

# **CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE**

**Faculty of Economics and Management**

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**Bachelor Thesis**



**Economic Analysis of a Cocoa Industry (GHANA)**

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## **Declaration**

I hereby declare that I have elaborated the Bachelor Thesis on the topic: Economic analysis of the cocoa sector (A case study about Ghana), only with the help of expert consultations and with the use of credible sources of information, which I am stating in my thesis and then mentioning in the references.

I entirely agree that my Thesis can be saved in the library of the Czech University of Life Sciences Prague.

Prague, 2012

.....  
Samuel Kwame Saforo

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**Economic Analysis of a Cocoa Industry (GHANA)**

**Ekonomická analýza odvetvi kakaa (GHANĚ)**

## **Abstract**

The cocoa sector is of significant importance and the main engine of the Ghanaian economy employing millions of the population in the country. Cocoa has also contributed positively to the generation of revenues and income to the government of Ghana. In order to enhance price increment raised by producers and to boost the performance of the cocoa sector, a number of reforms were undertaken, where the internal market was opened for significant competition. The thesis describes how the cocoa sector in Ghana has influenced the performance in terms of production, production prices, marketing, yields, storage, and quality yields. In comparison with other African producing countries of cocoa, the economic performance in the Ghanaian cocoa sector is relatively low as compared with others such as Cote d'Ivoire and can be enhanced or increased if further liberalization takes place within the economy. The conclusion is on its basis that through the reforms, production, producing prices, marketing, yields, and storage and quality yields has increased from previous years.

Keywords: Ghana, cocoa, market chain, , competition, performance, liberalization.

## **Abstrakt**

Kakaový průmysl je velmi významný a je to hlavní pohon ekonomiky v Ghaně. Zaměstnává miliony lidí v zemi. Kakao taky pozitivně přispělo a přispívá do státní pokladny země. Aby se vylepšili ceny, které navyšují producenti a aby vzkvétal výnos kakaového průmyslu, bylo tedy uskutečněno množství reforem, kterými se otevřel vnitřní trh konkurenci.

Tato práce popisuje, jak kakaový průmysl v Ghaně ovlivnil výsledky, co se týče výroby, výrobních cen, marketingu, výnosu, skladování a jak se to podepsalo na kvalitě úrody. Když Ghanu porovnáme s ostatními africkými producenty kakaa, tak jsou ekonomické výsledky v ghanském průmyslu relativně nízké. Výsledky mohou být zlepšeny a zvýšeny, jestliže ekonomika projde další liberalizací. Závěrem je, že reformami se zkvalitnila výroba, výrobní ceny, marketing, výnos i skladování oproti loňským rokům.

Klíčová slova: Ghana, kakao, soutěž, liberalizace, konkurence, výsledky.

## **ABBREVIATIONS**

PPRC.....	Producer Price Review Committee
CSMC.....	Cocoa Sector Marketing Committee
FAO.....	Food and Agriculture Organization
NGO.....	Non-Governmental Organization
ICCO.....	International Cocoa Organization
CSD.....	COCOBOD Service Division
IMF.....	International Monetary Fund
LBC.....	Licensed Buying Company
PBC.....	Produce Buying Company
CMC.....	Cocoa Marketing Company
CTOR.....	Cocoa Take-Over Receipt
QCD.....	Quality Control Division
CMB .....	Cocoa Marketing Board
GDP.....	Gross Domestic Product
NCG.....	Nigerian Cocoa Board
COCOBOD .....	Ghana Cocoa Board
PC .....	Purchasing Clerk

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# 1. Introduction

Cocoa (*Theobroma cacao* Linn.) is a global trade and industry crop cultivated around the globe mainly in the humid tropics of Africa, Southeast Asia, South America and the Caribbean. Global annual production of cocoa from all the continents averages three(3) million tonnes with 70% of production emerging from West Africa(Cote d'Ivoire,Ghana,Cameroon,Nigeria,Togo) respectively. Cocoa production in Ghana is mainly a smallholder cultivated on a wide range farm employing about 3 million of the population in the country. In the 2009-2010 crop year, Ghana was the second largest producer following the Ivory Coast with a market share of 16% of world production (ICCO 2011).Cocoa is the main income and foreign exchange earner to the Ghanaian economy contributing about 38% to the GDP in the country.

Cocoa is used in the extraction of cocoa butter, cocoa paste and cocoa powder which are consumed in larger quantities as chocolate confectionary and other cocoa based food products. The crop is a commodity that directly links consumption patterns of consumers in the developed world with the overall comfort of farmers and rural workforce in developing countries like Ghana. However, the demand of cocoa rises each crop year due to elevated living standards, announcement and campaigns of the crop on the world market, high yield, news of the health effects of cocoa that reaches the world market.

In Ghana, the cocoa sector is guarded by the state that amends and adjusts prices and lay down policies and tariffs on the crop since it's the main engine of the economic growth of the country and the most important foundation of employment in the country. In Ghana, the cocoa sector has not been as liberalized as in its neighbouring cocoa producing countries,however,there has a liberalization reform in the recent years and competetitors like Ivory Coast and Nigeria and as a result still, to a large extent controlled by the government through the COCOBOD.

## **2. Objectives**

The purpose of the thesis is to assess the arrangement and reforms of the cocoa sector in Ghana using chosen indicators of performance in the economy. However; other goal of the thesis is also to propose additional ways and reforms in the development and improvements of the sector's performance by discussing possible gains and risks of progressed liberalization.

## **3. Methodology**

In order to obtain information, informal and formal interviews and meetings were held with the Ghana Ministry of Agriculture, representatives of farmers, International cocoa organization(ICCO),Ghana Cocoa Board(COCOBOD)stakeholders on the internal cocoa market in Ghana, private buying companies, Ministry of trade and industry and foreign exchange authorities in Ghana and consequently data from these interviews were analyzed using synthesis, induction and deduction.

Secondly, comparative analysis was conducted on the production and marketing of Cocoa in the West African sub region.

## **4. Literature Review**

### **4.1 Definition of Cocoa**

Cocoa bean (also called cacao bean, often simply cocoa and cacao) is the dried and fully fermented fatty seed of *Theobroma cacao*, from which cocoa solids and cocoa butter are extracted. They are the basis of chocolate, as well as many Mesoamerican foods such as mole sauce and tejate. A cocoa pod (fruit) has a rough leathery rind about 3 cm thick (this varies with the origin and variety of pod). It is filled with sweet, mucilaginous pulp (called 'baba de cacao' in South America) enclosing 30 to 50 large seeds that are fairly soft and white to pale lavender in colour. While seeds are usually white, they become violet or reddish brown during the drying procedure. [2][13].

### **4.2 History of Cocoa in Ghana**

Tetteh Quarshie (1842-1892) travelled to Fernando Po (now Bioko in Equatorial Guinea), has transformed the economy of Ghana with his introduction of cocoa beans on his return. Previously, palm-oil and rubber were the main staple industries in Ghana. In 1870, Tetteh Quarshie undertook a journey to Fernando Po (Bioko in Equatorial Guinea).[3].

Six years later he returned to Ghana with several cocoa beans (the Amelonado) and made history. Sir William Brandford Griffith (Governor of the Gold Coast in 1880 and 1885) claimed it was his father, Sir W. Brandford Griffith who deserved that honour because he thought his father introduced the crop in Ghana. The Basel Missionaries also claimed to have experimented with the cocoa beans in Ghana as noted in their diaries. Sir

Gordon Guggisberg decided to fully investigate the various claims. As documented in D.H. Simpson's "Gold Coast Men of Affairs," Sir Gordon Guggisberg, carefully investigated the issue and drew a conclusion that, the fact that Government found it necessary many a time to establish inquiries is an evidence that cocoa was introduced in the Gold coast by an individual rather than the government, and it was impracticable that the Gold Coast Government could have failed to record or to give credit to such a distinguished public figure like the late Governor Griffith if he was responsible for the introduction of the crop[3][4].

In 1879 Tetteh Quarshie planted the seeds at Mampong Akuapem in the eastern region of Ghana. Individuals also planted the cocoa when pods were given to them. Soon other farmers followed the exercise and it spread throughout the country. The Basel Missionaries started importing large quantities of the crop into the country. The seed was sent from the Gold Coast (Ghana) to other countries like Nigeria and Sierra leone. The export of cocoa from Ghana began in 1891, (two bags) were officially exported in 1893. Ghana once provided about half of world output. Between 1910 and 1980 Ghana was the world's largest exporter. This position was ceded due to bush fires, diseases, poor storage facilities and unskilled farming practices. However Ghana's cocoa is still of the highest quality and the country earns hundreds of millions of dollars annually from the export of the beans and processed materials.[3][4].

### 4.3 Overview of Cocoa

Cocoa is a perennial tree crop of the humid tropics grown frequently under forest shade and a cocoa tree has an economic life of about 25-30 years; In West Africa, it is mostly grown underneath broad management system by smallholders (often with only 1-2 hectare of the crop). It is estimated that there are 1.7m cocoa smallholders in Côte d'Ivoire and Ghana. The fruits (pods) take about 5 months from flowering/fruit-set to ripeness and are subject to a number of pests (in West Africa most importantly capsids) and diseases (most importantly in West Africa species of the pathogen *Phytophthora*). [4][16].

Ripe fruits are harvested by farmers with long handled knives or machetes when the fruit has achieved a deep yellow colour; the harvested pods are collected together, broken open, usually with a wooden baton and the wet beans enclosed with sweet mucilage are removed by hand. Ripe fruits are sometimes left in the field for up to 10 days -- a practice (called pod storage) which seems to enhance the taste but is in fact usually done to allow enough labour to be assembled to break the pods. The pod husk is discarded and the wet cocoa beans with their sweet mucilage are then fermented for a number of days; without this vital process, the chocolate flavour will not be fully developed on subsequent roasting in the factory. [4][16].

For successful flavour development a fermentation heap (from 90 to 250 kg of wet beans) will be placed on plantain leaves and then covered with more plantain leaves; these heaps should be constructed away from full sunlight and ideally should be turned after about 3 days to ensure even conditions throughout the heap. Plastic sheets are sometimes used. On larger holdings, this fermentation can conveniently be carried out in wooden boxes usually 1.2 m by 1.2 m and beans are to a depth of 0.9 m and again would be turned at the third day; this would be about 1 tonne of wet beans. The highly corrosive liquid runoff from either of these fermentation processes, starts on the second day. [5][16]

On completion of fermentation, the cocoa is carried to the villages for drying on raised bamboo mats. This can take from 7-10 days or even longer depending on the weather conditions. Drying the cocoa early stops prevents the chemical reactions started during fermentation and prevents flee of the remaining acids in the beans resulting in acidic flavours in the cocoa. Very fast drying can leave the cotyledons wet and merely dries the exterior of the bean, giving the misleading appearance that the cocoa is dry.[5][16].

After a few days in this situation, the moisture will migrate out to the shell, allowing fungal development and growth. If artificial drying is necessary the conditions should mimic sun drying as far as possible, using low temperatures/ambient air for the initial dries with higher temperatures only for the final stage.[4] Sun drying allows the sun and wind to take their effect, and combined with stirring ensures thorough drying; a process that also allows the removal of defective beans and gives cocoa of the best flavour quality. Drying on concrete can lead to the beans drying quickly and potentially introduce various sorts of externally imposed contamination.[16] On raised bamboo mats the drying beans can be conveniently sorted and debris moved and their use enables the beans to be rolled up in the mat in the event of rain during drying. When cocoa beans crackle in the hand if rubbed together, then they have achieved the desired level of about 7.5% moisture and after cooling for 24 hours are ready for sale. In both Côte d'Ivoire and Ghana, the purchase of cocoa from farmers and its movement to port is in the hands of the private operators(licensed buyers).[16].

The only State intervention is in Ghana where the Government's Quality Control Division (QCD) undertakes grading and sealing of cocoa into export sacks. In Côte d'Ivoire, itinerant buyers with small pick-up trucks regularly come to the villages to buy cocoa for cash -- after a cursory quality and moisture check followed by crude weighing. The scales are rarely checked/corrected by the relevant authorities.[4][16].



In Ghana, stagnant buying premises are required under the significant cocoa marketing legislation. The cocoa can be brought into the metal roofed shed by the farmer where it is weighed on certified scales. In Ghana, the nomadic buyer pays cash directly to the farmer with little documentation and the cocoa will be delivered that same day to the collection centre in the nearest large town.[4].

In Ghana, quality and moisture content will be thoroughly checked often in the presence of the farmer by the manager of the buying shed who will (usually) provide a cheque to the farmer and keep a detailed payment record. From the collection centres, in the large towns of Côte d'Ivoire, the cocoa will be moved (certainly within days and sometimes within hours) to the exporters store in the port areas of Abidjan or San Pedro. The marketing system in Ghana and the resulting high quality standards has been founded on the principal that cocoa bags are officially graded and sealed by QCD as close to the farm as possible -- in the village buying sheds. This means that cocoa may remain at the village level for some weeks, both before and after sealing by QCD. [5][16].

In Ghana, once an adequate quantity of sealed cocoa and transport is available, then the buyer will move to the 'hand over point' where the cocoa is sold to the Government owned Export Company (the Cocoa Marketing Company or CMC) at a fixed price. The fabric and the ventilation in many of the up-country cocoa stores in both Côte d'Ivoire and Ghana may be poorer than would be desirable. In the case of Ghana, cocoa may remain in these stores for some weeks. Cocoa may also remain on Lorries in the port area waiting unloading for some days in both Côte d'Ivoire and Ghana. On unloading at the exporters store in Côte d'Ivoire, the cocoa would be checked for quality, re-dried if necessary (in an artificial drier), sieved and bagged into export sacks. The bagging stage would be omitted if cocoa is being shipped as bulk in containers or as mega bulk (direct in the hold of the vessel). Cocoa may be ready for export within seven days of arrival at the exporter's store.

In Ghana, the cocoa is purchased by CMC from the private buying company and placed into large piles in substantial, airy warehouses in the port area from which vessels can be loaded directly after fumigation of the cocoa.[5][16].

#### **4.4 Supply, Demand Of World Cocoa Price**

Cocoa is a perennial crop grown on trees in a well-drained porous soil and a shelter from strong winds and direct sun rays from the sun. There are varieties of trees which exist as cocoa trees with different shapes and types which have common characteristics for a couple of years before they bear fruits with an approximation of at least 30 years. Cocoa is reaped throughout the year since the seed cases of each tree do not ripen at the same time but differs from tree to tree due to harvesting procedures.[16].

In Ghana, the cocoa seed is harvested intensively from December and June, together constituting a crop year. The yields of crops vary; different soils, different local climatic conditions and different standards of cultivation, all affect the yield. A rough average would be about eight pods per tree at the main harvest.[7][9][16].

Cocoa requires a hot, wet climate. A mean shade temperature of 27°C, with daily variation less than 8°C, and well-distributed rainfall of at least 12 cm, is the ideal climatic conditions for the growth of cocoa. It also needs a well-drained porous soil and a shelter from strong winds and direct rays of the Sun. [16].

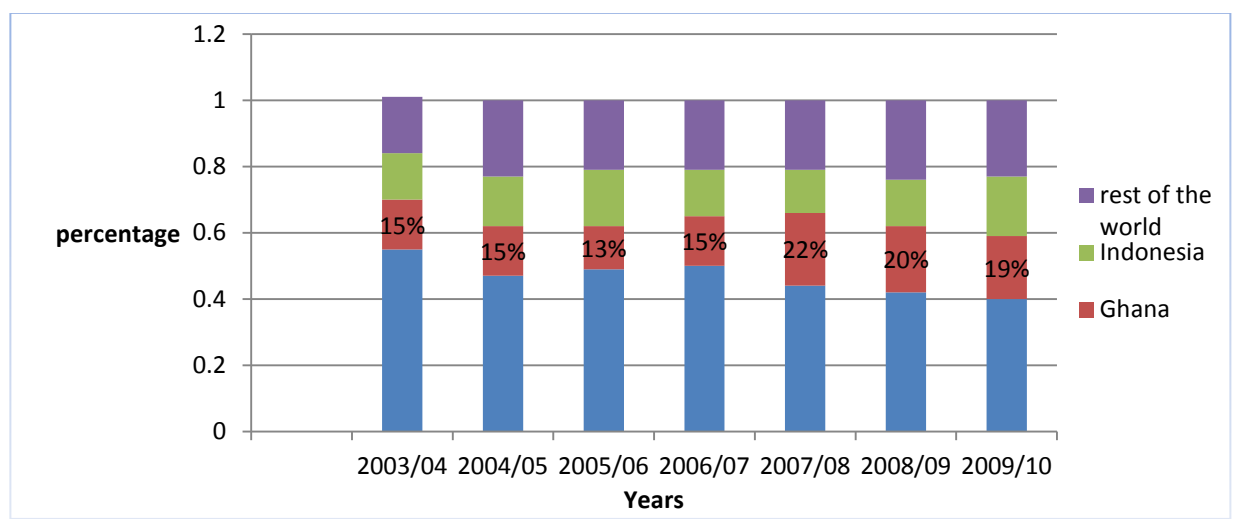
In natural state, the cocoa tree grows to a height of about 10 meters or so, but it is pruned to a height of 6 to 7 meters in order to facilitate the plucking of cocoa pods. The cocoa pods, about 25 cm. long, contain about 30 to 40 cocoa beans. The cocoa fruits are usually cut down by hand, often using long cutlass. Machines cannot be used due to harvesting time differences of the cocoa beans. The seeds are fermented on the ground for

seven days and dried in the sun for at least three weeks before they are packed in their bags for export or usage.[9][16].

Although the crop cocoa originated from South America, West Africa is the main primary producer of the crop since time generation due to its fertile land.Cote d’Ivoire; Ghana, Nigeria and Cameroun produce two thirds and exports three quarters of total world cocoa production in the world. [16].

Figure 1 below shows Ghana’s share of supply which increased rapidly from 15 to 22 percent in the recent years whereas Cote d’Ivoire decreased by 15 percent due to recent civil war destroying farm lands and poor marketing procedures in the country. Indonesia’s amount supplied remained fairly stable except for a rise in the last crop year. The rest of the producing countries in the world are labelled “rest of the world” showing they supply cocoa in minute quantities even with the increment of shares. The biggest portion of cocoa is directed into the European market which is the biggest processor and consumer of cocoa.[1][6][7].

**Figure 1: Exports of cocoa, by main exporting countries, 2003 – 2010**



**Source:ICCO and own computation**

During 1998/99 to 2009/2010 crop year, there was increment from 2.8million tones to 3.7 million tonnes with an average annual growth rate of 2.8 percent. The consumption rate showed similar patterns with an average increment of 2.9 percent from 2.9 million to 3.8 million tonnes.

## **4.5 Approved Buying Institutions**

During the recent years, the number of registered LBC's has increased steadily since the formation of the liberalized reform. On the basis, six companies were granted licenses to operate internally but today, there are 26 active LBC's including the PBC. Table 2 below portrays the stages of the LBC's market shares and it shows that the number of active LBC's per village increased from 16 to 26 between the 2004/2005 and 2009/2010 crop year. The average number of LBC's per village increased by around 30 percent between 2002 and 2004 years, which entails that the potential trading partners of cocoa farmers, has increased drastically over the years.[4][7].

In broad view, one can divide the LBC's to four main categories depending on the ownership structure of the company. The first subsidiary comprises of the former subsidiary of COCOBOD-the PBC.The second category of LBC's consist of domestically owned LBC's.many of these Ghanaian companies were former transport companies that were contracted by COCOBOD prior to the liberalization reform. A typical example is global haulage and it's a successful former transport company that is currently a key shareholder in three major LBC's-Adwumapa, federated commodities and TransRoyal.[2].

The third category comprises of the farmer-based fair trade cooperative Kuapa Kokoo. Kuapa Kokoo was established on 1993 by a group of organized farmers with the help of a British NGO TWIN trading Limited. The fourth which is the final category consists of the two main international companies, Singaporean-owned Olam and British-owned Armajaro.

Both Olam and Armajaro are the leading suppliers of cocoa and other commodities such as coffee and sugar on the world market to operate in all main cocoa producing countries. But in Ghana these two companies operate as buying companies, but they are experts which includes origination, exporting and processing of cocoa. However the foreign companies have access to foreign capital, an advantage that makes them less dependent on the seed fund.[2][5].

Table 1: Ranking Licensed Buying Company (LBC) By Market Shares.

Licensed Buying Company (LBC)	2005/2006 (%)	2006/2007 (%)	2007/2008 (%)	2008/2009 (%)	2009/2010 (%)	Five (5) Year Average (%)
Produce Buying Company	37.60	32.76	30.28	30.63	32.87	32.83
Akuafu Adamfo Marketing Co. Ltd	13.11	11.37	9.29	12.63	13.45	11.97
Olam Ghana Ltd	13.18	13.87	11.47	7.94	7.11	10.71
Adwumapa Buyers Ltd	7.24	8.95	9.75	9.02	8.14	8.62
Federal Commodities Ltd	6.77	6.82	7.57	6.90	7.14	7.04
Kuapa Kookoo Ltd	6.80	6.61	5.58	5.29	5.27	5.91
Transroyal Ghana Ltd	5.06	5.70	6.71	5.57	5.54	5.72
Amajaro Ghana Ltd	5.36	4.97	5.12	6.86	6.21	5.70
Cocoa Merchants Ltd	2.21	2.37	3.59	3.33	4.36	3.17
Diaby Company Ltd	0.09	1.23	4.03	4.24	3.91	2.70
Dio Jean Company	0.38	1.26	1.73	1.30	0.66	1.07
Royal Commodities Ltd	0.45	0.79	1.09	1.19	1.69	1.04
Sika Aba Buyers Ltd	0.10	0.89	1.00	0.99	1.24	0.84
Chartwell Ventures Ltd	-	0.13	0.95	2.25	0.68	0.80
Sompa Cocoa Ltd	0.90	0.68	0.52	0.43	0.49	0.60
West Africa Exchange Ltd	0.33	0.49	0.75	0.26	0.07	0.38
CocoExco Ltd	0.41	1.12	-	-	-	0.31
Evadox ltd	-	-	-	0.93	0.45	0.28
Sunshine Commodities Ltd	-	-	-	0.57	-	0.11
Allied Commodities Ltd	-	-	-	0.10	0.25	0.07
Fereday Company Ltd	-	0.04	0.03	0.10	0.12	0.06
Farmers Alliance Ltd	-	-	-	0.03	0.10	0.03
CDH Commodities Ltd	-	-	-	-	0.11	0.02
Ghana Cooperative Marketing Co. Ltd	-	-	-	0.01	0.05	0.01
Aba Pa Golden Ltd	-	-	-	-	0.05	0.01
Yayra Glover Ltd	-	-	-	-	0.04	0.01
Aboafo Company ltd	-	-	-	-	0.01	-
Duapo Buyers Co. Ltd	-	-	-	-	0.01	-
Total	100%	100%	100%	100%	100%	100%

*Source: statistics from COCOBOD, 2011, own representation.*

Table 1 above shows that the PBC has the largest market share with a 5 year market share averaging about 33 percent. The second largest LBC is the domestically owned company AKuafo Adamfo with an average market share of close to 12 percent. Olam, with its approximate market share of 11 percent is the third largest LBC. The Glaubal Haulage owned LBC's Adwumapa, Federated commodities and the TransRoyal are fourth and fifth and seventh position, while kuapa kokoo and Armajaro are sixth and eighth place. The eight largest LBC's together purchase 90 percent of all cocoa while the remaining companies only have marginal shares. This implies the market is been dominated by few big players.

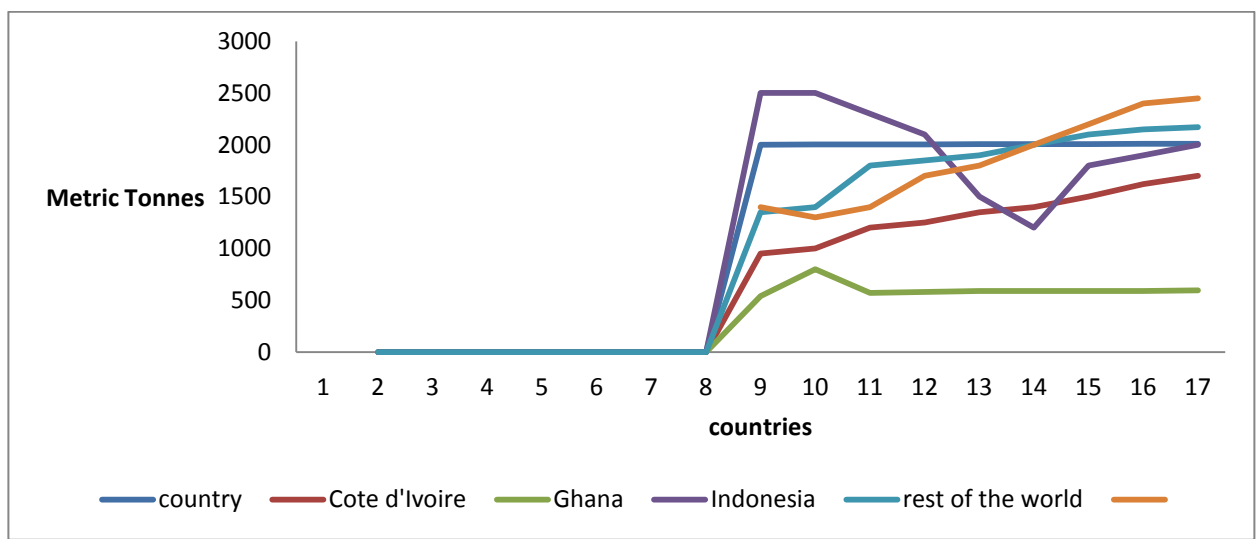
When dividing the market shares into categories, figure 5 below shows that domestically owned LBC's have increased their shares over the five-year period, while both Kuapa Kokoo and Olam has both decreased. The LBC decreased its market shares in the 2005/06 and 2007/2008, but reversed the trend the years after. The main reason for increasing shares of domestically owned companies may be due to the several of the LBC's not being active in the beginning of the time period later started operating on the market and that more domestically owned LBC's have been granted licenses.

## **4.6 Producer Price**

One major goal of liberalized cocoa sectors is increased producer prices, to be gained through increased competition and lower costs. The experiences from other countries, which to a larger extent have liberalized their cocoa sectors, are that marketing costs and taxes are lower, implying a more efficient system and higher producer prices. The reforms of the Ghanaian cocoa sector resulted in an increase of the producer price, but persisting macroeconomic problems implied that the real price increase lagged behind during most of the 1990s and real gains for farmers were thus initially low. The producer price increased from 320 USD/tonne in 1993 to a top level of 1 010 USD/tonne in 2003, figure 7. Since then prices have been fairly constant. The producer price is, as a result of

COCOBOD's high share of the world market price, substantially lower in Ghana than in other cocoa producing countries. Having in mind that Ghana receives higher prices for its high quality cocoa, this indicates that the quality premium is not passed on to farmers. Hence it seems like COCOBOD benefits most from it.[3][11].

**Figure 2: The producer price in selected cocoa producing countries, 1994 – 2010**



**Source: FAO, 2010 and own calculations**

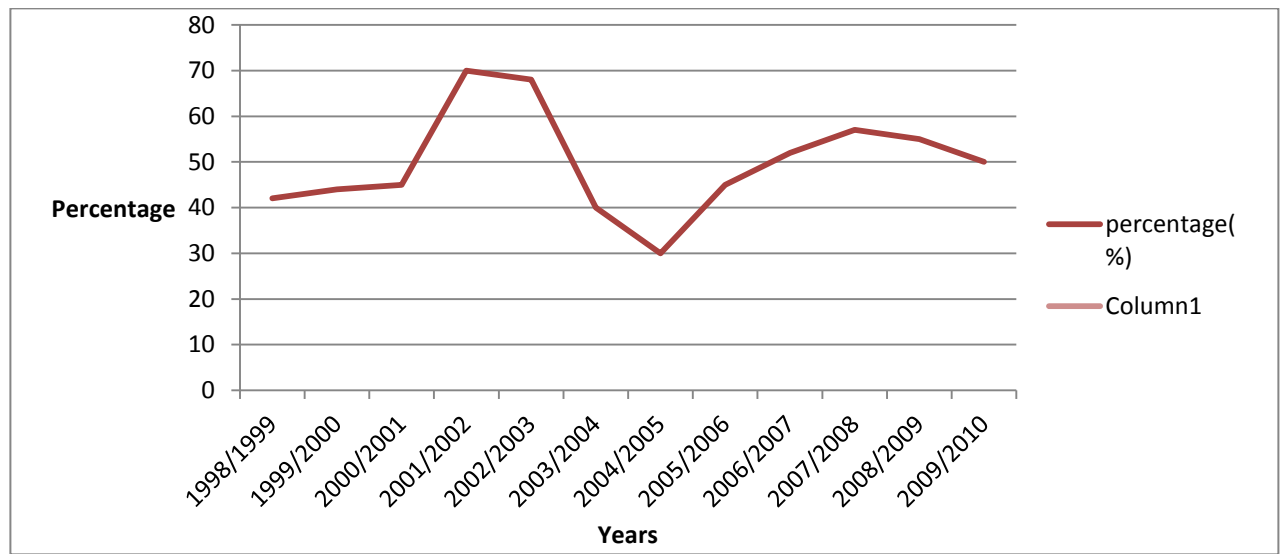
Note: Calculated data. \*Average of 10 (out of 11) largest cocoa producing countries in 2010 (Côte d'Ivoire, Indonesia, Ghana, Nigeria, Brazil, Cameroon, Ecuador, Togo, Colombia, Dominican Republic). To better show the difference between the producer prices in Ghana and the other countries, the figure does not fully show the fluctuations of the Nigerian producer price (which reached its top level in 1997 at approximately 4 100 USD/tonne).

Before the reforms, the share of the world market price received by Ghanaian farmers could be as low as 20 percent. After the reforms, the producer price's share of the world market price varied between 39 and 73 percent between 1998 and 2010, as seen in figure 3. The drop in the relative producer price in crop years 2000/01 and 2001/02 was due



to a sharp increase in the world market price of cocoa during these years (recall that the producer price is set according to the expected world market price).

**Figure 3: The producer price in Ghana as percentage of the world market price, 1999-2010**



**Source: COCOBOD, 2010, own computation**

Due to the lack of price-based competition mechanisms in the internal market, the producer price in Ghana reflects to a larger extent the world market price of cocoa and profit margins and costs facing various market participants and, to a lesser extent, the bargaining power of and between farmers, the LBCs and COCOBOD. The latter is reflected in farmers' lack of capacity to put pressure on buying companies to raise the price above its minimum level and the LBCs' inability to raise the buyer's margin.[2].

**Table 2: Total bonus paid by COCOBOD between 1999/00 and 2008/09**

Crop year	Producer price (GHC/tones)	Total Bonus Paid (GHC/tones)	Bonus as percentage of producer price (%)
2001/2001	225.0	-	-
2001/2002	347.5	17.82	5.1
2002/2003	620.0	12.18	2.0
2003/2004	850.0	31.78	3.7
2004/2005	900.0	21.87	2.4
2005/2006	900.0	NIL	NIL
2006/2007	900.0	24.08	2.7
2007/2008	915.0	26.23	2.9
2008/2009	1200.0	31.16	2.6
2009/2010	1632.0	-	-

**Source: statistics from COCOBOD 2010.**

Table 2 indicates that the government has distributed bonuses almost every year and that the error range has been fairly constant since crop year 2004/05. COCOBOD has stated in an interview that it is reluctant to lower the producer price, which may imply that the price is set with caution and perhaps slightly below the expected world market price. In addition, there have been signs of not all farmers having received the bonuses. This could confirm the habit of COCOBOD of not passing revenues on to farmers.

### **4.6.1 Price and limit**

To decrease price negativity and impact of price fluctuations on farmers, a fixed producer price is set every year by the Producer review Committee (PPRC), consisting representatives from the state, COCOBOD, farmers, the LBC'S, University of Ghana and different business organizations. The producer price is a price floor. i.e the LBC is not allowed to buy cocoa for less than the producer price. Even though there are no formal restrictions against price increment above the price floor, it is not raised above the minimum level. The producer price, which is based on the forecasted average world market price of cocoa, is set in the beginning of each crop year and is constant throughout the seasons. [10][11].

In setting the producer price, the PPRC sets a yearly fixed purchasing price, i.e. the price that the LBC receive from selling the cocoa to COCOBOD. This so called buyer's margin is set at levels that take into consideration commissions to pc's, transportation costs and other costs faced by the LBC's and at the levels where the LBC's break even. Each LBC faces the same buyer's margin.

When prices of cocoa fluctuate in the world market, there is inconsistency between the actual and the forecasted price, the latter on which the producer price is grounded. This implies, there will be surpluses or deficits in relations to the targeted level depending on the fluctuations on the world market as a whole. The surplus is been divided between the government and the farmers, while the deficit is covered by the government alone with no other body intervening. The farmers, however receive this surpluses in the form of yearly bonuses after payment. [11].

## **4.6.2 Regulations and Guidelines**

The undertakings of the (Licensed Buying Company) LBC's are heavy and regulated by the COCOBOD. They apply to all LBC's equally and the PBC is not subject to additional obligations or exemptions apart from its geographical coverage. In order for a company to operate, it must obtain a licence, these companies must comply with the rules and regulations set by the COCOBOD related to the organization and structure, the operational strategy and the financial strength of the companies. However, applicants who wish to participate must demonstrate that they have access to tools for the trade, trading rules, warehousing facilities and vehicles or transport facilities. It is also required that companies must have the capacity to purchase a minimum of 2000 tons of cocoa the first crop year. The set ups of the company, warehousing and facilities must be approved of and certified by the QCD.

Applicants that meet these requirements are approved an operating license or in other cases temporary licenses. The applications are however reviewed by the Cocoa Sector marketing Committee (CSMC), consisting of representatives from the board of governors of the COCOBOD, banks, farmers and which makes recommendations to COCOBOD has to plan with regard on how many LBC's that can operate on the market and all applicants satisfying the requirements are approved licenses.[11].

The licenses issued are renewed annually based on the performances of the LBC's. If the operational requirements are violated or if the LBC's fall short to carry out operations for two year crop in a row, the companies are suspended until minimum requirements are met. The operational requirements of the LBC's consist of what type of bags to use, packaging requirements, grading and sealing procedure, bagging weight, minimum capacity of the sheds, when to disinfect sheds etc. The care and the storage of cocoa are subjected to examination by the QCD. In addition, the LBC's shall declare returns

weekly to COCOBOD and submit an prepared account and audited financial report once a year.[1][4][6][7][9].

## **5. ANALYSIS**

### **5.1 Production And Institutional Structure**

In cocoa producing countries, there are differences in farm size lands and usefulness of cocoa farms. In producing countries like Brazil and Malaysia, cocoa is been produced on large scale farms and runs like commercial firms in the view that profitability is their main aim for producing the crop and ever prepared from the world market whenever there unfavourable conditions. In Ghana and other producing West African countries, cocoa is produced on small scales and the income earned from these harvest comprises the livelihood of farmers.

There exist different ways on administration in the cocoa sector. A simple way is to determine the prices and quantities produced annually by the influence of private enterprises and little attention from the government. In so doing, producers earn more profit but the volatility of the market prices becomes more vulnerable. In spite from the dictatorships from the world market forces, the government can interfere to coordinate private actors and regulate the taxation policies and the level of quantity produced. [5][6][12].

There are differences in the marketing approach from each country whereas the marketing board in Ghana under the influence of the state controls the production and internal marketing chains of cocoa in the country. There are certain few private actors but their strength cannot supersede that of the state but also has influence over certain areas of the production. Overall, the state sets producer prices and the amount of cocoa seeds to be

exported Producers has little or no power over the revenues if they are disorganized or have different ideologies. [5][6][11].

The (Ghana Cocoa Board) COCOBOD sets the producer prices since it's a state owned and the same board handles exports and domestic markets. But it does not however franchise power of the handling of the crop but the farmers do so, even though they are the main dictators and sets agents that can or cannot act on the market of cocoa in Ghana. The prices are set by them to prevent market fluctuations and the main motive behind is to create and establish reserves when the world market prices reach its highest peak and to use these reserves in supporting the producers when the same world market prices fall.[5][6][12].

Most cocoa producing countries in the world must adopt market-oriented strategies. Countries like Nigeria, Brazil and Indonesia all operate under such conditions. Countries like Ghana, Cameroun, and Cote d'ivoire where the government has more influence over the crop have been liberalized, with the liberalization from the world market outlook. Prices that farmers obtain are determined by the world market price.

In so doing, farmers may receive higher prices but more insecure earnings in Ghana since these farmers are under the influence of the state and with harsh economic conditions. There is a long trend of negative market problems since these farmers have no protection from periods of low market because state policies in Ghana is difficult to be adjusted according to volatile market prices. A more positive and advantageous policy to these farmers in Ghana are the marketing costs and taxes appear to be lower in Ghana than other producing countries which indicates and enhances more production. [4][5][6][12].

## **5.1.2 Arrangements And Reforms Of Ghana Cocoa Sector**

This section begins with the setting and arrangement of improvement of the Ghana cocoa sector, highlighting on the current and upcoming growth of the cocoa sector and Ghana's political and economic development. However, the cocoa sector is presented, beginning with the arrangement and implementation reforms of the sector and continuing with a presentation of the purpose of the internal and external market.

### **5.1.3 Background**

Great Britain colonised Ghana until the end of the second world war II to which the colonial masters got involved in the cocoa sector which was dominated by private and international manufacturing and processing companies, for the betterment of the nation to gain global recognition. The (Cocoa Marketing Board) CMB was established in 1947 and given sole accountability of exporting cocoa through its wholly-owned subsidiary (Cocoa Marketing Company) CMC. The government however was the main benefactor of cocoa export in the country. Several LBC's operated on the internal market as buying and transportation companies for the CMB. The manufacturer price was determined by the world market price and tax, but the system was eventually abandoned in favour of marketing board system fixed with nominal prices that are granted by the CMB high shares of the world market price.[1][3][6].

After Independence from the British in 1957, the responsibilities and structure of the cocoa sector was not changed until 1961 when numerous buying systems were replaced by monophony organization. The organization collapsed in the early years of 1966 and the introduction of licensed buying companies came into existence. The same year, the establishment of a state owned company (Produce Buying Company) PBC was inducted to operate with the private owned buying companies. The monophony system was introduced again in 1977 with the PBC as the only buying company functioning on the internal market

chain. Before independence, the world market prices of cocoa was relatively high enabling the(Cocoa Marketing Board) CMB to pay farmers high produce prices.However,more people were encouraged and convinced to join the trade and production of cocoa for those years.[7].

From 1950-1960, the production of cocoa in Ghana doubled. Between the years of 1911 and 1978, Ghana produced a world market average of 30 percent of worlds cocoa production and this increment depressed world market prices. This price decreased affected farmers negatively, but from the government's point of view the loss of revenues due to lower prices was compensated for by an increased demand for cocoa. [5][6][12].

The use of fixed nominal producer prices and high domestic inflation led to a further decrease of the producer price. Despite the important role of the cocoa sector (at time of independence, cocoa was the country's largest single source of government revenues).the new government paid less attention. The harmful impact of decreasing prices on production therefore became obvious only in middle of the 1960's and refreshed by increased smuggling of cocoa to Cote d'Ivoire until even recent years, which offered farmers higher producer prices. [5][6][12].

The state use of fiscal and monetary policies established on generally excess in Ghana.Inspite of the use of import-licensing and exchange rate controls, the pressure on the balance of payment turned the net profit assets in the monetary system negative. In 1966, the actual exchange rate appreciated by 50 percent since the eve of independence and the global competitiveness as well as the portion of exports of (Gross Domestic Product) GDP declined sharply.

There was a military takeover in government in 1967 and devaluated the currency in an attempt to restore the balance of payment. The price of foreign exchange by 43 percent whiles the nominal producer price increased by 30 percent, which has clear implications that the government took the largest share of the cocoa revenue. The increase was not enough to cover the many years of increase in nominal producer price by led than



the inflation rate, leading to additional real term decrease in the price received by farmers. The producer price however profited from the main recovery of world cocoa prices and it increased importantly in real terms.[3][4][7].

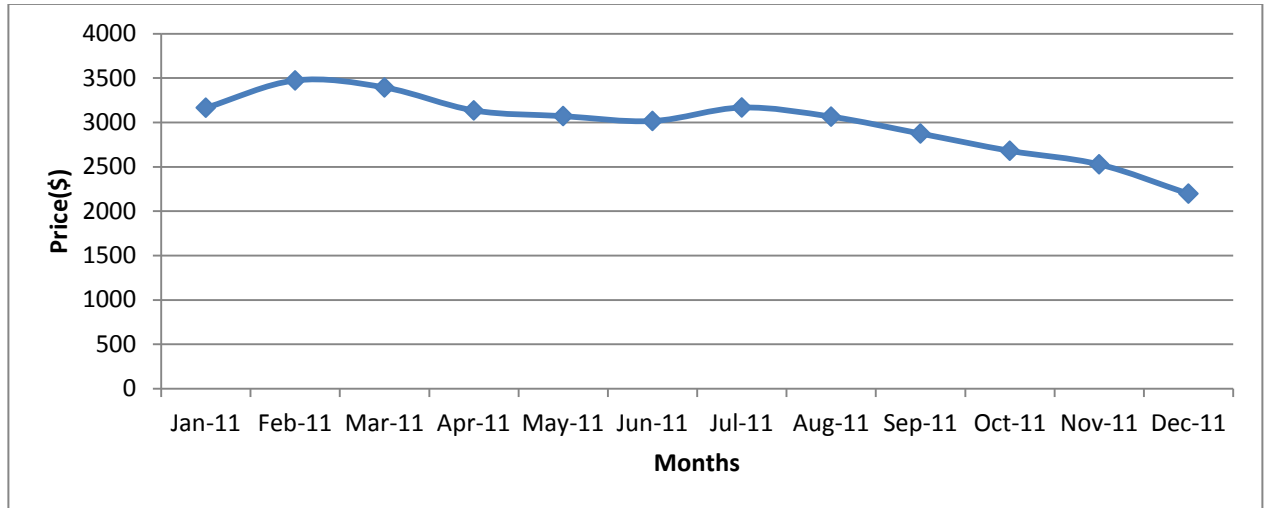
The early deflation did not have the expected effects and a new deflation was conducted in 1971 in Ghana, this time by a democratically elected government. However the nominal producer price of cocoa increased, but once more to a lower extent than the deflated rate. Another coup was carried out in 1972 by the military. They succeeded and their first actions were to reevaluate the currency. The underlying basics of the Ghanaian economy worsened rapidly due the government's mismanagements in the economy. The cocoa sector increased its rate of development in the years of 1973 due to good weather condition, mass-spraying of cocoa infected diseases and control of diseases and high international prices on the world market.[7].

There were shortages of food in urban, rural areas and health centres were out of staffs due to the neglecting of infrastructure maintenance due to military government turmoil. The nominal producer price and inflation increased rapidly but this did not bring any price decrement in the market. In 1980, there was a heavy drought which resulted in bush fires and there was a huge destruction of cocoa farmlands.[2][6].

Low producer prices encouraged farmers to divert to more profitable crops than cocoa. Farmers were of old age and illiterates and did not adapt to changes in the world with the adoption of new technology and diseases and pest control and the poor credit of cocoa farmers led to lack of good planting materials for the treatment of old farms. The bush fire and low level of income led to the fall of cocoa production in 1980 to be compared to that of 1930. [3].

## 5.1.4 ANALYSIS OF WORLD COCOA PRICES

**Fig 4.world cocoa prices(January 2011-December 2011)**



**Source:ICCO with my own computation**

The current review reports on cocoa price movements on international markets during January 2011 until December 2011. In January 2011, the International Cocoa Organisation (ICCO) daily cocoa prices averaged \$3,165 per tonne up by \$105 compared to the average price recorded in the previous months (\$3,060). The prices ranged between \$2,921 and \$3,412. In February, the ICCO daily cocoa prices averaged US\$3,472 per tonne, up by US\$307 compared to the average price recorded in the previous month (US\$3,165). Prices ranged between US\$3,304 and US\$3,699. [13]

During the first sessions of the month, as a result of strong arrivals of cocoa beans in Côte d'Ivoire and Ghana, cocoa futures prices eased to US\$3,234 per tonne in New York. In March, the ICCO daily cocoa prices averaged US\$3,393 per tonne, down by US\$79 compared to the average price recorded in the previous month (US\$3,472). Prices ranged between US\$3,020 and US\$3,731. [13].

As in the previous month, cocoa futures followed an upward trend at the start of the month as the export ban in Côte d'Ivoire initiated by one of the parties involved in the political dispute, combined with international sanctions and a disrupted banking system stalled cocoa exports from Côte d'Ivoire. In April, the ICCO daily cocoa prices averaged US\$3,134, down by US\$259 compared to the average price recorded in the previous month (US\$3,393) and ranged between US\$3,048 and US\$3,339.[13].

In May, the ICCO daily price averaged US\$3,071 per tonne, down by US\$63 compared to the average price recorded in the previous month (US\$3,134) and ranged between US\$2,906 and US\$3,306. As opposed to the price increases experienced during the end of April, cocoa futures followed a downward pattern in May. By the end of the first week of the month, cocoa futures New York markets plummeted by 8% to US\$3,067 per tonne respectively. By the third week of the month, bearish fundamental news of large volumes of cocoa beans leaving the ports of Côte d'Ivoire as well as record production data from Ghana incited cocoa futures to settle lower, falling to £1,819 in London and to US\$2,887 in New York. At the end of the month, cocoa futures followed a rally experienced in the broader commodity market and made some modest gains[13].

In June, the ICCO daily price averaged US\$3,016 per tonne, down by US\$55 compared to the average price recorded in the previous month (US\$3,071), and ranged between US\$2,918 and US\$3,194. Bearish fundamental news of large volumes of cocoa beans from West Africa (Ghana) that incited cocoa futures to settle lower in May continued to influence the downward trend of cocoa prices at the beginning of the month under review.[13]. In Ghana, cumulative cocoa purchases by COCOBOD for the 2010/2011 season were 916,000 tonnes as at the end of the month. Favourable weather conditions, combined with an increased use of fertilizers and improved disease and pest control have been cited by COCOBOD as factors that have helped to achieve the record production level.

In July, the ICCO daily price averaged US\$3,167 per tonne, up by US\$151 compared to the average price recorded in the previous month (US\$3,016), and ranged between US\$3,050 and US\$3,266.[13] Cocoa prices fell to their lowest levels at the end of the month, to £1,879 in London and to US\$3,018 in New York, as a result of the confirmation of higher arrivals and purchasing figures from Côte d'Ivoire and Ghana. In total, cocoa prices fell by five per cent during the month under review, while the value of the commodity complex rose by almost four per cent. In Ghana, cocoa purchases continued to increase at a strong pace. Although the country had targeted one million tonnes for the 2012/2013 season, reports indicated that a record output of more than one million tonnes is expected by the end of the 2010/2011 season.[13]

The prices of Cocoa at ICCO fell slightly by the end of July until an upward trend of January 2012. In December, the ICCO daily price averaged US\$2,197 per tonne, down by US\$331 compared to the average price recorded in the previous month (US\$2,527). Prices ranged between US\$2,305 and US\$2,099.[13]

At the beginning of December, cocoa futures continued to follow the downward trend experienced in previous months. Markets were weighed down by fundamental news of ample supplies from West Africa. This rally may have been sparked by a report from Olam International of a significant deficit for the current season. In Ghana, COCOBOD declared that purchases were reported as 556,847 tonnes. This indicated an increase of about seven per cent over purchases recorded at the end of December of the previous crop year(2011).[11][13].

### **5.1.5 Arrangements Of The Cocoa Sector**

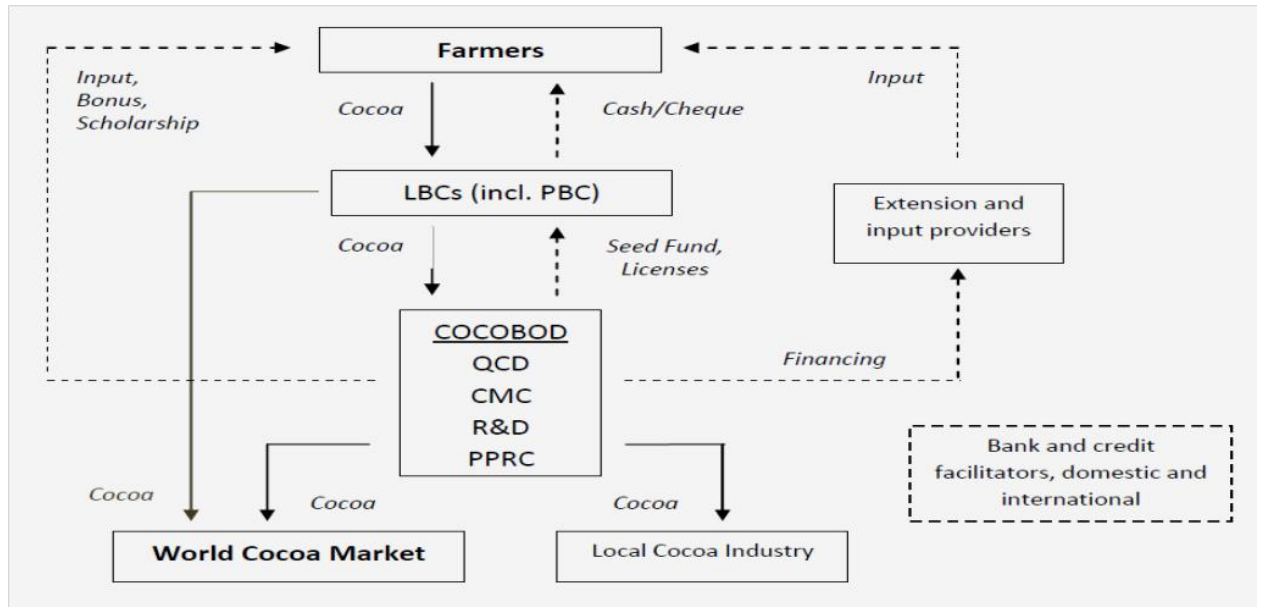
Interview with COCOBOD indicated that there is a complete monopoly in the arrangement of the cocoa sector. The (Cocoa Marketing Board) CMB was the only approved buyer and exporter of cocoa in Ghana because the market was in the hands of the

government who regulates the development of the crop. The CMB carried out its works through its subordinates the PBC and CMC. There was another extra body called (Quality Control Division) QCD which was accountable for controlling the quality of cocoa.

In 1984/85 the first stage of reform was enacted and focused on reorganization of the (Cocoa Marketing Board) CMB. There was a reduction of work forces in the CMB division from 10000 to 60000. This operation expansion led to the change of name from CMB to Ghana Cocoa Board (COCOBOD). During the formation of COCOBOD, there were provision of seedlings to replace old trees to farmers, provision of adequate transportation and better roads for easy access of transportation to rural centres for export and easy trade in the country. The COCOBOD placed a greater stress on the usage of fertilizers. In 1993, the second stage was inducted which re-introduced the several buying system and inferred that private LBC's were given the authorization to work on free domestic market jointly with PBC. The main aim was to initiate contest on the internal market and improve the chain with regard to its operational and financial performance as well as open up the possibilities of paying higher economical producer prices.

Most recent reforms, aiming at further increasing the efficiency of the cocoa sector were established in 1999 in the government's cocoa plan. This reforms included the reduction of taxes and marketing costs by the COCOBOD further and aiming at the producer price to a 70 percent of the world market price by crop year 2007/2008. The PBC was privatized in 2000 and established the Ghana stock exchange. COCOBOD however owns 40 percent of the stocks directly and another 30 percent through its ownership of a main stakeholder.

**Figure 5: Structure of the cocoa sector**



**Source: van Duursen & Norde, 2003**

### **5.1.6 Internal Market**

In an interview with COCOBOD, Ghana has the largest smallholders in percentage share as compared with other West African countries which affects farmers owning 5 hectares of productive land. There are approximately one million smallholders in the Ghana and over 3.2 million workers in the country. Only 14 percent of the population of Ghana are employed in the cocoa sector with just a few farmers who forming organizations. In Ghana, only the southern part of the country are eligible for the production not due to restrictions but the availability of arable lands in the southern part of the country. Out of the 10 regions, only 6 regions about 67 districts for the production.

The LBC has 2700 selling centres in the country and farmers transport their products to them at their centres. The LBC is an operating body of COCOBOD. There is a

big outlet located in every region where farmers can trade their produce. The crop earns a better income than any other crop produced in the country because the COCOBOD has a regulatory status for all and buys the best quality of the crop. The farmers faces economic risk due to price fluctuations and yield levels which depend on the world market price of cocoa.

An interview with the Quality Control Division (QCD) is to inspect and seal the cocoa produced in Ghana after which the Licensed Buying Company( LBC) pays for the fees. The LBC's hire purchasing clerks (PC's) purchase the cocoa at rural communities, working on equivalent commission to a permanent percentage per bag of cocoa. The LBC transport the cocoa from the country side to a more designated take-over centres and a receipt is issued called Cocoa Take-Over Receipt (CTOR) indicating the amount of cocoa sold to Cocoa Marketing Company (CMC).However, CTOR is submitted together with the invoices issued to the COCOBOD for imbursement. The cocoa is fermented and dried out by farmers and packaged with its seal at the LBC.

Ghana has a good name of high and quality of cocoa produced on the world market which allows the COCOBOD to buy and sell directly with the world market and allowing it to pre-finance its cocoa buying. Through COCOBOD service division (CSD),the COCOBOD has provided the addition and key services such as(education, seeds, fertilizers and pesticides etc).Due to safety and savings purposes, in year 2000 the CSD was compounded with a government panel to make a self-directed organization. Since then, provision and extension and input services have been insufficient and underfinanced. A report by the CSD indicated that, one agric officer ascribed to 3000 farmers and these officers lack education who receive low salaries and lack information and accurate transportation.

Information from the LBC stated that, any farmer is allowed to sell its produce to any branch of the LBC since there are no restriction from the government. The LBS's working is coordinated by COCOBOD and their works are subject to regulations. Because of the monopoly positions in export by the COCOBOD, there is no contest between farmers since they are restricted due to the marketing of sufficient cocoa quality at a minimum price. However, the act of contest on the internal market trend in Ghana is restricted to purchasing and transportation works by the LBC's.

### **5.1.7 External Marketing**

Throughout the restructuring processes, the government of Ghana has the aim of liberalizing the exterior marketplace of cocoa, therefore allowing the LBC's to export. Beginning of the year 2000, The LBC has a legitimate permission to export 30 percent of their purchases which was set by the government. The main aim was to share 30:70 stuck between the LBC's and the CMC was to survive during a change period ending year 2005/2006 crop year.

An interview conducted with the COCOOD indicates that, the government's main reason for maintaining the monophony agreement of the cocoa producing region is to give assurance to the agreement completion for which Ghanaians cocoa will earn as a best price on the world market. Because of difficulties in observing the actions of purchasing, the government has a greater panic that the market will depreciate and the nation might lose the quality of the crop.

The COCOBOD however indicated that, the LBC's are not fascinated in exporting the crop and the country unswervingly benefits from cocoa exports. The state loses a greater revenue due to the governments unwillingness to open the market for competition and makes the nation's tax system very weak. In an interview with the LBC they are



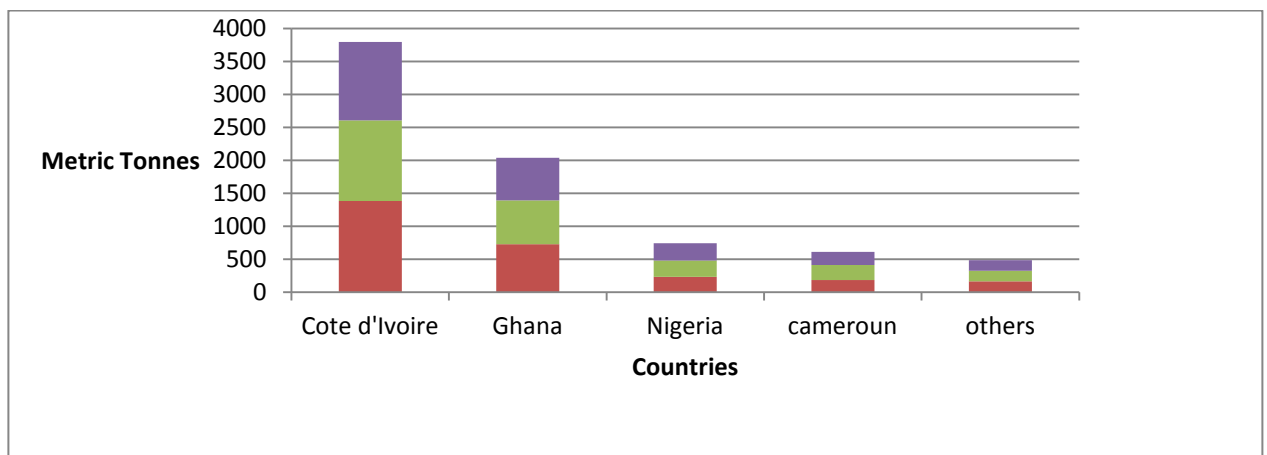
willing to enter into the world market but the regulations of the COCOBOD is preventing them from entering into the external market because of its privatization rules.

There was a massive pressure on the government of Ghana to liberalize the external market from the World Bank and the International monetary Fund from year 2000. The COCOBOD however increased producer prices and made efforts to increase production, the international markets does not want to place more stress on additional reforms. Ghana is the only cocoa producing country in the world which does produce constant cocoa and has a relatively low price and quality. However, many processing and manufacturing companies worldwide does not want to oppose their actions of external marketing rules by the COCOBOD.

### 5.1.8 Production and Yields

An interview conducted with the COCOBOD and Kuapa farmers stated that there is a direct affiliation linking increased producer prices and increased production. High producer prices motivates the use of enhanced machinery, fertilizers and pesticides and increase the reason of farmers to carry out excellent farming practices, replant trees and enlarge production.

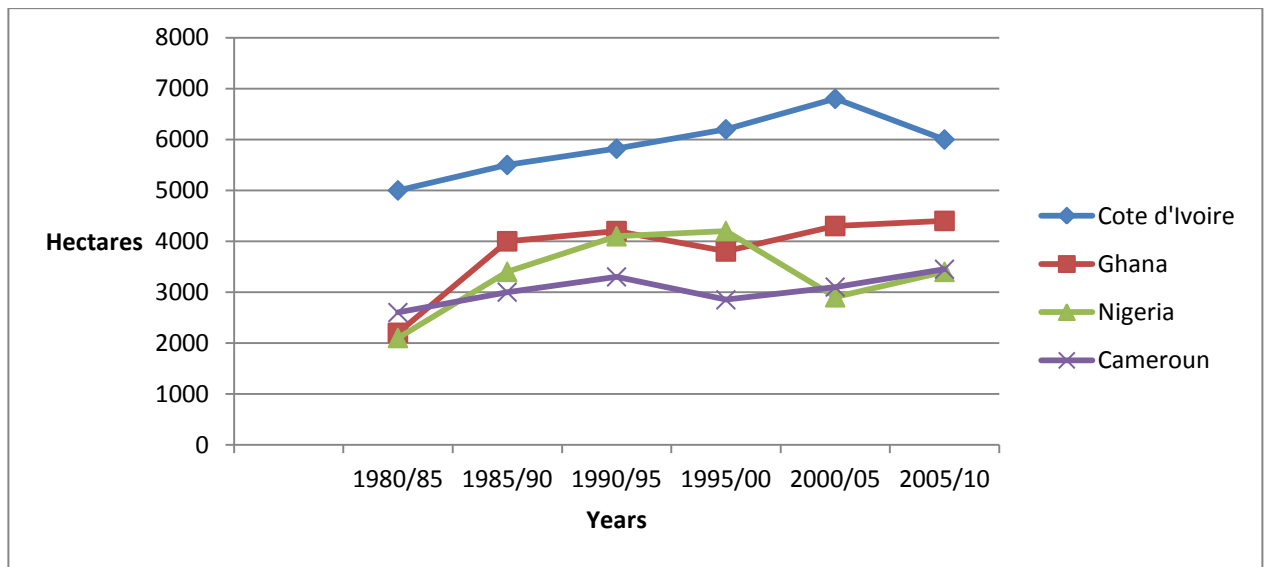
**Figure 6: cocoa production in selected cocoa producing countries, 2008-2010**



**Source: FAO and own calculation.**

Figure 6 illustrates cocoa production in selected cocoa production in the world, The production of cocoa in Ghana followed a rising tendency, from approximately 200 000 tonnes per year to nearly 700 000 tonnes in 2007. After a relative fall, cocoa production improved steadily due to increased producer prices, good weather conditions, better agronomic practices and fresh areas harvested. The figure illustrates a further increasing production rate in other African producing countries.

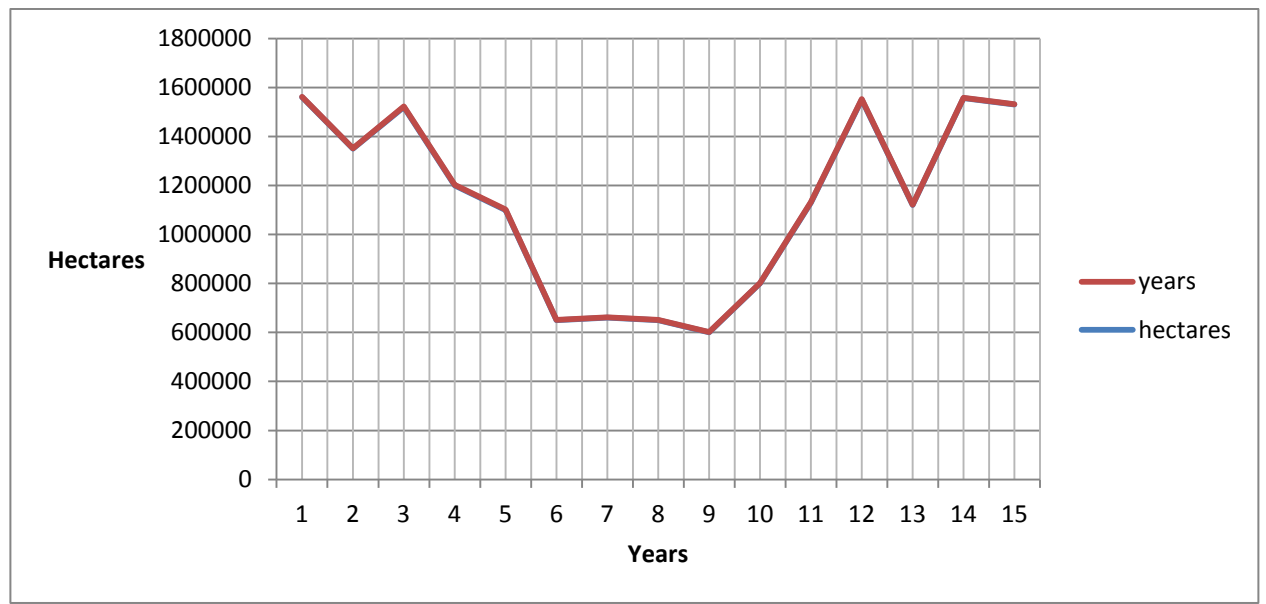
**Figure 7: Cocoa yields in selected cocoa producing countries, 1984-2010**



**Source: FAO, 2010 and own calculation**

Figure 7 shows the average yields in cocoa producing countries in Africa, Ghana's cocoa yield has been on average 25 percent below the average yield level of the other cocoa producing countries and around 40 percent beneath the regular yield level of neighbouring Côte d'Ivoire. The Reasons set forward to explain Ghana's low yield levels are the virtual old age of cocoa trees and diseases affecting the cocoa, the absence of widespread row planting, and pests such as black pod and mistletoes.

**Figure 8: Area harvested for cocoa production in Ghana, 1995 – 2010**



**Note: Some statistics are estimations by FAO source: FAO, 2010 and own computation.**

Figure 8 above demonstrate the area harvested for cocoa production in Ghana between 1995 and 2010. The use of land has increased in recent years and it reveals that the production of cocoa has become more advantageous for farmers to produce cocoa comparative to other crops. It may also reveal that liberalization seems to have improved farmers' right to use to cocoa purchasing companies. Prior to liberalization, the PBC was responsible for operating in all cocoa producing districts, but there have been signs of the company not always being present, leading to unforeseen event of farmers. This difficulty has departed since the liberalization reform.

### **5.1.9 Quality**

The quality of cocoa is very important since it determines the price status of the crop. Ghana has a high quality level because COCOBOD's regulatory system that endorse the use of sufficient farming practices among farmers. For COCOBOD to carry on selling its cocoa on the familiar market and receiving the price premium, its status as a high quality cocoa producing country must be maintained. Without the use of familiar sales contracts as deposit for discounted international loans, the prevailing price setting system would not exist. Hence the possibility of setting a fixed producer price and other profit limits, as well as providing the seed fund to the LBCs, are dependent on the conservation of the market structure. Countries such as Cameroon and Nigeria, has the presence of familiar sales..

The quality of Cocoa production has somehow reduced since the introduction of the internal marketing system. The LBCs are accountable for the quality of cocoa at regional level and there have instances where the LBC's pressurize some cocoa farmers to sell the cocoa before it is fermented or dried. However, even with a flat producer price, farmers do not have an motivation to hold the cocoa if they can sell it before properly fermented. This exercise has been long-established in meetings with some farmers and implies that most farmers are not properly rewarded for maintaining good quality, which yet again indicates that it is mainly COCOBOD that profits from the high value standard. There are other reasons and accusations that most quality cocoa are smuggled into Cote d'Ivoire. However, the quality level of Ghanaian cocoa is still high and the price premium received.

## **5.2 Analyses Of The Cocoa Sector Performance**

This segment aims at analyzing the performance of the Ghanaian cocoa sector to other producing countries in Africa. It relates its performance to the arrangement of the internal market chain, with a focal point on the special effects of the reforms. The dimensions are important due to its importance for the evaluation of the ability of the sector and because the purpose of the reforms was to boost the economy with the help of quality maintenance.

### **5.2.1 Comparing the performance of the Ghanaian Cocoa sector to other producing countries**

In order to understand the issues at risk in Ghana, a brief summary of liberalization reforms in other West African countries are outlined. Ghana in terms of Production situations and market formation has less in common with cocoa producing Countries on other continents than with its bordering countries.

Colonial master's France and Great Britain time-honoured stabilization funds and Marketing board systems before leaving the country. Their systems did not work because of the attainment of Independence, which led to a huge cost largely Paid by cocoa producers. On a condition of structural adjustment, the World Bank's vital reforms of the cocoa sectors, in order to decrease operation costs and raise producer revenues, A free market system was introduced to provide farmers better prices. All cocoa producing countries in West Africa undertook some reforms – Nigeria, Togo and Cameroon changed the whole system, while Côte d'Ivoire and Ghana chose an extra inequitable and steady approach to liberalization.[1][3].

## **Nigeria**

Before 1970, Nigeria was among the leading producers of cocoa, because of low producer prices, movement from the countryside to the cities and cocoa pod diseases, Nigeria accounts for only six percent of total world supply. During the decline period, the Nigerian Cocoa Board (NCB) which is the main marketing board was the only buyer and exporter of cocoa and regulated the internal market chain. The NCB was abolished in 1986, as an advanced economic reform, prices were set by market forces, which led to a higher but more unbalanced prices and an empty quality control. In addition with the introduction of inexperienced middlemen in both internal and external market chains, led to quality worsening and loss of the cocoa quality for Nigeria, which resulted in lower sales and income losses for the government. However, farmers created cooperatives to trade directly to the exporters, to avoid problems with middlemen. The internal market liberalization of private companies have started to supply extra services to farmers, which had led to advanced quality control and credit potentials.[3][11].

## **Côte d'Ivoire**

Côte d'Ivoire is the world's largest producer of cocoa which produces about 40 percent of total global supply. Due to liberalization reforms, private exporters were allowed to work on the market even though internal and external markets were controlled by a state-run company. In 1994-95, the governments management was diminished, in order to cut marketing costs, increase producer prices and give confidence to the formation of producers' organizations. The reforms enlarged production, but did not lead to sufficient changes for farmers, further liberalization reforms were introduced in 1999. This led to a rebuilding of the state owned company, which only got a partial monitoring position, and a complete liberalization of the producer price. Therefore, the present-day decline in world

market prices led to minor revenues for farmers, who demonstrated against the newly installed organization.

Due to the civil war, which started in 1999, Côte d'Ivoire's production decreased drastically and therefore the world market price increased because the country has a larger production percentage in the world market. However, it has not profited producers in Côte d'Ivoire. In current years the government tried to reinforce the location of farmers with the provision of information about prices and cheering farmers to form organisations to achieve more bargaining power but it did not materialise due to the recent war in early 2011 due to the installation of a new government. 6][11].

## **Cameroon**

The cocoa chain in Cameroon was regulated by a stabilization sponsors that managed exports, price settings and quality controls before 1990. Buying institutions were given the licence to operate under polices on the internal market. Due to failing global cocoa prices and overrated trade rates, the sponsors reduced producer prices and faced stern financial struggle. In 1994,a reconstruction of a new reform was established with the addition of the reform of the stabilization fund and beginning of a floor price for producers. A more thorough liberalization was carried through in crop year 1994/95; leading to a free market system where prices and limits are totally determined by the world market and any company can trade cocoa.

The previous stabilization fund is now in charge of quality management and maintaining information. The government formed more than two hundred purchasing companies, only twelve of them are regarded huge actors. With the result of liberalization, producers achieve advanced prices. [6][7][9][11].

## **Togo**

Togo is among the smallest amount of cocoa producers in West Africa, they produce one percent of total world supply. In spite of this, the cocoa sector is a significant indicator in the country's wealth. Due to liberalization, cocoa prices as well as external and internal market were guarded by a marketing board like Ghana. The country enforced a reflective liberalization of its cocoa zone in 1996 with the main aim of increasing producer incomes and expand private export contribution to the world, and preserve an elevated quality of cocoa produced in the country.

However, this was achieved with the addition of the private sector in the planning stage of the reform process, an understandable discussion with all participants in order to harmonize all security and a in depth information system on international market prices to help producers easily choose amid buyers and receive good prices. The government increased the producers' share of the world market price from under 60 percent in 1997, which resulted in increased production. The cooperation among the government and private actors concerning quality controls, the high quality level was maintained and Togo receives a higher cocoa price than normal world.[2][10][11].

### **5.2.2 Market Price**

The country lost its price premium and experienced decreasing cocoa sales since most of the cocoa produced were smuggled into the Cote d'Ivoire. In Côte d'Ivoire production of cocoa increased, which turned out to be unprofitable since the country is a price-maker on the world market, leading to deteriorating cocoa prices. The country was later afflicted by societal turbulence, and liberalization improve the performance of the cocoa sector. In Cameroon and Togo, liberalization resulted in increased production and higher producer prices. The quality level decreased in Cameroon, but it was maintained in Togo, mainly because the private sector was included in the design stage of the reform



process and because Togo introduced a detailed information system, aiding farmers in their choice of buyers.[7][9][11].

### **5.2.3 Market Efficiency**

Market efficiency in Ghana is mainly affected by missing markets (e.g., financing) the agricultural produce and the cocoa beans as a whole. Higher transaction cost has also been a key menace in the country since colonial era. There is however ‘middlemen’ in the sector. Thus, transaction of cocoa passes through many media before it gets to the main exporting companies or the government. Imperfect information from buyers and sellers has also been a major threat, farmers and the government does not have major market information for the product when it yields.[6][11].

### **5.2.4 Market Efficiency Issues**

**Infrastructure:** There are poor storage facilities in rural areas. Communication is a major problem affecting the marketing efficiency of cocoa in Ghana. There are no modes of communication between the government directly to the farmers since some middlemen(agents) are involved in the buying and selling of cocoa products from farmers.

The investment for Exporters, Agents and Farmers-Limits the access to international trade. Local capital costs typically range from 14-25% versus 3-5% for borrowers with access to international markets. Significant limitation for agents up-country who are forced to acquire finance from the exporters Port-based on capital filters down to local buyers with high degree of risk. The Repayment cycle can be extremely short (48hrs) leading to incentive to boundary search for the costs which may adversely affect quality of cocoa.[3][11].

## **Measurement Standards**

Liberalization brought a loss of official certification of weights and measures (e.g., balances) by Government. Certain countries transformed units of trade (kg vs. lb) which brought confusion in the farm gate transactions. A potential solution is annual certification of the weigh balances and scales used to carry out trade as a licensing prerequisite of all agents downstream from the farm gate.[2][4].

## **Price Transmission**

The price transmission determines the price variability, transactions costs and institutional arrangements the downstream affect market outcomes at the farm gate in Ghana. They are illustrated as World Price → Exporter → Trader → Buyer → Farmer

Low transmission found in Ghana and other West African producing countries suggests that world price signals are not being received by farmers.[11]

## **6. SUMMARY AND CONCLUSION**

The final part of the thesis consists of a summary of the reforms and impacts on the Ghanaian cocoa sector. The reform programs enacted in 1983, 1993 and the late 1990s marked the ending of decades of political disorder and economic turmoil that Ghana faced after its independence. One of the reasons for the economic recession was the country's abandon of its export sector of which cocoa constituted the main part.

Generally, the cocoa sector were vital elements of the overall reform process, contributing drastically to the improvement of the Ghanaian economy. The main components of the reforms of the cocoa sector were the modernization of COCOBOD, the deregulation of the internal market chain and the targeting of the producer price's share of the world market price. The main objective of the proponents of the reforms was to elevate the low production volumes caused by low producer prices, low yield levels and low incentives of farmers cultivating cocoa. The reforms were implemented in a large extent in the economy.

The reformation of COCOBOD was carried out together with the implementation of pro-production policies. Ghana undertook an inequitable liberalization of its cocoa sector, resulting in the company of LBCs functioning on the internal market. Liberalization of the external market has not been followed through and there are no signs of it being liberalized in the near future.

The producer price is targeted to 70 percent of the world market price. Even though it has not reached the objective level, it is likely that the government will maintain it because of the helpful affiliation between higher producer prices and increased production. The formation of the reform has resulted in an increased producer price, but it is still lower than in other West African producer countries such as Cote d'voire. The yield level and the

amount of land used for cocoa production have increased, resulting in larger output in the recent years since many farmers producing other cash crop in Ghana has seen the significance and profit in cocoa production. The yield level in Ghana is however low in comparison with rival cocoa producing countries such as the Cote d'voire and the optimal capacity level may therefore not have been reached. Within the series of recent reforms, the level of quality seems to have been maintained.

## **7 Sources**

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## **Interviews and meetings**

All interviews and meetings have been of great value for the work with the thesis, even if not all have been reference material in the final thesis' layout.

1.10.06.2010 Interview with the Managing Director of Quality Control Company Limited (QCCL), Mr. Kwesi Gorkeh-Sekyim a subsidiary of COCOBOD. The Chief Executive of COCOBOD, Mr. Anthony Fofie. 2.11.06.2011. Intensive Interview with a group of Farmers at the Tafo district. Numerous interviews were also held with some workers of the COCOBOD.