

THE ROLE OF PROCUREMENT IN QUALITY MANAGEMENT OF GHANA COCOBOD, GHANA

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ABSTRACT: *In the era of global competitive market, quality output forms the bedrock for survival in this hectic business environment. Organizations therefore spend a lot of time and money to meet quality standard, the role of procurement in quality management is paramount and cannot be over emphasized. As a prime objective therefore quality management in this article attempts to undertake a systematic examination of the extent to which an entity as in this case Ghana Cocoa Board is capable of fulfilling specified quality requirement. In spite of the fact that the Ghana Cocoa Board have some ways of handling the issue of quality, customers keep on complaining about the defect of the products which sometimes lead to rejection of the cocoa beans. Some institutions assigned to maintain standards have complained about proliferation of low quality goods and services especially in the public sectors. In effect the objective was to examine and unravel how effective qualitative analytic techniques can help to obtain best value for money as well as access the impact of purchasing in developing a quality management system in the cocoa industry, ultimately geared towards the customer's satisfaction. In addition, it provide specific recommendation to Ghana Cocoa Board to take a critical look at issues pertaining to total quality by drawing up a quality policy and manual. The call for strict adherence to rules and regulations in public procurement cannot be over emphasized, the famous 6 Rs definition of public procurement places the demand squarely on the shoulders of all concerned to ensure that goods, works & services are acquired- at the Right Price, Right Quantity, Right Quality, Right Place, Right Time and from the Right Source-during the procurement process. Conducting monitoring and evaluation in public procurement holds enormous benefits. It provides an avenue for constant feedback, easy identification of potential challenges, opportunity to incorporate innovation and track progress.(ppaghana.org, 2013. So we designed this article to unravel the state of affairs and pin point the valuable role the procurement function can play in curbing the situation through quality management function being run on acceptable procedures and practices and to suggest procedures acceptable to the procurement professionals as contained in the Public Procurement Act, 663, of 2003 in Ghana.*

KEYWORDS: role of procurement, quality management, Ghana cocoa board, Ghana

INTRODUCTION

Purchasing and supply management has become a leading strategic part of management today due to its role of reducing cost, avoiding waste and saving money through qualitative buying. Qualitative buying is achieved through effective purchasing and supply functions. Most organizations are now laying emphasis on the procurement function due to changing global trends in material acquisition, technological complexities and other socio-economic changes. In fact, more changes have occurred in business and industry during the past few years, than in the two preceding decades creating global competitiveness. One of the major benefits of globalization to organizations is its ability to improve upon the quality of their products in a sustainable manner. Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied need. A visit to many organizations especially the public sector organizations' store reveal the existence of obsolete materials that have been lying in stores for many years. This problem arises due to over specification of products, and unprofessional buying techniques employed by personnel in procurement section of those organizations. Most organizations spend large sums of their budget on procurement of goods and services which is estimated close to about 70% of their expenditure in a year. The role of procurement function to the total quality management of an organization cannot be over emphasized. This Project work seeks to discover those sets of features or characteristics that a product may possess for meeting the desired quality requirements.

Related Studies

Most organizations compete on the basis of quality and customer satisfaction. It is difficult to think of even a single industry in which these two issues are not paramount to competitive success. Examine the competitive strategies of firms in such diverse industries as automotive manufacturing, banking, consumer electronics, produce buying company and health care, and what you see is the critical role played by customer satisfaction and quality. Indeed, in the twenty-first century, firms rely increasingly on quality and customer satisfaction as the prominent means of gaining market share and sustaining competitive advantage at home and abroad. As manufacturing executives find it increasingly difficult to establish sustainable, technological-based competitive advantages, they direct greater attention and resources to quality and customer satisfaction as a real source of advantage. In addition, as manufacturers compete on the basis of customer satisfaction, the differentiation between manufacturing and service industries along these dimensions begins to disappear, (www.researchgate.net/Eric_Wang25). Simply improving quality is not enough. Actually improving quality in the eyes of the customers is what pays off. When quality improvement investment leads to perceived customer service improvements, TQM becomes a viable competitive strategy, www.questia.com. Customer do not evaluate quality solely on an item's intrinsic quality, they also consider the process by which that quality is delivered. This is the foundation of customer satisfaction. Only customers judge quality; all other judgments are essentially irrelevant. For example, how well an organization's purchasing function is doing can only be relevant in relation to how well its services and supplier's products meet or exceed customer (user) expectations. Self assessments, although useful for internal purpose, are useless unless tied to customer expectations. In the short term, superior quality leads to increased

profitability and even the ability to charge a premium price relative to a firm's competitors. As quality increases, cost per unit invariably decreases at both the buying and the supplying firms. Why? As quality increases, market share goes up, creating an environment for increased economies of scale within the firm and also in supplier firms. As quality increases, process improvements occur at both firms, and productivity increases through superior use of people and machines. All these benefits are made possible by market share growth for both the buying and supplying firm – a true “partnering” relationship,(www.researchgate.net/Eric_Wang25).

By the time cocoa products hit store shelves they have moved through a long and complex supply chain which comprise of collectors, traders, exporters, processors and manufacturers. The cocoa bean is typically grown on small family farms that use labour-intensive practices. The International Cocoa Organization (ICCO) estimates that approximately 90 per cent of the world's cocoa is produced by 3 million such smallholders. Worldwide cocoa production employs approximately 14 million individuals, with Western Africa alone employing 10.5 million. Four West African countries - Côte d'Ivoire, Ghana, Nigeria and Cameroon - dominate the global supply, producing approximately 70 per cent of the world's cocoa beans. Côte d'Ivoire and Ghana are the two largest global producers, accounting for 56 per cent of all traded cocoa. (International Cocoa Organisation, 2010). West Africa is the largest cocoa supplier, accounting for 70 per cent of worldwide cocoa production. Ivory Coast and Ghana are the two largest cocoa-producing countries. In the harvest year 2006/07 they held a combined average market share of 56 per cent. Cocoa cultivation in Ivory Coast and Ghana are usually a family activity. Statistics indicate that farm sizes typically average less than ten acres in the Ashanti and Eastern regions, and 10 to 20 acres on the average in the Western North and Western South regions. Such detailed statistics are not available for Ivory Coast; however, it is known that there are no large cocoa fields there. It is said that farmers in Ivory Coast own between 1.75 and 5 hectares. In Ghana and Ivory Coast farmers harvest on average 300 to 400 kilograms of cocoa beans per hectare per year. This is 30 to 50 per cent lower than the potential productivity per hectare. The reasons for this lower productivity are diverse. The cocoa trees there are, on average, old and the farmers often do not possess the technical and financial capability to raise productivity per hectare and the quality of the beans. Ghana has approximately 720,000 cocoa farmers. After harvesting, fermenting and drying, the cocoa beans are sold to one of the government-approved traders or Licensed Buying Companies (LBCs). The Licensed Buying Companies operate through recognised buying centers in cocoa producing regions. The traders give the farmers a minimum price determined by the Producer Price Review Committee (PPRC). The Ghanaian government stated in 2004 that Ghanaian farmers would from 2004/2005 onwards receive at least 70 per cent of the international cocoa market price, as recorded by the London International Financial Futures and Options Exchange (LIFFE) and New York Board of Trade. However, it has not yet realized this objective during the harvest periods of 2004 up to 2007. The next step in the cocoa supply chain involves the inspection of the beans by the government. Cocobod's quality division (the Quality Control Division) samples and weighs the cocoa. For this, the division charges a price determined in advance by the PPRC. The recognized traders then transport the weighed and sealed bags to so-called 'takeover points (Tema port, Takoradi port and the Kaase inland port in Kumasi). These are the locations where the cocoa sold to the Ghana Cocoa Board, at a price that is once more determined by the PPRC are kept pending sales to internal cocoa processing businesses and export abroad. Subsequently, Cocobod sells the

cocoa to exporters or to companies that will process the cocoa themselves. A total of 75 per cent of the cocoa beans from Ghana is exported to the following eight countries, listed here according to the size of their imports: The Netherlands, Malaysia, United Kingdom, Japan, Estonia, United States, Belgium and Turkey. The Netherlands are by far the largest importers. This is partly due to the major cocoa grinding installations of Cargill and Archer Daniels Midland (ADM) situated in Amsterdam. Both companies dominate the cocoa grinding market.

The value-chain of cocoa as presented by the former chief Executive of Cocobod. It goes on to focus on the key issues such as quality compliance to international standards, the various interventions towards sustainable cocoa production, ascertain logistical problems of stakeholders, investigate fair-trade, determine traceability of cocoa, compare feasibility of the production of organic cocoa and finally attempt to discuss the existence of child-labour issues within the supply-chain of cocoa in Ghana.

Supply chain management (SCM) is the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers (Harland, 1996). Supply chain management spans all movement and storage of raw materials, work-in-progress inventory, and finished goods from points of origin to point of consumption. A customer focused definition is given by Hines (2004) as "Supply chain strategies require a total systems view of the linkages in the chain that work together efficiently to create customer satisfaction at the end point of delivery to the consumer. As a consequence costs must be lowered throughout the chain by driving out unnecessary costs and focusing attention on adding value through output efficiency must be increased, bottlenecks removed and performance measurement must focus on total systems efficiency and equitable reward distribution to those in the supply chain by adding value. The supply chain system must be responsive to customer requirements." Global supply chain forum - supply chain management is the integration of key business processes across the supply chain for the purpose of creating value for customers and stakeholders (Lambert, 2008). Supply chain management is the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole (Mentzer et al., 2001). Supply chain has evolved over the years due to globalization, the need to create strategic relationship with customers and specialization. Supply chain management is a cross-function approach which includes managing the movement of raw materials into an organization, certain aspects of the internal processing of materials into finished goods, and the movement of finished goods out of the organization and toward the end-consumer. As organizations strive to focus on core competencies and becoming more flexible, they reduce their ownership of raw materials sources and distribution channels. These functions are increasingly being outsourced to other entities that can perform the activities better or more cost effectively. The effect is to increase the number of organizations involved in satisfying customer demand, while reducing management control of daily logistics operations. Less control and more supply chain partners led to the creation of supply chain management concepts. The purpose of supply chain management is to improve trust and collaboration among supply chain partners, thus improving inventory visibility and the velocity of inventory movement. 3.0 Supply chain and competition According to Krajewski and Ritzman

(1998), competition has shifted from individual companies to supply chains. To win the supply chain war, one must come out with innovative supply strategy with cutting-edge solutions. Supply chain innovation can be achieved through better supplier relationships, costs improvements and quality managements. It must go to position the supply chain and finally ensure a strategic fit between corporate strategy, operational strategy and functional strategy. According to Sunil and Meindl (2007), supply chains have cycle view including ordering cycle, replenishment cycle, customer demand cycle and procurement cycle. The procurement cycle otherwise known as purchasing function is an important key performance indicator in the entire supply chain which should ensure value for money within the supply chain concept. According to Lyson and Farrington (2006), there are a number of techniques that can be used to obtain the best value for money from the purchasing process. These include the following: Value analysis including the elimination of unnecessary product features. Consolidation of demand (that is aggregating several orders to negotiate discounts)

The impact of sourcing on quality of cocoa bean

Baily, et...al,(2005) quality circles have become a popular approach to the improvement not only of product quality but also of other aspect of company performance and the quality of working life. ISO (1995) as cited in Lysons (2006), defines quality as the totality of features and characteristics of product that bears on the ability to satisfy stated or implied need whereas Crosby (1980, cited in Lysons, 2006, P 266) defines quality as “conformity to requirements not goodness. Quality is very important for ensuring good performance and success of any organization. Quality control contributes to profitability and growth. Quality of goods and services determines the performance of an organization through increased sales, customer retention and business sustainability (Barker, 2006). Quality determines the value placed on product. Thus, market determined premiums in. Commodity markets are based among other factors on quality perceptions. In cocoa, it is not just a perception; it is the reality (Quality Control Handbook, 2007). Total quality management (TQM) is a commitment to continuous improvement of quality not just in industry but also totally in society (Gana, 2008). We can therefore come to terms that quality is what every client requires in all aspects of the product (cocoa) to continue funding. Lindt and Sprungli as an organization in funding AGL seeks that, high quality beans is purchased for them. That is why they have put in place programs to train the indigenous farmers on good agronomic practices. Therefore the need for commercial officers in the process of ensuring quality beans is derived from the farmer based associations established in the various districts. Quality Control Divisional officers are responsible for certifying if the stock, cocoa meets the quality standards set. If it does not, it is not permitted to be exported until the anomaly is corrected. This is what is termed as reconditioning in this industry. It comes at a cost to the district, which is passed on to the purchasing clerks in some instances and at other instances born by the Franchise holder, thereby extending the lead time. The period between the transfer of funds date and the secondary evacuation date is usually two weeks maximum. This period is known as the cycle time. To be able to meet up with the cycle time, for more funding, we must ensure that high quality beans is purchased.

The World Cocoa Scene: The Role of the Procurement Unit

The procurement unit has a minimal role to play in the determination of the Overall Quality System of COCOBOD. Funds for the Purchase of Jute Sacks, Chemicals, Stationary and other equipment come from two areas. One is Self-Financed by the Board and the other source comes from ADB, ODA grant or Ministry of Finance and Economic Planning normally negotiates on behalf of the Board, ppaghana.org, June 2013. Items listed come out with drafted tender documents. These tender documents are evaluated and recommendations are made to the kind of items to produce. Normally, tender durations take about 60 days and are published in newspaper. Ranges are normally given in specifying so that a vast amount of vendors can be evaluated. Technical specifications are given and any supplier that conform is given the chance. The Arav Bank for the Economic Development of Africa has its head office in Sudan is also a major financier. The bid security holds the supplier bonded for what he/she has quoted otherwise a percentage is fortified. For fitment of bid security occurs when supplier fails to submit performance bond, which is valid for 30days that is delivery time. After evaluating vendor by considering price, delivery terms quality and so on.

Effects of Changes in Cocoa Quality on the Global Industry

As the processes at each stage of the supply chain develop, improve or become more efficient, some concessions on quality have been made. Fold (2001) addresses this issue. He states that grinders are currently more willing and able to compromise on quality“ so as to exploit lower costs by using advanced forms of transport and storage. According to Fold (2001), „technological and organizational developments in the chocolate industry have removed the demand for uniform and high quality beans as well as the willingness to pay a premium for them, worldbank.org. For this reason, any attempts by a cocoa producer to upgrade quality control systems to gain a price premium will be fruitless.

Ghana’s Unique Cocoa Production Industry

The entire cocoa industry in Ghana is an example of a successful private-public partnership. While the public sector takes responsibility for quality assurance, pest and disease control, research and development, and marketing; the private sector takes responsibility for planting, harvesting, cocoa bean collection and collation, haulage, warehousing and processing (COCOBOD, 2009) worldbank.org.

Ghana’s status as the best producer of quality cocoa beans can be attributed to the unique nature of the supply chain. At certain stages of the chain, there are measures put in place to assess the quality of the beans, gain.fas.usda.gov. At the cocoa bean production stage which is undertaken by smallholder farmers, the Cocoa Research Institute of Ghana (CRIG), Seed Protection Unit (SPU) and Cocoa Swollen Shoot Virus Disease Control Unit (CSSVDCU) gain.fas.usda.gov, ensure that farmers are provided with materials which will guarantee successful growth of quality beans (COCOBOD, 2009).

CRIG undertakes agronomic research into problems relating to the production of cocoa and other related tree species which produce fats similar to cocoa butter and also provide scientific and technical advice on matters relating to production of cocoa (COCOBOD, 2009). CSSVDCU is

responsible for control of cocoa swollen shoot virus disease whilst SPU is responsible for the multiplication and distribution of improved cocoa planting material to farmers (COCOBOD, 2009). These activities by CRIG, CSSVDCU and SPU are funded by the COCOBOD.

The next step in the Ghana supply chain is the collection and bagging step which is undertaken by Licensed Buying Companies (LBCs) on behalf of COCOBOD. These companies purchase cocoa directly from farmers and bag it for delivery to COCOBOD. COCOBOD in turn pays these LBCs for each bag of cocoa delivered to them (COCOBOD, 2009). Before the beans are transported from the villages to city centers by haulage companies, Quality Assurance by the Quality Control Division (QCD) of COCOBOD must determine the quality of the cocoa beans, (gain.fas.usda.gov). At this stage the bags from the LBCs are inspected, graded, bagged and sealed by QCD. A marking on the bag identifies the grade of the beans, the inspector who graded the beans and the LBC which bought the beans from the farmer. This enables each bag to be traced to its origin (COCOBOD, 2009). After this, private haulage companies transport the bean to the city centers. The haulers are paid by COCOBOD based on the number of tones transported per mile.

Cocoa Marketing Company (CMC), a subsidiary of COCOBOD stores, sells and exports the beans, (mofa.gov.gh 2020). Before storage and sales occurs, the beans are re-inspected and re-graded by QCD. Also, before the beans are exported by CMC, the quality inspection is repeated at the port prior to shipment

Other trends in cocoa production include incentives to increase production. In Ghana, effective and sustained control of diseases and pests, encouragement of farmers to rehabilitate and replant old and moribund farms, improving cultural practices on existing old commercial plots and improving soil fertility through application of fertilizer are efforts that are being put in place to increase production and quality of cocoa beans, (www.powershow.com). Whilst the Seed Production Unit (SPU) and Cocoa Swollen Shoot Virus Disease Control Unit (CSSVDCU) are under CRIG.

CRIG mainly handles research into problems relating to the production of cocoa and provides scientific and technical advice on matters relating to production. For this reason, they were not useful with regards to provision of information which would be relevant to this study. However, COCOBOD has details on the costs involved in establishing and maintaining a cocoa farm and this data was more relevant to this study. Also, COCOBODs overall cost of operations includes the costs incurred by LBCs in delivering bags of cocoa on their behalf, costs incurred by Haulage companies per tonne per mile and the costs incurred by the QCD. Hence the overall costs of production of cocoa which incorporates every stage along the supply chain explained in the previous chapter would be represented by the total cost of operations of COCOBOD. In addition, COCOBOD has figures on revenues from exports of cocoa hence making that institution a better source of data with regards to the production and exports side of this study.

Farmers, LBCs, Hualiers and quality control personnel will ensure that processing companies or beans exported will be of the quality required. The incentives in place such as payment of at least 70% of the net projected Freight On Board to farmers, bonus scheme to cushion them financially,

farmers day celebrations, promoting health through national insurance scheme, inclusion of farmers on producer price review committee and scholarship schemes for wards of farmers should be maintained or increased, (www.icco.org)

Procedures and Associated Problems

Due to the autonomy given to some subsidiaries, the purchase of materials which solely rest on the head office (centralized) has been fragmented. The Produce Buying Company (PBC) used to be the sole buyers of the cocoa beans and Quality Control is to ensure that the beans are free from defects and have been graded in to the right categories of cocoa from Ghana. Its products have been tugged to be the best worldwide because the harvesting, drying was naturally done by the use of the sun (solar drying) which extracts the fat from the beans. Despite the seemingly threat of European Countries to cause a major upset in the demand for cocoa worldwide, the COCOBOD still stands firm because of the enviable production of the best quality cocoa. In November 1999, Reuters reported that the 25 year old EU formation of a single policy regarding the use of non-cocoa butter in chocolate fats was to be renegotiated with the agreement that it's degrades the chocolate quality. Australia, Denmark, Finland, Ireland, Portugal, Sweden and the UK already allow non-cocoa fat to be used, while Belgium, France, Luxembourg and the Netherlands opposed their use altogether. La Cote D'Ivoire's cocoa sector was liberalized during 1999. It was perceived that about 50% of total cocoa produced would be processed domestically by the year 2015. Cargill, a large agri-business multi-national, intends to build a cocoa processing unit with 50,000 annual capacities. Following liberalization efforts of Cameroon, Nigeria and has Togo, Ghana has appointed a task force to devise a future development strategy. The work of the 45 member task force will concentrate on production, research and extension, marketing, processing and quality. From Bulletins and newsletters from COCOBOD.

Reputation for high quality cocoa

The characteristics that make up for quality in cocoa include the size of beans, moisture and fat content and fat quality. These determine the quality of cocoa butter and cocoa liquor, the two ingredients that add texture, aroma, color and flavor to chocolate. Quality is obtained through appropriate fermentation of seeds and storage and evacuation practices. Ghana sells most of its cocoa production, over 90 percent of which is of grade 1, ahead of the harvest season through forward contracts. Selling the crop up to a year in advance allows the marketing board to fix in advance the price it can offer to farmers for the entire crop year; (www.questia.com).

Cocoa, like many other commodities, is often differentiated by country of origin, and this in turn is associated with a reputation based on average quality. The reputation, a national public good, enables the country to earn premiums in the global market. Ghana receives a price premium for its cocoa in the world market for its slightly higher fat content, lower levels of debris which gives higher butter yields, and the lower level of bean defects, which generate a liquor flavor preferred by some end users. In addition to these attributes, the reputation of the Cocoa Marketing Company (the government division in charge of all exports) in ensuring the consistency and reliability of shipments and documents has played a central role in establishing the country's reputation for high quality beans (Agrisystems, 1997) www.questia.com.

Justification for this Research Study

Ghana was ranked the best premium quality cocoa beans provider in the world to support the chocolate industry in 2016. Key criteria for assessment of cocoa quality include flavour quality. This parameter is mainly attained through proper handling of the harvest and post-harvest processes developed by CRIG, which consist of harvesting, pod breaking, fermentation, drying and storage. Education and sensitization on harvest and post-harvest handling by CHED as well as quality assessment by QCC has generally not included flavour quality. The rich, intense and unique chocolate flavor that characterizes Ghana's premium quality cocoa could be lost over time, <https://www.icco.org>.

Now Ecuador is a recognized producer of high-quality cacao beans. The nation produces a unique native variety of cocoa beans known as Arriba or Nacional. The cacao beans have distinctive aromas and flavors which differentiate them from those produced in other countries and they fetch higher market prices. Ecuador produces just about 4% of the world's cocoa beans, but this quantity makes up around 70% of the fine flavor variety, <https://www.worldatlas.com> 5th March 2021

However, there have been a lot of concerns raised about the fallen standards of quality of Ghana's cocoa during the competition in purchasing. This revelation spurred the researcher to examine the contributions LBCs make towards ensuring high quality cocoa in the domestic market. The focus of the research is to examine the role of LBCs in their pursuit to maintain the world recognized quality standard of the Ghanaian cocoa. This will encompass an assessment of the Quality Control Practices (QCPs) instituted by Cocoa Merchant Ghana Ltd (CML) in maintaining quality standard

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RESEARCH METHODOLOGY

Primary source of data was obtained for the study. The primary data was obtained directly from respondents through the administration of questionnaires and survey. The primary data provided reliable and accurate first-hand information relevant to this study about the role procurement plays in quality management of the Ghana Cocoa Board and other issues necessary for the research. This study took the form of cross-sectional survey which involved seeking opinions from a lot of people for short time period through the use of questionnaire. The study employed the quantitative and qualitative techniques.

Whilst the secondary sources comprised the records on number of bags of cocoa beans rejected or complaints about the product from customers from Marketing and Public Relation Departments, records on procurement from the Procurement Department as well as brochures, journals and newsletters of the Board, interviews, observations, and internet resources .

The questionnaire was composed for COCOBOD officials, PBCs, LBCs and Cocoa Farmers respectively.

Self-administered questionnaire were used to collect quantitative data from Cocoa Framers and staff of the PBC. The questionnaire had a very simple structure to enable the researchers cover all research questions. Out of the one hundred and twenty (120) questionnaires administered, 81 were returned representing 67.5% response rate. Notwithstanding, the challenges faced during the research, it did not in any way affected the reliability, validity, credibility, and accuracy of the result.

Due to the large size of the population under study, a reasonable representation of the total population was taken for the study and it was conducted in Accra, Ghana Cocoa Board, PBCs, LBCs and some cocoa farming communities. Sampling size of one hundred and twenty (120) people were selected, probability sampling was used to select respondents for the study. This comprised twenty (20) from management staff, twenty (20) from procurement staff, ten (10) from stores department, thirty (30) from staff of the General Services Department in charge of works and services; twenty (20) from PBCs, LBCs and twenty (20) from farmers.

The questionnaire administered consisted of twenty-one questions. Likert- type items on a 1 to 5 scale with endpoints “strongly agree to strongly disagree” and “very bad to very good” were used as some responses in this study. The questions focus on the role procurement plays in quality management of the Ghana Cocoa Board and other issues necessary for the research. The data was analyzed using Statistical Package for Social Sciences version 16.0 (SPSS 16.0) and presented in the form of tables, box plots, and bar chart.

Data Analysis and Results

This is based on responses from the questionnaires that were administered, interview, visits and observations.

TABLE 4.1**4.1 DISTRIBUTION SHOWING SUMMARY OF THE PRESENTATION OF**

REPPONDENTS	NO. ISSUE D	NO. RETURNE D	NO. NOT RETURNE D	% RETURNE D	% NOT RETURNE D	% ISSUE D
MANAGEMENT	20	17	3	85%	15%	16.7%
STORES DEPT.	10	10	0	100%	-	8%
PROCUREMENT	20	18	2	90%	10%	16.7%
GENERAL SERVICE DEPT.	30	25	5	83%	17%	25%
PBCs/LBCS	20	19	1	95%	5%	16.7%
COCOA FARMERS	20	14	6	70%	30%	16.7%
TOTAL	120	103	17			100%

QUESTIONNAIRES.**SOURCE: FIELD SURVEY, June 2020.**

The table above shows the total number of questionnaires administered and collected. It embraces management and other employees within the stores and procurement department, PBCs, LBCs and Cocoa Farmers. A total number of one hundred and twenty (20) questionnaires were administered. Twenty (20) out of the number were given to management, out of that seventeen (17) were returned representing 85% of what was issued. It could also be deduced from the table that ten (10) questionnaires were given to the Stores Department of which all the ten (10) were returned, representing 100% of response from the department. The Procurement Department also had twenty (20) questionnaires of which eighteen (18) were returned representing 90% of response. General service department thirty (30) questionnaires were issued twenty –five (25) were returned representing 83%, further more twenty(20) questionnaires was given to PBCs and LBCs of which nineteen(19) were received representing 95% and lastly twenty (20) questionnaires was issued to Cocoa Farmers of which fourteen (14) were received representing 70%.

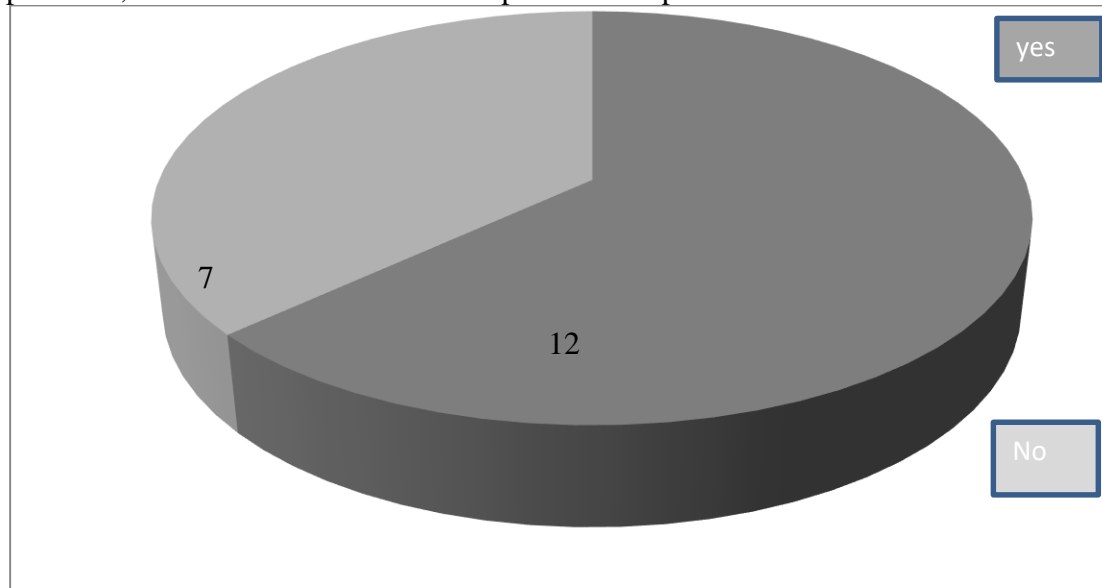
TABLE 4.2

4.2 DISTRIBUTION SHOWING DETERMINATION OF INVENTORY MANAGEMENT AND CONTROL ACTIVITIES IN THE ORGANIZATION.

RESPONSES	FREQUENCY	PERCENTAGE	VALID PERCENTAGE
YES	12	63.2	63
NO	7	36.8	37
TOTAL	19	100	100

SOURCE: FIELD SURVEY, 2020.

On the issue of inventory management and control as a pronounced activity in the organization, 63.2% responded in the affirmative where as 36.8% said no as depicted by the table above. It could however be deduced from personal conversation and interview that stock taking was not made regularly, which in effect result in occasional report of pilferage or theft at the Stores Department, pesticide, fertilizers and other cocoa inputs been expired.



SOURCE: FIELD SURVEY, 2020.

Figure 4.0 showing determination of inventory management and control activities in the organization

This information is further represented on the pie chart illustrated above. That is, 63% people believed strongly that inventory management and control is adhered to strictly where as 37% of the people do not believe in that.

It was deduced that inventory control and management was a management policy, therefore it was a matter of priority for the organization.

TABLE 4.3**4.3 DISTRIBUTION SHOWING IF COCOBOD OUTSOURCES SOME OF THE PROCUREMENT ACTIVITIES**

RESPONSES	FREQUENCY	PERCENTAGE	VALID PERCENTAGE
YES	19	100	100
NO	0	0	0
TOTAL	19	100	100

SOURCE: FIELD SURVEY, June 2020.

In the interview from the above table, the responses to a question of whether Ghana Cocoa Board outsources some of their procurement activities 100% of respondents affirm that. However there appears to be a lapse in the procurement practice that would affect the quality of their product as price may be prime deciding factor in all purchases. This in effect goes against some purchasing practices such as quality, after sale services, delivery terms and the like.

The same information about the determination of separate procurement is further represented in the bar below.

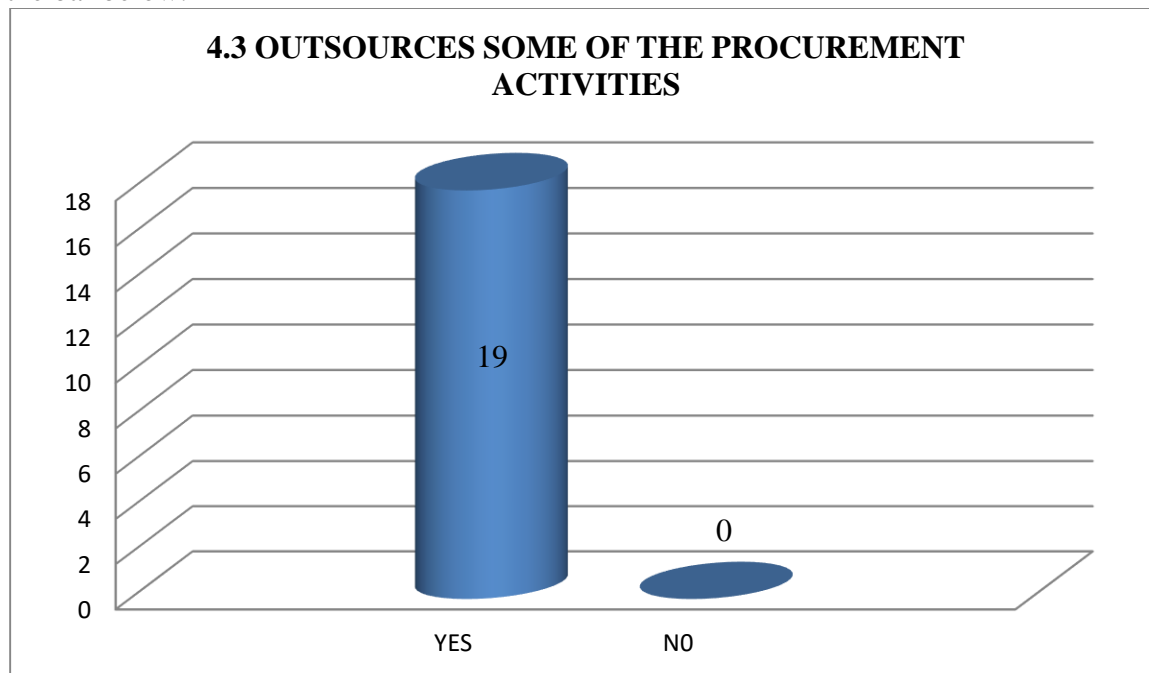


Figure 4.1 shows whether cocobod outsources some of the procurement activities

SOURCE: FIELD SURVEY, 2020.

From the diagram above it indicated that 100% of the respondents confirm that they outsources some of their procurement activities.

Ascertaining the Implementation of Quality Management System in the Organization

The analysis indicated that 73.6% response on the operation of quality system from 19 respondents whereas 5 respondents do not agree with the existence of total quality management system in place, representing 26.3% questionnaires issued. To the 26.3% respondents, the question of total quality

management system requires a pragmatic policy on quality. This can be seen to have been met half way as other subsidiary organization in the country also need to benefit from the quality improvement system throughout the country.

Analysis Showing Whether Procurement Contributes to Total Quality Management in the Overall Organization

The analysis proved that 20 out of 25 respondents, representing 80% believe that procurement contribute to total quality management in the organization, while 5 out 25 do not believe so. Which means that procurement department is valued as one of the backbone to the sources of the company.

Response Showing Whether Procurement Policies and Procedures Are Followed.

It was revealed that 88% of respondents were of the view that procurement policies and procedures are in place and observed while 12% of the respondents say procurement procedures are not followed in the organization.

Analysis Showing the Examination of Defect Detection Used in the Procurement Department.

The analysis proved that pre inspection method of defect detection is the major feature in the organization. Ghana's cocoa beans remain a high grade due to the merger of the Produce Inspection Division and the Infestation Control Division, 60% respondents consider pre inspection as major defect approved detection system they used. 10% of respondents said that Standard Board regulation form minor purchases and 30% agreed on post production inspection as a means of defect detection procedure in the organization. This indicates that COCOBOD is much particular about the quality of Ghana cocoa beans Ghana export.

Analysis Showing the Kind of Training Received by the Respondents.

Opinion sought from the respondents indicated that 33.3% had professional training in their respective fields and 66.7% on the other hand indicate that they received on the job training as s This indicate that majority of COCOBOD staffs are not well trained, which in one way or the other have negative impact on the company's quality delivery.

Analysis Showing the Relationship within Department

The analysis shows that relationship that exists within and among department, 83.3% of the respondent considers it to be cordial and another 16.7% looks at it as co-operative, 0% was recorded as not co-operative relationship. It is the believe of the researchers that progress and development as well as corporate goal can be achieved only through total inter department co-operative and support from management which is a pre requisite for total quality management.

Response on whether there has been any Seminar or Workshop(S) on Total Quality Management

PBCs and LBCs were asked if there have been any seminar or workshop organized on total quality management, 42.1% of the respondents state that there has not been any seminar or workshop in their organization concerning Total Quality Management (TQM) while 57.8% agree that there

have been a workshop on TQM. Further information gathered indicates that there have been workshop on quality of cocoa beans and ware house management on how to maintain quality of the beans.

Response on how Materials are stocked to Enhance Total Quality Management

Store department of the various players in cocoa sector were asked how they manage stock in their stores, 66.7% of the respondents says materials are stocked using coding system while FIFO and LIFO are 25% and 0 respectively. However, 10 out of the respondents agree that the organization use all the above. Further information gathered indicate that a coding system exist and items are issued based on first-in first-out (FIFO) system so as to ensure that stocks do not stay too long in stores, such that materials session held during the study, procurement officers, Produce Buying Company's(PBCs), Licence Buying Company's (LBC) and Quality Control division of the board were asked to; based on their experience, explained how Ghana Cocobod able to maintain high quality standard cocoa beans over the years, 100% of the respondents said that quality of the cocoa beans is obtained through fermentation that alter quality of the cocoa dramatically. It was deduced from the interview that the practices to obtain beans with what is known as classical 'West African' type flavor involves leaving the beans in a heap under banana leaves for about six days, with manual turning and drying in the sun drying beans slowly on raised platforms is very important for flavor development as it decreases the acidity level in the beans. Quality is also maintained by rapid of properly fermented and dried beans from smallholders, followed by their prompt shipment to avoid moisture buildup, mould and free fatty acids problems that can rapidly deteriorate the quality of the beans. Farmers were asked to rate the following factors as courses of low quality standard of Ghana's cocoa beans.

Lack of motivation to farmers

Bad weather

Lack of pesticides

Aging farming population

Disease

Untimely/poor resource allocation

Inadequate rainfall

Late application of fertilizers

Reduction of a government spraying programme

Table 4.4

4.4 distribution of factors affecting quality standard of Ghana cocoa beans.

Factor Attribute	Very high	high	Fairly high	low
Luck of motivation to farmers	10(50%)	4(20%)	4(20%)	2(10%)
Bad weather	12(60%)	8(40%)	0.00	0.00
Aging farming population	8(40%)	2(10%)	6(30%)	4(20%)
Disease	15(75%)	5(25%)	0.00	0.00
Untimely/poor resource allocation	10(50%)	8(40%)	2(10%)	0.00
Inadequate rainfall	10(50%)	7(35%)	3(15%)	0.00
Late application of fertilizers/pesticides	17(85%)	3(15%)	0.00	0.00
Reduction of a government spraying programme	16(80%)	4(20%)	0.00	0.00
Strong Harmattan wind	8(40%)	7(35%)	5(25%)	0.00
Lack of pesticides	15(75%)	5(25%)	0.00	0.00

SOURCE: FIELD SURVEY, 2020.

The respondents were asked to rate a list of factors facing Ghana cocoa quality. It is evident from the results in table 4.1 below shows that late application of fertilizer and pesticides appeared a major challenge affecting quality of Ghana cocoa beans, 80%(n=16) of the respondents rated reduction of government spraying programme very high, 20%(n=4) also rated it high. This implies that first and common challenge affecting quality of Ghana cocoa beans is late application of fertilizer and pesticides. Delayed supply of fertilizers and pesticides is due to late supply from the Cocobod.

Lack of pesticides is also a major challenge disturbing quality of cocoa beans. 75%(n=15) of the respondents rated lack of pesticides very high, 25%(n=5) also rated it high. This implies that Cocoa husks shriveled by fungal black pod and fat red capsid bugs feeding on cocoa trees affect the quality of cocoa beans and yield. Bad weather also appeared a major challenge affecting the quality of cocoa beans. From the results, 80%(n=16) of the respondents rated bad weather very high and 20%(4) of respondent rated this factor high. This means that seasonal Harmattan winds from the Sahara dry the cocoa trees and soil and can lower production of the “mid” crop or the annual second crop in West Africa. A strong hot and dry pattern can even affect the next main crop production potential, which would have negative effect on the quality of cocoa beans.

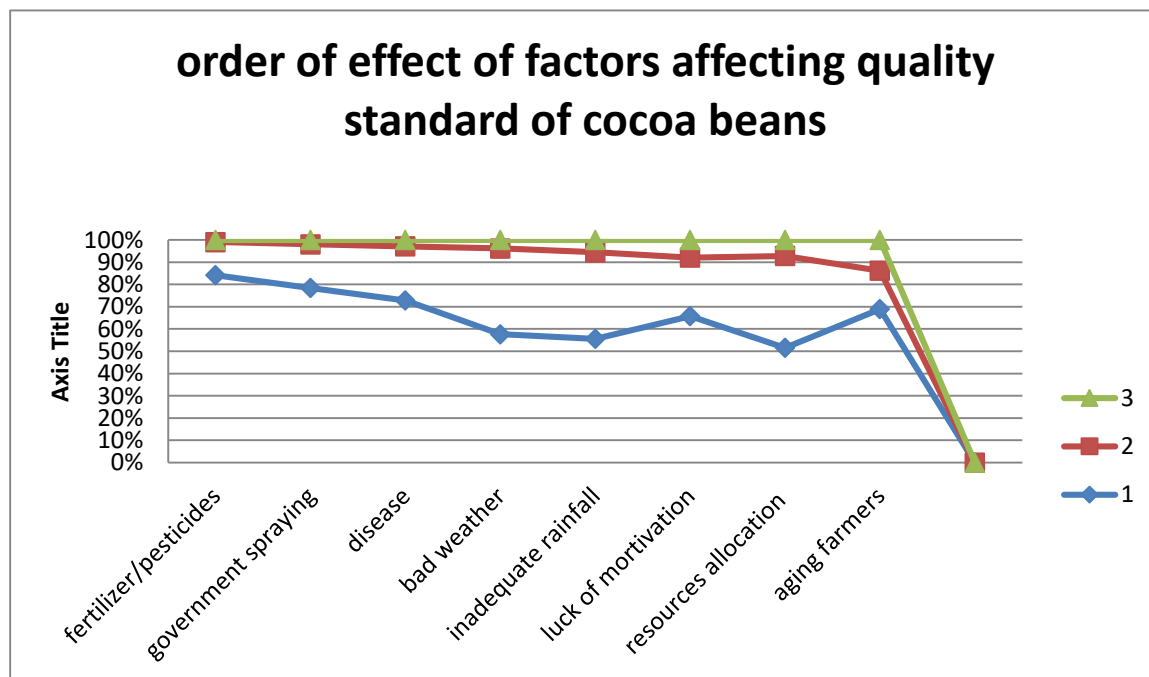
Inadequate rainfall was also found to be a great challenge facing quality of cocoa beans. From the results, 50%(n=10) of the respondents rated **inadequate rainfall** very high and from the results, 35%(n=7) and 15%(n=3) of respondents rated this factor high.

On **poor resource allocation**, about 50%(n=10) and 40%(n=8) of the respondents rated it very high and high, while 10%(n=2) rated it fairly high indicating that untimely allocation of cocoa inputs from logistics department of Ghana COCOBOD plays a major part of challenge Ghana cocoa beans face.

Lack of motivation to farmers was also seen as a major challenge facing quality of cocoa beans the results show that about 50%(n=10) and 20%(n=4) perceived lack of motivation to farmers as very high and high challenge respectively in terms of its impact on quality of cocoa beans, while 20%(n=4) and 10%(n=2) of respondents rated it fairly high and low respectively. there should be incentives for farmers for example payment of at least 70% of the net projected freight on board to farmers, bonus scheme to cushion them financially during off-seasons, farmers day celebrations, promoting health through national insurance scheme, establishment of cocoa clinics, inclusion of farmers on producer price review committee and scholarship schemes for wards of farmers.

Aging farming population was reviled as another factor harbouring the quality of cocoa beans 40%(n=4) and 10%(n=2) rated it very high and high respectively while 30%(n=6) and 20%(n=4) rated it fair high and low. Base on the analysis it **was deduced that** majority of the smallholder farmers are old and need younger farmers to take over the operations of their farms.

Figure 4.2 order of effect of factors affecting quality standard of cocoa beans.



Source: Authors' Field Survey, 2020

The observations made during the study confirmed the views and perceptions of the respondents regarding various factors affecting the quality of Ghana beans, it was observed that farmers do not have much incentive to apply fertilizers, pesticides to even hybrid trees as the returns to fertilizer applied to mature these trees may not be any higher than those achieved on traditional varieties current gap between observed and achievable yields lies somewhere between 50 to 80 percent, depending on different practices adopted by farmers (e.g. thin shading with or without fertilizer application). It was also observed that government cocoa mass spraying programme has reduced drastically and agriculture extension service from the Cocobod was also curtailed at the beginning of the season due to funding issues. And lastly it was revealed that although COCOBOD has a Quality Control Division, it has not yet given corporate status to quality as a main force towards the success of the cocoa industry, they still rely on quality control rather than quality assurance and seem not be implementing ISO 9000 quality requirements.

CONCLUSION

The study was conducted with strong data reliability and was found to address some pertinent factors affecting the role procurement play in the realization of quality management in Ghana COCOBOD. The study revealed certain weakness as well as strengths of COCOBOD in the maintenance and sustenance of quality throughout the organization. The study revealed that Ghana COCOBOD has not been able to fully reap the benefit of procurement, transportation and other value chain with cocoa production. These factors are the major issues affecting the quality of Ghana cocoa beans production in Ghana: **Lack of motivation to farmers, Bad weather, Lack of pesticides, Aging farming population, Disease, Untimely/poor resource allocation, Inadequate rainfall, Late application of fertilizers, Reduction of a government spraying programme, haulage and transport, etc.**

Based on the above findings, Ghana Cocoa Board take a critical look at issues pertaining to total quality by drawing up a quality policy and manual. Management must take up responsibility to ensure that the policy is understood, implemented and maintained at all levels. This can be done when quality, is given a corporate status as quality assurance where other functions like quality control, inventory control, purchasing and transport become subordinates. The management of Cocoa Board should make a policy for user department to always involve procurement personnel and technical person in drawing specification for materials to be purchased, in this way procurement can contribute meaningfully towards Total Quality Management. More over owing to the advantages partnership sourcing has on quality procurement department should develop partnership relationship with its major suppliers. The mass cocoa spraying exercise is a step in the right direction and should be continued by the government as this will go a long way to boost the cocoa industry and improve the quality of our cocoa export and also increase incentives for farmers such as payment of at least 70% of the net projected freight on board to farmers, bonus scheme to cushion them financially during off-seasons, farmers day celebrations, promoting health through national insurance scheme, establishment of cocoa clinics, inclusion of farmers on producer price review committee and scholarship schemes for wards of farmers.

In addition materials when purchased need to be stocked, therefore in order to compliment Procurement's effort in quality management the Store function should be staffed with qualified professionals and equipped with the necessary logistics so that materials at stores are fit for use when needed and also TQM training workshop should be carried throughout the organisation that would help the workers to embrace the concept and contributes to its realization.

Finally conclusion is that COCOBOD management should make sure that Procurement Unit do not buy products or services purely on the basis of price alone, but look at the rest of the attributes that makes a good purchase such as continuous improvement in the quality of product, lead –time, safety requirement, after sale services, its rate of maintainability, serviceability, and delivery and so on, the procurement department should be well equipped in terms of more qualified personnel and equipment's such as computers to enable data storage and procedures done electronically and also introduce national irrigation system to all cocoa growing areas to help improve the quality of cocoa beans.

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