

---

# Chapter 8

---

## Cocoa and cotton commodity chains in West Africa: Policy and institutional roles for smallholder market participation\*

Philip ABBOTT<sup>1</sup>

---

\* Correct citation: Abbott, P. (2013), ***Cocoa and cotton commodity chains in West Africa: Policy and institutional roles for smallholder market participation***, In: *Rebuilding West Africa's Food Potential*, A. Elbehri (ed.), FAO/IFAD.

---

<sup>1</sup> Professor, Department of Agricultural Economics, Purdue University. This paper was commissioned by FAO Trade and Markets Division and was presented to the FAO Workshop on "Institutional innovations and policy interventions in support of smallholder market participation," Rome, June 3– 4, 2010. The paper synthesizes and extends on earlier work funded by IITA, USAID and the World Bank.

# Table of Contents

<b>1. Introduction</b>	<b>253</b>
<b>2. Background</b>	<b>254</b>
2.1 Cocoa and cotton in West Africa	254
2.2 Structural adjustment and privatization	258
2.3 Effects of agronomy and environment on value chains	260
2.4 Prices along the value chain	261
2.5 Smallholder farmers	266
2.6 International interventions	267
<b>3. Issues</b>	<b>268</b>
3.1 "Shortening" the marketing chain	268
3.2 Tax incidence	269
3.3 Public goods after privatization	270
3.4 Quality	271
3.5 Inputs and credit	272
<b>4. Policy options</b>	<b>273</b>
4.1 Privatization	273
4.2 Pricing and taxation	274
4.3 Institutional development	276
<b>5. Successful innovations</b>	<b>277</b>
5.1 Producer organizations	277
5.2 Fair trade	278
5.3 Credit	279
5.4 Multinationals	279
<b>6. Implications for small farmers</b>	<b>280</b>
<b>7. References</b>	<b>283</b>

## 1. Introduction

Cocoa and cotton are important commodity exports from West Africa. Cameroon, Côte d'Ivoire, Ghana and Nigeria export nearly 70 percent of the world's cocoa (FAOSTAT, 2012). West African exporters are the second largest regional group exporting cotton, providing 11 percent of world cotton trade. Mali and Burkina Faso are the two largest West African cotton exporters, accounting for half of regional exports (ERS, 2010). Cocoa and cotton are not only important sources of export revenue, but also important sources of agricultural income, including income to smallholder farmers in those countries. Cocoa provides 38 percent of agricultural value added in Côte d'Ivoire and 12 percent in Ghana. Cotton accounts for 12.7 percent of agricultural value added in Mali and 7 percent in Burkina Faso (FAOSTAT, 2012 and World Bank, 2012).<sup>1</sup>

Cocoa and cotton often involve long value chains and payments to farmers for the commodities are a small part of the cost of the consumer products derived from these goods. There may be significant opportunity to raise farmer income by "shortening the marketing chain", thus providing to farmers a greater share of the value added in final consumer products. Value chain analysis has been used for both cocoa and cotton in West African countries to guide interventions aimed at improving smallholder farmer incomes (Cappelle, 2008; FIAS, 2007; Gilbert, 2006; ICCO, 2006; Poulton *et al*, 2004; RATES, 2005). These efforts have often focused on increasing the market power of farmers by strengthening farmer organizations and by correcting market failures along the value chain that influence credit, inputs, quality, and information. International assistance to these commodities in these countries has sought to replace market institutions that were missing or functioning poorly following structural adjustment reforms that reduced the roles of parastatal marketing boards which had monopolized both domestic marketing and exports (Gowkowski, 2008; ICCO, 2010). The claim of those interventions has been that they were fostering innovations targeted to improving smallholder farmer incomes (e.g. STCP, 2010; Tschirley *et al*, 2009).

Value chain analysis often focuses on new initiatives that involve contracting mechanisms with smallholder farmers in new markets. These market mechanisms are only apparent for the more mature cotton and cocoa markets in quite small niches, such as fair trade. In that case the one successful cooperative - Kuapa Kookoo in Ghana - has become a partial owner rather than a contractor with its upstream partners. Nevertheless, similar issues arise when considering institutions and policy options aimed at raising smallholder farmer income, particularly as reforms change existing value chains. Market failures must be addressed, geographic and agronomic specialization must be considered, and scale economies, spillovers to other markets, as well as roles for NGOs and aid interventions in institutional development must also be taken into account.

This chapter explores issues and recent experience with policy reform and institutional changes aimed at improving smallholder farmer income for cocoa and cotton farmers in West Africa. Analysis and results are based on earlier research conducted in Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Mali and Nigeria.<sup>2</sup> In the next section, background information on the cocoa and cotton sectors of these countries is presented, including descriptions of value chains, the roles of small farmers, and the nature of interventions. The following section highlights the key issues relevant to raising farm income: limits on raising farm income through market interventions, institutional changes after privatization, and market failures in quality, inputs and credit. Policy options are then examined in light of these issues, and successful outcomes are

<sup>1</sup> Data reported here for 2005 and 2009 (see Table 1) are typical of the roles played by these West African countries in cocoa and cotton world markets, and of the roles of these commodities in agriculture in those countries.

<sup>2</sup> Research on cocoa was in collaboration with the Small Tree Crops Program (STCP) of IITA. USAID funded that research as well as research on cotton in Burkina Faso and Mali. Subsequently, the World Bank funded research on agricultural policy in Côte d'Ivoire. FAO supported updating of that work as well as viewing interventions from a value chain perspective.

discussed. The paper concludes by assessing implications for smallholder farmers. Although correcting market failure and improving producer organizations may yield benefits to farmers, these gains along the value chain are likely to be small relative to gains from enhancing productivity, given constraints on marketing interventions. Mature markets like cocoa and cotton may differ from new initiatives in that respect, and institutional development - particularly for inputs and credit - may be needed as sectors reform simply to maintain existing farm income levels.

## 2. Background

### 2.1 Cocoa and cotton in West Africa

Several West African countries generate significant export revenue from cocoa and cotton exports and are major players in world markets for these commodities. The four largest West African cocoa exporters accounted for about 70 percent of cocoa exports in 2005 (FAOSTAT, 2012). The two largest West African cotton exporters played a somewhat smaller role, having shipped about 5.5 percent of worldwide cotton exports in 2005. Other West African cotton exporters account for another 5.5 percent of world cotton trade (ERS, 2010). Cocoa trade is closely related to production since only a small amount of production is consumed domestically by any major cocoa exporter. The pattern of world trade in cotton exhibits a significant share of production used domestically in some major producing countries. Cocoa and cotton trade patterns are more similar in West Africa, however, since most production is exported rather than consumed domestically, after varying degrees of primary processing.

Three of the countries examined here are largely dependent on a single commodity export (Burkina Faso, Ghana and Mali), whereas other countries export several commodities (Cameroon, Côte d'Ivoire and Nigeria). Table 1 reports cocoa and cotton exports in 2005 and 2009 from the six countries examined here. Côte d'Ivoire is shown to export nearly USD2 billion worth of cocoa, 26 percent of its total exports, and Ghana exported nearly USD1 billion of cocoa, a third of its exports in 2005. Burkina Faso and Mali exported over USD 200 million worth of cotton, amounting to 62 percent and 24 percent of total exports, respectively, and over 60 percent of agricultural exports for both in 2005 (FAOSTAT, 2010). Growth elsewhere in the economy decreased these shares in some cases for 2009.

Table 1. Cotton and Cocoa Exports, 2005 and 2009

Country		2005		2009	
		Cotton	Cocoa	Cotton	Cotton
Burkina Faso	Exports (USD million)	214	0,8	250	
	% Processed *	99	0,0	98	
	% of Ag. Exports	77	0,3	81	
	% of Tot. Exports	62	0,2	53	
Cameroon	Exports (USD million)	133	247	106	256
	% Processed *	100	15,7	100	9,8
	% of Ag. Exports	22	40,9	16	39,0
	% of Tot. Exports	4	8,3	3	7,1
Côte d'Ivoire	Exports (USD million)	148	1921	102	2019
	% Processed *	94	55,2	96	59,6
	% of Ag. Exports	5	63,6	3	58,1
	% of Tot. Exports	2	26,5	1	23,8
Ghana	Exports (USD million)	7	912	5	1044
	% Processed *	72	16,3	53	24,6
	% of Ag. Exports	1	79,6	0	74,3
	% of Tot. Exports	0	32,5	0	24,9
Mali	Exports (USD million)	267		201	
	% Processed *	99		98	
	% of Ag. Exports	83		64	
	% of Tot. Exports	24		13	
Nigeria	Exports (USD million)	24	470	24	331
	% Processed *	83	5,6	85	6,0
	% of Ag. Exports	4	71,8	4	54,9
	% of Tot. Exports	0	1,0	0	0,5

**1 Processed :**

**Cotton : (Cotton Lint / Tot. Cotton)\*100**

**Cocoa : [(Cocoa butter + powder + paste) / Cocoa beans Prod. Value]\*100**

\*Processed means converted from seed cotton to lint for cotton, and from cocoa beans to butter, powder and paste for cocoa. There are post-harvest activities potentially done on the farm that precede this level of processing, especially for cocoa (fermentation and drying).

**Source :** FAO, FAOSTAT, 2012

Some primary processing is required for each crop. Seed cotton is converted to lint in gins located near farms in rural areas, so a large fraction of cotton is exported as processed. Converting cotton lint to thread, textiles and clothing is mostly done elsewhere. Cocoa beans are sorted and cleaned at the port in a process referred to as usinage, and are mostly transformed to cocoa butter, powder and paste overseas. An increasing amount of cocoa is processed in Accra and Abidjan, however, as the major

producers (Archer Daniels Midland [ADM], Cargill, Barry Callebaut) have recently built modern plants near these ports. In 2005 about half of cocoa beans were processed in Côte d'Ivoire and 16 percent in Ghana, with Ghana's share of processing increasing more recently. Use of cocoa products in the production of chocolate and processed foods remains mostly in Europe and North America.

Table 2 shows shares of agricultural production value, agricultural value added and gross domestic product (GDP) generated on farms by seed cotton production and by cocoa bean production.<sup>3</sup> Since input use is low, especially for cocoa and for subsistence crops, similar shares are found for production and value added. These shares are very large for cocoa in Côte d'Ivoire and Ghana, at 22 percent and 18 percent of value added, respectively. The value added share is also large for cotton in Mali, at 12 percent. Larger and more diverse agricultural economies and larger proportions of subsistence crops yield smaller shares in the other countries. Agriculture's share of GDP has been declining in these countries, but sizeable shares of GDP from these crops are found in some cases. Cotton production accounts for 4.3 percent of GDP in Burkina Faso and 4.0 percent in Mali. Cocoa production accounts for 4.9 percent of GDP in Côte d'Ivoire and 6.9 percent in Ghana. These statistics show the considerable importance of these two crops in the rural economies of these countries, and hence their importance in determining smallholder farm incomes.

**Table 2. Gross Production Value (GPV) as a Share of Agricultural Production, Value Added from Agriculture and GDP, 2005 and 2009**

Country	GPV as a % of	Seed cotton		Cocoa beans	
		2005	2009	2005	2009
<b>Burkina Faso</b>	Agriculture	14,58	8,66		
	Value Added	13,23	..	98	
	GDP	4,34	2,60	81	
	% of Tot. Exports	62	0,2	53	
<b>Cameroon</b>	Agriculture	2,45	0,81	5,03	7,91
	Value Added	3,51	..	7,22	..
	GDP	0,67	0,26	1,37	2,51
<b>Côte d'Ivoire</b>	Agriculture	2,77	0,75	19,72	24,55
	Value Added	3,03	0,86	21,54	28,34
	GDP	0,69	0,21	4,91	6,99

<sup>3</sup> These data for 2005 and 2009 were taken from FAOSTAT (2012) and in the case of value added and GDP from World Development Indicators (World Bank, 2012). Most studies consulted for this paper provided similar statistics to highlight the roles of exports and farm income from these crops, which show wide variations. This is likely due to poor data quality rather than changing roles for these crops either in export markets or in a country's agricultural sector.

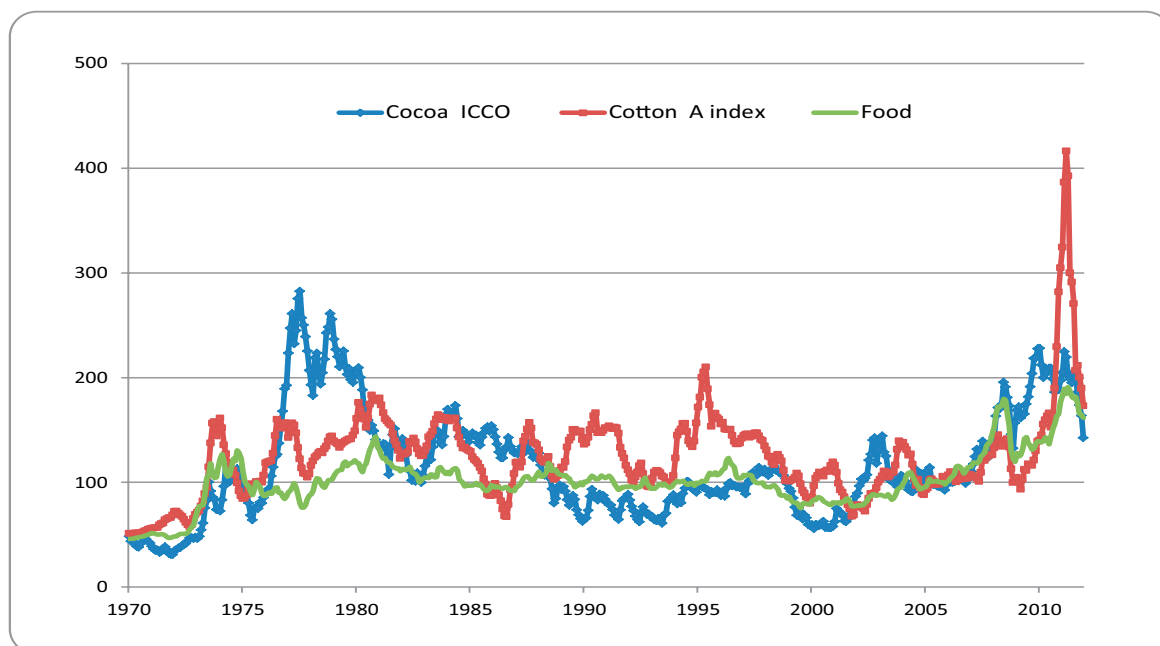
<sup>4</sup> Data for both the ICCO cocoa price and the cotton A index were taken from IMF (2012). The Cotlook A index has varied in definition over time. In the past regional indices have been published, which show qualitatively similar trends.

**Table 2. Gross Production Value (GPV) as a Share of Agricultural Production, Value Added from Agriculture and GDP, 2005 and 2009 (Cont.)**

Country	GPV as a % of	Seed cotton		Cocoa beans	
		2005	2009	2005	2009
<b>Ghana</b>	Agriculture	0,10	0,10	8,98	6,31
	Value Added	0,20	0,16	18,28	10,28
	GDP	0,07	0,05	6,85	3,19
<b>Mali</b>	Agriculture	6,92	1,46		
	Value Added	11,91	..		
	GDP	4,02	1,08		
<b>Nigeria</b>	Agriculture	0,42	0,40	1,09	0,93
	Value Added	0,79	..	2,08	..
	GDP	0,26	0,19	0,67	0,44

**Source :** FAO, FAOSTAT, 2012 for gross production value in agriculture, seed cotton and cocoa beans World Bank, 2012, World Development Indicators for value added from agriculture and GDP.

These West African countries have faced volatile world markets for these commodities for decades. Figure 1 shows monthly international price indices for cocoa and cotton from 1970 to 2011 (IMF, 2012). Those indices are all equal to 100 in 2005. Figure 1 shows that cocoa and cotton prices have exhibited greater volatility than agricultural prices generally (as represented by the international food price index of the International Monetary Fund [IMF, 2012]). In the case of cocoa, the International Cocoa Organization (ICCO) price – an average of prices on the New York and London commodity exchanges – is typically used to gauge world prices. International cotton prices are determined from the Cotlook A index, based on quotations for far eastern delivery of lint from key exporting sources worldwide as reported in *Cotton Outlook* by Cotlook.<sup>4</sup> In 1970 both cocoa and cotton prices were half the values they had in 2005. From the late 1970s until 1981 cocoa prices were nearly triple their 2005 levels and cotton prices were nearly double. Cotton prices were nearly double their 2005 levels in 1996, as well, and cocoa prices in 2010 were more than twice their 2005 levels. Cocoa prices generally fell from 1985 until the commodity price run-up beginning in 2007, and they were late among agricultural commodities to exhibit increases. Cotton prices have been highly volatile, and have fallen since the mid-1990s due in part to competition from synthetic fibers and new production technologies based on biotechnology (Genetically Modified Organisms - GMOs). They did not show the extreme increases experienced by other agricultural commodities in 2007 and 2008, but spiked later as land was removed from cotton production worldwide. Both variability of world prices and downward trends in those prices have posed problems for farmers in West Africa as well as for public institutions seeking to influence farmgate prices. Public institutions have historically taxed and stabilized farmgate prices, but downward trends in prices have limited the ability of governments to extract tax revenue through explicit or implicit means.

**Figure 1. Monthly International Cocoa and Cotton Prices, 1970-2011**

Source: IMF, *International Financial Statistics*, 2012

## 2.2 Structural adjustment and privatization

After independence was achieved, parastatal marketing boards were created using structures similar to colonial institutions for marketing of both cocoa and cotton (Bassett, 1988). These institutions differed somewhat by crop and colonial heritage. In the case of West African cocoa, British colonies (e.g. Ghana and Nigeria) utilized state enterprises to physically market the commodity, whereas French colonies (Cameroon, Côte d'Ivoire) heavily regulated private entities. In the case of cotton, publicly-owned gins transformed seed cotton to lint in an institutional framework similar to that found for cocoa in British colonies; this was true even in French West Africa (Abbott, 2008; Baffes, 2008). Structural adjustment programs fostered by the IMF and the World Bank have driven reforms of these institutions. A key aspect of those reforms was privatization of the parastatal boards, which were viewed as inefficient, high cost firms. The parastatal boards were pursuing broad development goals, and not just marketing of cocoa or cotton. They employed more people than private firms, and incurred high costs in stabilizing prices as world prices for these commodities fell. Public funding and loans from the IMF were necessary in several cases to keep these parastatals from going bankrupt.

Private marketing entities have only gradually replaced public institutions in West Africa, and privatization has proceeded more slowly, particularly for cotton, relative to reforms elsewhere in Africa. While pressure for structural adjustment reform began in the mid-1980s, devaluation of the CFA franc in 1994 represented a turning point in privatization of commodity parastatals in French West Africa. Nevertheless, actual reforms have occurred only gradually since that time. Domestic marketing institutions have been liberalized ahead of exporting or processing entities. Once commitment to privatization began, phased liberalization sought to reform marketing institutions with considerable uncertainty as to the form those institutions should take. There was concern that liberalization efforts undertaken earlier in many African countries had not made appropriate institutional reforms and markets had suffered afterwards. There were not many good examples to follow, however.



In the case of cotton, negative experiences with structural adjustment reforms, particularly in East Africa, have encouraged West African governments to move slowly (Banquedano, 2009). In both Burkina Faso and Mali the state still retains at least partial ownership of cotton gins. Gins in Burkina Faso were converted to joint public-private ownership on a regional basis in 1999 (Akiyama *et al*, 2001). Under pressure from the IMF, Mali attempted to sell interests in the existing public cotton gins, but their poor financial condition and low cotton prices forced delays in the sale of those gins.

Reforms of cocoa parastatals occurred more quickly in Nigeria and Cameroon than in Côte d'Ivoire or Ghana. Nigeria abandoned its parastatal in 1986. Cameroon began reforms in 1991 which were completed in 1994. Côte d'Ivoire committed to privatization in 1999, and then only gradually reformed its export monopoly. It already had the structure in place since private trading firms such as Cargill, ADM and Barry Callebaut were handling exports. Ghana partially reformed its domestic marketing structure in 1991, permitting private licensed buying companies to purchase cocoa from farmers, but its export parastatal - Cocobod - still holds a monopoly on exports. As this reform process evolved, Ghana and Côte d'Ivoire have emerged as the two dominant cocoa exporters, while production and market shares for Nigeria and Cameroon have fallen. The chocolate industry now supports maintaining the public export monopoly held by Cocobod in Ghana, where high quality cocoa bean exports have been best maintained.

Existence of parastatals meant that state entities (or heavily regulated private entities) provided the institutions and services necessary for marketing of cocoa and cotton. Privatization has required new, different institutions to replace those formerly provided by the state. The best example of this is market information. Prior to reform, parastatals typically set official prices on a pan-territorial and pan-seasonal basis, so no market information system was needed. After reform, private market prices would vary over time, location and quality. Not only has this made it more difficult to collect information on farmgate prices, but it has also made it more difficult for farmers to know what market prices are. Various projects have sought to improve market information for small farmers, but they have typically provided information on the ICCO price or Cotlook A index (world prices), which were often disconnected from local prices paid to farmers. Parastatals provided other public goods beyond market information, including research, extension, infrastructure, and disease control. The private sector was eager to take on export marketing activities after reform but these public goods were often not provided following privatization. New legal frameworks were also necessary once marketing began to be carried out by private rather than public actors.

Parastatals also either implicitly or explicitly taxed exports of cocoa and cotton. One stated goal of liberalization initiatives has been to raise farm income through reduction of those taxes. Analysis of prices along the marketing chain to be presented below will show that these taxes could be quite substantial. But reform did not always bring elimination of these taxes, and did not always bring higher farm income when taxes were cut. In the case of Côte d'Ivoire, export taxes fell from 1999 until about 2003, but exporter margins adjusted the most in response. Then the costs of the civil war encouraged the government to find new institutional means to reinstitute export taxes at close to their previous levels.

Evaluation of the extent of export taxes is clouded by the stabilization objectives of the parastatals. Since governments were setting floor prices at the farmgate, implicit export taxes would increase as world prices increased and fall as world prices declined. Financial difficulties of parastatals came about in large part because eventually price floors were stabilizing prices at or above equivalent international price levels and implicit taxes went to zero or lower (negative). At higher world prices, particularly for cocoa, implicit export taxes increased once again, and some see reduction of these taxes as an opportunity for improving farm income. In the case of cotton, higher prices mostly reduced losses incurred by the publicly owned gins.

Value chains for cocoa and cotton remain similar to those found under parastatal management in West Africa. Institutional reforms have occurred slowly in response to gradual privatization. Aid efforts during the privatization era often took the view that there were few real public goods, and that private sector entities would provide all the services previously offered by parastatals. Even market information was viewed at times as a private good. Those aid efforts often failed to provide the services necessary for well-functioning markets. Research activities have declined and extension services are now very weak. Some successful innovations may be found in reforming markets, however, which will be discussed later.

### **2.3 Effects of agronomy and environment on value chains**

Value chains for cocoa and cotton involve farm-level activities that influence quality, intermediaries who transport commodities to ports or processors, exporting firms, and manufacturers who transform processed products into finished consumer goods. These value chains differ by commodity as agronomic and environmental factors come into play. Some issues along the marketing chain as well as solutions intended to raise farmer income are commodity specific, while others overlap.

Processing of cocoa beans into butter, powder and paste has typically occurred in Europe and North America. Early efforts to process cocoa beans into intermediate products in Africa yielded low quality products. New processing plants located near the African ports of Abidjan and Accra are owned and operated by multinational processing/trading firms. Managers insist that quality is now equivalent to that produced in plants in more developed countries, but the cost is higher in Africa. Reduced export taxes on processed products and the ability to get around market share restrictions on exports have encouraged multinationals to locate processing facilities in Africa. Manufacturing and consumption of chocolate and the use of cocoa in processed foods still occur primarily in developed countries.

Cotton is transformed from seed cotton into lint in gins located in rural areas in West Africa. Locating gins near the farms reduces transport costs, as roughly only 40 percent of seed cotton weight becomes lint. Conversion of lint to yarn, thread, fabric and textiles is mostly performed in developing economies outside of Africa. While there is some manufacturing of clothing in Africa, fabric and textile production is less likely to be located in Africa. Cotton production and clothing manufacturing may be labor-intensive, but textile production is often capital-intensive.

Farmer practices and post-harvest activities influence product quality for both cocoa and cotton. Fermentation and drying of cocoa beans after harvesting pods from trees are critical steps, sometimes not well performed, that occur on the farm. If farmers sell wet cocoa, drying may be accomplished by traders or by exporters at the port. Chocolate manufacturers have a long history of utilizing chemistry to combat quality problems with cocoa from Africa.

In the case of cotton, input decisions, particularly on pesticide use, can also significantly influence product quality. These activities are important to subsequent uses and therefore determine payments by exporters and downstream agents, but premiums for quality seldom reach back to the farmgate and remain low within African markets (Poulton, 2006).

Provision of inputs and credit are also essential features of value chains that differ somewhat across these two commodities. Cotton is an input-intensive crop, requiring fertilizer and pesticides. Credit is essential to finance input use. Problems following reforms in other African countries can often be traced back to problems with credit and input markets after liberalization (Goreaux, 2003; Baffes, 2004). For cocoa, relatively few inputs are used but credit is seen as essential to marketing activities and thus to

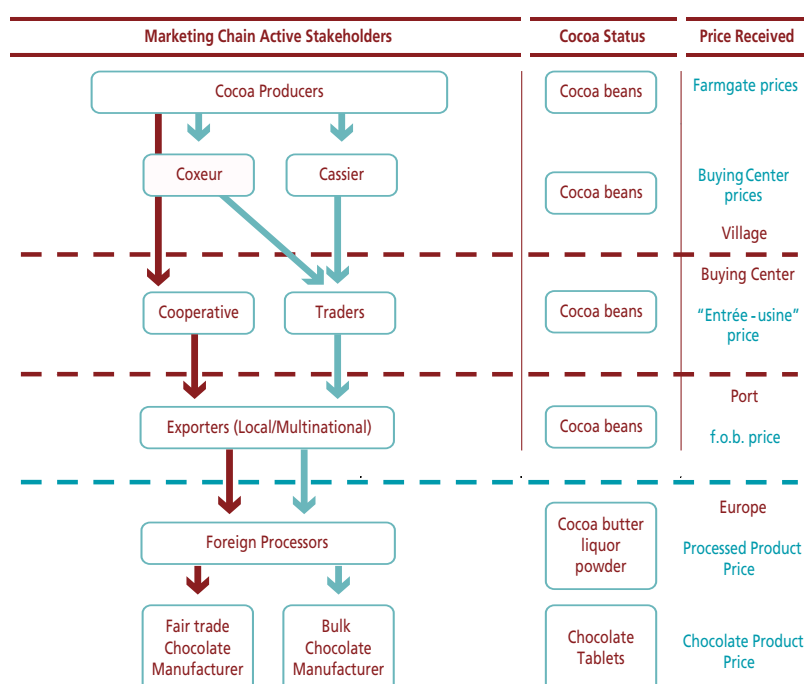
the success of producer organizations whose primary function is (or should be) buying cocoa from farmers and selling it to exporters.

One of the most obvious differences between cocoa and cotton is the system of transportation from the farmgate to either the port or processor. Cocoa is produced under the canopy of a rain forest and harvest occurs during the rainy season. Roads remain poor so traders have invested in all-terrain vehicles. Agents whose names vary from one country to another (pisteur in Côte d'Ivoire, cassier in Cameroon) come to farms to purchase cocoa.<sup>5</sup> Problems with inadequate drying or fermentation, and possibly market power of local traders as well, derive from this system of acquiring cocoa at the farmgate. Producer organizations also often lack a system of buying agents, making it difficult to compete with traders. Cotton is often transported by farmers to ginning agents or traders. Cotton farmers are likely to be located in less remote locations, served by better transportation networks. Roads in cotton areas were often constructed by parastatals.

## 2.4 Prices along the value chain

Figure 2 depicts the cocoa value chain in West Africa, utilizing Cameroon (and its language) as an example. Cocoa beans are produced by smallholder farmers and sold at the farmgate to agents (cassiers, coxeurs, pisteurs), who are sometimes independent and sometimes employees of traders. Small and large traders, as well as producer cooperative organizations, are located in buying centers in the larger villages or towns. Farmers or buying agents may sell cocoa beans to cooperatives. Traders and cooperatives deliver cocoa beans to both local and multinational exporters at the port, who ship cocoa beans overseas to foreign processors. The processors now located in Africa are owned by the multinational exporters. Those processors transform beans into butter, powder, paste and liquor which are in turn sold to chocolate manufacturers and food processors. Prices for cocoa can be observed at the farmgate, in the buying centers, at the port, or in overseas markets.

**Figure 2. Cocoa Value Chain in West Africa**



**Source:** Abbott, Muir and Wilcox, 2006

<sup>5</sup> Farmers who brought their cocoa to buying centers received lower prices, even before considering transportation costs, than farmers who waited for agents to come to the farm in Cameroon (Wilcox, 2006).

Table 3 shows estimated prices along the cocoa value chain for the year 2002 in Côte d'Ivoire, Ghana, Nigeria and Cameroon (Abbott, Wilcox and Muir, 2005). Many of the transaction costs in this table are rough estimates based on observing typical prices at various points along the value chain. The world price (ICCO price) is set at the border in Europe or the United States. Country-of-origin premiums or discounts apply to the ICCO price. Ghana exports higher quality cocoa and so gains a substantial premium. Cocoa from Cameroon is sold at a discount, while cocoa from Côte d'Ivoire and Nigeria receives roughly the ICCO price. Data on ocean freight rates are also available, allowing estimation of export taxes. In the case of Côte d'Ivoire explicit export taxes may be observed. For Ghana explicit export taxes appear to be quite small, but the margins collected by Cocobod are much greater than margins collected by private exporters in the other three countries, indicating substantial implicit export taxation. It is alleged that these exporters exercise market power at this point in the market, so that these margins include monopoly rents. In some cases these rents accrue to private agents, but in other cases they accrue to the government. It is also alleged that chocolate manufacturers and processors may exert market power (Oxfam, 2001). Table 3 estimates margins for both processors and chocolate manufacturers in Europe and the United States. While these may seem large, all activities along the value chain also incur costs. Those who argue for "shortening the marketing chain" would like to see these margins reduced. However, private agents, particularly the multinational exporters, argue that they are real transaction and processing costs.

**Table 3. Cocoa Price Linkages, 2002 – Cameroon, Côte d'Ivoire, Ghana and Nigeria\***

Country	Côte d'Ivoire	Ghana	Nigeria	Cameroon
<b>Farmgate prices</b>	<b>625</b>	<b>974</b>	<b>1232</b>	<b>1135</b>
Pisteur costs	57	57	57	129
Buying Center Price	682	1031	1289	1264
Trader costs	105	90	64	77
<b>Exporter prices</b>	<b>786</b>	<b>1121</b>	<b>1352</b>	<b>1342</b>
Export tax	<b>501</b>	169	6	0
Ocean freight	78	91	80	75
Exporter margins	470	<b>737</b>	437	331
<b>Processor Prices (cif)</b>	<b>1836</b>	<b>2117</b>	<b>1876</b>	<b>1748</b>
Country of Origin Premium or Discount	<b>-29</b>	<b>252</b>	11	<b>-117</b>
	<b>EU/U.S.</b>			
<b>ICCO price/ average processor price</b>	<b>1865</b>			
Processor Costs	411			
Chocolate manufacturer price	<b>2277</b>			
Manufacturing costs	1873			
Consumer (retailer) prices	<b>4151</b>			

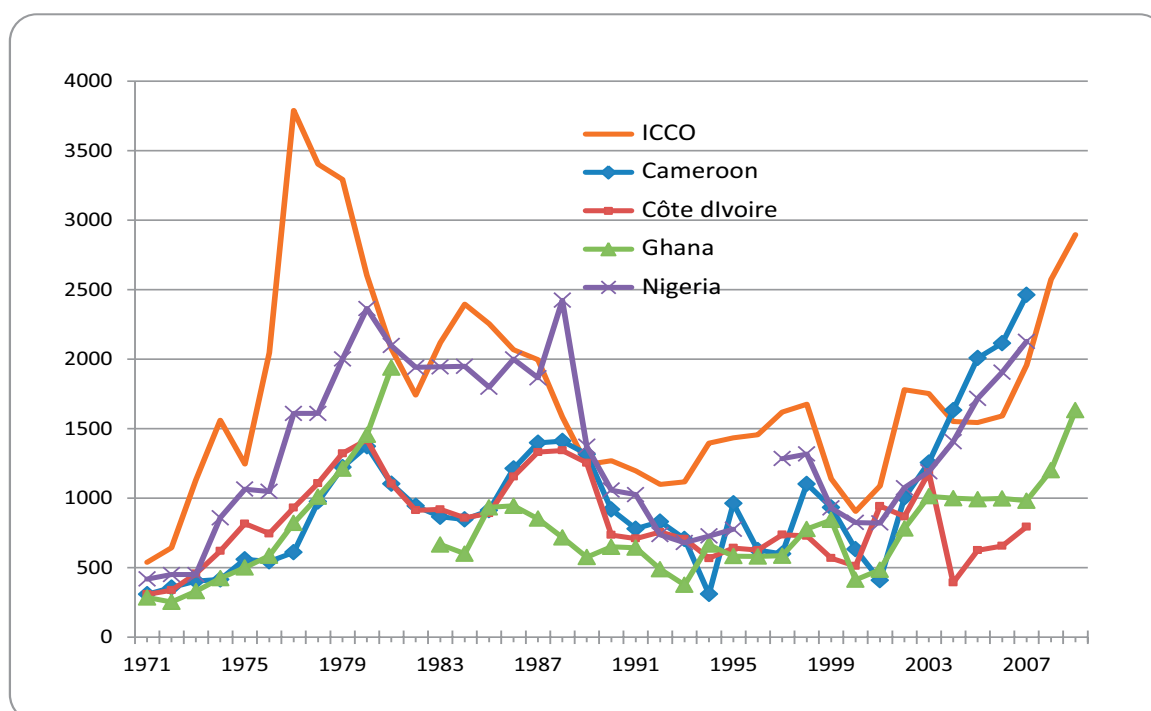
\*Prices are in USD per metric ton, cocoa bean equivalent basis.

Source : Abbott, Muir and Wilcox, 2004

Figure 3 shows farmgate prices in Cameroon, Côte d'Ivoire, Ghana and Nigeria from 1970 to 2007 as well as the ICCO price. It is important to bear in mind that transaction costs between the farmgate price and the ICCO price are significant, but the relationships of these prices demonstrate the consequences of reform as well as the stabilization objectives of parastatals. Nigeria was first to liberalize and its farmgate price most closely follows the ICCO price, with the smallest margin as well. The

farmgate price in Cameroon also follows the ICCO price after liberalization in the early 1990s. Prices in Côte d'Ivoire and Ghana exhibit stability and are substantially below the ICCO price. The effects of liberalization in 1999 in Côte d'Ivoire, followed by reinstating export taxes in 2003 at the beginning of the civil war, are also evident. Moreover, the steep recent increase in world cocoa prices is seen in prices in Côte d'Ivoire and Ghana, with substantial export taxation persisting. Margins of chocolate manufacturers and cocoa processors also vary with world cocoa prices.

**Figure 3. Cocoa Producer (Farmgate) Prices Compared to the ICCO Price, 1970-2007**



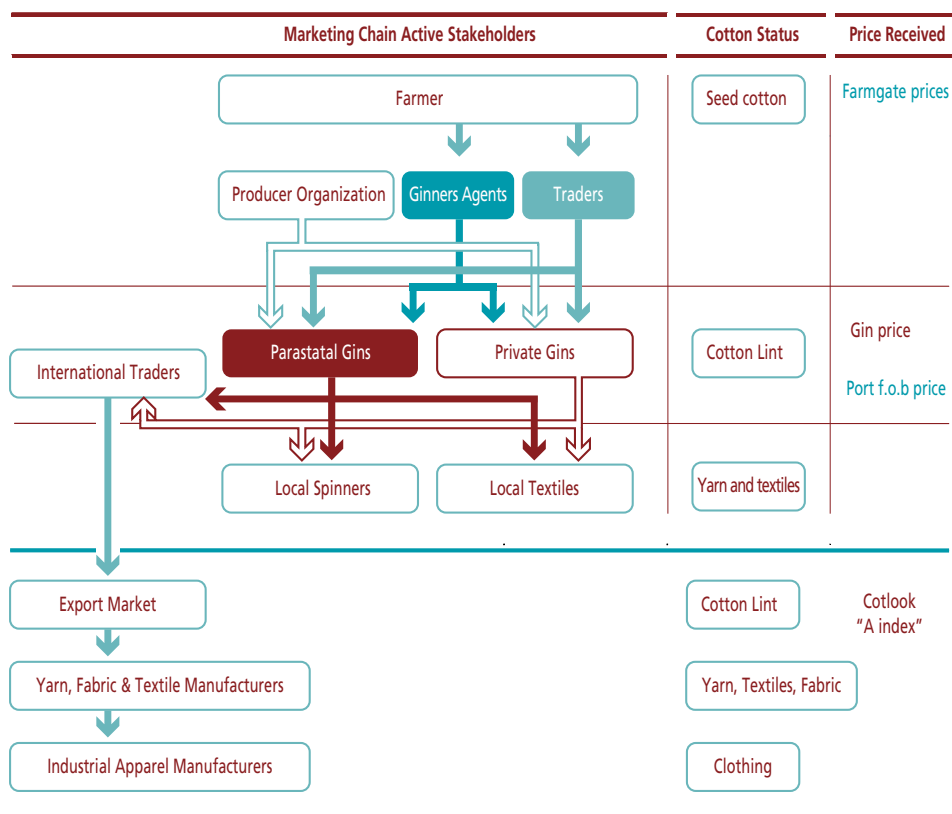
\*Prices in USD per metric ton.

**Sources:** FAO, FAOSTAT, 2010 and Abbott and Wilcox, 2004 for farmgate prices.

IMF, International Financial Statistics, 2010 for ICCO price.

Figure 4 shows a stylized value chain for cotton in West Africa based on Baffes (2007) description of the cotton market and a value chain drawn by RATES (2005) for Tanzania. Farmers sell seed cotton to ginner's agents, traders or producer organizations. Parastatal or private gins transform seed cotton to cotton lint at an outtake ratio of about 40 percent. Cotton prices may be reported on a seed cotton or lint basis, using the uptake ratio and cost estimates to move from one to the other. Lint may be sold to local spinners and textile manufacturers to support domestic textile and clothing industries but it is more frequently sold to international traders in West Africa. In the export market cotton lint is sold to yarn fabric and textile manufacturers, who in turn sell products to industrial apparel manufacturers. World cotton prices are reported as the A index, a measure of prices at borders of countries importing lint.

Figure 4. Cotton Value Chain in West Africa



Source: Abbott, adapted from RATES, 2005 and Baffes, 2007

Table 4 presents cotton prices in Burkina Faso, Mali and Côte d'Ivoire for 2005 at the farmgate, the gin, the port and the EU border (A index). Farmgate prices are at a similar level in the two major exporting countries and are somewhat lower in Côte d'Ivoire. Based on Baffes (2007) estimates of transaction and ginning costs, gins appear to be incurring losses in all three cotton-exporting countries. Margins in transportation costs are lower than were found for cocoa. This is alleged to be a more competitive industry at the processing and manufacturing levels.

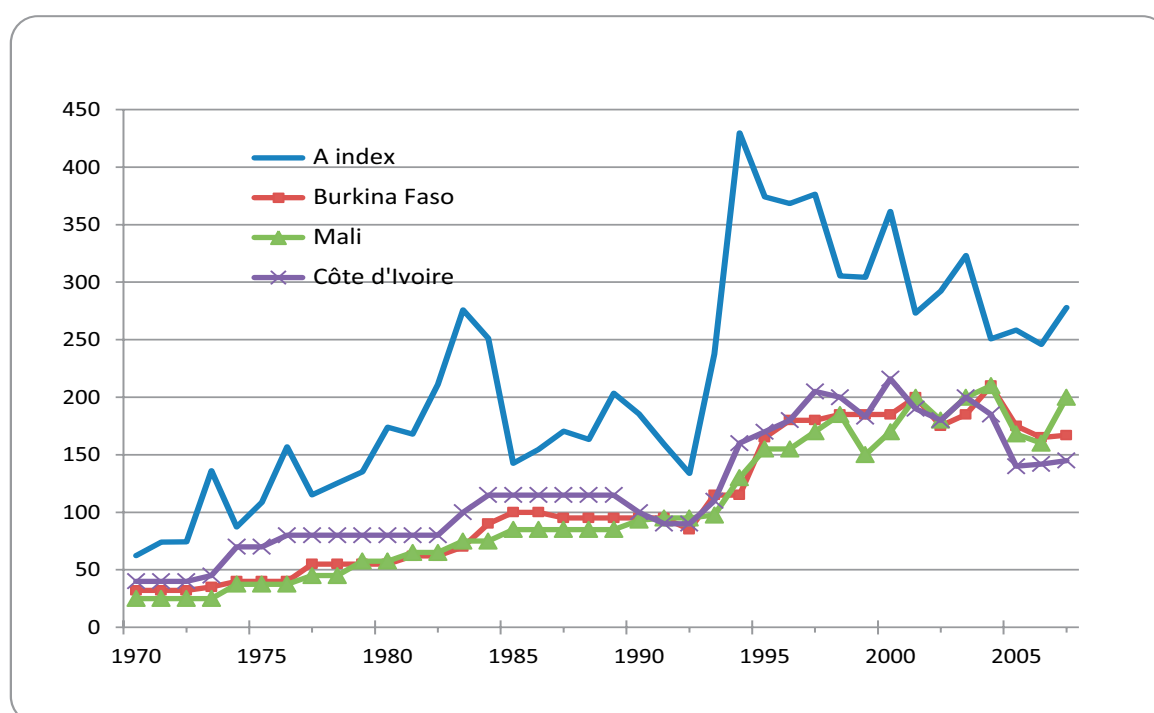
Table 4. Cotton Price Linkages, 2005 – Burkina Faso, Mali, and Côte d'Ivoire\*

		Burkina Faso	Mali	Côte d'Ivoire
Farmgate price	Seed cotton	175	168	140
	Lint basis	422	405	337
Gin losses		-106	-89	-21
<b>West Africa</b>				
Ginning cost		225		
Gin price	Cotton Lint	541		
Transport costs - domestic		75		
Port f.o.b. price		616		
<b>EU</b>				
Ocean freight		49		
<b>A "index"</b>		<b>665</b>		

Source: Baffes, 2007. \*Prices are in Fcfa /kilogram on a cotton lint basis. Farmgate price is also expressed as seed cotton basis in local currency. Gin prices and other downstream prices are after transformation from seed cotton to lint at an outturn ratio of 41.5 percent (from Burkina Faso data).

Figure 5 compares cotton producer prices to the A index on a lint basis in CFA per kilogram. The extent to which parastatal gins stabilize farmgate prices is even more evident for cotton than for cocoa. While there was substantial variability in world prices from 1970 to 1993, farmgate seed cotton prices remained steady, with step increases in domestic prices following world price increases around 1975 and 1985. In 1995, as world prices in domestic currency increased again, due largely to CFA devaluation, farmgate prices were raised, but a substantial relative difference persisted, especially when world prices were very high. When world prices declined, especially after 1995, domestic cotton prices remained constant, and the shrinking margins have led to losses for gins. Currency matters to these trends - cotton prices measured in CFA have been in steadier decline since the mid-1990s than they appear to be in US dollars (as in Figure 1).

**Figure 5. Cotton Producer (Farmgate) Prices Compared to the A index, 1970-2007**



**Sources:** FAO, FAOSTAT, 2010 and Baffes, 2007 for farmgate prices. Prices are in Fcfa per kilogram, seed cotton basis. Baffes, 2007 for A index fob West Africa in seed cotton basis.

In the cases of both cocoa and cotton, comparisons of farmgate prices to world prices suggest that margins could be reduced in order to improve farm income. Many studies simply use this sort of price information to argue for marketing interventions to improve farmer welfare, noting large differences between farmgate and consumer prices. But there are significant transaction, transformation and processing costs along the value chain. Nevertheless, the fact that these margins shrink when world prices decline and expand when world prices increase suggests there may be some scope for reduction of these margins. Whether margin reductions would translate into higher farmgate prices will be explored below.

## 2.5 Smallholder farmers

Subsequent analysis will explore policy options, institutional reforms and market innovations that have the potential to raise farmgate prices and thereby raise farm income. The specific concern is whether or not benefits from these interventions accrue to smallholder farmers, particularly those with less than two hectares. Cocoa and cotton yield higher incomes to farmers than are realized by subsistence farmers producing millet and sorghum in West Africa. Cocoa in particular is referred to as a plantation crop, suggesting that these farmers may have larger land holdings than is typically the case. However, the rhetoric of aid projects and NGO innovations, such as fair trade and organic cocoa or cotton, argues that interventions are aimed specifically at smallholder farmers.

Data on farm size for cocoa or cotton farmers have been difficult to find. According to Oxfam (Cappelle, 2008), cocoa farmers in Ghana farm an average of 10 hectares, with considerable regional variation. The range of farm size in Côte d'Ivoire was set at 1.5 to 5 hectares, however. For the case of cotton in Burkina Faso, average farm size is about 3.3 hectares. In Mali the average size of a cotton farm is estimated to be 1.5 hectares. Except for Malian cotton farmers, these averages are above those typically found for West African subsistence farmers.

These data need to be viewed with caution because substantial variations in farm size are observed both across regions and across farms within a region. Differences between countries also arise because opening of new lands has been important for the expansion of production of both these crops. For cocoa growers, the process of abandoning land where diseases have taken over and moving to new lands (virgin rain forest) is an ongoing practice (Ruf, 1995). Moreover, allowing immigrants from other countries to begin cocoa farms on new lands is an important political issue in Côte d'Ivoire that helped promote cocoa expansion in the 1980s and 1990s and also led to political tensions in the 2000s (Woods, 2003; Abbott, 2007). This process has led to smaller land holdings than are found in Ghana, but the practice of moving to new lands is also a feature of the Ghanaian cocoa sector. In the case of cotton in Burkina Faso, elimination of the tsetse fly and the diseases it carries has opened new lands to cotton cultivation, allowing for larger cotton farms than are found in neighboring Mali.

Land used for cocoa, cotton and subsistence crops may not be strictly comparable. Cocoa is grown under the canopy of a rain forest, and in collecting data one often counts trees rather than hectares (Wilcox, 2006). Cotton is grown in specific regions in West Africa in preference to subsistence crops, and land quality is typically lower in regions where only subsistence crops are grown. Many farmers grow subsistence crops in addition to cotton or cocoa. Another aspect of African agriculture is that low-quality land availability may not be the binding constraint to hectares planted and poor farmers may become better off by expanding the size of their farms through the acquisition of animal traction and adoption of new technologies. Credit constraints may prevent cotton farmers from becoming larger, as well. Family size is also a somewhat elusive concept and farms of the same size but with larger families yield lower per capita incomes. Although better land quality and higher incomes for export crops mean that cocoa and cotton farmers are not as poor on average as subsistence farmers, the wide distribution of land holdings means that there are many poor farmers even in cotton- and cocoa-producing regions.

A more important issue may be whether or not proposed interventions are biased against adoption by smallholder farmers. For example, is it more difficult for smallholder farmers to band together into producer organizations, or are there membership restrictions related to farm size? For the interventions examined here, there is little evidence of a bias against smallholder farmers. Most interventions explicitly state an objective to focus on small farmers and have no interest in showing a bias against small farmers. But scale economies in marketing and distribution as well as in credit markets may



work against smallholders benefiting from specific interventions along the marketing chain. Moreover, interventions that improve the farmgate price yield benefits in proportion to the size of the farm.

## 2.6 International interventions

Several international approaches have targeted interventions along the value chain as a means to raise smallholder farmer income for cocoa and cotton. The IMF, World Bank and aid agencies continue to push for privatization, which remains incomplete in some West African countries for both cocoa and cotton. Private NGOs have fostered niche solutions via Fair Trade, organic and traceability programs. The ICCO, United States Agency for International Development (USAID), Sustainable Tree Crops Program (STCP) and others have run aid programs that include marketing components and that target smallholder farmer income.

The completion of privatization remains problematic for several reasons. Cotton exporters in West Africa have been extremely slow to privatize cotton gins. While plans have been in the works to create joint public/private ownership of gins, given low world prices for cotton and the consequent poor financial condition of gins in West Africa, it has been extremely difficult to find private buyers for the existing cotton gins. The sale of Mali's gins has been delayed for several years as its French partner, Dagrís, has failed to tender an offer for the gins. Maintaining functioning gins in rural areas is critical to continued success of a cotton industry. In the case of cocoa, privatization is most incomplete in Ghana, where Cocobod continues to maintain a public monopoly on exporting. The chocolate industry defends Cocobod and opposes privatization because Ghana remains the one country providing higher quality cocoa to the world market. Ghana continues to receive a substantial premium over the ICCO price. Most cocoa is sold in bulk at an average quality level, and the small needs for higher quality cocoa are now met from the production provided from Ghana. In other countries privatization of gins and exporters has progressed further, but the institutional reforms to provide critical components of functioning private markets, to regulate those markets, and to provide missing public goods remain incomplete.

Small niche markets have been developed by private NGOs for both cocoa and cotton, with better success to date in cocoa. One cooperative in Ghana, Kuapa Kookoo, provides 45 percent of the volume of cocoa fair-traded in the world (Fair Trade Foundation, 2010). Fair Trade Foundation and ICCO (Consultative Board on the World Cocoa Economy, 2005) indicate there is only one other very small fair-trader of cocoa in West Africa, with the remainder of fair-trade cocoa coming mostly from Latin America. Kuapa Kookoo has become a very large, successful entity in Ghana, but only exports 12 percent of its cocoa to the fair-trade market, with the remainder sold as bulk cocoa. Kuapa Kookoo also continues to operate in a publicly regulated market, and uses Cocobod as its exporting agent. Because Ghana continues to set official prices for cocoa, Kuapa Kookoo uses fair-trade premiums to fund development projects. The Fair Trade Foundation (2010) indicates that there are initiatives for both fair-traded and organic cotton from West Africa, but volumes exported from either of those entities remain extremely small. Limited demand for fair-traded and organic products severely limits the scope of these initiatives to expand their activities and to serve a significant share of West Africa's smallholder cocoa and cotton farmers.

The sustainable tree crops program (STCP) run by the International Institute of Tropical Agriculture (IITA) and funded by USAID has sought to improve the welfare of smallholder cocoa farmers in Cameroon, Côte d'Ivoire, Ghana and Nigeria. STCP aimed to strengthen producer organizations and to enable them to compete more effectively against local traders, gaining premiums from the marketing chain. One implicit goal of STCP that has not been realized has been to replicate the model of Kuapa Kookoo widely across West African cocoa exporting countries. The program has had more success in developing science to combat fungus and improving extension services by fostering farmer field schools. USAID has also

intervened in cotton markets in West Africa, partly in response to the World Trade Organization (WTO) Doha Round initiative targeting West African cotton. That project contains relatively small efforts to address the value chain compared to the size of the cotton sector in the many West African countries served by the project. The ICCO, NGOs and other international entities have also fostered development projects in the cocoa and cotton sectors. Those projects often target improvement of marketing institutions.

### 3. Issues

Five critical issues condition the likely effectiveness of efforts to extract greater value from the marketing chain for smallholder farmers. These include: prospects for shortening the marketing chain; incidence of taxes and what share of reductions in taxes and transaction costs (or margins) are passed back to farmers; provision of public goods post-privatization; delivery of quality after liberalization; and missing or incomplete input and credit markets. Each of these factors limits the extent to which privatization and tax or cost reductions will in fact result in higher smallholder farmer income.

#### 3.1 "Shortening" the marketing chain

For both cocoa and cotton only a small share of consumer prices for finished products is represented by farmgate prices (see price linkage data in Tables 3 and 4). Numerous studies use this evidence to conclude that farmgate prices could be raised by extracting greater farmer income from the long value chain. The notion of "shortening the marketing chain" argues that it is possible to lower costs (or margins) along non-competitive value chains. The data are clouded somewhat by the degree of price stabilization pursued by the parastatal marketing boards and by longer-term downward trends in world prices that have been experienced at times for each of these commodities. Marketing chains are longest in times of high world prices and become shorter when world prices fall. In the case of cotton, for example, losses to cotton gins from 2005 to 2007 suggest that these gains are illusory. Traders and large exporters argue that marketing chains are now efficient and that transaction costs along the marketing chain are quite real and difficult to reduce.

The notion of shortening the marketing chain has a long history in the research on African commodity markets. An early debate on whether or not African agricultural markets were competitive or oligopolistic was used as a justification for allowing the parastatal marketing boards to replace non-competitive traders. Others at that time asserted that the markets were high in cost but nevertheless competitive, with numerous agents along the supply chain collecting small markups. One idea suggested that reducing the number of agents, hence shortening the marketing chain, would reduce transaction costs (made up of many small margins) and so raise farmgate prices (Duncan and Jones, 1993). The notion persists that these marketing chains are inefficient and that transaction costs along these chains could be reduced. Some arguments are based on inefficiency while others are based on market power of agents along the marketing chain. Some continue to argue that the large traders of these commodities, as well as exporting agents, hold significant market power (Oxfam, 2001 and Cappelle, 2008).

Improved infrastructure is one means by which marketing transaction costs could be reduced if marketing chains are inefficient. In the case of cotton, parastatal boards built roads in cotton-producing areas to reduce those costs, but in the case of cocoa the roads remain poor and investment in capital (e.g. trucks) by traders substitutes for road construction. Investment in roads remains an option for reducing transaction costs (World Bank, 2007). Other investments in market infrastructure – including

institutions such as better market information and legal reforms such as warehouse receipts - also offer opportunities to lower transaction costs.

Our research has revealed that there may be significant fixed costs and therefore scale economies for both marketing and processing of cocoa and cotton. A successful innovation by Cargill, discussed later, has exploited these scale economies by utilizing larger trucks for transporting cocoa to the port and using industrial-scale gas dryers for which unit costs are lower. Moreover, problems with cocoa cooperatives were often due to lack of transportation capital. Small all-terrain vehicles may be effective for collecting cocoa from remote farmers but as one gets closer to the port larger trucks are more cost-effective. Rental markets for transportation were limited and imperfect. In general, the successful traders were quite large and could cover fixed costs of doing business against larger volumes. Similarly, fixed costs and scale economies appear to be factors in primary-processing activities. Fixed costs have an impact on cotton gin operations and on “usinage” (drying and sorting cocoa beans) as well as on primary processing of cocoa. Marketing agents, including producer organizations, need to be organized in order to exploit these scale economies.

STCP and ICCO have also pursued marketing interventions to establish traceability of cocoa exports back to the village of origin, along the lines of the French system of *appellation contrôlée*. STCP's original goal was to utilize “village of origin” as a basis for gaining premiums in cocoa marketing. But participants of STCP in the chocolate industry argued that demand for quality cocoa is weak and these identity preservation-based premiums would not be realized. The continued emphasis on traceability by an ICCO project probably reflects European food safety concerns rather than cost or premium considerations along the cocoa value chain. The safety concern is of considerably less importance along the cotton value chain given that cotton is not food. Traceability will add, not reduce, transaction costs along the value chain.

The niche market solutions (e.g. Fair Trade, organic) are also aimed at gaining premiums along the marketing chain and also require traceability. Costs for these marketing options are very likely to be higher than trade in bulk cocoa or cotton. The goal of these options is to gain premiums, not to reduce transaction costs. Once again, limited demand for high quality products prevents premiums from being realized by a large numbers of farmers.

### 3.2 Tax incidence

Consumers, intermediaries, processors, manufacturers and farmers share in any reductions of taxes, rents or transaction costs along the value chain. Tax incidence across these agents depends on market responses, as measured by elasticities. Tax incidence is greatest on the most inelastic agents – which may well be the intermediaries, processors or manufacturers. While supply of cocoa and cotton by farmers is not likely to be extremely elastic, consumer demand for these products is also likely to be inelastic, as is the derived demand of intermediaries. Transaction costs near the farmgate are also a much smaller share of consumer costs than they are of farmgate prices, affecting the relative shares of change in tax and transaction costs. Abbott, Wilcox and Muir (2005) simulated various interventions along the cocoa value chain and found small shares of tax reductions or cost savings accrued to farmers. While assumptions were necessary to establish elasticities, and although the magnitudes of elasticities – particularly of consumer demand – are disputed, it is clearly the case that price changes at the farmgate will only be a fraction of changes along the value chain, even if the shares are not precisely known.

Sharing of tax and transaction cost reductions is complicated by two additional factors. Several studies argue that exporting agents, processors and chocolate manufacturers are oligopolistic firms, so market power is relevant. Sexton *et al.* (2007) argue that market power exacerbates the rents captured by

intermediaries, and thus their tax incidence as well. Moreover, the largest cocoa exporting countries, Côte d'Ivoire and Ghana, probably have a degree of market power in international markets which is exercised by the government as it taxes exports. In those cases where market power exists, some of export taxes are borne by foreigners: the whole point of applying optimal export taxes is to collect revenue from foreigners. When those taxes are relaxed, the benefits accrue to those foreigners more than to farmers. The literature has recognized that at least in the case of Côte d'Ivoire export taxes may be optimal policy (Yilmaz, 1999; Consultative Board on the World Cocoa Economy, 2007). When Côte d'Ivoire reduced export taxes in 1999, it is likely that benefits accrued not only to consumers but also to the exporting intermediaries, whose oligopoly rents appear to have increased over that period. When export taxes were reinstated in 2003, rents declined (Wilcox and Abbott, 2005). Intermediaries may well be the least elastic agents in the supply chain, so such results should not be surprising. Another observation consistent with a potential importance of market power is that processors have pursued backward integration along the value chain towards the farmgate. Wilcox and Abbott argue that this could not only benefit from scale economies in marketing but also confer local market power on the processors/exporting agents that would otherwise be held by local traders.

The second factor that could limit farmers benefiting from transaction cost reductions is imperfect market integration. Estimates of price transmission from world prices to farmgate prices are low for both cocoa and cotton. Imperfect price transmission could arise both from stabilization efforts by the government and from imperfect market integration. In his study of farmgate prices in Cameroon and their relationship to port and world prices, Wilcox (2006) found considerable regional variation in price transmission and strong evidence of imperfect integration, at least for some markets within Cameroon. Unexplained arbitrage opportunities also appear in local price data. Cameroon liberalized in the early 1990s, and since then the government has not exercised policies to stabilize domestic prices. Therefore, evidence of imperfect price transmission is evidence of imperfect market integration there. Once again, this mechanism limits the extent to which any downstream changes in transaction costs or the sharing of value added would be passed back to farmers.

Even innovations such as Fair Trade, which directly intervene to raise some farmgate prices and avoid market responses that diminish transmission of benefits to farmers, may hurt other farmers. Abbott, Wilcox and Muir (2005) found the niche interventions have this effect in that these institutions raised prices for some farmers – those participating directly in the activity – but lowered prices for the remainder of the market. This effect is small as long as these niche strategies remain small components of the overall market. Single-country tax reductions can have a similar effect, raising prices in the domestic market of that country, but lowering prices for farmers in other countries. This mechanism is limited by the issues discussed above that limit transmission of cost changes upstream to farmers, regardless of the type of intervention.

Thus, there are several mechanisms – tax incidence sharing based on relative elasticities, market power, and imperfect market integration – that severely limit transmission of value added, tax, rent and cost changes upstream to the farmgate.

### **3.3 Public goods after privatization**

An issue mentioned earlier, which bears repeating, is that public goods are not readily provided by the private sector after structural adjustment reforms liberalize markets. It is clearly the case that provision of public goods declined substantially after structural adjustment reforms in the six West African countries examined here. Budgets for research and extension that depended on export tax revenue and on the profits of parastatals diminished even before the parastatals were eliminated. Market information was not necessary when official prices were announced and applied throughout the country and year, but it

needed to be accessible when private market prices prevailed. In the case of cocoa in particular, disease control was an important activity of the government. Fungicides could be applied to prevent spread of disease at the edges of cocoa-growing areas, and reducing fungus outbreaks on one farm protected neighboring farms. These activities appear to be less effective in the more liberalized cocoa producing countries. Stabilization was probably also viewed as a public good by farmers, who have shown a strong preference for stable prices during policy discussions after liberalization led to greater price volatility. In the case of cotton, parastatals also installed infrastructure such as roads, but this activity ceased as structural adjustment programs disciplined the activities of those parastatals.

There has been some debate over which privatization activities were truly public goods and which goods were better provided by the private sector. That debate has led to some extreme aid interventions, such as projects intended to foster better market information which would collect fees from farmers for that information. Those interventions probably erred on the side of relying too much on the private sector. The record also shows that the private sector chose not to provide certain activities following reforms. An effective government is needed to provide the numerous public goods mentioned above, which are important to proper functioning of cocoa and cotton markets.

### 3.4 Quality

Product quality is an important factor determining the success of traders, including cooperatives and producer organizations. Both cocoa and cotton from West Africa are typically sold as bulk commodities, with only small niches that offer potentially higher quality products. The chocolate industry in particular has emphasized that most cocoa is an ingredient in processed foods or is used to produce bulk chocolate, with premium chocolate being a very small share of the market. But minimum quality standards must be adhered to, and they are regulated on the international exchanges that trade these commodities. At least in the case of cocoa, specifications applied by exporting-agent purchases are simpler than international contract standards.

Labor-intensive farm practices influence quality for both cocoa and cotton. Exporting agents and processors insist on dry, well-fermented cocoa in West Africa, but other standards are less important. Drying and fermentation may occur on the farm, but market failures often result in farmers selling wet, moldy or poorly fermented cocoa. Particularly when prices are higher, demand is strong or production is low, there is a rush to market that gives rise to problems with quality. In the case of cotton, the use of pesticides can affect fiber characteristics and so enhance the quality of the cotton lint produced by a gin. In the case of cocoa, processors and chocolate manufacturers have sometimes found chemical solutions to cope with quality issues in products delivered from Africa. In those cases, farmers forgo potential premiums for higher quality generating higher prices that now cover additional processing costs instead.

There is evidence that quality of cocoa and cotton exports from Africa has declined after privatization, but there is also some controversy on this issue (Gilbert, 2006). One example is that premiums to red colored cocoa that had accrued to Cameroon are no longer realized as premiums above the ICCO price for that country. In Côte d'Ivoire the share of cocoa purchased at the port as "number two" rather than "number one" quality increased substantially after reforms, but exporters have been able to maintain the level of quality sold on international markets by blending products purchased from traders. Poulton (2006) argued that quality premiums for both cocoa and cotton have been either low or non-existent after privatization, so that farmers have not realized incentives to maintain quality, nor have they gained a higher income that could contribute to providing higher, consistent quality. If premiums exist for cocoa they are provided to traders by exporting agents at the port. For cotton they would be provided by the gins. Quality standards are not well enforced at the farmgate, and enforcing quality standards in their

purchases has been a problem for producer organizations. In the rush to market for cocoa it was not uncommon for producer organizations to pay the same price regardless of quality and to accept lower-quality cocoa in order to maintain volume.

Issues of maintaining quality were often paramount in discussions with traders. For example, it was evident that some traders gave up arbitrage opportunities when they were unable to manage markets to maintain quality. Successful cooperatives and traders would establish relationships with the entities buying their product – exporting agents in the case of cocoa and gins in the case of cotton. Maintaining those relationships required reliable delivery of significant volumes of higher-quality product. Even tests for quality were performed less often for traders or cooperatives who had built solid reputations. Any innovations that would allow farmers to realize greater benefits from the value chain will have to pay serious attention to mechanisms that ensure product quality.

### 3.5 Inputs and credit

Input and credit markets are especially important to the West African cotton sector. As noted earlier, fertilizer and pesticides are important inputs to successful cotton cultivation. Prior to liberalization these inputs would typically be provided by the parastatal cotton gin. Payment of the effective credit offered through parastatal input provision was made through deductions from payments for the cotton when it was delivered by farmers to the gins. Cotton production served as collateral for input loans. These relationships broke down after reform and the ties between inputs, production and credit have been difficult to maintain afterwards. In earlier reforms in East Africa as well as later reforms in certain West African countries, particularly in Benin, it was not uncommon for farmers to sell their cotton to agents who had not provided the input credit, so loans remained unpaid. Goreux (2003) coined the term “poaching” to describe this practice of renegeing on debts by selling to a different agent<sup>6</sup>. There is evidence that the demise of East African cotton sectors following structural adjustment reforms was generated by these failures in input and credit markets (Srinivasan, 2008).

Other problems with input and credit also stemmed from disappearance of prior parastatal practices, and lack of institutions to provide credit and inputs to farmers following reforms. There were often spillovers of cotton credit to subsistence crops because other options to obtain credit were either unavailable or too costly to farmers. In West Africa much of the fertilizer used in maize and sorghum production was provided by a cotton parastatal and intended for cotton production. While this practice would lead to improved yields for subsistence crops, lower fertilization and so lower yields would be realized for the export crop. Parastatals also would cross-subsidize inputs by charging farmers costs for specific inputs that differed from the costs of those inputs incurred by the parastatals. Thus, farmers did not see incentives to make the right marginal choices for input use because they saw the wrong prices for those inputs (Banquedano, 2009).

While credit is critical to cotton cultivation and one of the most important issues in development of a private cotton sector, it is also of some importance to West African cocoa sectors, even if requirements for credit there are much smaller. The greatest needs for credit in the cocoa value chain are in marketing credit or credit for trading infrastructure. Traders who purchase cocoa must pay in cash. Traders also need trucks and warehousing, as well as possibly drying facilities. Successful traders and producer organizations who have established relationships with exporting agents obtain credit for marketing activity from those exporting agents. Multinational exporters provide much of the credit available to the

---

<sup>6</sup> Poaching has been referred to as “side-selling” in some value chain discussions. In each case farmers did not honor contracts related to credit, where output served as collateral.

cocoa sector. Credit had been provided to trading agents by parastatals prior to reform, and institutions have been slow to arise that will provide credit widely to trading agents. Multinationals identify and offer credit to only the most reliable agents.

In both the cases of cocoa and cotton one initiative to improve smallholder farmer income is establishment of producer organizations. In order for these to function as effective business entities/marketing agents, by purchasing cocoa or cotton from member farmers and selling it at the port or to the gin, they need credit to conduct their operations. For example, a successful cocoa cooperative would have its own truck and warehouse, and would require credit to obtain that capital. Producer organizations have cited credit as a critical need. While parastatals continue to exist in cotton, privatization of cocoa has given rise to some public sector efforts to offer credit to producer organizations. Several programs observed by this author were failures, as default rates on loans to cooperatives were extremely high. Little discipline has been imposed when cooperatives have defaulted.

After reforms it is not uncommon to find that the private sector does not provide inputs, a seemingly private good. It is likely that problems with development of input markets stem at least in part from problems with credit markets. Lack of adequate legal institutions has contributed to missing or incomplete credit markets, and hence to missing or incomplete input markets as well. For the West African cocoa and cotton markets to succeed under privatization, a solution to these problems of credit and input provision are essential. Many of the successes have been private initiatives, but a supportive policy environment is needed.

## 4. Policy options

Policy alternatives need to be considered broadly, and must include institutional development along with changes to price wedges and incentives. Since value-chain interventions are mostly about enabling new private sector activity, policy is mostly about creating the appropriate environment for that activity. Policy options to improve farm income include taking steps to complete privatization, adopting policies that affect pricing and taxation, legal reform and institutional development. Each of these offers some opportunity to raise smallholder income subject to constraints and limitations indicated in the discussion of economic issues above.

### 4.1 Privatization

As noted earlier, privatization has been partial and incomplete for both cotton and cocoa in several of the West African countries studied here. Cocobod maintains a public export monopoly in Ghana for cocoa, while domestic marketing activities have been privatized. In Burkina Faso the solution to privatization has been regional monopolies partially owned by the state. In Mali a similar solution has been proposed, but sale of cotton gins to private entities has been delayed due to the poor financial condition of the gins. National governments have been reluctant to adopt privatization for these critical export commodities, and there is still resistance to completing the privatization process.

In the case of cotton in West Africa, one solution, recommended even by the World Bank, seems to be the strategy pursued in Burkina Faso: regional monopolies partially owned by the state (Goreux, 2003). Where more aggressive privatization has been pursued, the problems of credit and input provision – given the practice of side-selling or poaching – have been severe. It appears that the public sector needs to continue

to play a role in credit provision, and credit provision is critical to providing essential inputs to cotton. In any case, credit tied to production must be based on credible commitments. Whatever solution is found, whether it involves privatization or not, must address the issues of credit provision that have been problematic in most African countries where more complete privatization has been pursued. This may include legal reforms and better enforcement of contracts rather than public provision of credit. However, to date there are not many cases of successful private provision of credit for cotton in Africa. Moreover, maintaining gins is critical to the viability of a cotton sector; it is simply not an option to allow these gins to go out of business.

In the case of cocoa, Côte d'Ivoire showed great reluctance to privatize. Even when the government announced that privatization would be pursued, it delayed taking action to put privatization into force. The government found ways to continue some of the more problematic policies brought about by public sector management of the cocoa industry – notably high export taxes. In Ghana, the public export monopoly continues to be the source of high quality cocoa to world markets. Hence, even the chocolate industry is reluctant to see it privatized. Deterioration of quality has been cited as a problem in other cases where privatization reforms have been pursued, and key industry participants do not want to see that happen in Ghana. Thus, as in the case of cotton, full privatization in cases where it is partial and incomplete is often not considered among the best policy choices, and it continues to face resistance from national governments.

The principal concern about complete privatization remains the problem of missing markets and imperfect marketing institutions following privatization. The best example is the case of credit for cotton, but similar problems with institutional development have been critical for cocoa as well. Slow privatization of cocoa in Côte d'Ivoire was due to a belief that preparation in the form of institutional development was needed before privatization provisions were finalized, yet there was a great deal of uncertainty as to what measures were required. Earlier privatizations in Nigeria and Cameroon had occurred rather quickly, and in cases of more recent privatizations phasing of reforms has been preferred.

In Africa a tension remains between government failure and private market failure. The rationale for privatization – inefficient and sometimes corrupt parastatal exporters and gins – remains an issue in these markets. The inefficiency is due in part either to the parastatal pursuing broad development goals beyond simply marketing the commodity in question or to the evolution of world prices that reduced financial viability of the parastatal. Private sector participation will likely force some public firms to focus more directly on marketing or processing efforts only. But a balance needs to be found, with a continuing role for government, since the private sector will not provide public goods when privatization requires the state to discontinue certain activities. The most important policy concern then, as reforms are pursued, is to foster institutional development of marketing, recognizing both the role of the national government and potential efficiencies from private sector participation.

## **4.2 Pricing and taxation**

Institutional development may be the primary policy concern that should be addressed, but a great deal of attention continues to focus on pricing and taxation issues. Parastatals had set official prices on a pan-territorial, pan-seasonal basis. In that way, they stabilized prices and made the setting of prices for cocoa and cotton deeply political issues. When privatization has led to prices being determined by private market forces, political entities – including producer organizations – have continued to try to influence those prices, with limited success. Producers have shown a continuing desire for stability, so policy regimes to provide that stability have been considered. In the case of Côte d'Ivoire the government found new institutional means to implement former policy regimes. High, and now explicit, export taxes have continued after a brief respite following initial privatization. Cocobod in Ghana has



used the public export monopoly to continue imposing high implicit export taxes. In cotton-producing countries, low world prices have meant that collecting high export taxes is not possible, while stabilizing farmgate prices at historical levels. Allowing those prices to fall below those historical levels, and be in line with world prices, has met substantial political resistance.

Reduction or elimination of export taxes had been a goal of policy reform for these sectors, with the hope that this would lead to higher farmgate prices. This would not always be the case, however, and is not always in the interest of the exporting country, for two key reasons. First, when export taxes are eliminated it is not always farmers who see their prices change. The tax incidence may have fallen on intermediaries, processors, manufacturers or consumers rather than farmers, so elimination of the tax would benefit those who had been paying it. More of the tax is paid by the more inelastic market participants, who are unlikely to be farmers, and this incidence is exacerbated when there is countervailing market power along the supply chain. Abbott, Wilcox, and Muir (2005) found only small shares of export tax elimination benefiting farmers. Second, when the country is a large supplier to the international market, and so has market power, an export tax may be optimal policy. It is governments, not the private sector, who have the power to implement such a policy. Both Côte d'Ivoire and Ghana are likely to have market power in cocoa exporting, whereas the other cocoa exporters and cotton exporters have shares of the world market too small to impose optimal export taxes. Optimal export taxes occur because foreigners pay part of their tax, so elimination of those taxes would benefit foreigners not farmers. Thus, market forces likely mean that in many cases the elimination of explicit or implicit export taxation will not result in substantially improved farmgate prices.

Numerous price interventions have been proposed to improve smallholder farm income. In order to maintain stable prices, some have suggested price bands regulation in private markets. Either export taxation or domestic subsidies have been proposed to establish floor and ceiling prices for cotton or cocoa. However, the same problems faced by the parastatals, particularly high costs in the face of declining world prices, would persist under such a regime. Moreover, price setting would remain a political issue, while prices would not efficiently allocate resources. Those exploring stabilization policies have found such regimes to be typically both costly and ineffective (Wright, 2001).

Pricing interventions have also been proposed to correct the market failures in input and credit markets. In other parts of Africa input subsidies are being used to foster agricultural development, in spite of the potential inefficiencies and high costs such subsidies could bring. A larger problem is that subsidies will fail to work if input and or credit markets are missing or incomplete. Often the problem with these markets is not pricing per se, but rather an institutional issue which simple application of subsidies does not address.

In the case of cotton another factor influencing potential adoption of new biotechnology production methods has been seed pricing. Hybrid cotton seeds sold by Monsanto include technology fees that could capture the entire benefit from the new technology, leaving farmers in the same position they were prior to adoption. Monsanto and the government of Burkina Faso have been trying to negotiate these technology fees. The government wants to preserve the greatest benefit for its farmers, while Monsanto is unwilling to charge lower fees than it does in other markets. Other concerns with biotechnology, in particular possible repercussions in trade with the European Union, have meant that most African governments have been reluctant to pursue adoption of this technology. In addition, most governments have been slow to establish policy and regulatory frameworks to deal with biotechnology and the pricing, technology and environmental issues it raises (Vitale *et al*, 2007).

Another pricing issue has been the application of fair-trade premiums to farmers. The only large fair-trader, Kuapa Kookoo, operates in Ghana where official pricing prevails. This means that farmers in fact

do not receive higher prices for fair-traded cocoa, but proceeds from fair-trade finance-development funds can improve the environment where those farmers live. These proceeds are used to build roads, schools, health clinics and infrastructure. Abbott, Wilcox, and Muir (2005) argued that maintaining artificially high prices for cocoa would cause the same problems that are characteristic of agricultural policy elsewhere in the world, such as oversupply in the long run, especially in places that do not have a comparative advantage. Decoupled payments are preferred for these commodities, and these are currently what are being achieved through the development funds.

In summary, pricing interventions are unlikely to benefit farmers greatly, but they may well introduce inefficiencies. Better options include policy regimes that foster market institutional development.

### 4.3 Institutional development

The two most important components of market institutional development are provision of public goods and creation of a legal framework for private trade of commodities. As noted earlier, privatization causes the state to withdraw provision of a number of public goods, so alternative institutional mechanisms are required after reform. These include market information, research, extension, disease control, and other activities. Moreover, some private markets have not functioned well after reform, and require institutional innovations, notably the credit and input markets. In addition, if commodities are to be traded in private markets, new legal institutions are required that were unnecessary when the public sector physically conducted trade. Phasing of privatization has been preferred recently in West Africa, allowing some institutional development to occur before privatization.

The best example of necessary legal reform is the system of warehouse receipts. This institution allows trading of commodities based on paper receipts rather than by requiring individuals to physically hand over the goods being sold. Legal frameworks ensuring contract provisions, quality certification, and requirements for warehouse operations need to be established. These frameworks were not needed when the public sector owned the commodity after it left the farmgate. This system has been established only slowly in reforming cocoa markets.

Other legal reforms include establishment of quality standards and regulatory regimes for genetically modified organisms (GMOs) and biotechnology adoption. New legislation is required in each of these cases. Parastatals maintained quality standards for purchasing of commodities, but they did not create a legal framework for private-sector trade under quality standards enforceable by contracts. Private sector solutions often evolve to meet the need for quality standards, as well. In the case of cocoa exporting, firms enforce relatively simple quality standards in their purchasing activities at the port. Those standards are well known, but often do not result in premiums paid to farmers who meet the standards. In the absence of national quality standards, institutions such as producer organizations have had difficulty enforcing quality standards in their purchasing activity. Adoption of biotechnology is a new endeavor, requiring entirely new legislation.

Because cocoa exporting has been taken over by multinational corporations, some countries (Cameroon and Côte d'Ivoire) have implemented what amount to antitrust regulations to combat exporter market power. In Côte d'Ivoire market shares of exporters are limited by regulation. Overlapping ownership has permitted some evasion of this restriction, and firms have established processing plants in-country to export greater market share. Abbott and Wilcox (2004) found greater market power for these firms during the period when the state had reduced export taxes than would have been expected given the extent of the exporting firm concentration observed. Cameroon has prohibited exporting by multinational firms in order to accomplish similar objectives. To circumvent this regulation multinational

firms find Cameroonian partners, and straddle through these exporting agents, operating in domestic and international markets but not as exporters per se. It is not evident that attempts to reduce market power of oligopolistic multinational firms have been effective, with the exception of export taxation, which may capture rents that would have otherwise gone to those firms.

Fostering stronger producer organizations is another goal of market institutional development. Aid projects have worked to strengthen cooperatives, and governments have provided subsidized loans to cooperatives. Inter-professional organizations have been created to try to give farmers more voice in policy matters influencing these markets. Aid projects have also pursued – with some success – new market institutional structures involving public/private partnerships. A number of innovations can be seen along the cotton and cocoa value chain as liberalization has occurred, some of which have improved the positions of smallholder farmers.

## 5. Successful innovations

In spite of the problems cited above, some interventions have resulted in innovations along the value chain that have raised income for some farmers. These include efforts to establish more effective producer organizations, niche market solutions – notably fair trade – efforts to provide credit, and efforts by multinational exporting firms to improve market institutions.

### 5.1 Producer organizations

Much emphasis has been placed on the role of more effective producer organizations to increase farm income. In the past, producer organizations in Africa have concentrated on negotiating with parastatal boards and the government to determine the official price for cocoa or cotton. To the extent that those parastatals held market power, the producer organizations would countervail against the market power of traders and exporters. Effective producer organizations also function as competition for traders, providing the same trade in services – buying and selling the commodity that traders also buy. In addition, producer organizations have served as vehicles for provision of credit and inputs to farmers. Many of the functions performed by producer organizations are simply the business of a trading entity. Producer organizations may therefore play both a political role and an economic role.

In the case of cotton, inter-professional boards (IPB) have been created in some countries to negotiate with the cotton gins to establish official producer prices and to represent the interests of producers. Producers are included as members of those boards. These boards emphasize the political aspects that are also pursued by producer organizations, negotiating the terms of sale for cocoa or cotton. This remains an appropriate function in the case of cotton, when regional monopolies persist, but if a market is privatized and price is determined in that market, the political function of a producer organization or an IPB becomes irrelevant. One problem with producer organizations is that often too much emphasis is placed on political rather than economic functioning, in an environment where they no longer have countervailing market power and prices are not determined by negotiation.

The more effective producer organizations (cooperatives) have become effective businesses which earn price premiums for their members. In the area of marketing, STCP has worked to support Cameroonian producer organizations in their efforts to become traders and to achieve better prices for their members.

In his survey of Cameroonian farmers, Wilcox (2006) found that farmers who sold to cooperatives received prices about 10 percent higher than those realized from sales to independent traders. Thus, there is some scope for producer organizations to achieve higher prices for their members if they function as effective traders. The most difficult problem faced by Cameroonian producer organizations was arranging transportation to the port, as an effective rental market for transportation services did not exist.

Wherever we encountered successful producer organizations acting as traders, and in fact whenever we encountered successful traders, those organizations and traders indicated that they had a partnership with one of the multinational exporting entities. Arrangements between multinationals and traders or producer organizations yielded a number of benefits. Those entities realized higher prices and obtained marketing credit from the multinationals. In addition, controlling for quality was less stringent as long as the entity provided consistently high quality. Multinationals sought partnerships with traders and producer organizations which could consistently provide both high volume and high quality. Only a minority of producer organizations we encountered had achieved such relationships; they were found more often with successful traders.

The model for STCP marketing efforts was the mega-cooperative Kuapa Kookoo in Ghana. That cooperative became a licensed buying agent at the time Ghana liberalized domestic trade in cocoa and operates in 1100 villages. It is the largest cooperative in Ghana and the largest supplier of fair-traded cocoa in the world, an effective business entity that successfully manages the logistics of buying cocoa from remote farmers and delivering that cocoa to the port. Its role in fair trade will be discussed below when we consider niche-market solutions, but that is a minority of its operation, and its success must be attributed to more than participation in fair trade. Only 12 percent of its cocoa sales now go to the fair trade market, and even that share is much larger now than in the recent past. Like other examples of successful producer organizations, the defining feature of this organization is that it recognizes its role as a business rather than political entity. The STCP efforts to replicate the model of Kuapa Kookoo have not been successful to date, however.

## 5.2 Fair trade

Fair trade and other niche-market solutions (e.g. organic) are often pursued as vehicles for gaining greater value added for farmers. For cocoa and cotton these efforts show only limited success, and only a small number of farmers can potentially be served by this option.

As noted above, Kuapa Kookoo in Ghana is the world's largest fair trader of cocoa. It provides roughly 45 percent of fair-traded cocoa in the world. There is only one other small African fair-trade outlet, providing very small volumes of cocoa. The Fair Trade Foundation (2010) also indicates a couple of producer organizations that engage in fair trade cocoa, but only report sales volumes for Kuapa Kookoo. The remainder of fair-traded cocoa other than from Kuapa Kookoo comes from Latin America, not Africa.

Industry sources have also indicated that they go to Latin America in search of higher quality cocoa. They emphasize that most cocoa is sold as a bulk commodity, and that the market for higher quality cocoa, as well as for cocoa with an identifiable origin, is very small. They note that most cocoa is used in manufacturing and processed foods, where origin identity would be lost. Data on volumes of fair-traded cocoa are consistent with the industry contention that this is a very small market.

In addition to identity preservation, fair trade arrangements pay a minimum price plus a premium to farmers. In the case of cocoa, the minimum price of USD1600 per metric ton is currently well below the ICCO price, although that has not always been the case. Fair-traded cocoa continues to receive a 10 percent premium above the ICCO price as well. As noted earlier, because there is an official farmgate price in Ghana, the premium is decoupled from production and accrues to a foundation to administer development projects. There are no other cases of African cocoa or cotton farmers receiving significant premiums through participation in fair trade.

Fair trade arrangements often involve contracting with downstream agents, but not in the case of cocoa. Kuapa Kookoo has instead become a part owner of Day Chocolate in the United Kingdom, which is its principal buyer and manufacturer. Oxfam is another owner of this chocolate manufacturer. The World Wildlife Foundation participated in the establishment of Kuapa Kookoo as part of its effort to preserve rain forests. As for other niche-market solutions, there has been significant NGO involvement in the evolution of Kuapa Kookoo.

Kuapa Kookoo is successful not only because of its participation in fair trade, which is a minority of its business, but also because of its success in managing the logistics of cocoa trade. Both the small share of fair-traded cocoa from Kuapa Kookoo and elsewhere, and the failure of other African entities to penetrate this business are indicative of the small niche opportunity this option offers.

### 5.3 Credit

As observed earlier, provision of credit is critical not only to generation of farm income but also to successful operation of producer organizations. In the case of cocoa, the most important source of marketing credit has been multinational exporters. Both traders and some producer organizations benefit from arrangements with these multinationals, and provision of credit is one of the most important benefits. In the case of cotton, credit is critical to the provision of inputs, and cotton is input-intensive. Moreover, traditionally credit has been provided to farmers by the parastatal gins. As cotton sectors reform, some have sought ways to maintain credit provision from the state, or from partially state-owned cotton gins.

Microfinance is often seen as a solution to credit market failure in developing countries. However advocates of microcredit argue that it is inappropriate for agriculture. The amount of credit required is much larger than typical microfinance loans, and the duration of the loans is much longer for seasonal agricultural credit than is common for these loans. For loans of the amount and duration required, interest charges can be quite high. Nevertheless, there is some evidence of the use of microcredit in Mali to support farmers in both cotton and subsistence crop production (Banquedano, 2009).

One argument in favor of supporting producer organizations is that they are a logical vehicle for the provision of credit. Not only is the provision of credit absolutely critical for cotton production because of the heavy use of inputs, but producer organizations acting as traders also require capital for both marketing and transportation to effectively run their operations.

### 5.4 Multinationals

Multinationals are often seen as the villains in value chain analysis, where the hope is that some of the value added captured by exporters, processors and manufacturers can end up in the hands of farmers. Several of the more successful marketing innovations in cocoa and cotton, however, are the

result of activities of multinationals and in particular partnerships between multinationals and producer organizations. As noted above, the most successful cooperatives maintained partnership relationships with multinational firms. They obtained premiums to quality of high volumes of sales when they successfully maintained those relationships. They also received logistical support.

In addition to supporting producer organizations as competitive traders along the marketing chain, there have been some efforts in Côte d'Ivoire by multinationals to move up-country and compete with traders in buying centers. Cargill established up-country buying stations for cocoa, rather than simply waiting for cocoa to arrive at the port. It could thus exploit scale economies through the use of gas dryers as well as large trucks to transport cocoa to the port. It effectively competed with traders, offering higher prices to farmers. The success of this activity brought resistance and political action from local traders, which discouraged Cargill from expanding this activity. The advantage to Cargill had derived as much from scale economies as from countervailing market power.

In addition to establishing up-country buying stations, multinationals have also been expanding processing capacity in African ports – specifically in Abidjan and Accra. Côte d'Ivoire was initially targeted for processing capacity expansion, but civil war there has led multinationals to look to Ghana as an alternative. The quality of processed cocoa products from Africa used to be quite low, but the multinationals contend that the modern plants built in Africa now produce products of the same high quality standard achieved in Europe and North America. Processing costs in Africa are believed to be higher than in developed countries, but export taxes on processed products are lower than those on raw cocoa, encouraging African processing. Moreover, multinationals face market share limitations in Côte d'Ivoire on cocoa bean exports and can export larger volumes if they export processed products. Cocoa processing plants are relatively capital-intensive, and ownership remains with the multinationals, so in-country benefits are limited to small amounts of additional labor demand and tax revenue. It is unlikely that the relatively small amount of processing in Africa changes the labor demand for cocoa beans or even the regional composition of that demand. Thus, it is not evident that establishing processing in Africa will convey significant new benefits to smallholder farmers.

Multinational cocoa exporters have also responded to demands for greater corporate social responsibility. Some cocoa manufacturers have indicated a desire to engage in fair trade for an increasing portion of their sales. The STCP initiative was also supported by multinational cocoa processors and chocolate manufacturers as part of their effort to address the alleged child labor problem on cocoa plantations. As a result, multinationals have provided a substantial amount of development assistance to cocoa-exporting African countries.

Multinationals argue that their margins represent real costs rather than rents. If that is true, opportunities are limited for farmers to take higher shares of that value added. But the multinational exporters seek active partnerships with traders and also producer organizations. Potential benefits likely derive from scale economies and addressing market failure in quality provision, rather than countervailing market power.

## 6. Implications for small farmers

Value chain analysis is now a popular approach to identifying new opportunities to raise smallholder farmer income. The best examples of success are identification of new markets, supported by contracting farmers to supply those niches. Cocoa and cotton exhibit value chains in which farm income represents a relatively small component of consumer costs. Advocates for value chain analysis have argued there are opportunities to “shorten the marketing chain” for these commodities, providing higher value added to farmers. But these are

mature markets in bulk commodities, with well-established value chain links, not new markets. Opportunities for altering income distribution along these value chains may arise when structural adjustment reforms eliminate the roles of state trading entities. But efforts to extract greater value added from multinational traders, processors and manufacturers have realized limited success at best. Nevertheless, many of the same issues that arise in identifying new marketing opportunities matter to reforming these mature commodity markets. Market failures must be addressed, geographic and agronomic specialization must be considered, and scale economies, spillovers to other markets, as well as roles for NGOs and aid interventions in institutional development all matter. As seen in the case of cotton, there may be a need for defensive measures to preserve farm income after reform rather than finding measures to increase that income.

In establishing new markets and reforming old ones, the debate over market failure versus government failure remains relevant. Problems of inefficiency and corruption lay behind the impetus to liberalize cocoa and cotton markets. But reforms have been slow, particularly for cocoa and cotton in West Africa. National governments as well as sectoral actors have been reluctant to implement reforms after observing problems following privatization elsewhere. It should be clear now that a role for the government remains, even if private sector participation may bring greater efficiency to trading or processing activities.

Two key roles remain for the government: First, because parastatals provided certain public goods which are not provided by private firms after privatization, the state must continue to provide research, extension, market information, disease control and other public goods to these markets. Second, the state must also create an enabling regulatory environment that allows new marketing institutions to develop. There is a considerable need for substantial institutional development in new activities as well following reform. The government needs to take a lead role in fostering appropriate new marketing institutions. That role may be necessary not only to preserve provision of public goods, but also to ensure proper functioning of critical private markets. Credit market failure is a key problem that must be addressed. Quality control is also important. The demand for stability by farmers remains after privatization as well, so the government must play a role in fostering risk management strategies under the new market structures.

Approaches based on value chain analysis rely heavily on establishing better producer organizations. In Africa those organizations often see their role as aggregating the negotiating strength of small farmers in order to countervail market power of other agents along the value chain. The political role of such organizations is more important in a publicly-managed market, where official prices prevail, than in a private market. In a private market setting negotiations may have some influence over explicit export taxation, but in the end it is likely that the market and not political negotiations will determine the farmer's share of value added. It may be the case that after reform too much emphasis remains on the political rather than the economic functions of producer organizations.

Past experience with producer organizations in West Africa shows a number of problems and a few successes. An open question is whether the structure of producer organizations is biased against smallholder participation. Historically, producer organizations were organized in hierarchical structures to support negotiating entities in the capital, taxing farmers in order to provide that support. They have also been a vehicle through which the state has funneled credit (badly) to farmers after privatization. Producer organizations face the same scale economies as traders in both delivery of high volumes and provision of credit. These factors may cause producer organizations to prefer larger farmers as members. Emphasis on political rather than business activities – and possibly corruption – has led to limited contribution to farmer welfare from these organizations. But some successes can be found.

Successful producer organizations in privatized markets need to serve as efficient business entities. One of their primary functions is to compete with traders, buying commodities from farmers and selling them to processors or on the international market. Managing the transportation logistics and maintaining quality control are critical skills that need to be developed. Producer organizations are also a logical vehicle for provision of inputs and credit to farmers.

In the cases of cocoa and cotton, the most successful producer organizations behaved like successful traders and established strong working relationships with one multinational exporter. In the case of cocoa markets, where privatization has gone further than for cotton, the best source of credit for those markets has been the multinational exporters. In order to maintain these relationships, producer organizations need to overcome problems of quality control in purchasing from farmers and local traders. The successful producer organizations observed in the cases of cotton and cocoa have been able to gain small premiums for their members by delivering consistently high quality in large volumes to their partner multinational processors and exporters. Multinational firms welcomed improvement of producer organizations as effective trading entities and have assisted in promoting this marketing alternative. Politics have kept multinational firms at the border, so these firms benefit from these options to make internal markets more efficient.

Expectations about the prospects for extracting additional value added for smallholder cocoa and cotton farmers need to be tempered by the reactions of markets to changes in transaction costs, taxes and rents along the value chain. Tax incidence effects mean that changes (reductions) in costs accrue to the more elastic agents, so at best the benefits of tax or transaction cost reductions must be shared with consumers and intermediaries. Moreover, marketing activities may be subject to substantial fixed costs and scale economies. In the cocoa and cotton markets, trader and processor margins may vary as they stabilize farm income and absorb world price fluctuations, while generating profits to cover fixed costs. If intermediaries do have market power, it is exercised in the context of scale economies and changes that may have more impact on other agents along the value chain or short run profits than on farmer incomes.

The activities in cocoa and cotton markets most closely resembling other value chain activities are the niche-market strategies that include fair-traded and organic production. Limited demand has relegated these activities to being relatively small contributors to farm income. These are bulk commodities for which identity preservation and high quality are likely to generate small premiums at best. If these became larger, they could become "beggar-thy-neighbor" strategies – raising some farm incomes at the expense of others. They provide good opportunities for farmers who are part of the niche, but are unlikely to be useful as a broad development strategy benefiting large numbers of farmers.

As is the case for other commodities, there are clearly market failures that need to be corrected in the cocoa and cotton markets. Privatization brings the need for new marketing institutional development, and for the correction of market failures that arise as the state exits certain functions. This has been especially evident for cotton, where collapse of input and credit markets following privatization has resulted in declining production and lower farm incomes. The premiums achieved from extracting additional income along the value chain are likely to be relatively small, however, based on experiences in cocoa markets. Strategies to raise productivity on the farm are likely to contribute more to increased smallholder farmer income than innovations along the supply chain.



## 7. References

- Abbott, P. (2002) Towards More Socially Responsible Cocoa Trade. *Consumer Driven Agriculture and Trade*. Monterey, CA, International Agricultural Trade Research Consortium.
- Abbott, P. (2007) Distortions to Agricultural Incentives in Côte d'Ivoire. Washington, DC, World Bank.
- Abbott, P. C., Wilcox, M. D. & Muir, W. A. (2005) Corporate Social Responsibility in International Cocoa Trade. *15th Annual World Food and Agribusiness Forum*. Chicago, Illinois, IAMA
- AGRITRADE (2010) Trade issues in the cotton sector: implications for the ACP countries. Wageningen, Netherlands, CTA.
- Akiyama, T., Baffes, J., Larson, D. & Varangis, P. (2003) Policy reform experience in cotton markets. *Commodity Market Reform in Africa: Some Recent Experience*. Washington, DC, World Bank.
- Alston, J., Sumner, D. & Henrich, B. (2007) Impacts of the Reductions in US Cotton Subsidies on West African Cotton Producers. Boston, MA, Oxfam America.
- Badiane, O., Ghura, D., Goreux, L. & Masson, P. (2002) Cotton Sector Strategies in West and Central Africa. Washington DC, World Bank.
- Baffes, J. (2001) Policy reform experience in cotton markets. In T. Akiyama, J. B., D. Larson and P. Varangis (Eds.) *Commodity Market Reforms: Lessons from Two Decades*. Washington, DC, World Bank.
- Baffes, J. (2004) Cotton: Market Setting, Trade Policies, and Issues. Washington DC, World Bank.
- Baffes, J. (2007) Distortions to Cotton Sector Incentives in West and Central Africa. Washington DC, World Bank.
- Baffes, J. & Ajwad, M. I. (2001) Identifying price linkages: a review of the literature and an application to the world market of cotton. *Applied Economics*, 33, 1927-1941.
- Baffes, J. & Gardner, B. (2003) The Transmission of World Commodity Prices to Domestic Markets Under Policy Reforms in Developing Countries. *Policy Reform*, 6, 159-180.
- Baquedano, F. G. (2009) Increasing Incomes of Cotton Farmers in Mali: Effects of Price Increases, Productivity Gains, and Alternative Crops. *Department of Agricultural Economics*. West Lafayette, Indiana, Purdue University.
- Baquedano, F. G., Abbott, P. C. & Sanders, J. H. (2007) The West African Cotton Reform Process: How Much Has Changed? West Lafayette, IN, Department of Agricultural Economics, Purdue University.
- Bassett, T. J. (1988) The Development of Cotton in Northern Ivory Coast, 1910-1965. *Journal of African History* 29, 267-284.
- Bingen, J., Serrano, A. & Howard, J. (2003) Linking farmers to markets: different approaches to human capital development. *Food Policy*, 28, 405-419.

- Bourde, T. Y. (2004) A Tale of Three Countries –Structure, Reform and Performance of the Cotton Sector in Mali, Burkina Faso and Benin. Stockholm, SIDA.
- Bruno, L. (2002) Global Restructuring and Liberalization: Côte d'Ivoire and the End of the International Cocoa Market? *Journal of Agrarian Change*, 2, 206-227.
- Cappelle, J. (2008) Towards a Sustainable Cocoa Chain. Oxford, Oxfam International Research Report.
- Consultative Board on the World Cocoa Economy (2005) Facts and Figures on Fair Traded Cocoa. London, ICCO.
- Consultative Board on the World Cocoa Economy (2007) Optimal Export Taxes in Cocoa Producing Countries. London, ICCO.
- Delpuech, C. (2007) EU and US safeguards against Chinese textile exports: What consequences for West African cotton-producing countries? Paris, Groupe d'Économie Mondiale.
- Dhaoui, L. (2008) Identification of Strategies for Developing the Cotton Value Chain in West and Central Africa (WCA). Geneva, UNCTAD.
- Duncan, A. & Jones, S. (1993) Agricultural marketing and pricing reform: A review of experience. *World Development*, 21, 1495-1514.
- ERS (2010) PSD Online database: <http://www.fas.usda.gov/psdonline/psdQuery.aspx>. Washington, DC, USDA.
- Fair Trade Foundation (2010) Dougourakoroni Cotton Producers Co-operative, Mali. London, Fair Trade Foundation.
- Fair Trade Foundation (2010) Kuapa Kookoo Union: Cocoa Growers' Co-operative, Ghana London, Fair Trade Foundation.
- FAO (2010) FAOSTAT. Rome, Food and Agriculture Organization of the U.N.
- FIAS: The Foreign Investment Advisory Service (2007) Moving Toward Competitiveness: A Value Chain Approach. Washington DC, World Bank.
- Fold, N. (2002) Lead Firms and Competition in 'Bi-polar' Commodity Chains: Grinders and Branders in the Global Cocoa-Chocolate Industry. *Journal of Agrarian Change*, 2, 228-247.
- Gilbert, C. (2006) Value Chain Analysis and Market Power in Commodity Processing with Application to the Cocoa and Coffee Sectors. Trento, Italy, Dipartimento di Economia, Università degli Studi di Trento.
- Glover, D. J. (1987) Increasing the benefits to smallholders from contract farming: problems for farmers' organizations and policy makers. *World Development*, 15, 441-448.
- Gockowski, J. (2008) The Analysis of Policies, Productivity and Agricultural Transformation in the Cocoa-Producing Rural Economies of West Africa. Yaounde, Cameroon, STCP, IITA.

- Gockowski, J., Mva, J., Oduwole, S. & Binam, J. N. (2008) Institutional Innovation in the Credit, Input, and Cocoa Markets of West Africa. Accra, Ghana, STCP, IITA.
- Goreux, L. (2003) Reforming the Cotton Sector in Sub Saharan Africa. Second Edition. *Africa Region Working Paper Series*. No. 62. Washington, DC, World Bank.
- Goreux, L. & MacRae, J. (2003) Reforming the Cotton Sector in Sub-Saharan Africa Washington DC, World Bank.
- ICCO (2006) Analysis of the Value Chain in Cocoa Producing Countries: Proposal for Global Comparative Study. London, ICCO.
- ICCO (2007) Supply Chain Management for Total Quality Cocoa in Africa. London, ICCO.
- ICCO (2010) International Cocoa Organization (ICCO) <http://www.icco.org/>. London, ICCO.
- IMF (2010) International Financial Statistics. Washington DC, International Monetary Fund.
- Nubuko, K. K. & Keita, M. S. (2005) L'Impact sur l'Economie Malienne du Nouveau Mécanisme de Fixation du Prix du Coton Graine. Oxford, OXFAM.
- OXFAM (2001) The Cocoa Market – A Background Study. Washington DC, OXFAM.
- OXFAM (2007) Pricing farmers out of cotton: the costs of World Bank reforms in Mali. Washington DC, OXFAM.
- Poulton, C. (2006) Bulk Export Commodities: Trends and Challenges. Washington DC, World Bank.
- Poulton, C., Gibbon, P., Hanyani-Mlambo, B., Kydd, J., Maro, W., Larsen, M. N., Osorio, A., Tschirley, D. & Zulu, B. (2004) Competition and Coordination in Liberalized African Cotton Market Systems. *World Development*, 32, 519-536.
- RATES (2005) Cotton-Textile-Apparel: Value Chain Report. Nairobi, Kenya, The RATES Center.
- RSCE (2009) Guidelines on Best Known Practices in the Cocoa Value Chain. London, ICCO.
- Ruf, F. (1995) *Booms et Crises du Cacao: Les Vertiges de l'or Brun*, Paris, CIRAD-SAR and Karthala.
- Sexton, R. J., Sheldon, I., McCorriston, S. & Wang, H. (2007) Agricultural trade liberalization and economic development: the role of downstream market power. *Agricultural Economics*, 36, 253-270.
- Srinivasan, M. (2008) Price Transmission and the Cotton Sector in Sub-Saharan Africa. *Department of Agricultural Economics*. West Lafayette, Indiana, Purdue University.
- STCP (2010) Sustainable Tree Crops Program (STCP): Program Overview. Accra, Ghana, IITA.
- Tschirley, D., Poulton, C. & Boughton, D. (2006) The many paths of cotton sector reform in Eastern and Southern Africa: Lessons from a decade of experience. East Lansing, MI, Michigan State University.

- Tschirley, D., Poulton, C. & Labaste, P. (2009) Organization and Performance of Cotton Sectors in Africa : *Learning from Reform*, Washington DC, World Bank.
- UNCTAD Secretariat (2008) Cocoa Study: Industry Structures and Competition. Geneva, UNCTAD.
- Vitale, J., Boyer, T., Uaiene, R. & Sanders, J. (2007) The Economic Impacts of Introducing Bt Technology in Smallholder Cotton Production Systems of West Africa: A Case Study from Mali. *AgBioForum*, 10, 71-84.
- Wilcox, M. (2006) Farmgate Prices and Market Power in Liberalized West African Cocoa Markets. *Department of Agricultural Economics*. West Lafayette, Indiana, Purdue University.
- Wilcox, M. D. & Abbott, P. C. (2004) Market Power and Structural Adjustment: The Case of West African Cocoa Market Liberalization. *American Agricultural Economics Association Annual Meeting*. Denver, Colorado.
- Wilcox, M. D. & Abbott, P. C. (2004) Market Power and Structural Adjustment: The Case of West African Cocoa Market Liberalization. *American Agricultural Economics Association Annual Meeting*. Denver, CO.
- Wilcox, M. D. & Abbott, P. C. (2006) Can Cocoa Farmer Organizations Countervail Buyer Market Power? *American Agricultural Economics Association Annual Meeting*. Long Beach, CA.
- Woods, D. (2003) The Tragedy of the Cocoa Pod: Rent-seeking, Land and Ethnic Conflict in Ivory Coast. *Journal of Modern African Studies* 41, 224-241.
- World Bank (2007) Agriculture for development. *World Development Report*. Washington, DC, World Bank.
- World Bank (2010) World Development Indicators. Washington, DC, World Bank.
- Wright, B. (2001) Storage and Price Stabilization. In B. Gardner, B. & G. Rausser (Eds.) *Handbook of Agricultural Economics*. Baltimore, MD, Hopkins University.
- Yilmaz, K. (1999) Optimal Export Taxes in a Multi-country Framework. *Journal of Development Economics*, 60, 439-465.