on Figure 4.3 below.

Figure 4.3: A Pie Chart Showing Respondents' Views on the Importance of Cocoa Fermentation, Drying and Storage, in Determining Cocoa Quality



Source: Researcher's Field Work, June, 2011

Respondents were asked to mention the processes which to them contribute to achieving cocoa quality. The processes mentioned by them are:

1. Harvesting ripe cocoa and harvesting at regular times;
2. Breaking the cocoa pods at the appropriate times;
3. Doing proper fermentation and drying of cocoa beans; and
4. Ensuring proper storage of the dry cocoa beans.

The processes mentioned by respondents are shown in table 4.8 below.

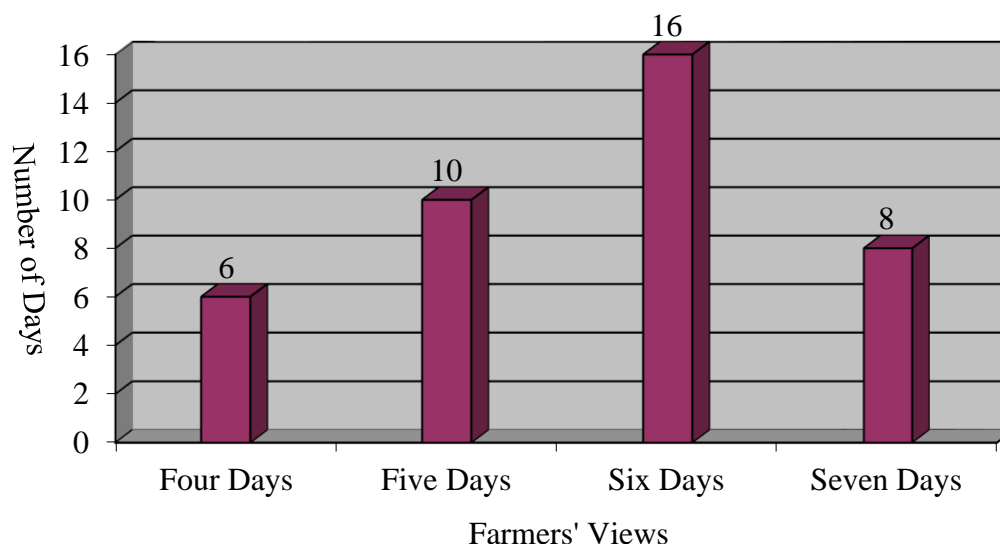
Table 4.8: A Table Showing Cocoa Quality Maintenance Activities and How They Contribute to Achieving Cocoa Quality

| Maintenance Activity | Period of Maintenance | Contribution of Quality Maintenance Activity in Ensuring Cocoa Quality |
|----------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Harvesting | Intervals of two weeks | Harvesting ripe pods at regular intervals prevents fungus diseases, mould and germinated beans |
| Breaking | Latest 3 days after harvest | When breaking is done at the right time it prevents germinated beans, weevils and cocoon infestations |
| Fermentation | 6 days in the heap | Fermentation enhances dryness and converts cocoa beans from bitter taste to sweet taste and flavour |
| Drying | 6 – 8 days depending on the weather | Drying to remove water content to achieve true weight of cocoa, while picking foreign materials and polishing beans to give attraction to buyers. |
| Storage | Pending sale | Proper storage helps prevent mould, dampness, and weevils attacks. Improper storage causes defects. |

Source: Researcher's Field Work, June, 2011

All respondents agreed that the major factor in achieving quality in cocoa is fermentation. According to respondents who are members of QCC and COCOBOD, cocoa beans fermentation should last for six day.

Respondents who were farmers however mentioned that fermentation period that gives the needed quality should be seven, six or five days. On the whole, 20% of the respondents in the survey mentioned that the fermentation period that will give maximum quality standard to cocoa is seven days. 40% of them mentioned six days, 25% mentioned five days while 15% mentioned four days. The views of respondents are shown in figure 4.4 below.

Figure 4.4: A Bar Chart Showing Farmers' Views on the Actual Number of Days Cocoa Should be Fermented to Achieve Quality

Source: Researcher's Field Work, June, 2011

In response to a question as to whether or not proper standards are being pursued effectively by farmers, 66.3% of respondents affirmed in the positive while 33.7% affirmed in the negative as shown on Table 4.9 below.

Table 4.9: A Table Showing Respondents' Views on Whether Farmers Carry Out Maintenance Activities Effectively

| Respondents' Responses | Number of Respondents | Percentage |
|------------------------|-----------------------|------------|
| Yes | 63 | 66.3 |
| No | 32 | 33.7 |
| Totals | 95 | 100 |

Source: Researcher's Field Work, June, 2011

The respondents who were of the view that farmers do not live up to quality process standards cited reasons which are as follows:

- i. failure of farmers to ferment cocoa properly, leading to low quality of cocoa;
- ii. hasty drying of cocoa by farmers in order to get the cocoa ready for the market quickly, resulting in insufficient drying and quality problems;
- iii. failure of farmers to pick out foreign matter, resulting in adulterated cocoa;
- iv. farmers using unapproved chemicals to spray on their farms, leading to recent complains about high chemical residue found in the cocoa beans;
- v. some farmers especially absentee farmers not having enough time to maintain their farms properly and caretakers also not ensuring cocoa quality;
- vi. some farmers collecting inputs on credit or financial assistance from LBCs but not ensuring that they are used properly to improve quality of cocoa.

In response to a question whether Purchasing Clerks pursue cocoa quality standards in the midst of the competition in purchasing, 54.7% of the respondents answered in the positive while 45.3% of them responded in the negative. The views shared by respondents are shown on Table 4.10 below.

Table 4.10: A Table Showing the Views of Respondents on the Role of PCs in Maintaining Cocoa Quality in the Midst of Market Competition

| PCs Contribute Positively Towards Ensuring Cocoa Quality | Number of Respondents | Percentage |
|----------------------------------------------------------|-----------------------|------------|
| Yes | 52 | 54.7 |
| No | 43 | 45.3 |
| Total | 95 | 100 |

Source: Researcher's Field Work, June, 2011

The respondents who stated that PCs do not pursue proper standards in cocoa quality gave the following reasons:

- i. as a result of competition, PCs compromise on quality cocoa from farmers and therefore accept any cocoa beans regardless of the quality standards;
- ii. PCs always buy defective cocoa with the view to re-condition them to meet quality standards, thereby encouraging farmers on the wrong practices;
- iii. Sometimes PCs deliberately fail to demand quality standards from farmers because such farmers are likely to sell their cocoa to another PC;
- iv. Having provided credit inputs or financial credits to farmers, PCs are prepared to buy cocoa from them even though the quality may be low; and
- v. Due to competition in cocoa purchase, some PCs buy the product even though the quality might be below acceptable standards.

Respondents who are staff of QCC mentioned that the QCC on its part ensure high quality standards in cocoa through the following:

- i. sampling, inspection, grading and sealing of cocoa at the grading centres;
- ii. check-testing for the quality of cocoa at the point of shipment to the world market, to avoid the exportation of bad quality cocoa;
- iii. enforcing quality standard compliance among LBCs on their depots, coverage of cocoa evacuated from the buying centres to the depots, proper storage of cocoa and the use of clean jute sacks for the storage of cocoa;
- iv. undertaking monthly fumigation and disinfestations of depots and cocoa sheds to control weevil attacks and cocoon infestations; and
- v. conducting grading demonstrations and courses for farmers on the careful preparation and good storage of cocoa to ensure quality at the farm gate.

As to whether the QCC train farmers on how to achieve quality standards in cocoa, 62.5% of respondents, who are farmers, mentioned that they are trained two times in a year while 37.5% said they are not trained.

Table 4.11: A Table Showing Farmers' Responses as to Whether They are Trained by the QCC on the Treatment of Their Cocoa to Ensure Quality

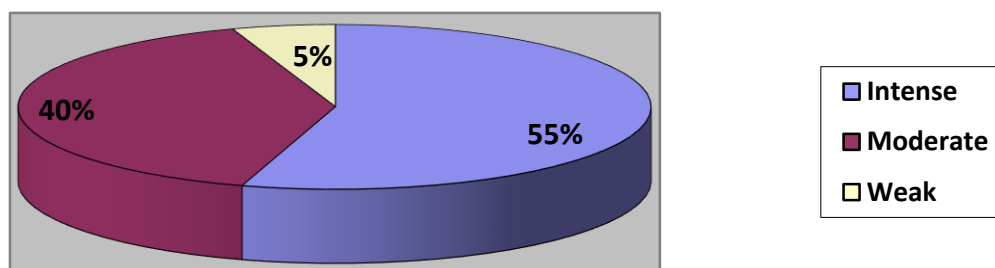
| Respondents' Responses | Frequency | Percentage |
|------------------------|-----------|------------|
| Yes, Trained by QCC | 25 | 62.5 |
| No, Not Trained by QCC | 15 | 37.5 |
| Total | 40 | 100 |

Source: Researcher's Field Work, June, 2011

According to the farmers some of the areas of training given to them are proper harvesting techniques, the right approach to cocoa fermentation, drying and storage of dry cocoa beans, as well as some QCC's rules and regulations regarding the treatment, handling and storage of cocoa. Respondents were asked to give a rating to the competition among LBCs in the cocoa purchasing industry. The aim of this question was to find out the level of competition and whether it was a factor in the fallen standard of quality in cocoa. Respondents described the competition as intense,

moderate, and weak. The views of respondents on the nature of competition among LBCs are shown in figure 4.5 below

Figure 4.5: A Pie Chart Showing Respondents' Views on the Competition Among LBCs in the Cocoa Purchasing Industry



Source:

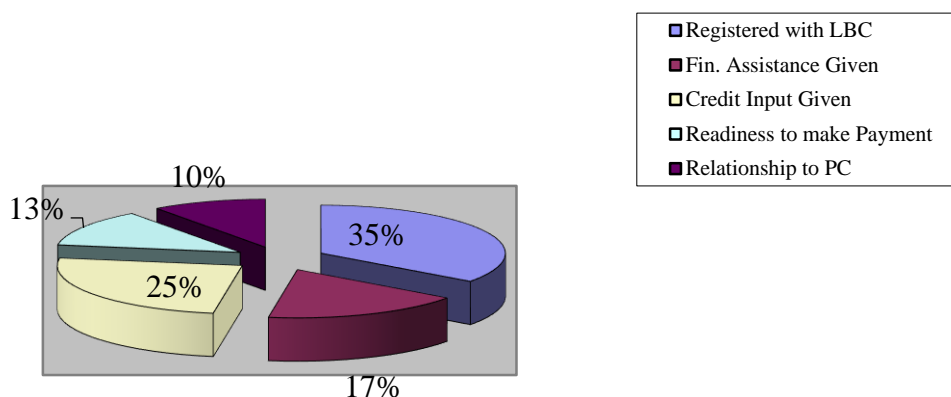
Researcher's Field Work, June, 2011

To a question as to how LBCs achieve quality in cocoa, respondents mentioned the following as the activities of LBCs geared towards achieving quality:

- i. acquisition of ware housing facilities, trucks for transportation purposes, and operational logistics such as weighing scales, tarpaulins, and gratins;
- ii. prompt payments of salaries and wages of staff associated with maintaining of product quality in order to motivate them to ensure good quality cocoa;
- iii. co-operating with COCOBOD and QCC in adherence to regulations in the cocoa purchasing industry especially those related to quality maintenance.
- iv. Assisting farmers with farm inputs, financial credit, as well as bonanza and award systems for farmers and PCs, to help improve yield and quality;
- v. Building schools, clinics, toilets and bore-holes in cocoa farming villages to entice the members to improve the standard of quality in cocoa.

As to why farmers would sell their cocoa to a particular LBC, 34% of the respondents said they would sell to a particular LBC because they have registered with it, while the remaining 66% said they would sell based on reasons such as financial assistance given, readiness to make payment, and their relationship to the PC. The reasons given by respondents are shown on figure 4.6 below.

Figure 4.6: A Pie Chart Showing Factors that Farmers Consider when Giving Their Cocoa to LBCs



Source: Researcher's Field Work, June, 2011

As to how COCOBOD maintains quality standard in cocoa, respondents mentioned that COCOBOD does mass spraying of farms using chemicals such as redomil, champion, nordor, funguran, kocide, and fungikill which control the black pod disease. They added that other chemicals used in spraying farms are akate master, confidor, and actora for the control of the capsid bag disease.

As to what programmes are put in place to educate farmers on improving product quality, respondents who are officials of COCOBOD said that farmers are trained in product quality improvement through periodic workshops. They are trained on the use of chemicals, harvesting of cocoa, and drying techniques among others. On the impact of the competition on cocoa quality, respondents mentioned both positive and negative impacts. The positive impacts are the following:

- i. Competition has led to improvement in yield and prices of cocoa;
- ii. Competition and guaranteed prices have created ready market for cocoa;
- iii. Improved yield, prices and ready market motivate farmers to improve quality;
- iv. competition has created jobs for many Ghanaians who work as LBC staffs, Purchasing Clerks, depot labourers and those who go into cocoa farming;

The negative impacts of competition as mentioned by respondents are:

- i. farmers pay less attention to product quality improvement due to ready market they enjoy under competition, resulting in low quality cocoa;
- ii. farmers use unapproved chemicals to spray their farms due to competition;
- iii. LBCs resort to the use of persuasion to convince farmers to supply cocoa for purchase without paying attention to quality. They also influence officials of QCC to compromise on quality standards for quick financial returns.

5.0 CONCLUSION

This chapter summarizes the finding of the study, as well as conclusion made by the researcher based on the findings. In order to improve quality standards in the cocoa industry so as to maintain the quality premium Ghana is enjoys in the world commodities market, the researcher has made some recommendations aimed at achieving this. The recommendations also include those that have been directed at how government can make effective use of the advantages offered by the cocoa sector for socio-economic development.

5.1. Summary of Findings

Majority of the respondents are of the opinion that there are some challenges in cocoa quality standard due to the competition introduced in the cocoa purchasing industry. Indeed 64% of them share the view that cocoa quality standard has fallen under competition in purchasing. The causes of fallen quality standard were attributed to many factors. Whereas some respondents attributed it to the failure of cocoa farmers to treat the beans properly before selling them, others think it is because of the desire of PCs to buy more cocoa irrespective of whether the quality requirements are met. Yet, some suggest that the QCC sometimes compromises on their quality principles, while others believe that the problem occurs due to COCOBOD's failure to motivate farmers to improve quality standards.

However, the results of the study has indicated that privatisation and its resultant competition have led to improvements in cocoa production and prices, and for that matter increased export earnings for Ghana. Competition has created ready market while COCOBOD's policy of guaranteed prices has ensured financial security to farmers. Other advantages were also identified. Apart from support from government and COCOBOD in the form of free cocoa spraying, farmers' education and subsidised inputs and fertilizers, farmers also have support services from LBCs in the form of credit inputs and financial assistance to maintain their farms. All these have helped to encourage farmers to increase production as well as improve quality.

Back to the issue of quality, the findings made are that there have been some challenges in the area of achieving cocoa quality. Competition has led to LBCs scrambling for cocoa while farmers neglect their duties of good farming practices. This has led to fallen quality standard of cocoa. Under normal circumstances a parcel of cocoa is supposed to be produced at the farm-gate free of NTD, admixture, adulteration or any other defect. However, it has been found that farmers have often sold cocoa with all these defects due to the competition. There are many factors that could account for this attitude of farmers. Apart from the fact that there are many buyers competing for the cocoa with some ready to buy sub-standard cocoa, farmers also deliberately sell NTD cocoa, admixture cocoa, or cocoa mixed with foreign matter just to take advantage of the weight to cheat buyers. This attitude of farmers also partly emanates from the perception of some of them, that they are being cheated by buyers. This has resulted in inferior cocoa in the system.

One major observation that was made in the study is that quality standards of the cocoa beans have often been achieved at the end of the day in spite of the attitude of farmers as indicated above. This is because LBCs and their agents are compelled to adopt measures at an additional cost to recondition the beans to ensure that the quality requirements are met. There has therefore been emphasis on extra efforts, time, and resources spent by LBCs in the Offinso Municipality to meet required quality standards of cocoa. This practice has been identified as a common feature of market competition under liberalisation and privatisation reform in the cocoa industry.

The study revealed the roles played by the various stakeholders including COCOBOD, the QCC, LBCs and cocoa farmers. There have been both positives and negatives in the roles played by stakeholders, leading to improvement or deterioration of cocoa quality at the farm-gate within the Offinso Municipality. It was discovered that farmers undertake activities such as cocoa harvesting, breaking, fermentation, drying and storage, which contribute a lot in determining the quality of cocoa beans. Respondents agree that farmers are doing well when it comes to the effective discharge of these responsibilities. However, where the QCC mentioned six days as the time period required for sufficient fermentation, farmers gave different time periods such as five days, six days and seven days.

The QCC take active part through their duties of inspection, grading and sealing, as well as fumigation at cocoa sheds and depots. On farmers' education, evidence from the responses given by farmers shows the efforts of QCC in the periodic training given to farmers on the proper ways of treating cocoa to ensure quality, though there were some who said they had not been trained by the QCC.

It was revealed that due to the competition, Purchasing Clerks compromise on quality from farmers. PCs always accept cocoa from farmers regardless of the quality standards and are always prepared to re-condition the inferior cocoa to meet the quality requirements. It has also been found that one reason why PCs buy inferior cocoa is because they have often committed their resources in the form of credit inputs and financial assistance to farmers in anticipation for the cocoa. This practice has been identified as marketing strategy adopted by LBCs. This notwithstanding, the study also showed that PCs contribute a lot in helping to achieve quality through their efforts in re-conditioning cocoa and in educating their farmers on quality issues.

It was revealed that farmers demand so many things such as farm inputs and financial assistance from LBCs before selling cocoa to them. This is in addition to other financial commitments such the provision of ware housing facilities and other operational expenses which were identified as the contributions made by LBCs in helping to achieve quality. Anna Laven, 2007, in lamenting the difficulties faced by LBCs as stakeholders in the industry stated that "LBCs are locked into a system with few incentives for high performance, and little financial scope for establishing strong relations with farmers, while LBCs are given more responsibilities without being able to generate increasing returns".

5.2 CONCLUSION

The objective of the study was to determine how privatisation and liberalisation in cocoa marketing affect the quality of cocoa in the Offinso Municipality. It was also to determine how the competition can be converted into high production, high product quality, and high producer prices, in order to improve the financial positions of farmers and LBCs within the Municipality.

The problem however, is that some concerns have come to bear regarding the implications of the quality situation on the cocoa industry in general, and on some of the stakeholders in particular. The extra cost and time spend by LBCs to re-condition cocoa have negative implications on their operations as it will affect their profit margins. This can affect the financial viability of LBCs, which may make it difficult for them to assist farmers with farm inputs and credit facilities. Such a situation can lead to worsening quality problem since farmers who cannot afford the chemicals can resort to the use of unapproved ones at cheaper prices to spray on their farms.

Apart from the above, there are other potentially dangerous aspects of the situation. The possibility of LBCs and their agents finding ways out to receive these extra expenses from farmers in the form of cocoa cannot be ruled out. There is also the possibility of LBCs finding ways out to have sub-standard cocoa passed for the quality test by the QCC. The literature reviewed pointed out some issues that lend credence to this concern. Canatus and Darkoa (2009) as captured under the literature review, observe that the QCC faces major challenges with the introduction of liberalisation due to the habit of LBCs tempering with sealed cocoa, while Anna Laven (2006) observes with particular reference to the internal market reforms in the cocoa sector in Ghana, that there is a resultant corruption on the part of QCC.

If by whatever means, bad quality cocoa is exported to the world commodities market, it will have some negative implications on Ghana's reputation and on the patronage for our cocoa. The resultant consequences could be a loss of the quality premium we receive for the outstanding quality of our cocoa. This can lead to a reduction in the level of contribution cocoa makes to the Ghanaian economy. The literature review points to the important contributions cocoa makes to the Ghanaian economy and hence the need to guard against any negative practices by industry players that have the tendency of eroding away this advantage.

5.3. RECOMMENDATIONS

The aim of this research was to find out about the quality situation of cocoa in the Offinso Municipality, and the effect of fallen quality standards on the cocoa industry in general. It was also to find out the possible ways by which the problems of cocoa quality can be addressed if they exist, in order to achieve a desired situation for the benefit of cocoa farmers in the Offinso Municipality and stakeholders in the cocoa industry as a whole. Based on the roles played by stakeholders in the industry as unveiled by the research, these recommendations have been made to help them contribute in deriving maximum benefit for the study.

5.3.1. Recommendations to Government

Previous regimes have made a lot of inputs as far as policies aimed at ensuring cocoa quality is concern. The Cocoa Industry (Regulation) (Consolidation) Decree, N.L.C.D. 278, (1968), the Cocoa Industry Regulations, L.I. 598, (1968) and PNDC L.81, 1984 can be described as very wonderful works done in the areas of legislation towards achieving cocoa quality. These laws have spelt out in very clear terms what produce inspectors, cocoa farmers, and all stakeholders in the cocoa industry must do or must not do in order to ensure the production of high quality cocoa. The law covered issues on how NTD, admixture, adulteration and many other cocoa defects can be avoided. In fact the law has prohibited the exportation of any cocoa "unless and until the same has been inspected by an inspector who shall have affixed to each bag a seal and grade-mark".

The emphasis should be on the effective implementation of these policies. There should be effective collaboration between the three arms of government in the implementation aspect. Parliament should review the laws to see where there might be the need for any amendments. The judiciary needs to also play their role in the area of cases involving offenders of laws aimed at achieving cocoa quality. The executive must also be willing to commit the needed resources and political will to ensure that good policies are formulated and effectively implemented to achieve cocoa quality.

In fact, the recommendations aimed at ensuring cocoa quality have also been made to other stakeholders, the effective implementation of which will result in the achievement of the required standard of cocoa quality in the midst of competition. The role of government in the cocoa sector must go beyond how to achieve quality. Government must therefore give priority to the effective utilisation of the cocoa sector for national development.

In comparing the cocoa sector with the mining sector, it was established that cocoa has advantages over mining in terms of the environmental impact, the economic prospects and social benefits. In this era of environmental concern by the international community where governments all over the world look out for areas where development can be

achieved without much environmental problems, the cocoa sector must be considered as a sector that offers opportunity for government to achieve mutual economic development.

It is an opportunity for government to invest in the sector to create jobs for the youth to help solve the unemployment problems. This can be done by giving financial assistance to the youth to go into cocoa farming. The issue of land acquisition is a major problem and for such a policy to achieve its objective, government must look into the issue of land ownership in the country in order to make it easy for those who want to go into cocoa farming to acquire land.

The concept of cocoa plantation which seems to have been given less attention by government for some time now must be revisited. It is an opportunity for government to create mass employment by engaging the youth in the plantations and at the same time enhancing our chances of realising our dream of regaining the position of the largest cocoa producer in the world.

The cocoa sector has the potential of helping government realise the nation's dream of industrialisation. A special attention must be paid to value addition and so there should be a deliberate government policy to process at least 50% of cocoa produced in Ghana in the long term. If such a policy is implemented through a public-private partnership investment in the cocoa sector, more jobs will be created and at the same time ensuring effective management for sustainable development.

5.3.2. Recommendations to COCOBOD

There is the need for COCOBOD to focus on how to achieve cocoa quality at the farm-gate through the active involvement of farmers. The effort of COCOBOD in the area of farmers' education was mentioned in the data presentation. The periodic training given to farmers and those who are involved in the cocoa spraying exercise in the Offinso Municipality should be intensified to reach all cocoa farmers in the municipality. In fact, COCOBOD should make the programme part of its policy objective and replicate it nationwide with clearly defined evaluation criteria to ensure its effectiveness and efficiency.

It was observed in the research that farmers do not have any specific motivation for ensuring that their cocoa is of high quality. Government, COCOBOD, and even LBCs who made attempts to award farmers only focus on the quantity of cocoa the farmer produces. For this reason farmers do not seem to have the desire to produce high quality cocoa. COCOBOD should institute an award system to award farmers who produce quality cocoa to serve as an incentive. To ensure that the incentive gets to farmers who are the real beneficiaries, grading and sealing of cocoa should be done at the society levels where PCs can identify farmers whose cocoa meet the criteria for award. This incentive should be distinct from cocoa price so that it will have the psychological effect on farmers since it will always remind them that there is an extra benefit for hard working farmers who produce high quality cocoa.

Apart from farmers, cocoa quality can be achieved through effective collaboration with LBCs. COCOBOD should therefore collaborate with LBCs by listening to issues of concern raised by them, and should always factor in such issues of concerns into their policy decisions. This will help ensure effective participation of LBCs and other stakeholders in the implementation of COCOBOD's policies including those that are aimed at achieving high cocoa quality.

It was revealed during the literature review, that the flavour of cocoa partly depends on the genetic constitution of the tree from which the cocoa comes. The Cocoa Research Institute of Ghana (CRIG) should be tasked to research into identifying cocoa that produce good flavour beans. COCOBOD can task the CRIG and Ministry of Agriculture to collaborate in finding out the possibility of cultivating such cocoa separately from other breeds. If such breeds are identified and expanded, we will be producing cocoa of good flavour beans in larger quantities in the near future and this will help improve quality. It may also help check admixture since there is the tendency of cocoa of the same breed to produce uniform beans size.

Some of the major problems that were observed in the study are the use of rudimentary tools and methods in cocoa drying, sieving and segregation. In this era of technology, cocoa segregation and sieving are still done manually using locally made sieves from Magazine in Kumasi, which are fixed to a wooden stand. Depot workers pour admixture cocoa onto the sieve and use their hands to rub the cocoa beans against the sieve until the smaller beans fall off one by one. COCOBOD should find out the possibility of using modern machines and technology to sieve and segregate cocoa so as to speed up the process and to enhance quality. This measure is very necessary considering the fact that the quantity of cocoa involved at the depot level is so huge that manual methods are not appropriate.

5.3.3 Recommendations to QCC

The QCC is the implementer of COCOBOD's quality maintenance policies and for COCOBOD to succeed in achieving and maintaining quality, the QCC must use the right approaches in executing their programmes. Major part of the work of QCC in the Offinso Municipality is focussed on inspection, grading and sealing of cocoa, which is

more of a control measure rather than preventive. The focus of QCC should be on prevention and hence on how to ensure that farmers do the right thing at the farm-gate. In fact, efforts are made in this direction through farmers' education but that is not enough. The study has shown that cocoa harvesting, breaking, fermentation, drying and storage are very important exercises which must be done properly in order to achieve cocoa quality. There should be a nationwide farmers' education on how these exercises can be done properly to ensure quality.

The definition of farmer in this particular case should include farmhands and care takers who are the real workers on the cocoa farms. Regular meetings should also be organised to assess the outcome of the education offered to farmers, and to inform farmers about impending quality problems as well as possible measures that are required to prevent such problems from occurring.

The QCC has so many rules and regulations that border on how the required cultural practices should be carried out by farmers, and the right things done to produce quality cocoa at the farm-gate, but which many farmers are not aware of. In the Cocoa Industry Regulation Decree, 1968, it is stated for instance that "No person shall buy or sell or offer or expose for sale or tender in satisfaction of any claim or demand, or shall export any cocoa which is not thoroughly dry or which contain any foreign matter". If farmers and other stakeholders at the farm-gate are made aware of some of these regulations and are compelled to adhere to them, the quality problem will be reduced drastically and high quality cocoa beans produced at the farm-gate.

The alleged issue of corruption on the part of QCC should also be tackled. Apart from prescribing punishment for produce inspectors who grade and seal sub-standard cocoa, there should be some incentives to award inspectors who do their work well.

5.3.4. Recommendations to LBCS

The major problem identified with LBCs in the Municipality is the fact that they rush to buy more cocoa due to the competition and in the process they undermine the quality of cocoa. LBCs need to do serious assessment of their marketing strategies. It might be more profitable to buy only high quality cocoa even if they are in smaller quantities as against buying low quality cocoa and incurring additional expenses in re-conditioning them. It is prudent to avoid the additional expenditure that result from the quest to buy more cocoa than draining the profit made to ensure quality. LBCs should collaborate in their dealings with farmers. There should be common grounds upon which cocoa is accepted for quality by all agents of LBCs, so that a parcel of cocoa rejected by a PC or DM on the bases of its quality does not find its way into the shed of another LBC.

Again, LBCs should collaborate with QCC to institute some training programmes for their agents such as DMs and PCs to be able to identify good quality cocoa. Apart from the training, LBCs should provide some of the equipments such as the aqua-boy which is used to test the moisture content in cocoa, for their agents. If the agents of LBCs are trained to be able to identify the various elements of quality and are provided with the tools and equipments for those purposes, it will help a lot. If the PC or DM possesses the Aqua-boy for instance, he can test for the dryness of cocoa in the presence of the farmer before paying for it.

5.3.5. Recommendations to Cocoa Farmers

The achievement and maintenance of cocoa quality largely depends on cocoa farmers who are the primary producers in the cocoa value chain. Farmers need to pay special attention to the cultural practices that are necessary to ensure cocoa quality. The deliberate attempt to hasten cocoa fermentation and drying without regard for quality must be discouraged. Some farming activities like pruning and drainage are also very important and farmers must pay attention to all those things. Farmers should also seek expert advice from COCOBOD on the use of chemicals for cocoa spraying. They should also use only chemicals approved by COCOBOD. Apart from chemicals used for cocoa spraying, the problem sometimes comes from chemicals used for other crops such as tomatoes and maize. Cocoa is highly hygroscopic and so if these chemicals are kept closer to where cocoa is stored, they are absorbed by the cocoa leading to high chemical residue in the cocoa. Farmers must therefore avoid keeping chemicals or any poisonous substance closer to where cocoa is stored.

One major problem faced by cocoa farmers in the Offinso Municipality is finance. Many farmers in the Municipality become financially bankrupt during the lean season and this has implications for cocoa quality as it affects their abilities to maintain their farms. Farm maintenance requires resources and farmers should know this and must always budget some amount from the proceeds of their cocoa for farm maintenance. They should also cultivate the habit of collecting their cocoa moneys from the banks through the Akafo cheque systems to enable them access loan facilities from the banks during the off seasons for the maintenance of their farms.

Farmers can also teamz up with their PCs to institute susu schemes. Some kilograms of cocoa can be deducted and saved in a special joint account to enable them have something to rely on during the off season. This can also

enable them access loan facilities from the banks through the joint account. This way, they will always be able to maintain their farms without relying on PCs for assistance.

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