

Prospects and Challenges Faced by Cocoa Producers in Their Supply Chain Activities in the Mbam Division, Cameroon

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Abstract

This research aimed to investigate the prospects and challenges faced by cocoa producers on their supply chain activities in Cameroon, specifically in the Mbam division in the centre region of Cameroon. More particularly the study intended to identify the supply chain activities effectively practiced by cocoa farmers in the Mbam, to examine the challenges they face in their supply activities and to propose some opportunities to reverse these supply chain challenges. A sample of 167 Cameroonian cocoa farmers from the Mbam was randomly selected to take part to this research. The resultant data were subsequently analysed using descriptive statistics, as well as the Likert scale analysis. The results of this research found out that, the few supply chain management activities practiced by cocoa producers of the Mbam were warehousing, transportation, packaging, and inventory which again were found to be poorly practiced and managed. The results also indicated that, the challenges faced by cocoa producers in their supply chain activities were real and were challenging to the producers and their production. Some of the main findings of this research concerning these challenges included; lack of a bridge to connect certain communities, inadequate warehousing, poor infrastructures like the absence of roads, poor storage, lack of knowledge on inventory management and others. The research ended investigating some opportunities that could have been adopted to minimise these supply chain activities challenges and thus improve the working conditions and logistics of the cocoa producers of the Mbam. Thus the research made some recommendations to the government, to the Mbam cocoa producers as well as to the other stakeholders intervening in that field.

Keywords: Supply chain; Ware housing; Supply chain activities; Packaging; Inventory; Cocoa farmers; Challenges; Prospects

Introduction

Now a day the word sustainability has become a popular word in the business term for almost every operation in business sectors and firms across the world. The raising concern on environmental damage, depleted resources, and exploitation of child labor, endangered species, global warming and much more have shifted the traditional way of manufacturing and operation of most companies in the world to become more lean, green and friendlier towards sustainability. Thus, explicitly, there is an urgent need for sustainable supply chain management [1].

The best enterprises around the world are discovering a powerful new source of competitive advantage. It's called supply-chain management, and it encompasses all of those integrated activities that bring the product to market and create satisfied customers. The Supply Chain Management Program combines subjects from manufacturing operations, purchasing, transportation, and physical distribution into a unified program. Successful supply chain, then, control and integrates all of these activities into a seamless process. It embraces and connects all of the partners in the supply chain. In addition to the departments within an organization, these partners include vendors, carriers, third-party enterprises, and information systems agents.

Within a company, the supply chain refers to a vast range of functions. These include Supply Chain Management-related activities such as inbound and outbound transportation, warehousing, and inventory management. Sourcing, purchasing, and supply management fall under the supply-chain umbrella, too. Forecasting, production planning and scheduling, order processing, and customer service all are part of the process as well. Most importantly, it also embodies the information systems so necessary to monitor all of these activities.

Simply stated, "The supply chains embrace all of those activities related with moving goods from the raw-materials stage through to the

end consumer". A supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer request. The supply chain includes not only on the manufacturer and supplier but also transporter, warehouses, retailers and even the customers themselves. These functions which are not limited include new product development, marketing, operations; distribution, finance and customer service [2].

Despite the fact that the functions and activities mention above that are included in the supply chain, we should remember that our area of study will be in the supply chain of activities of cocoa producers in Cameroon. Blessed with fertile soil, Cameroon is the fourth African largest producer of cocoa after Ivory Coast, Ghana, and Nigeria [3].

Cameroon annual production of cocoa rose by 16% year on year to 269,495 tonnes (National Cocoa and Coffee Board (NCCB). Cameroon as the fourth cocoa producer has targeted annual production of 600,000 tons by 2020 [4].

In other to attain this objective, certain conditions need to be put in place to encourage and boost production. These measures should be for the farms and the producers. In other to support manufacturers, the supply chain activities of cocoa should not be neglected. The aspects of warehousing, inventory, purchasing, material handling, packaging,

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and transportation are some of the supply chain activities that need to be ameliorated upon to increase production and encourage producers to work harder.

Like most African countries, agriculture is the primary economic activity in Cameroon. Agriculture still remains the backbone of Cameroon's economy, employing 70 percent of its population while providing 42 percent of its GDP and 30 percent of its export finances [5]. In fact, Cameroon is blessed with fertile land and regularly rainfall in most regions, Cameroon produces a variety of agricultural products both for exportation and for domestic consumption. Coffee and cocoa are grown in central and southern regions, bananas in southwestern areas, and cotton in several Northern provinces. Cocoa is one of the major products that contribute to Cameroon GDP as it's a primary source of revenue for the economy because it is exported. The most productive regions of cocoa in Cameroon are the coastal zones and the center south east region. The coastal areas extend from Mount Cameroon to kribi and the second largest zone is center, south and eastern region. Those are the four top cocoa productive areas in Cameroon [3]. Amongst these sectors are the central area which produces a lot, and one of the highly productive divisions in the center is the Mbam. This is a division which is mostly agricultural oriented with two subdivisions; Mbam et Kim and Mbam et Inoubou. This division, like many other divisions in the country is blessed with fertile soil for farming, the area temperature favors the production of different agricultural products like plantains, cocoa, cassava, groundnuts, etc.

Despite the fact that Mbam division is highly cocoa rich, the cocoa farmers' action is hindered by a lot of difficulties that tend to affect their supply chain activities. Supply chain activities cover everything from product development, sourcing, production, and logistics as well as the information systems needed to coordinate these activities. Even if the Government has been trying its best to support this vital sector of the Cameroon economy by creating institutions like ONCPB, FONADER, SODECAO, and IRAD just to name a few, to respond effectively to the difficulties facing the cocoa sector in Cameroon.

Regrettably, most cocoa farmers are still unable to well cope with their transport, inventory, packaging, transportation and warehousing [3]. The absence of infrastructures such as roads and bridge has a whole have a negative impact on farmers and cocoa production as a whole. Accessibility is not easy; farms are neglected. Consequently, production drops as farms are being allowed at the mercy of diseases. The lack of an extension service, which is supposed to be in charge of educating farmers on modern scientific methods of producing, is not available, making farmers remain traditional and constant in their production. The inefficiency of the government in providing funds and conditions necessary for agriculture does not encourage the youths to invest in the agricultural sector or even inherit what has been left by the parents because the work is over complicated. The absence of public warehousing, education on material handling, the provision of mechanical or automated machines, financial assistance for purchasing, inventory records and as mention earlier good infrastructures like road and bridges to facilitate the logistic can be perceived like challenges that have severe impacts on the activities of cocoa producers in the Mbam and its economy.

Research Objectives

The main purpose of this research is to investigate on the prospects and challenges faced by cocoa producers of the Mbam in their supply chain activities.

More specifically this work aims to:

1. Identify the supply chain activities practiced by cocoa farmers in the Mbam;
2. Examine the challenges faced by the cocoa producers of the Mbam in their supply chain activities;
3. Investigate possible prospects to overcome the challenges faced by cocoa farmers of the Mbam on their supply chain activities.

Research Questions

This research had as main question; what are the prospects and challenges facing cocoa producers of the Mbam and how they influence in their supply chain activities?

More specifically, it will address the following issues:

1. What are the supply chain activities practiced by cocoa producers in the Mbam?
2. What are the challenges faced by cocoa producers of the Mbam in their supply chain activities?
3. What are the possible opportunities that can be adopted to solve these challenges?

Methodology

The research adopted the survey research design. A sample of 167 cocoa producers were selected out of the 538 Registered cocoa farmers that produce more 50 bags and above a year in the targeted area, using stratified Mbam et Kim and Mbam et Inoubou were the two strata and simple random sampling technique within each stratum. The main instrument for data collection was a well-structured questionnaire. The instrument was validated and its reliability insured using Cronbach Alpha reliability coefficient. The Data gathered was analysed using the Statistical Package for Social Sciences (SPSS), and Microsoft excels.

Findings

Research question 1: What are the supply chain activities practiced by cocoa producers of the Mbam?

The Answer is suitable described with the help of Tables 1-3.

Research Question 2: What are the challenges faced by cocoa producers of the Mbam in their supply chain activities?

The Answer is suitable described with the help of Tables 4-7.

Strategic Supply Chain Activities		
	Frequency	Percentage
4pl services	0	0.00
3pl selection	0	0.00
Consulting services	0	0.00
Inventory financing	49	29.34
Freight bill auditing and payment	7	4.19
Information technology solutions	5	2.99
Inventory ownership	75	44.91
Product assembly and installations	20	11.98
Rate negotiations	4	2.40
Supply chain management	7	4.19
Total	167	100.00

Table 1: Dominant supply chain activities in the Mbam; strategic SC activities.

Research question 3: Opportunities/prospects to reverse supply chain challenges faced by cocoa farmers in the Mbam

The Answer is suitable described with the help of Tables 8 and 9.

Tactical Supply Chain Activities		
	Frequency	Percentages
Inventory management	16	9.58
Sales order fulfilment	0	0.00
Customer service	0	0.00
Procurement logistics	13	7.78
Product marketing/labeling and packages	50	29.94
Product return and repair	4	2.40
Reverse logistics	6	3.59
Shipment planning and distribution control	0	0.00
Warehousing	78	46.71
Total	167	100.00

Table 2: Dominant supply chain activities in the Mbam; tactical SC activities.

Transactional Supply Chain Activities		
	Frequency	Percentages
Shipment consolidations	0	0.00
Cross docking and JIT	0	0.00
Custom clearance	0	0.00
Fleet management	0	0.00
Freight forwarding	0	0.00
Inbound transportation	65	38.92
Outbound transportation	102	61.08
Total	167	100.00

Table 3: Dominant supply chain activities in the Mbam; transactional SC activities.

Items	SA	%	A	%	N	%	D	%	SD	%
There is no private or public warehouse provided by the government	78	46.71	38	22.75	8	4.79	28	16.77	15	8.98
Warehouse are small and inappropriate for cocoa conservation	67	40.12	59	35.33	13	7.78	13	7.78	15	8.98
There is not sufficient finance to build good warehouses	95	56.89	43	25.75	17	10.18	8	4.79	4	2.40
There is no government assistance for storage facilities	78	46.71	28	16.77	27	16.17	20	11.98	14	8.38
Storage tend to be difficult due to lack of appropriate warehouses	72	43.11	50	29.94	20	11.98	18	10.78	7	4.19
Lack of warehouses discourages production in a large scale	59	35.33	47	28.14	27	16.17	18	10.78	16	9.58

Table 4: Warehouse challenges faced cocoa producers in the Mbam.

Items	SA	%	A	%	N	%	D	%	SD	%
Have a good inventory records for the past three years	27	16.17	36	21.56	40	23.95	35	20.96	29	17.37
At times lack pesticide to spray your farm due to no proper record keeping	48	28.74	50	29.94	24	14.37	30	17.96	15	8.98
The is low inventory due to no government assistance that could help boost production wit assistance like subsidies	17	10.18	28	16.77	49	29.34	59	35.33	14	8.38
Poor inventory record due to lack of knowledge on inventory keeping	58	34.73	45	26.95	28	16.77	23	13.77	13	7.78

Table 5: Inventory management challenges faced by cocoa producers in the Mbam.

Items	SA	%	A	%	N	%	D	%	SD	%
Have bags that efficiently covers the required volume and weight of the product	57	34.13	46	27.54	28	16.77	18	10.78	18	10.78
Have bags that effectively protect the product.	46	27.54	62	37.13	18	10.78	22	13.17	19	11.38
Have bags that have the ability to advertise the product	12	7.19	26	15.57	18	10.78	37	22.16	74	44.31
The bags provided are easy to handle and last long.	37	22.16	38	22.75	28	16.77	42	25.15	22	13.17

Table 6: Packaging challenges faced by cocoa producers in the Mbam.

Items	SA	%	A	%	N	%	D	%	SD	%
Product transportation to market is difficult due to poor roads	87	52.10	23	13.77	12	7.19	32	19.16	13	7.78
Product transportation to markets is difficult due to lack of a bridge	45	26.95	42	25.15	23	13.77	27	16.17	30	17.96
Accidents occur a lot due to poor transportation infrastructure reducing delivery time and causing activity slowdown.	67	40.12	24	14.37	18	10.78	37	22.16	21	12.57
Inaccessibility of the region thus driving youths and investors away from agriculture	83	49.70	37	22.16	13	7.78	18	10.78	16	9.58

Table 7: Transportation challenges faced by cocoa producers in the Mbam.

Discussion of Findings

The findings of this research revealed that, the supply chain activities practiced by cocoa farmers in the Mbam include; Transportation (as indicated by 102 (57%) respondents in Table 3 above), warehousing (as mentioned by 82 (46%) of the interviewees in Table 2 above), inventory management and packaging (as indicated by 80 (45%) of the respondents in Table 1 above). These findings are in agreement with the results of Karibu [6] who found out in his study that, among the principal supply chain activities of farmers include; transportation, warehousing, packaging and inventory management. This finding is also in line with the results of Jespersen, et al. [7] who found out that, supply chain activities of farmers include; transportation, packaging, inventory management, and warehousing. These findings are also in accordance with the findings of Muller et al. [8] you discovered that, all organizations at a point in time keep inventory for one or two reasons since the absence of it affects all the agents in the supply chain. The actions of suppliers, customers and even the manufacturing cannot be predicted through fluctuation in demand, the unreliability of supplies and the event off break in production.

The findings of this research showed that, one of the principal challenges faced by cocoa farmers in the Mbam is the problem of warehouse for storage (as indicated in Table 4 above). This is in agreement with the conclusion of Coyle et al. [9] who discovered in their findings that, lack of proper warehousing by farmers for storage is one of the supply chain challenges faced by local farmers. This finding is also in line with the results of Bloomberg [10] that discovered that, lack of storage facility is one of the major supply chain challenge faced by farmers.

Items	SA	%	A	%	N	%	D	%	SD	%
Diminishing of state role in the agricultural markets	87	52.10	56	33.53	13	7.78	4	2.40	7	4.19
Non influence of the price by the government	64	38.32	64	38.32	8	4.79	13	7.78	18	10.78
The creation of structures like Sodecao by government to assist the cocoa farmers	73	43.71	68	40.72	10	5.99	14	8.38	2	1.20
Government facilitate access to loan	65	38.92	84	50.30	5	2.99	8	4.79	5	2.99
Disbursements of development assistance earmarked for agriculture are currently running	74	44.31	66	39.52	11	6.59	5	2.99	11	6.59
Farmers have been empowered to negotiate better prices with buyers	82	49.10	58	34.73	14	8.38	6	3.59	7	4.19
The government pays subsidies to encourage exports and provide additional financial help through direct budgetary payments, concessions on taxes, subsidised credit, fuel and fertilizer	79	47.31	63	37.72	6	3.59	12	7.19	7	4.19

Table 8: Local prospects to supply chain challenges faced by cocoa producers in the Mbam.

Items	SA	%	A	%	N	%	D	%	SD	%
Cameroon belong to at least one regional trading agreement that calls for preferential tariffs on trade amongst members and common external tariffs to be applied to trade with non-members	64	38.32	64	38.32	8	4.79	13	7.78	18	10.78
Facilitation of the access to international market	87	52.10	56	33.53	13	7.78	4	2.40	7	4.19
The demand of cocoa is continuously rising internationally	73	43.71	68	40.72	10	5.99	14	8.38	2	1.20
The insurance of agricultural commodities	65	38.92	84	50.30	5	2.99	8	4.79	5	2.99
Provision of a transportation system	74	44.31	66	39.52	11	6.59	5	2.99	11	6.59
Training on inventory management	82	49.10	58	34.73	14	8.38	6	3.59	7	4.19
Training on managerial skills	79	47.31	63	37.72	6	3.59	12	7.19	7	4.19

Table 9: External prospects to supply chain challenges faced by cocoa producers in the Mbam.

The findings of this research also revealed that, the lack of proper inventory management is one of the supply chain problems faced by farmers in the Mbam (as indicated in Table 5 above). This finding is in corroboration with the results of Johnson [11] who found out from their study that, most local farmers hardly take inventory of what they are doing because they lack inventory management skills. These findings are in accordance with Bloomberg [10] who found out that, lack of inventory management is a major challenge faced by farmers in their supply chain activities.

The finding of this research also showed that, packaging is one of the supply chain challenges faced by farmers in the Mbam (as mentioned in Table 6 above). This finding is in agreement with the conclusion of Bloomberg [10] Coyle [9] who discovered that, lack of good bags for packaging of the product by farmers is a major challenge in their supply chain activity. They also found out that, most farmers don't have the bag with labels in packaging their product.

Findings from Table 8 revealed that, there exist some local and external opportunities that can be used by cocoa farmers to overcome their challenges. One of these opportunities is to give more consideration for cocoa crops, by using it like a mirror for the country. This finding is in corroboration with the findings of Shapiro and Rosenquist [12] who revealed that, cocoa supply chain can be taken as for the country model as cocoa can be mirrored as a sustainability model for other tree crops. This is also in accordance with the findings of Li, et al. [13] repeated by Obiri et al. [14] who said that, cocoa is a world commodity well known not only for its boom - bust cycles, but also for its capacity to draw in and then expel new populations, regions and nations and has the capability to create profit for the regions. These facts entice, even at country level, to stimulate and develop cocoa industry as a catalyst for economic development.

Conclusion

From the result of the research, the researchers can say that, the challenges faced by cocoa producers in their supply chain activities were

real as the results showed that most of these difficulties were admitted by the majority of the respondents who were cocoa farmers. The majority of the respondents were also in agreement with the impacts these challenges had on them and their output even though most of them blamed the government. The research also concluded that, there is a need for vulgarization of the local and external opportunities existing in this sector, because most of the cocoa producers are not aware of many of them.

This research will, therefore, be significant as it will contribute to academic and technical knowledge's. It will also serve as a guide or source of reference to governance especially to the various ministries concern (finance, economy, agriculture, commerce, planning, and infrastructures) as it was a fruitful and concrete research that fits with the realities of the society and the country, Cameroon as a whole.

Recommendations

Due to the challenges faced by cocoa producers in the Mbam and the impacts that they have on their production, we propose the following recommendations.

To policy makers

The government should provide public warehouses that are convenient for cocoa preservation to facilitate storage.

Jutes sacks that are made for cocoa should be re-enforced to be stronger. In fact, if LA SACHERIE can no longer be re-open, another institution which can produced jutes sacs to stock cocoa should be created to be replaced by polytene bags which do not favour the storage of cocoa for a long period of time, making the cocoa moist and below standard for international consumption.

It is recommended that, the government should encourage labeling should to easily distinguish between high quality cocoa producers and poorly qualified cocoa farmers.

Also, the study recommended that, part of the Cameroon budget

should be given to solve the issue of accessibility of the agricultural zones, once and for all.

It is equally recommended that, in addition of the ferry, a bridge should be constructed specifically in the Ngoro community, Mbam et Kim subdivision, to save cocoa farmers from time overrun and stress.

A local policy and a proper effective system should be put in place that will send the correct information to the ministries concern with infrastructures, to ensure their effective maintenance. If it is too difficult to tare the roads, at least, an annual policy should be voted always to deploy engines that will level the roads the more it depreciates with variation in seasons.

A national agricultural service team should be put in place by the ministries concern, to have regular visits in productive areas of Cameroon, to educate and assist farmers on farm maintenance, disease control, good farm practices and security management just to name a few. These extension services will also help train farmers on modern managerial skills; have a good planning system and a good forecast system.

It's recommended to revive SODECAO which is a company (Government Company) that is in charge of producing cocoa stems and distributes or sell it at a low price to those who want to invest in cocoa production. Unfortunately, SODECAO hasn't been operating effectively for some years now. The SODECAO is a company who should provide cocoa tends to buy cocoa from farmers to resell to others to make a profit. It's a miserable situation. SODECAO should, therefore, be revived to its first and original functioning, which is to encourage cocoa investment through the research, production, and distribution of quality cocoa stems.

It's equally recommended to revive the FONADER (fond national du developement rural) which was a financial institution that was brought about by the government to help farmers in the agricultural activities. But due to mismanagement, the financial institution did not carry on its function properly. It was later on replaced by le "Credit Agricole" which had as function to revive the original functions of FONADER. But still, with the corrupt nature and narrow mind of the leaders, it came to be the same structure that wasn't there to help farmers but to profit from some of its top managers. FONADER should, therefore, be reinitialized and brought back to its original functions to support farmers financially and promote agriculture.

It's recommended to the government to stop competing with SODECAO by creating other structures that perform the same role like the later. Such structures include; ASPA, CUROR, PROMOPA.

Also, agricultural banks should be encouraged and have a system that will favour farmers when they engaged in collecting long term loans, interest rates should be favourable and affordable collateral should be demanded.

The law n° 92-006 of 14 august 1992 on corporative and common initiatives groups should be revisited, concerning the mandates of corporate leaders (the law came as an exit for the government who mismanaged the stabilization fund of cocoa and coffee. The main consequences of these mismanagement aspects on both the famers and their productions where; double pricing, fake weighting, fake and over refractions.

It is hardly believed that, if cocoa was majorly produced by the Europe or the other developing countries, sufficient machines would have been created to facilitate the work of cocoa producers. Cocoa pod

breaking machines and cocoa pod separation machines would have been vulgar and given to farmers to facilitate their work and increase production. Therefore, machinery discrimination should stop and the government should take the necessary measures to mechanize the agricultural sector, most especially cocoa.

To cocoa farmers

Cocoa producers should improve on their warehouse management by avoiding them to be exposing to external hazards like rain and theft.

Cocoa producers should organize themselves in to groups to ensure the endogenous maintenance of their roads infrastructure and facilitate therefore the access to their farms in the limit of their possibilities.

It's recommended that, cocoa farmers should change some bad attitudes amongst associations, malpractices shouldn't be encouraged, double pricing should be discouraged, and there should therefore, be transparency in transactions as much as possible. Producers should follow a common cause, and they should be unified, escape from the traps of unscrupulous buyers and agents.

Government policies on tariffs, subsidies and taxes should be recognized to encourage investment in cocoa which will help Cameroon to realize its desires output of 650 thousand tones by the year 2020.

The study recommended that, the farmers should not abandon their farms to focalize themselves in the management of the cooperative. In fact, farmers who were part of the corporative were forced to abandon their farms because being part of the corporative had higher advantages due to the mismanagement aspect of the system including; double pricing, fake weighting, fake and over refractions which only benefited the management of the corporative. Consequently, the proportion of farmers who believed in corporative reduced.

To financial institutions

From some sources in the Mbam, it has never been easy for a farmer to get a loan from a bank or a micro finance. The CFA franc, which is the French colonial currency in some African countries including Cameroon, charge interest rate very high to the central bank, who charges it high to other banks, who also charge high interest to micro financial institutions. From this point view, the franc CFA is, therefore, a problem as taking a loan will first include paying it back with high interest and secondly, banks don't believe that much in long term agricultural projects. This project problem should, therefore, be looked upon in other to encourage agricultural investment. If possible, let a different agricultural bank, financed and controlled by the government, be put in place that could offer soft loans to canalize farmer's source of revenue which could also integrate extension services. This will encourage people to jump into agriculture.

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