

# A Tale of Three Countries





# A tale of Three Countries – Structure, Reform and Performance of the Cotton Sector in Mali, Burkina Faso and Benin \*

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Author: Yves Bourdet

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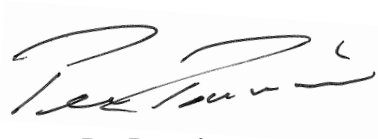
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# Foreword

This study on the cotton sector in Mali, Burkina Faso and Benin is part of a series of annual studies, undertaken by various Swedish universities and academic research institutes in collaboration with Sida. The main purpose of these studies is to enhance our knowledge and understanding of current economic development processes and challenges in Sweden's main partner countries for development co-operation. It is also hoped that they will have a broader academic interest and that the collaboration will serve to strengthen the Swedish academic resource base in the field of development economics.

This report has been prepared by Yves Bourdet at the Department of Economics at the University of Lund.



Per Ronnås  
Chief Economist



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# Executive Summary

The cotton sector plays a critical large role in the economies of Benin, Burkina Faso and Mali, accounting for a large share of agricultural output and for between a third and two thirds of total export. In each of these countries several millions of people are dependent upon the cotton sector for their livelihood, making the performance of the sector decisive for economic growth and for the width and depth of poverty. The purpose of this paper is to analyse the role of the structural and institutional arrangements of the cotton sector in its performance. It is also to examine and evaluate the reforms afoot in the cotton sector and to put them into a more theoretical context.

The study starts with an analysis of the long-term developments in the world cotton market and of the constraints that these developments put on the cotton sector in the three countries. Then, the study examines the structures, institutional arrangements and reforms of the cotton sectors in Mali, Burkina Faso and Benin. In the following section an attempt is made to relate the performance of the cotton sector, in terms of producer price, production and ginning companies' profitability, to the structural and institutional arrangements and also to the degree of advancement of the reforms. The next section discusses some aspects of the institutional and organisational structure, which have been insufficiently considered in the current reform attempts.

Several tentative findings emerge from this study. A main finding is that the structural and institutional arrangements interact with other factors, like the quality of governance, in explaining the performance of the cotton sector. A second finding is that cotton farmers' empowerment, associated with a certain degree of vertical co-ordination, has a positive impact on the performance of the cotton sector. This is supported by the current relative success of the sector in Burkina Faso. A third finding is that the permanence of soft budget constraints in the form of public guarantees has contributed to delaying the introduction of reforms in the cotton sector. A fourth finding is that a substantial increase in producer price, and eventually a decrease in poverty, requires not only the deepening of reforms but also the end of cotton subsidies in some countries, which have an important negative effect on cotton prices on the world market.

A Tale of Three Countries – Structure, Reform and Performance of the Cotton Sector in Mali, Burkina Faso and Benin.

# Acronyms

AFD:	Agence Française de Développement
AIC:	Association Interprofessionnelle du Coton
AV:	Associations Villageoises
BNDA:	Banque Nationale de Développement Agricole
CAGIA:	Coopérative d'Approvisionnement et de Gestion des Intrants Agricoles
CFA:	Communauté Financière Africaine
CFDT:	Compagnie Française pour le Développement des Fibres Textiles
CIRAD:	Centre de coopération internationale en recherche agronomique
CMDT:	Compagnie Malienne pour le Développement du Textile
CNCA:	Caisse Nationale de Crédit Agricole
CSPR:	Centrale de Sécurisation des Paiements et des Recouvrements
COPACO:	Compagnie Cotonnière
Dagris:	Développement des agro-industries du Sud
FUPRO:	Fédération nationale des Unions des Producteurs
GPC:	Groupements des Producteurs de Coton
ICAC:	International Cotton Advisory Committee
IMF:	International Monetary Fund
ONS:	Office National de Stabilisation et de Soutien des prix des produits agricoles
OVHN:	Office de la Haute Vallée du Niger
SOFITEX:	Société Burkinabè des Fibres Textiles
SONAPRA:	Société Nationale pour la Promotion Agricole
SYCOV:	Syndicat des Cotonniers et Vivriers
UDP:	Union Départementale des Producteurs
UNPCB:	Union Nationale des Producteurs de Coton du Burkina
USPP:	Union Sous Préfectorale des Producteurs
WTO:	World Trade Organisation

# 1. Introduction

The cotton sector plays a vital role in the economies of Mali, Burkina Faso and Benin. Cotton production constitutes a large share of agricultural production, and cotton export accounts for between a third and two thirds of total exports from these countries. The three countries are, together with Côte d'Ivoire, the largest cotton producers in Sub-Saharan Africa. In each of these countries several millions of people are dependent upon the cotton sector for their livelihood. The performance of the cotton sector is critical for the revenue earned by cotton producers and thus equally so for the scope, depth and development of poverty. It is also critical for macroeconomic development because of its large contribution to government revenue (as well as government expenditure from time to time) and export revenue. The cotton sector comprises several sub-sectors (ginning, cotton oil, textile, etc.) that also play a significant role in terms of employment, production and growth in the economies of the countries concerned.

The purpose of this study is to analyse the impact of the structural and institutional conditions (nature and degree of competition, ownership structure of the companies involved, etc.) of cotton production and marketing on the performance of the cotton sector, on producer prices and thus, indirectly, on the revenue of cotton farmers (and hence on poverty). A country-comparative approach is well suited since it makes it possible to assess the impact on performance of different competitive conditions across the countries. The choice of these three particular countries can be motivated by the fact that their competitive conditions and institutional arrangements differ markedly. Mali's cotton company, the CMDT, benefits from a quasi monopoly situation and from a de facto monopsony on the purchase of seed cotton from producers. The Malian state and the French company Dagrif jointly own the company (60 percent and 40 percent, respectively). Burkina Faso's cotton company, SOFITEX, benefits from rather similar competitive conditions but is owned on an approximately equal footing by the Burkinabè state, Dagrif and the producers' association. Finally, the cotton sector in Benin has been recently deregulated with a priori more competitive conditions as a result. The state enterprise, SONAPRA, has lost its monopsony on the purchase of seed cotton from producers and the government has initiated a strategy for its privatisation.

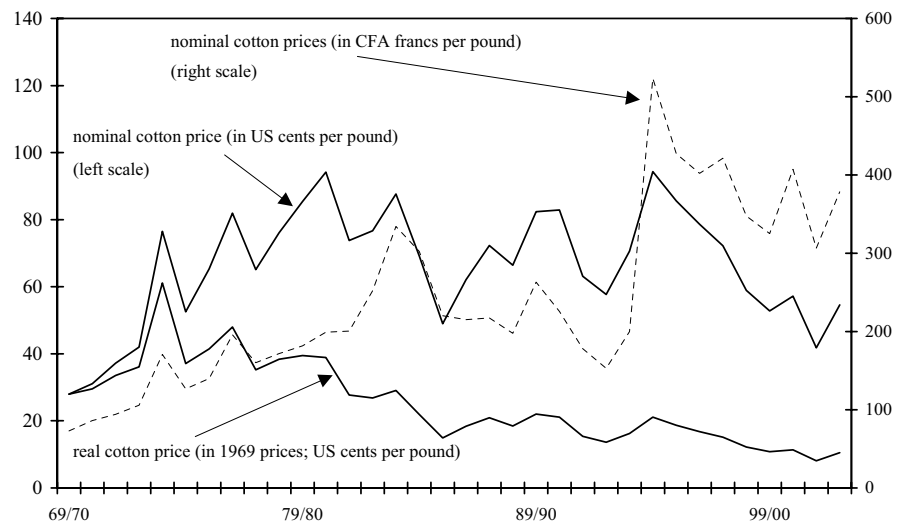
The aim of the study is twofold. First, it is to study the various institutional arrangements and competitive conditions of the cotton sector in the three countries examined (Mali, Burkina Faso and Benin) and to highlight their determinants. Second, it is to investigate whether and to what degree the differences observed in the performance of the cotton sector in the three countries concerned can be ascribed to these different competitive conditions and institutional arrangements. All this, in turn, has normative policy implications in that the study should give some indications about the best way to reform the cotton sector, i.e. how to optimise the returns of the reform in terms of increased producer revenue and alleviated poverty.

The study will consist of six sections. The second section will examine developments in the world market for cotton and highlight the constraints these developments put on the cotton sector in Mali, Burkina Faso and Benin. The third section will focus on the three countries and examine the structure and the reforms of their cotton sectors. In the fourth section we will make use of a cross-country comparative approach to assess the impact of different structures, institutional arrangements and reforms on the performance of the cotton sector (and its various production stages) in the countries concerned. In the fifth section we will discuss some aspects of the institutional and organisational structure of the cotton sector, which by and large have been bypassed in the current reform attempts. The sixth section concludes the study.

# 2. Depressed World Cotton Market

About one third of cotton production is traded internationally. The main exporting countries are the United States, Uzbekistan and West and Central Africa that together account for some 60 percent of total cotton exports. Import of cotton fibres is much less concentrated with nine countries accounting for 60 percent of imports. Most of the importing countries eventually become successful exporters of textile products. The price of cotton is determined by the supply and demand of cotton fibres on the world market. Individual countries (and international traders) are price takers on the cotton market and their production decision has no effect on the price. The Cotlook A Index, the most commonly used price index, is calculated by Cotlook Limited and based on the average of the five least expensive types of cotton traded in North Europe.

Figure 1: Nominal and Real Cotton Prices, 1969–2002



*Notes:* The cotton price is the Cotlook A index.

*Source of data:* Cotlook A Index from ICAC (2003). The consumer price index for industrial countries from the International Monetary Fund is used to estimate real cotton price.

The development of the cotton price on the world market is portrayed in Figure 1. A striking feature is the wide year-to-year variation in cotton price after the early 1970s.<sup>1</sup> One obvious reason for this is the break down of the Bretton Woods system of fixed exchange rates. Another feature is the large increase in cotton price during the 1970s, parallel with the increase in the prices of other primary commodities. A third feature is the sharp decline in the current cotton price after 1995, with the price being almost halved between 1995 and 2002. Figure 1 also illustrates the development of the cotton price in constant terms. This tells a somewhat different story. The real price of cotton has fallen significantly over the past three decades with the exception of the 1970s. In 2002, the real price of cotton was barely a fourth of its early 1970's level.

Figure 1 illustrates the price of cotton on the world market in US \$. The price in CFA francs, which is the reference price for West-African producers, exhibited a different profile, in particular after the devaluation of the CFA franc (by 50 percent) in January 1994 (see Figure 1). The increase in CFA francs in 1994 was much more pronounced than the increase in US \$, which should have resulted in a much stronger effect on cotton production in CFA countries. On the other hand, the decline in the cotton price thereafter was less pronounced when expressed in CFA franc because of the depreciation of the Euro relative to the US \$ after the late 1990s and the fixed parity between the CFA franc and the Euro. The cotton price in US \$ dropped by more than 50 percent between 1995 and 2001 while it "only" declined by some 40 percent when expressed in CFA francs during the same period. The cotton price recovered in terms of both US \$ and CFA franc in 2002 (see Figure 1). It has continued its upward trend during 2003, attaining 59.9 US cents per pound in late August. In spite of this, the price of cotton in CFA francs has decreased somewhat this year, reflecting the sharp appreciation of the Euro relative to the US dollar.

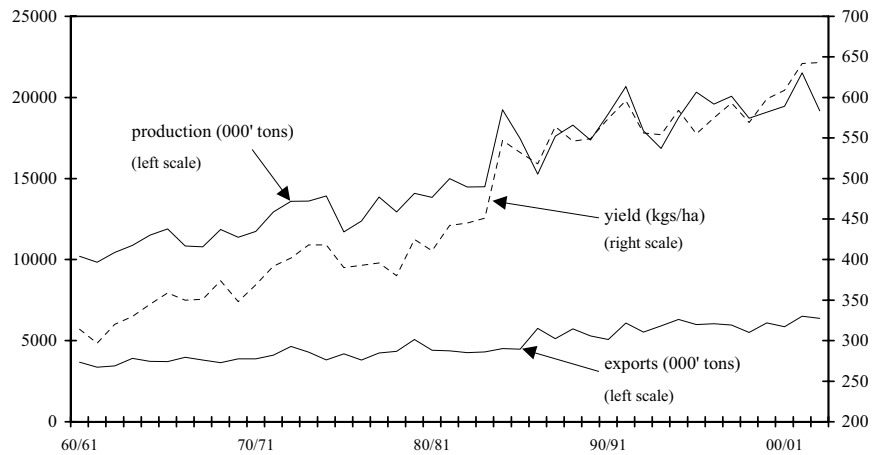
A main factor behind the long-run steady decline in the real price of cotton is the slowly increasing demand for cotton fibre in the world combined with a rather rapid rise in the supply of cotton fibre. Demand for cotton fibres is increasing slowly, partly as a result of the growing share of synthetic fibre in total textile consumption. Between the early 1960s and the early 2000s, the consumption of cotton fibres doubled approximately while that of synthetics jumped six-fold. In the meantime, the share of cotton in total fibre consumption (cotton and synthetics) dropped from 68 percent to 40 percent.<sup>2</sup> Figure 2 illustrates the rapid increase in cotton production over the past four decades. To a large extent, this increase reflects huge productivity gains, with the average cotton yield more than doubling during the period (see Figure 2). Exports grew much less than production and the ratio of exports to production decreased from 36 percent in 1960 to 30 percent in 2001. This makes cotton fibres one of the few products in the world that are less and less traded over time (in relative terms). A main reason for the declining

<sup>1</sup> Still larger fluctuations characterise intra-year movements. See e.g. Araujo Bonjean and Brun (2000), pp. 12–16.

<sup>2</sup> ICAC (2002a), p. 14. ICAC expects the share of cotton to decrease further to 36 percent in 2010.

export-to-production ratio is the subsidies that are granted to cotton farmers in some big cotton-producing countries, thus encouraging domestic production at the expense of imports. Subsidies to the cotton sector are considerable in value and vary markedly over time. Therefore, cotton subsidies not only limit the volume of cotton fibres that is traded internationally but also contribute to increasing price volatility on the world cotton market.

Figure 2: Cotton Production, Exports and Yield, 1960–2002.



Source of data: International Cotton Advisory Committee.

In the late 1990s, about half of the cotton production in the world benefited from public assistance in the form of production and/or export programmes. This figure jumped to 73 percent for the season 2001–2002. The amounts of the subsidies granted to the cotton sector and their distribution across countries are presented in Table 1.<sup>3</sup> The United States and China account for some three fourths of the subsidies in the world. Six other countries, mostly middle-income countries, accounted for the remaining subsidies in the late 1990s. Persistent low prices on the world market and the subsidisation of cotton production in big producing countries have induced a new wave of countries, mostly low-income, to subsidise their cotton production. The volume of subsidies to cotton producers in these low-income countries is, however, much less sizeable in absolute terms, with the exception of India, and in relative terms, with the exception of Colombia (see Table 1).

<sup>3</sup> For an analysis of the measures and subsidies affecting the cotton industry, see ICAC (2002b). For an analysis focusing on US subsidies, see Oxfam (2002).

**Table 1: Public Subsidies to the Cotton Sector, 1997–2002**

	1997–2001 (yearly average)			2001–2002 (preliminary)		
	Subsidies in US\$ millions	Subsidies US \$ per kg	Production in 000' tons	Subsidies in US\$ millions	Subsidies US \$ per kg	Production in 000' tons
USA	1423	0.39	3640	2421	0.55	4421
China	2068	0.48	4338	1196	0.22	5320
Greece	613	1.58	388	537	1.31	410
Spain	198	1.77	112	179	1.68	107
Turkey <sup>a)</sup>	204	0.32	636	59	0.07	901
Brazil	42	0.07	643	50	0.07	750
Egypt <sup>b)</sup>	111	0.43	261	23	0.07	314
Mexico	18	0.11	159	18	0.20	92
India	-	-	-	500	0.20	2475
Benin	-	-	-	20	0.11	179
Mali	-	-	-	14	0.06	242
Colombia	-	-	-	12	0.36	33
Côte d'Ivoire	-	-	-	8	0.05	163
Argentina	-	-	-	7	0.09	74
All countries	4677	0.46	10177	5044	0.33	15481
World	4677	0.24	19324	5044	0.24	21144
Cottlook A price	Average July 97–June 01			Average July 01–June 02		
(US \$ per kg)	1.35			1.11		

*Note:* Subsidies consist of assistance through production and export programmes. Only two countries, USA and China provide export subsidies. Production figures concern cotton fibres.

a) 3-year average. Figures for the season 1997–98 were not available.

b) 3-year average. Figures for the season 1998–99 were not available.

*Source:* Computed from ICAC (2002b), pp. 9–11, and ICAC production statistics.

Spain and Greece are the countries that benefit from the largest subsidies per kg followed in order of magnitude by the United States and China. Subsidies per kg to cotton farmers in the two countries of the European Union are larger than the price of cotton fibre on the world market! Between 1997 and 2001, the subsidies granted cotton farmers in Southern Spain and in Greece amounted to 131 and 117 percent of the world cotton price respectively (see Table 1). The huge subsidies to cotton producers have contributed to an increase of cotton production in some countries and in the world. They have also contributed to distorting international trade in cotton and to depressing the price of cotton on the world market in recent years (see Figure 1).<sup>4</sup> According to an estimate of the secretariat of the

<sup>4</sup> In June 2003, four West-African countries (Benin, Burkina Faso, Mali and Chad) brought the issue of cotton subsidies before the World Trade Organisation (WTO) and its Trade Negotiations Committee, which is in charge of the supervision of the Doha negotiations. The issue is to be discussed at the WTO Ministerial Conference in Cancún, Mexico, in September 2003. The four countries have also said that they are prepared eventually to take the issue to the WTO's dispute settlement system if the Doha negotiations do not result in a defined deadline for the full suppression of subsidies. In 2002, the Government of Brazil launched a formal complaint with the WTO on the issue of US subsidies on upland cotton.



International Cotton Advisory Committee (ICAC), the Cotlook A Index would have been 74 percent higher in the absence of subsidies during the season 2001–2002.<sup>5</sup>

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<sup>5</sup> Welcoming Remarks, Conference on Cotton and Global Trade Negotiations, Washington, D.C., July 8, 2002, available from [http://www.icac.org/icac/Meetings/cgtn\\_conf/documents/english.html](http://www.icac.org/icac/Meetings/cgtn_conf/documents/english.html)

# 3. Structure and Reform of the Cotton Sector

The cotton sector is made up of a chain of economic activities that are concerned with the cultivation, collection, ginning and marketing of cotton and its various by-products. This also includes activities that supply inputs (seed, fertilisers and pesticides) and equipment to cotton growers, activities in charge of the transportation of seed-cotton and cotton fibres, and the financing institutions that provide input credits. The entire cotton sector can be divided into three main stages, the cultivation of raw cotton, its processing, and the marketing of cotton lint and cotton by-products. The first stage is the more important in terms of employment since it comprises all the small-scale farmers that produce raw cotton. The second stage concerns the processing of unginning cotton into cotton fibre and by-products like oil, oil cakes and soap. The third stage is the marketing of cotton lint and by products on either the world market or, albeit to a much lesser extent, the domestic market.

The transactions that take place between the various stages of the chain are either steered by vertical, contractual arrangements or free from restrictions – that is, subject to the free play of supply and demand. Historically, the cotton sector in West Africa has been characterised by a high degree of vertical integration and rather extensive vertical arrangements. A French parastatal, the Compagnie Française pour le Développement des Fibres Textiles (CFDT) played a critical role in the development of large-scale cotton production in West Africa in the 1950s. It has also played a decisive role when it comes to the institutional arrangements in force in the cotton sector. The CFDT, which changed its name to Dagrís in 2001, is majority-owned by the French State (64.2 percent).<sup>6</sup> A consequence of vertical, contractual arrangements is to limit entry and hence the degree of competition at the different stages of the chain. Such arrangements impose restraints upon prices, quantities, the geographic territory in which cotton is grown and sold, and the actors involved. West Africa is a price taker on the world cotton market, which means that the price of cotton export is given for exporters. The

<sup>6</sup> Remaining shareholders are the Dagrís employees (12.7 %) and private shareholders (23.1 %). The privatisation of Dagrís has been discussed from time to time but without genuine commitment on the part of the French government. In mid-2003, however, the French government decided to engage in the privatisation of the company but to retain a minority share. A reason for this apparent change is the desire of Dagrís to take part in the privatisation process in countries like Burkina Faso, Mali, Senegal and Cameroon, and the opposition of the World Bank to the participation of state-owned Dagrís in this process. On the new Dagrís strategy, see the interview with the chairman of Dagrís, Gilles Peltier, in *Marché Tropicaux* (No. 3009, 11 juillet 2003, pp. 1458–61).

repartition of the value-added generated by the cotton sector between the different stages of the chain is to a large extent determined by the vertical arrangements in force.<sup>7</sup>

In this section, we analyse the institutional structures of the cotton sector in the three countries considered and of the reforms that have been implemented and/or are on the way to being implemented. This serves as a background to the next chapter where we attempt to find out the economic and systemic determinants of the institutional structure and competitive conditions. Emphasis here is placed on the degree of vertical integration of the sector and on changes within. An analysis of these factors is critical for the understanding of the efficiency and performance of the cotton sector as well as for the understanding of the problems met when liberalising it.

### 3.1 Mali

The cotton sector in Mali is vertically integrated around the parastatal CMDT (*Compagnie Malienne pour le Développement du Textile*). The CMDT, created in October 1974 when it took the place of the CFDT, is a joint venture between the Malian state, which owns 60 percent, and Dagrif, which owns the remaining 40 percent.<sup>8</sup> Since 1974 the CMDT has been responsible for the promotion of cotton production in Mali and has played a central role in the ownership, management and control of the different stages of the supply chain. It has also been given some responsibility for rural development (in particular road maintenance and some extension services) in its intervention zone, Mali Sud.

A comprehensive reform of the cotton sector was introduced in 1989.<sup>9</sup> To a large extent the current institutional and competitive structure of the sector is the result of this reform, which consisted of five related measures. The first was a strengthening of the role of the CMDT, which was granted financial autonomy. The second was the introduction of a minimum producer price for cotton producers. The third was the establishment of a stabilisation fund, under the responsibility of the CMDT, aimed at securing this minimum producer price and stabilising farmers' incomes over time. The fourth was the introduction of a rule establishing the repartition of profits between the stabilisation fund, the CMDT, the state and the cotton producers (the rebate from profit sharing). The fifth was the setting up of the conditions required to lower the floor price paid to producers. All the measures were integrated in the performance contracts (*Contrat Plan*) between the state and the CMDT in 1989 and 1994, and supported by the bilateral as well as the multilateral donor communities.<sup>10</sup>

Figure 3 shows the institutional structure and the actors of the cotton sector in Mali. The CMDT is the exclusive purchaser of seed cotton in the country. It is also in charge of the procurement and distribution of inputs (seeds, fertilisers and pesticides), and of the transport of seed

<sup>7</sup> A study by the CFDT concerned with the whole CFA zone in 1996–1997 shows that the domestic value-added amounted to some 75 percent of the value of the production of cotton and its by-products. Various inputs, petrol, maritime transportation and consultant services accounted for the remaining 25 percent. Dorey (1999), p. 128.

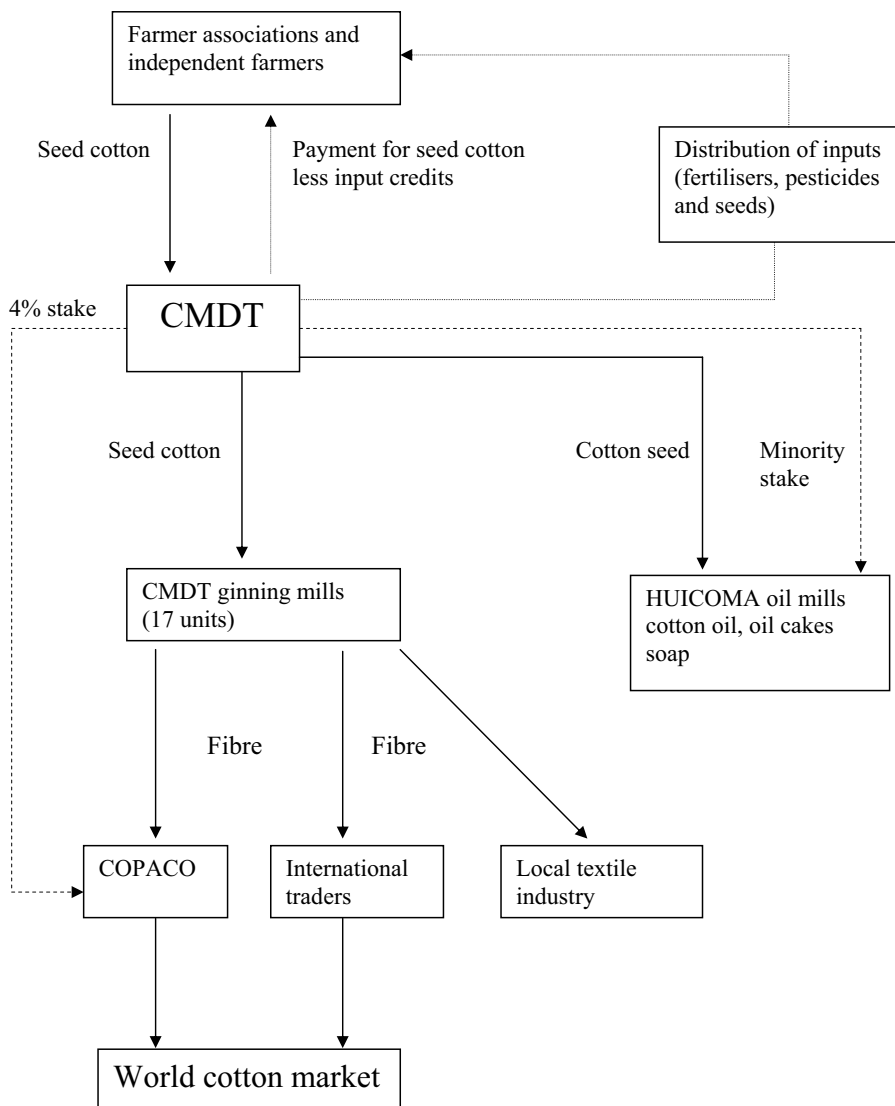
<sup>8</sup> For a history of cotton production in Mali, see e.g. Fok (1999) and Bérout (1999), pp. 98–99.

<sup>9</sup> For an analysis of the 1989 reform, see Chambas et al. (2000), pp. 120–125, and Guillaumont et al. (2001), pp. 253–255.

<sup>10</sup> See e.g. Guillaumont et al. (2001), p. 255.

cotton production from the countryside to the ginning factories either through its own transport vehicles or through private carriers (some 20 percent of seed cotton transported). The costs of inputs are covered by the CMDT (through loans from the banking system) and deducted from the farm-gate price of seed cotton purchased by the CMDT from cotton farmers. A growing share of the credits to the producer associations at the village level is handled by the BNDA (*Banque Nationale de Développement Agricole*) in cooperation with the CMDT. The farm-gate price in Mali, which is common to all cotton producers and cotton regions, is the outcome of a bargaining process involving the CMDT, the state and the producer associations. This bargaining takes place prior to the start of the planting period early in spring, which means that most of the risk of price fluctuations between planting and harvesting is borne by the CMDT. (Most of the risk because the price paid for cotton contains a rebate from profit sharing – the so-called "ristourne" – based on CMDT's surplus, which is dependent upon the development of cotton prices on the world market.) The CMDT is also formally in charge of a price stabilisation fund aimed at stabilising farmers' income over time.

Figure 3: Institutional structure of the cotton sector in Mali



A second illustration of the considerable role of the CMDT in the cotton sector concerns the ginning sub-sector, in which it is the sole operator of all the 17 ginning mills operative in Mali. In addition, the CMDT sells cotton seed to the cotton oil enterprise HUICOMA, which is in charge of the three oil mills that produce cotton oil and other cotton by-products. The price paid by HUICOMA to the CMDT is regulated by the state and is clearly lower than the domestic market price. The capital of HUICOMA is distributed among the CMDT (54 percent), the state (20 percent) and minority shareholders.

The lion's share of the fibre produced by the CMDT is exported, and only a minor share is sold to the domestic textile industry at a preferential price, lower than the export price. The lower price is one of the measures introduced by the government to support domestic textile production.<sup>11</sup> Regarding the marketing of fibres on the world market, the role of the CMDT has, to a large extent, been taken over by its close associate and minority shareholder Dagrís. About half of Mali's cotton fibre exports is made by a subsidiary of Dagrís, COPACO. Independent international traders account for the other half of fibre exports. The share of COPACO has decreased markedly since the mid-1990s when it amounted to no less than 90 percent of fibre export. Dagrís holds some 75 percent of COPACO's capital. The remaining 25 percent is distributed among the CMDT and cotton companies in Burkina Faso, Cameroon, Central African Republic, Chad, Senegal and Togo.<sup>12</sup>

An important institutional feature of the cotton sector in Mali concerns the large role played by producer associations at the village level (*Associations Villageoises*). The first association was established in 1974, which was also the year in which CMDT was created. Their number has increased tremendously since then and there were more than 4,000 in the late 1990s. Today, producer associations account for 98 percent of total cotton production in the CMDT zone, while they accounted for three fourths of cotton production in the early 1990s.<sup>13</sup> The CMDT has contributed greatly to this expansion of producer associations over the past two and a half decades.<sup>14</sup> The reason for this support is that producer associations were delegated tasks that were previously undertaken by the CMDT, like extension, the handling of input and equipment orders and input distribution, credit management or responsibility for cotton grading and weighing. The increased role of producer associations thus reflects a transfer of operational tasks from the CMDT to the farmers and a process of backward disintegration for the CMDT. The Malian government and development partners have supported this development, regarding it as a means to empower cotton producers and counterbalance the dominant position of the CMDT.

Producer associations are in charge of technical tasks that permit them to improve the overall efficiency of cotton cultivation and the quality of cotton. The end of the military dictatorship in Mali in 1991 and the advent of democracy were accompanied by the emergence of a

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<sup>11</sup> SOFRECO (2000), p. 54.

<sup>12</sup> CMDT also has a minority share (2.5 percent) in SOSEA, which is a subsidiary of Dagrís in charge of international transport, and varying shares in Malian companies.

<sup>13</sup> Dagnon (1992), p. 25, and SOFRECO (2000), p. 7.

<sup>14</sup> See e.g. Jonckers (1994), Bingen (1994), pp. 59–60, Bingen (1996), and Devèze (1996), pp. 77, 83.

cotton farmers' union, SYCOV (*Syndicat des Cotonniers et Vivriers*).<sup>15</sup> The SYCOV is financed by producer associations at the village level and is mainly engaged in claims concerned with pricing, marketing and credit issues.<sup>16</sup> But the role of SYCOV also extends to issues that do not fall under what is regarded as traditional union activities. For example, SYCOV is involved in public decision-making through its participation as a signatory to the performance agreement by the CMDT, the cotton farmers and the State (the so-called *Contrat Plan*). The CMDT and key foreign donors have encouraged this incorporation of SYCOV in public decision-making, probably so as to better monitor its activities but with the risk that SYCOV will move away from Mali's cotton farmers.

### **Commanded reform**

Reform of the cotton sector is a recurrent theme of policy debate between Mali and the multilateral donor community (the World Bank and the IMF) and between some bilateral donors, in particular France, and the World Bank. The debate has been given new impetus by the extended crisis that hit the cotton sector, in particular the CMDT, in the late 1990s and early 2000s. To a large extent the crisis could be ascribed to management weaknesses and financial wrongdoings at the CMDT. But the crisis was also the result of the sharp decrease in the world market price of cotton fibres after 1997. The crisis questioned the current institutional and competitive structure of the cotton sector, which is a legacy of the 1989 reform. To tackle the crisis and its consequences for the CMDT, the Malian government ordered an audit that far and wide illustrated the wrongdoings at the CMDT and indirectly revealed the weaknesses of the 1989 reform.<sup>17</sup> In addition to an analysis of the origin of the crisis, the audit also advanced a certain number of measures to cope with it. On the basis of the audit's recommendations, the government worked out a reform package for the cotton sector, in particular with respect to the role of the CMDT in the sector and the functioning of the entire cotton sector.<sup>18</sup> The reform programme benefited from the assistance of the World Bank, which has played a very active role in the analysis of the current difficulties, the design, timing and sequencing of the reform plan, as well as the ongoing implementation of the various measures included in it.

The reform plan concerns all the sub-sectors as well as the network of vertical arrangements that bind them to each other. An implementation of all the systemic measures included in the government's plan will lead to a profound reform of the current institutional structure of the cotton sector, as is illustrated in Figure 3. A major measure is to refocus the CMDT operations on its core activities, ginning and marketing, and to transfer the other activities to the private sector (transportation of seed cotton and distribution of inputs) and to local government agencies (road maintenance and extension services). A second measure is to increase the degree of competition in the ginning sub-sector by opening up the

<sup>15</sup> Bingen (1998) provides a thorough analysis of the emergence of SYCOV in relation to the democratisation following the March 1991 overthrow of the military dictatorship of Moussa Traoré. See also Bingen (1996).

<sup>16</sup> Dagnon (1992), pp. 27–32.

<sup>17</sup> For a summary of the results and recommendations of the audit, see SOFRECO (2000).

<sup>18</sup> For an official presentation of the reform programme, see République du Mali (2001). See also IMF (2002a), pp. 36–41.

OHVN zone (*Office de la Haute Vallée du Niger*) to a private operator, who will take over the ginning capacities of the CMDT in this zone. A third measure concerns the privatisation of the cotton oil public enterprise HUICOMA. The two latter measures will break up the monopsony power of the CMDT in the purchase of seed cotton. A fourth systemic measure is to encourage the entry of new actors and the development of a more competitive mechanism in the marketing of cotton fibre for export, with as a consequence a reduction of the market share for COPACO. A fifth measure is to increase the scope for private ownership in the cotton sector by, in a first stage, opening up the capital of the CMDT to producers and in a second stage by privatising the CMDT by 2005. It is expected that the entry of producers as shareholders in the capital of the CMDT will promote their broader involvement in the management of the sector and improve corporate governance. A sixth measure is the gradual liberalisation of the cotton sector that concerns both producer prices, which should better reflect movements in international prices, and the prices of cotton seed and fibre paid by oil mills and the textile industry, which should reflect the free play of supply and demand. In addition to systemic measures, the reform plan contains financial measures aimed at restoring the profitability and longer-term viability of the CFDT. In particular, it consists of a financial restructuring programme for the CMDT with a repayment plan involving the Malian State in the 30 billion CFAF owed by the CMDT to domestic banks, and of various measures aimed at reducing the company's production costs.

The reform plan contains many measures of both systemic and financial character and several years will be necessary to work out in detail and implement the entire plan. Not surprisingly, therefore, the introduction of some measures that were to be launched in 2002 has been postponed. Three main reasons explain this delay. The first is technical and refers to the rather long time required to prepare, design and introduce relatively complex measures.<sup>19</sup> The second is political and refers to the fact that Mali experienced two major elections in mid-2002, one presidential in May and the other legislative in July, and that the government deemed it politically risky to launch the reform of the cotton sector prior to the elections. The third reason concerns the difficulties in finding companies interested in the purchase of companies that face serious economic and financial difficulties. These three reasons explain why the reform plan has been delayed and substantially altered. An illustrative example concerns the cotton oil enterprise HUICOMA, which was planned to be privatised before the end of July 2002. This date has been postponed several times and it is only during the second half of 2003 that the sale of HUICOMA is likely to be completed. Another example concerns the opening up of the OHVN zone to a private operator.<sup>20</sup> Only one private company, Dunavant SA, came with a financial offer, well under that expected by the Government. Nonetheless

<sup>19</sup> The government has set up a new working group (Mission de Restructuration du Secteur Coton) with the technical and financial assistance of the World Bank. This new structure is in charge of the preparation and the working out of the various reforms.

<sup>20</sup> For other examples, see IMF (2002b), Tables 2 and 3, IMF (2002c), p. 7, and IMF (2003), p. 12–13.

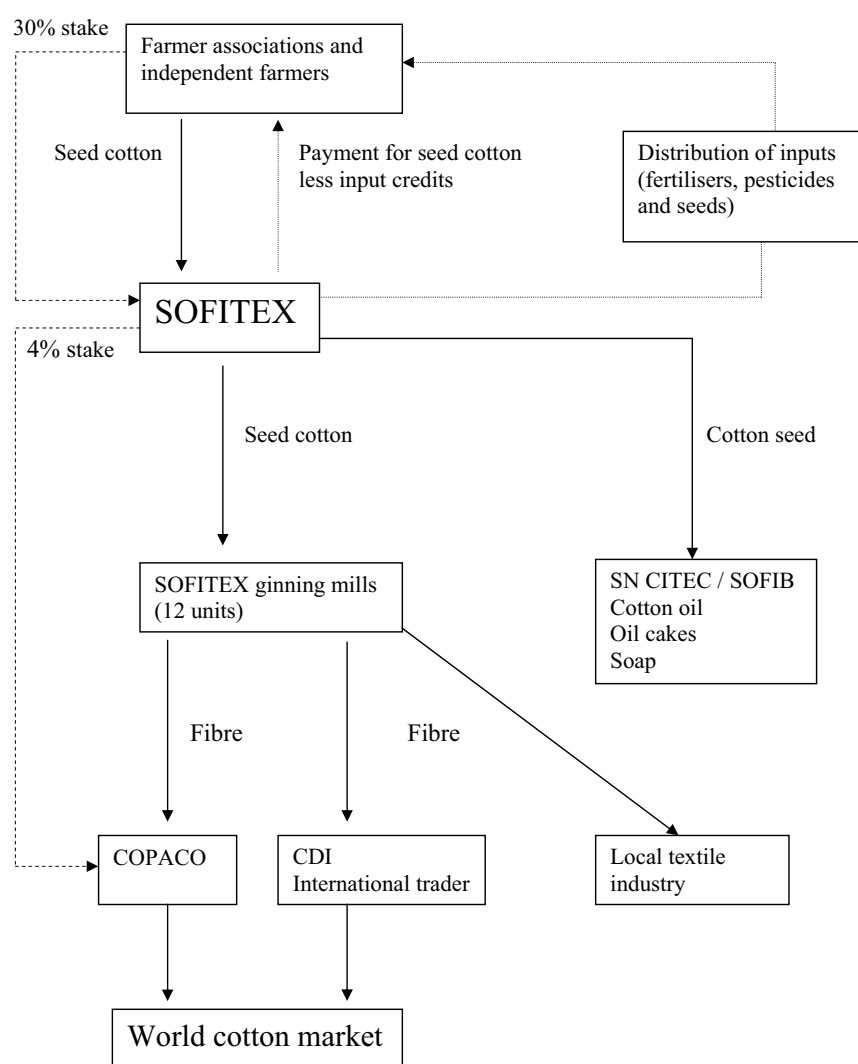
the company withdrew its bid in May 2003 following the increase in the producer price decided by the Government, which put into peril the economic viability of the three ginning plants of the OHVN area. In June 2003, the Government altered the initial reform plan. It decided to split up the CMDT into three or four private ginning companies, each responsible for service extension to cotton farmers (supply of seeds, fertilisers, pesticides and technical support) and benefiting from a monopsony on the purchase of cotton in a region for five years. This proposal, which maintains the vertical arrangements between the ginning companies and the cotton farmers, has received the support of the donor community. There remain uncertainties in the new proposal as regards, for example, the role of producers' associations, the position of Dagrís and the determination of the producer price. As has often been the case with the cotton sector in Mali, it is likely that the design of the reform proposal will again be altered during the implementation process.

### **3.2 Burkina Faso**

The institutional structure of the cotton sector in Burkina Faso is much like the one observed in Mali except for a few non-negligible aspects. The cotton sector in Burkina Faso exhibits a high degree of vertical integration with the SOFITEX (*Société Burkinabè des Fibres Textiles*) playing a central role in the cultivation, collection, processing and marketing of seed cotton and its by-products. The SOFITEX was created in 1979 as a joint venture between the Burkinabè State and CFDT, with 65 percent and 34 percent of the capital of the newly created company, respectively. Private shareholders held the one remaining percent of capital. This ownership structure was modified in 1999 with the entry of producers' associations into the capital of SOFITEX. Today, the whole capital of SOFITEX is owned by the Burkinabè State, Dagrís, the producers' associations and local banks, in the proportion of 35, 34, 30 and 1 percent, respectively.



Figure 4: Institutional structure of the cotton sector in Burkina Faso



Until the late 1990s, the vital role of SOFITEX in the cotton sector was determined by a performance contract (*Contrat Plan*) between the State and the company.<sup>21</sup> This contract was renewed every three years. A new form of performance contract (*Accord Interprofessionnel*) has taken over since September 1999. This change reflects the larger role given cotton producers and their associations in the ownership and management of the sector. Nonetheless, the crucial role of SOFITEX in the management of the entire cotton sector is still considerable.<sup>22</sup> This is illustrated in Figure 4, which shows that the institutional structure of the cotton sector in Burkina Faso looks much like that of Mali. SOFITEX is still in charge of five main functions. First, it provides inputs (seeds, pesticides and herbicides) and credits to farmers and their associations. A growing share of credits to farmer associations is granted by the BACB (*Banque Agricole et Commerciale du Burkina*) and other banks. Credits for the acquisition of inputs are eventually deducted from the payment for seed cotton delivered by farmers at a price common to all producers and regions.

<sup>21</sup> See e.g. *Contrat Plan, État / SOFITEX* (1993).

<sup>22</sup> For a description of the cotton sector in Burkina Faso, see Macrae (2002), pp. 16–27; Hien et al. (2002), pp. 141–150; and Bérout (1999), pp. 104–105.

This price, determined jointly by SOFITEX and the farmer associations, consists of a fixed component plus a bonus that depends on the profits of SOFITEX and thus indirectly on the price of cotton fibres on the world market. Second, SOFITEX is in charge of the transport of seed cotton to ginning mills and of the cotton fibre to export markets either through its own vehicles or through private carriers (and train). In the mid-1990s, the share that went to the private sector amounted to some 50 percent of total transport costs.<sup>23</sup> Third, SOFITEX is responsible for the processing of all seed cotton in its 12 ginning mills. Part of the cotton seed is sold to SN CITEC, which produces by-products of cotton (cotton oil, oil cakes, etc.). SN CITEC is majority owned by Dagrís (45.5 percent), the remaining stakes being held by the private sector since the late 1990s. Fourth, SOFITEX is responsible for the marketing of all cotton fibres, either through COPACO in which it holds a minority stake or through an international trader CDI. Only a minor share of ginned cotton is sold on the domestic market to the textile industry (some 2 percent of the total production of fibres). Finally, SOFITEX is in charge of rural development in the cotton region, in particular road maintenance and some extension services, for which the company receives a public subsidy.

The 1993 performance contract between the state and SOFITEX also decided the creation of a stabilisation fund managed by a committee that comprises two representatives of farmer associations, two representatives of SOFITEX, and one representative of the government.<sup>24</sup> The new fund is only concerned with the cotton sector while the old stabilisation mechanism covered other agricultural products as well.<sup>25</sup> The objectives of the stabilisation fund are threefold: first to grant a minimum income level to farmers, second to encourage cost efficiency within SOFITEX and third to secure a fair distribution of the gains of cotton production among the main actors (farmers, SOFITEX and the state). The main instrument of the stabilisation fund is a floor producer price, which varies according to cotton quality and is intended to reflect to some extent fluctuations on the world cotton market. The fund has been maintained by an important public subsidy from the outset, annual transfers from the profits of SOFITEX and foreign grants from, for instance, STABEX.

The increased participation of cotton farmer organisations in the management of the cotton sector and in the ownership of SOFITEX is one of the outcomes of a successful restructuring and strengthening of producer organisations in Burkina Faso over the last two decades. The Burkinabè government, SOFITEX and the donor community have encouraged the development of producer organisations exclusively concerned with cotton production (*Groupements des Producteurs de Coton* or GPCs). Their number has increased markedly and their tasks extended considerably. GPCs' tasks are some extension services, the handling of input and equipment order, the distribution of seeds and other inputs (fertilisers and pesticides), credit management, and some responsibility for cotton grading and weighing. As mentioned above, producers' organi-

<sup>23</sup> Hien et al. (2002), p. 147.

<sup>24</sup> Contrat Plan, État / SOFITEX (1993), pp. 12–14 and Annexes 1 and 2.

<sup>25</sup> The old stabilisation scheme, the CSPPA (Caisse de Stabilisation des Prix des Produits Agricoles), was removed parallel with the liberalisation of agricultural markets in the early 1990s.

sations also own 30 percent of the capital of SOFITEX, which means that their role in the management and control of the entire cotton sector has increased significantly. Since April 1998, the cotton farmer organisations have organised themselves in a countrywide union, the UNPCB (*Union Nationale des Producteurs de Coton du Burkina*).

### **Step by step reform**

The reform of the cotton sector in Burkina Faso has been going on for some time.<sup>26</sup> The overall goal of reform policy is to increase the scope of the private sector in cotton production and to foster competition in the different sub-sectors. Some components of the reform plan were already implemented in the late 1990s: for instance the entry of producer organisations as shareholders in the capital of SOFITEX or the privatisation of the company producing cotton oil and other by-products of cotton. Burkina Faso has opted for a piecemeal and gradual approach to reform policy. Another feature of reform policy is the emphasis put on empowering producer organisations so as to facilitate the implementation of the various measures included in the reform plan and minimise the risks of reversibility.

In addition to the reforms introduced in the late 1990s and examined above, the government has initiated three new reforms. It is not clear whether these reforms will fully materialise because of the difficulties met by the government in implementing them. The first reform concerns the gradual liberalisation of the input markets. This is proceeding very slowly mainly because farmer organisations find it difficult to secure credits for the purchase of inputs without the guarantee of SOFITEX.<sup>27</sup> It can also be the case that it requires time for new private operators to enter the markets for seeds, fertilisers, pesticides and herbicides. The second reform concerns the opening up of the transport of seed cotton to private carriers (instead of SOFITEX vehicles). This process has proceeded rather smoothly and the private sector now accounts for a large and growing share of the transport of unginning cotton. A similar opening up of the transport of fibre and other cotton by-products is taking place, encouraged by the government. The third reform concerns the opening up of two production zones (Centre and East) to new private operators. These new operators should take over the ginning capacities of SOFITEX in the two zones, which account for some 17 percent of the total ginning capacities of SOFITEX.<sup>28</sup> The law organising the opening up of the two zones to new operators was passed in December 2001. The private operators who are to take over and the kind of vertical arrangements they will develop with farmer associations and the other sub-sectors have not yet been decided.

### **3.3 Benin**

The institutional structure of the cotton sector in Benin differs markedly from those of Mali and Burkina Faso. Historical and political factors explain the difference. In the 1970s, Benin was ruled by a leftist regime, which conducted an inward oriented development strategy. The govern-

<sup>26</sup> For a summary of the reforms, see Macrae (2002), pp. 16–26, and IMF (2002d), pp. 6–9.

<sup>27</sup> Macrae (2002), p. 20.

<sup>28</sup> Goreux (2002), p. 10.

ment opposed the kind of joint venture advocated by the CFDT and as introduced in the other two countries. A state-owned company, SONAPRA (*Société Nationale pour la Promotion Agricole*) that took over from the CFDT was eventually created. The new company was fully state-owned and given the main responsibility for the promotion of cotton production. A vertically integrated structure was, however, adopted in Benin similar to that in force in the other two countries. SONAPRA was given the pivotal role in the management of the sector and benefited from a monopsony on the purchase of seed cotton from cotton farmers. The relationships between SONAPRA and the CFDT resumed on a limited scale in the 1980s in the form of technical and training assistance from the CFDT.

Reform of the cotton sector in Benin started earlier than in Mali and Burkina Faso and took a different path. Differences concerned the nature of the reforms embarked on as well as their timing and sequencing, that is, the order in which the main components of the reform package have been introduced. Emphasis has been put on the entry of new private actors into the market for inputs, the transport of seed cotton, the ginning sub-sector and the marketing of cotton fibres. But the whole sector has remained heavily regulated with prices for inputs, transport and seed cotton, and the allocation of seed cotton among ginning enterprises being centrally determined. New corporate structures with wide-ranging assignments were established in the late 1990s and early 2000s to regulate the market. While the scope of private operators has increased markedly, the state has retained a pervasive influence at almost all the stages of the cotton sector, on prices, on entry conditions and scope, on the allocation of seed cotton production among ginning operators, etc.

The deregulation of the cotton sector in Benin started in 1992 and has been under way since then.<sup>29</sup> The effect of this process on the institutional structure of the cotton sector is illustrated in Figure 5. The first step was the gradual opening up of the market for inputs in 1992. As a result, the number of private input distributors jumped from one in 1992 to 5 today with a peak of 12 in 1999. The drop in the early 2000s can be ascribed to the introduction of a new system aimed at regulating the entry of private distributors and at improving input distribution.<sup>30</sup> Since 1998 a newly established producer co-operative, CAGIA (*Coopérative d'Approvisionnement et de Gestion des Intrants Agricoles*) is in charge of the evaluation of input needs and the allocation of licences to a limited number of distributors.<sup>31</sup> The financing of CAGIA is secured through a tax of 0.5 percent imposed on the total volume of input credits to cotton farmers.

The state-owned SONAPRA remained responsible for the distribution and recovery of input credits until the late 1990s, when credit-handling operations were transferred to a new autonomous agency the CSPR (*Centrale de Sécurisation des Paiements et des Recouvrements*). CSPR plays

<sup>29</sup> On the cotton sector in Benin, see Raymond and Beauval (1995), pp. 34–60, Igué (1999) pp. 172–180, Crole-Rees and Soulé (2001), Salé et al. (2001), Ch. 1., and Macrae (2002), pp. 37–49.

<sup>30</sup> According to Macrae (2002), the deregulation of input distribution during the 1990s fell short of expectations and resulted in higher prices for imported inputs, in particular insecticides, in Benin than in neighbouring landlocked countries. Macrae (2002), p. 44.

a central role in the current institutional structure of the cotton sector (see Figure 5) and represents the main actors involved in the cotton sector, namely cotton farmers and their organisations, input distributors and ginning enterprises. It is a clearing-house in charge of the credit operations of cotton farmers, input distributors, ginning enterprises and the commercial banks.<sup>32</sup> The clearing operations are rather complicated since they require the registration of all the input sales to farmers by input distributors and of all the sales of seed cotton by farmers to ginning enterprises. The maximum amount and the geographical origin of seed cotton allocated to each ginning enterprise are decided centrally by CSPR at the outset of the marketing season. Each ginning enterprise has then to prepay 40 percent of the value of seed cotton demanded, which can be inferior to the quantity allocated. The 40 percent are used by CSPR to reimburse the commercial banks for the input credits. The ginning enterprises pay the remaining 60 percent on delivery of the seed cotton. The payment is made to CSPR, which can subsequently remunerate farmer associations for the quantity of seed cotton delivered less input credits. The financing of CSPR is secured through a tax of 0.5 percent imposed on the turnover of the agency.<sup>33</sup>

In addition to CSPR and CAGIA, the new institutional structure of the cotton market includes AIC (*Association Interprofessionnelle du Coton*). This new agency represents both cotton farmers and ginning enterprises. Its role is manifold; to encourage the overall development of cotton production, to promote cotton research, and to be the counterpart of the government in issues concerning the cotton sector. It is to monitor the repartition of activities among all the actors involved in the sector and to negotiate with private carriers the transport conditions (prices, location, etc.) for unginced cotton. It is also to solve conflicts between the various actors, to co-ordinate the work of the two other agencies (CSPR and CAGIA) and to decide upon the financing of the various agencies engaged in the management of the sector. The cost of AIC is borne by the sector itself, that is, mainly by cotton farmers and ginning enterprises.<sup>34</sup> AIC also benefits from financial assistance from the World Bank in the form of a loan of 4.2 millions of US \$ over the period 2002–2005.<sup>35</sup> Taken together the cost of three new agencies, AIC, CAGIA and CSPR, amounted to 2 billion CFA francs in 2001–2002.<sup>36</sup> This corresponds to some 2.5 percent of the price paid to cotton farmers.

<sup>31</sup> For an analysis of the organisation, aims and financing of CAGIA, see Salé et al. (2001), pp. 7–9.

<sup>32</sup> For a more complete description of the role, institutional structure and financing of CSPR, see Goreux (2002), pp. 1–17, and Salé et al. (2001), pp. 5–6.

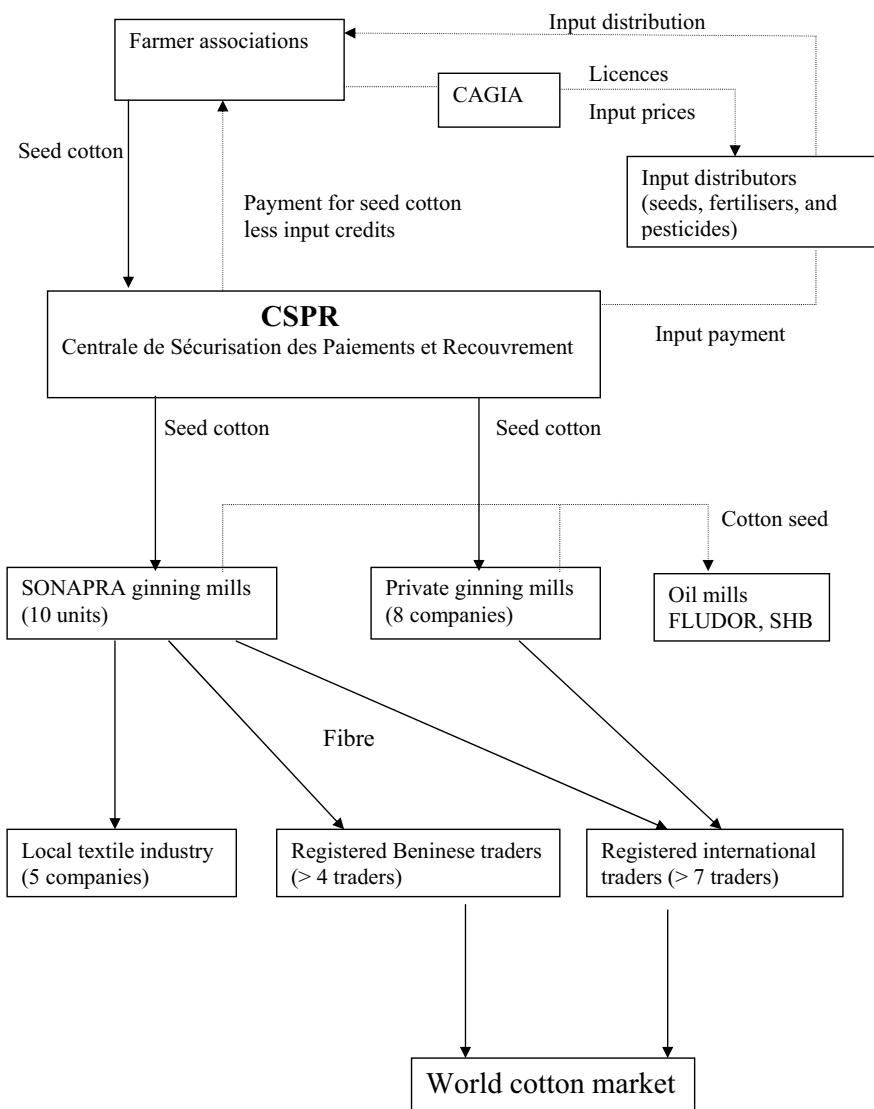
<sup>33</sup> Salé et al. (2001), p. 6.

<sup>34</sup> Salé et al. (2001), p. 3.

<sup>35</sup> World Bank (2001).

<sup>36</sup> Estimates from Macrae (2002), p. 46.

Figure 5: Institutional structure of the cotton sector in Benin



In addition to their indirect role through AIC and CAGIA, farmer associations play an important role in extension services, the handling of input orders, the distribution of inputs, credit management and recovery, and primary marketing activities like cotton weighing and grading.<sup>37</sup> The number of village associations has increased substantially since the late 1980s. During the 1990s, the increased role of farmer associations in cotton production resulted from the decreasing role of SONAPRA and the transfer of a certain numbers of tasks and responsibilities from SONAPRA to farmer associations. More recently, this has reflected the fact that the new institutional structure, introduced in the late 1990s and early 2000s, required an extended and smooth collaboration between farmer associations and CSPR. The most basic farmer associations are the village associations (*groupements villageois*), which consist of cotton farmers at the village level. Several village associations cohabit in larger cotton producing villages. Village associations are then regrouped into

<sup>37</sup> For a description of the development, role, functioning and problems of farmer associations in Benin, see e.g. Raymond and Beauval (1995), pp. 37–45, and Mongbo (1994).

regional unions.<sup>38</sup> FUPRO (*Fédération nationale des Unions des Producteurs*) represents cotton farmers at the national level and in the various agencies concerned with cotton production and marketing. It also participates in the bargaining process that decides the prices of inputs and seed cotton.

The price of seed cotton is fixed administratively and is the same in the whole country. Benin has experienced different systems of price determination over time.<sup>39</sup> A new system was introduced for the season 1998–1999.<sup>40</sup> The system accords a critical role to ONS (*Office National de Stabilisation et de Soutien des prix des produits agricoles*), which has to set two prices, a floor producer price decided before the start of the sowing season and a purchase price decided before the ginning season. The first price is based on production costs while the second reflects the price of cotton fibre on the world market. If the purchase price falls under the floor price, ONS makes use of stabilisation reserves to cover the difference. An evaluation of the price system shows, however, that it was not implemented as it was originally designed or at best very imperfectly implemented.<sup>41</sup> To a large extent, the price of seed cotton common to all the regions has been the result of a bargaining process involving the ginning companies, ONS and the government.

Another critical step of the reform of the cotton sector was taken in 1995 with the decision to open up ginning to private operators. During the second half of the 1990s no less than eight private ginning mills entered the ginning sub-sector in three successive waves, three in 1995, two in 1997 and three in 1998–1999. Today private operators own 8 out of the 18 ginning mills in Benin. The three ginning mills that were set up in 1995 have since then benefited from extensive privileges in the form of tax exemption and a contracted supply of seed cotton equal to their ginning capacities. Note that one of the newly established ginning companies, ICB, is minority owned by Dagrís (16 percent). The substantial expansion of ginning capacities following the entry of new operators occurred in the period following the devaluation of the CFA franc during which cotton production in Benin, as in the other countries of the CFA zone, increased considerably. But installed capacities in ginning have increased much more than cotton production, which means that most of the ginning mills in Benin have excess capacities today.<sup>42</sup> The reason for building up such oversized capacities is not that clear but it is likely that some entrants installed excess capacities to deter the entry of potential competitors and hence maintain the long-run profits of incumbents.

There are two oil mills in Benin, SHB (*Société des Huileries du Bénin*) and FLUDOR, both producing cotton oil and oil cakes.<sup>43</sup> Cotton oil is only produced for the domestic market, while oil cakes are for both export and the domestic market. SONAPRA and the private group Talon, which owns a ginning mill (CCB), and input distributors (SDI, Hydrochem), have shares in SHB.<sup>44</sup> This ownership arrangement secures

<sup>38</sup> These are USPP (Union Sous Préfectorale des Producteurs) and UDP (Union Départementale des Producteurs).

<sup>39</sup> See e.g. Crole-Rees and Soulé (2001), pp. 19–21.

<sup>40</sup> For a presentation, see Crole-Rees and Soulé (2001), pp. 19–21, and Salé et al. (2001), pp. 11–20.

<sup>41</sup> Salé et al. (2001), pp. 19–20.

<sup>42</sup> Total capacities of the ginning mills amount to 575,000 tons while cotton production amounted to 400,000 tons in 2001–2002. SONAPRA accounts for some 55 percent of the total capacities.

<sup>43</sup> On the cotton oil industry and market in Benin, see LARES (2001).

<sup>44</sup> Crole-Rees and Soulé (2001), p. 23.

a supply of cotton seed to SHB at a preferential price. The price of cotton seed sold to the oil mills is regulated and significantly lower than the price on the world market.<sup>45</sup> Ginning mills are therefore reluctant to supply oil mills with cotton seed. From time to time the government has stopped the export of cotton seed so as to secure the supply of cotton seed for the oil mills to keep them alive.<sup>46</sup>

Only a minor share (some 2 percent) of ginned cotton is sold on the domestic market to the textile industry. The rest is sold on the world market through more than 10 trading companies, more than half of which are well established international trading companies like L'Aiglon, L. Dreyfus, COPACO, CDI, Reinhart or Devcot. But there also exist several domestic traders like Transco, Sobere or Promo Coton. Thus a relatively high degree of competition prevails among agents engaged in the marketing of ginned cotton in Benin.

Consolidating the new institutional architecture and privatising SONAPRA

The reform of the cotton sector in Benin started earlier than in neighbouring countries. In some ways it has also gone farther. The main objective of reform policy for the coming years is therefore to consolidate the changes that were introduced in the late 1990s and early 2000s. A critical role will be played by the Cotton Sector Reform Project, which is supported by the World Bank.<sup>47</sup> The project aims at strengthening the components of the new institutional structure, in particular AIC and CSPR. It is also to strengthen the role and capacities of cotton farmer organisations and to improve the monitoring of the entire cotton sector with particular emphasis on environmental, quality, research, and price and income stabilisation issues. The financing of the project is secured through an IDA credit that amounts to 18 million US\$.

Another measure on the reform agenda in the near future concerns the privatisation of the state-owned company, SONAPRA. Two alternatives have been discussed. The first is the opening up of the capital of SONAPRA to producers and to private stakeholders, preferably domestic ones. In this case the state will keep about one third of the capital. The second alternative is to break up SONAPRA into regional entities before an eventual privatisation. The Government has opted recently for the second alternative, that is the sales of ginning plants by lots, which are expected to occur before the completion of the Cotton Sector Reform Project in December 2005.

<sup>45</sup> Export price is twice the price of cotton seed sold to the domestic oil mills. Macrae (2002), p. 41.

<sup>46</sup> Crole-Rees and Soulé (2001), p. 23.

<sup>47</sup> World Bank (2001).



# 4. Assessing the Performance of the Cotton Sector

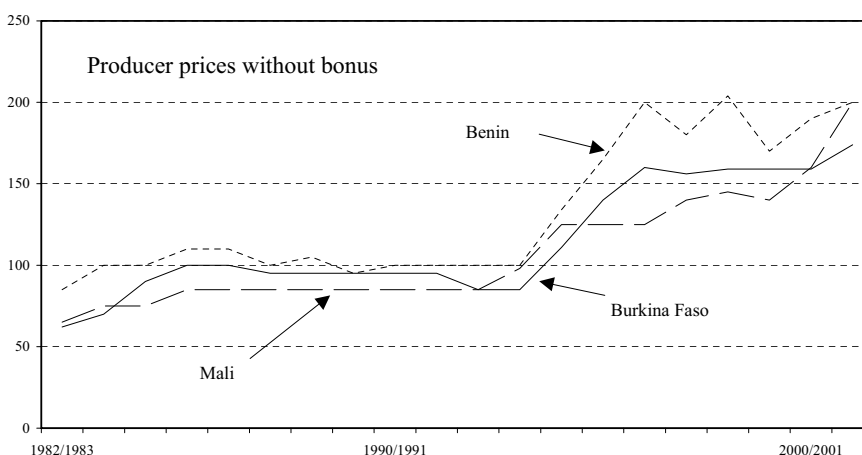
A necessary step in the evaluation of the various institutional structures and reforms is the analysis of the performance of the cotton sector in Mali, Burkina Faso and Benin. All three are price-takers on the world cotton market. Moreover, they have a rather similar factor endowment, are subject to quite similar climatic conditions (except for the southern part of Benin) and share a common currency. All these factors should facilitate the analysis and comparison of the performance of the cotton sector across countries, as well as the examination of the influence of various institutional arrangements and reforms on performance.

But there are also certain factors that work in the opposite direction. An obvious one is the existence of different transportation and export costs, which can be ascribed to the fact that two of the countries are landlocked while the third, Benin, has direct access to the sea and benefits from well-developed harbour facilities. Another factor is the late introduction of reforms in one or two of the countries, which makes it difficult to assess their full impact on performance at this point in time. Two examples of recent reforms are the entry of the farmer associations as shareholders in the capital of SOFITEX in Burkina Faso in 1999 and the setting up in Benin in the late 2000s of CSPR, the agency in charge of the allocation of seed cotton across ginning enterprises and the management of bank credits to finance the import and distribution of inputs. A third factor is that the impact on performance of a similar institutional arrangement in two or more countries, or a similar reform, may vary according to different historical, political and social environments in the three countries. An example of this is the farmer associations whose degrees of organisation, entrepreneurial and technical capacities vary significantly across the countries. Another may be the cross-country disparities in governance and various components (government effectiveness, control of corruption, political stability, voice and accountability, rule of law and regulatory framework). This aspect is all the more important in the cotton sector because of the central role played by state-owned companies. All these limitations should be kept in mind when contrasting the performance of the cotton sector in the three countries and when relating performance to the institutional arrangements in force in each of them.

## Level and evolution of producer prices

A first dimension of performance concerns the price paid to farmers for their cotton. Producer prices in the three countries examined are the outcome of a bargaining process involving farmer organisations, ginning enterprises and the home government. The reforms introduced in Benin in the late 1990s give the government a less influential role in this bargaining process.<sup>48</sup> Indirectly the producer price also reflects the degree of competition at the various stages of the supply chain and the technical and X-efficiency of ginning enterprises and transportation firms. (X-efficiency means eliminating all internal slack and waste). The level and development of nominal producer prices are portrayed in Figure 6. Both prices without and with bonus are examined. A clear finding of Figure 6 is the higher prices granted farmers in Benin followed in order of magnitude by the prices in Burkina Faso and Mali. This finding applies to the whole period covered by Figure 6, before as well as after the introduction of reforms in one or two of the countries concerned. Producer prices in Benin were 12 and 23 percent higher than in Burkina Faso and Mali respectively during the 1980s, while they were 10 and 13 percent higher during the post-devaluation period 1994–2002 (bonus included).<sup>49</sup> There is thus no evidence from Figure 6 that earlier reforms in Benin and in some measure in Burkina Faso (entry of farmer associations as shareholders in the capital of SOFITEX) led to higher relative prices for cotton farmers in these two countries. Persistent and similarly ranked price differences over time suggest rather that structural factors are at work. A likely one is the proximity to harbour facilities and hence lower transportation costs from ginning units to fob in Benin. In 2001–2002, the transportation costs from ginning mills to fob were an estimated 30 CFA francs per kg of fibre lower in Benin than in Burkina Faso and Mali.<sup>50</sup> To some extent, these lower transportation costs were passed on to farmers in Benin in the form of higher producer prices.

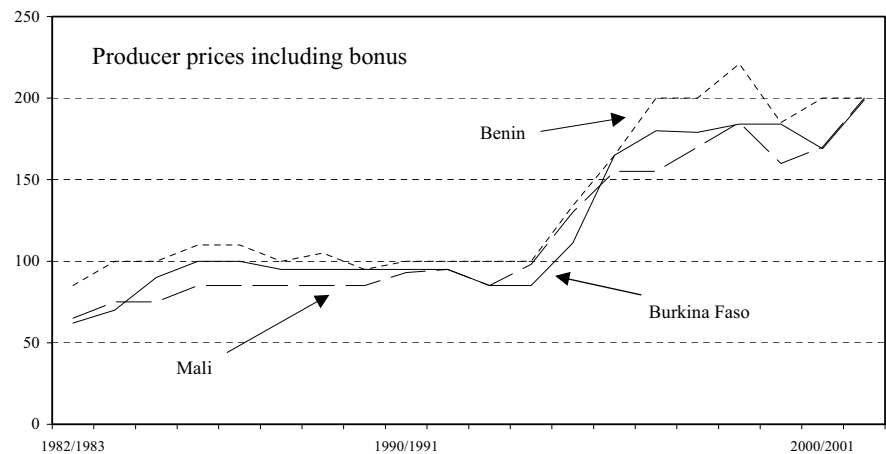
Figure 6: Producer prices (in CFA francs per kg of seed cotton), 1982/83–2001/02.



<sup>48</sup> The retreat of the state in Benin is more formal than real. This is supported by what happened in December 2001 when the government fixed the producer price and the price of cotton seed sold to domestic oil mills. The government also designated some of the members of CSPR. On these events, see Macrae (2002), p. 37.

<sup>49</sup> Between 1997 and 2001, the ratio of domestic producer price to international fibre price amounted to 59, 51 and 48 percent for Benin, Burkina Faso and Mali, respectively. Badiane et al. (2002), p. 11.

<sup>50</sup> Goreux (2002), p. 23.



*Sources of data:* Crole-Rees and Soulé (2001), Annexes; Goreux (2002) Statistical Annex; and data provided by LARES (Benin), IER (Mali) and INERA (Burkina Faso).

Prices jumped sharply in 1994/1995 following the devaluation of the CFA franc by 50 percent.<sup>51</sup> Prices with bonus rose by between 50 and 100 percent. This was more than the rate of inflation during the same period, which means that price increases were not only nominal but real as well. These increases in producer prices were, however, much less important than the 250 percent increase in the cotton price in CFA franc on the world market in the mid-1990s (Figure 1), which suggests that a substantial part of the devaluation gains was appropriated by the ginning enterprises and international traders. The ranking between the three countries was not influenced by the devaluation, with Benin continuing to grant the highest prices to its cotton growers followed by Burkina Faso and Mali. Average prices without bonus for the post-devaluation period 1994–2002 were 180 CFA francs in Benin as compared to 152 and 145 in Burkina Faso and Mali. The dispersion of prices with bonus was, however, much less marked (see Figure 6). During the post-devaluation period 1994–2002, average prices with bonus amounted to 188, 171 and 166 CFA francs in Benin, Burkina Faso and Mali, respectively.

#### **Widely differing output response to devaluation**

Another performance indicator is the development of cotton production over time. This has increased considerably in the three countries under scrutiny over the past decade. To some extent the high growth of cotton output reflects the reaction of risk-averse farmers to guaranteed producer prices.<sup>52</sup> Output growth would have been lower if the risks associated with price fluctuations on the world market had been borne by farmers and not, as is the case in the current system, primarily by the ginning enterprises and/or the government. Table 2 shows that seed

<sup>51</sup> The stability of nominal producer prices before 1994 (See Figure 6) ran parallel with a rapid improvement in yields, resulting in a rapid increase of farmer revenue.

<sup>52</sup> The degree of risk aversion depends upon the income levels of the farmers. The lower the income level (that is the poorer the farmer) the higher the degree of risk aversion and the stronger the demand for a price stabilisation scheme. This reasoning is highly relevant to cotton producers in West Africa, which for the most part are small-scale relatively poor farmers.

cotton production increased by more than ten percent on average per year in the past decade (1989–2002). Mali achieved the fastest growth followed by Benin and Burkina Faso. Table 2 also shows that the more rapid growth in all three countries was not the result of improved productivity (yields) but rather of new areas being utilised for cotton production. By and large, the growth of fibre production reflects that of seed cotton (see Table 2). In Benin, however, the growth of fibre production was significantly higher than that of seed cotton. This result reflects a rising ginning ratio (improved efficiency) in Benin, which brought it to the level observed in Mali and Burkina Faso. In early 2002, the ginning ratio in all the three countries amounted to 42 kg of fibre for 100 kg of seed cotton.

**Table 2: Production and Yields of Cotton, 1994–2002.**

	Seed cotton		Yields (seed cotton)		Cotton fibre	
	average growth (%)		average (kgs/ha)		average growth (%)	
	1989–02	1994–02	1989–02	1994–02	1989–02	1994–02
Mali	13.6	19.9	1156	1089	14.1	19.1
Burkina Faso	10.6	17.6	970	993	10.7	16.7
Benin	11.0	2.9	1154	1044	14.4	4.6

*Source of data:* Computed from ICAC CD-rom and completed with domestic sources.

The devaluation of the CFA franc in 1994 provided a new impulse to growth by raising the price in domestic currency paid to farmers for their cotton. Table 2 shows that cotton farmers in Mali and Burkina Faso reacted strongly to the higher prices by increasing cotton output. In these two countries, the average rate of growth of seed cotton production jumped by several percentage points between the first and the second half of the 1990s. Post-devaluation growth in Benin differed widely from that in Mali and Burkina Faso. Seed cotton production grew by a mere 2.9 percent in Benin, that is some 15 percentage points lower than in Mali and Burkina Faso. It is not easy a priori to explain such an ample discrepancy. One reason may be that input prices increased more rapidly and were higher in Benin, which resulted in lower producer prices less input costs (credits) in Benin than in the other countries. There is some evidence for this having been the case.<sup>53</sup> Another factor is a decrease in yields that was more pronounced in Benin than in Mali (see Table 2). A third factor may have been the uncertainty surrounding the deregulation of the cotton sector with unclear distribution of roles among

<sup>53</sup> According to John Macrae, both the price and the quality of inputs in Benin were adversely affected by the limited opening up of the input market to a few private domestic distributors in the early 1990s. Three of the selected distributors belonged to the same private owner, the group Talon, and were therefore not competing with each other. This may explain the higher input prices in Benin as compared to landlocked Mali and Burkina Faso. Imperfect competition and collusive behaviour thus permitted the Talon group to earn extra-profits in input distribution between 1992 and 1995. These profits were eventually used to build three ginning mills in 1995, which benefited from very advantageous conditions in the form of tax exemption and a guaranteed supply of seed cotton equal to the ginning capacities of the mills. Macrae (2002), pp. 43–44. See also Raymond and Beauval (1995), pp. 50–59.

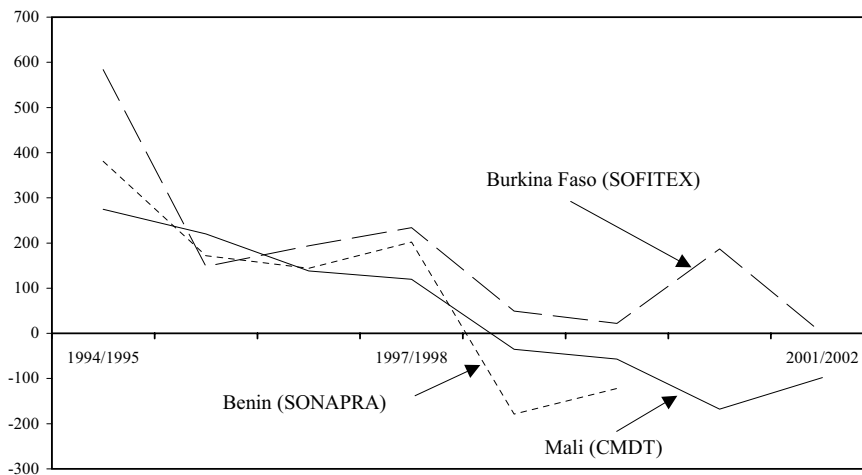
SONAPRA, the private ginning mills and the other actors. This uncertainty had an adverse impact on the whole supply chain and thereby on cotton production.

But difference in input prices, yields and uncertainty are unlikely to explain all of the huge differences in output responses to the CFA devaluation between Benin and the other two countries. The limited output response in Benin thus remains something of a puzzle. Because of decreasing yields part of the explanation may lie in the difficulties in increasing cotton areas in Benin contrary to Mali and Burkina Faso. Cotton production in Benin covers three fourths of the national territory. Two thirds of the cotton production originates from the northern province of Borgou, which benefits from excellent climatic conditions for cotton production. The rest is cultivated in the southern part, characterised by a humid tropical climate, which is less suitable to the production of high quality cotton. The relatively slow growth of cotton production in Benin may therefore reflect to a non-negligible extent the limited availability of new suitable cotton areas combined with decreasing yields.

#### **Diverging profitability over time**

A third indicator of performance is the profitability of the ginning sector and the ginning enterprises. Profitability in ginning depends upon a large number of factors such as the quality of seed cotton supplied by cotton farmers, the technical efficiency of ginning mills, the price obtained for ginned cotton sold to both domestic and foreign customers, or the level of taxes paid by ginning companies. The development of the profitability of ginning companies is illustrated in Figure 7. For the sake of comparison, we estimated gross profits per metric ton for the three state-owned companies, CMDT, SOFITEX and SONAPRA. Focusing on gross profits permits us to ignore the impact of taxes on corporate profitability. The figures for CMDT and SOFITEX concern the whole country's fibre production because of their monopoly position in fibre production in the respective countries. In the case of Benin the estimate only pertains to SONAPRA's gross profits and to its share of fibre production. The profits of private mills in Benin, which at present account for about half the production of cotton fibre, are not available, private companies having no obligation to report their profits (and costs).

Figure 7: Gross profit (in 000' CFA francs) per metric ton of cotton fibre, 1994–2002.



*Note:* Gross profit per metric ton is estimated by dividing gross profits by the volume of fibre output in metric tons. For Mali and Burkina Faso, all fibre production originates from CMDT and SOFITEX. For Benin, we approximate the share of SONAPRA in fibre cotton production by its share in total ginning capacities. This share dropped parallel to the building up of private ginning mills from 100 percent in 1995/1996, to 80 percent in 1996/1997, further to 68 percent in 1997/1998 and finally to 54 percent in 1998/1999.

*Sources of data:* Gross profits: IMF (2002a), p. 37, IMF (2002e), p. 12, and Goreux (2002) Statistical Annex; Fibre production: ICAC CD-rom completed with domestic sources. Figures on the distribution of ginning capacities in Benin are from Crole-Rees and Soulé (2001), Volume II: annexes, pp. 18–19.

Figure 7 covers the period that stretched between 1994 and 2002, with the exception of Benin where profit figures for 2001 and 2002 are not yet available. Two important external factors affected the cotton sector during this period: the devaluation of the CFA franc and the sharp decline of the price of cotton fibre on the world market. The first factor is expected to have boosted the profitability of ginning activities while the second one presumably had an adverse effect on it. On the domestic front, one essential factor is the reforms of the cotton sector that have been initiated in two out of the three countries. One main objective of these reforms has been to improve the profitability of ginning enterprises, by cutting their production costs and increasing their technical and X-efficiency.

Figure 7 shows that the profitability of cotton companies was high in the year that followed the devaluation of the cfaf. Most profitable was SOFITEX with a profit almost twice that of CMDT in Mali. The sharp decline of the price of cotton on the world market led subsequently to a clear worsening of the profitability of cotton companies in the three countries. In the case of Benin, the worsening was most pronounced in 1998/1999, which was the cotton season when three new private ginning mills (IBECO, SODICOT and MCI) started processing seed cotton. The three new mills together have a ginning capacity that represents some 20

percent of the total ginning capacity in Benin. New entry and increased competition thus explain the sharp decline of SONAPRA's profitability in this season. This apart, the profitability of the three companies followed the same downward trend until 1998–1999, with, however, SOFITEX exhibiting clearly better results. The situation deteriorated significantly for the CMDT thereafter, while it remained positive in Burkina Faso.

The evolution of profitability over time should largely reflect changes in production costs. Figure 8 shows the evolution of production costs per unit of cotton fibre for the three state-owned ginning companies. SOFITEX benefited clearly from the lowest production costs during the period examined. Production costs at SOFITEX only increased slightly in nominal terms and most likely decreased in real terms. The slow nominal increase in production costs was a major factor behind the better profitability achieved by Burkina Faso as compared to Mali and Burkina Faso (see Figure 6). A complementary factor is the higher fob prices at which Burkina Faso is selling its fibre on the world market. A higher degree of competition among trading companies in charge of the sale of cotton from Burkina Faso and a more successful policy of forward sales in the early 2000s explain the higher fob prices obtained by the country.<sup>54</sup>

A large part of the profitability differential between Mali and Burkina Faso can be ascribed to the higher and rapidly increasing production costs at CMDT in the aftermath of the devaluation of the CFA franc. This has been widely documented by the audit commanded by the Malian government.<sup>55</sup> The higher costs hit most of CMDT's activities. For example, for most of the period studied, CMDT used its own transport vehicles whose average cost per ton kilometre was twice that of private operators.<sup>56</sup> Another example concerns the charges associated with the construction of three new ginning mills. A third is related to the choice of costly generators, which resulted in expensive energy charges and higher ginning costs.<sup>57</sup> In addition to higher production costs, CMDT received lower fob prices for its fibre export than SOFITEX in Burkina Faso. One major reason was the dominant role played by COPACO among trading agents.<sup>58</sup> CMDT, which owns 6 percent of the capital of COPACO, seems from time to time to have favoured its role of shareholder to its role of exporter.

<sup>54</sup> IMF (2002d), p. 5, and Goreux (2002), p. 20.

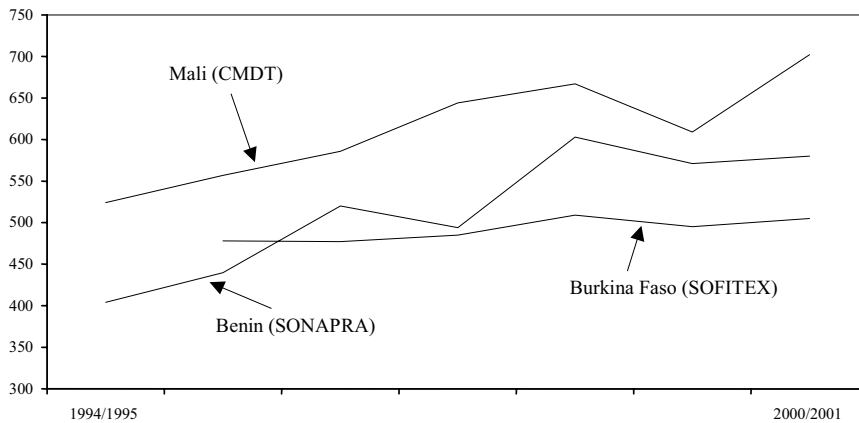
<sup>55</sup> For a summary, see Sofreco (2000).

<sup>56</sup> Tefft (2000), p. 225.

<sup>57</sup> *Ibid.*

<sup>58</sup> Sofreco (2000), pp. 50–51. Note, however, that the situation improved during the second half of the 1990s as a result of increased competition among forwarding agents and a declining share for COPACO.

Figure 8: Production cost of cotton fibre (in CFA francs per kg), 1994–2001.



*Note:* Production cost is equal to unit production cost less producer price plus bonus. Production cost includes ginning cost, financial cost, transport cost and some other costs.

*Sources of data:* Computed from IMF (2002a), p. 37; IMF (2002d), p. 28 and IMF (2002e), p. 12. For data on producer prices, see Table 6.

SONAPRA experienced the fastest production cost increase during the second half of the 1990s. Part of the increase can be ascribed to the entry of new private actors, who were allocated a share of the production of seed cotton that previously went exclusively to SONAPRA. The increase in unit production costs concerns especially fixed costs that cannot be reduced in the short and medium term. The cost of excess ginning capacities (some 40 percent) is estimated to be 30 CFA franc per kg.<sup>59</sup> This cost is unevenly distributed and SONAPRA, with the largest idle capacities, bears the largest share of it. (Some of the new entrants have a guaranteed supply of seed cotton that corresponds to their ginning capacities.) This explains part of the increase in production costs per unit illustrated in Figure 8, in particular in 1996–1997 and 1998–1999 when two waves of new entry took place. Poor management at the SONAPRA is also pointed out as inflating production costs. According to one estimate, the cost of poor management at SONAPRA amounts to 65 CFA franc per kg.<sup>60</sup> Adding up the cost of excess ginning capacities and that of poor management result in an extra cost of some 100 CFA francs per kg. By and large, this corresponds to the production cost differential between Benin and Burkina Faso in Figure 8.

<sup>59</sup> Salé et al. (2001), p. 43.

<sup>60</sup> *Ibid.*, p. 53.



On the other hand, the production cost differential between Benin and Mali can hardly explain the rather similar development of gross profits for SONAPRA and CMDT. This because the production cost advantage of SONAPRA over CMDT should have added to the advantage of proximity to the sea and harbour facilities and resulted in a much larger difference in profitability in favour of SONAPRA. One explanation behind this paradox may be that Figure 7 understates the level of SONAPRA's profitability by approximating its share of fibre production by its share of ginning capacities. Empirical evidence suggests that SONAPRA's share of production is somewhat lower than that of total capacities and thus that SONAPRA's gross profits per unit are somewhat higher than is depicted in Figure 7.<sup>61</sup> Another reason may be a larger share of SONAPRA sales being directed towards the domestic market (oil mills and textile industry) with a larger price discount. Both explanations are, however, unlikely to account for the discrepancy between the cost differential and the profitability differential between Benin and Mali. A non-negligible part of the rapid deterioration of the profitability of SONAPRA remains, therefore, unexplained.

#### Comparing performance: some tentative lessons

The analysis of performance does not provide clear results regarding the respective merits of the institutional arrangements and the influence of piecemeal reform on performance in the three countries. A major reason for this mixed outcome is that everything hangs and moves together. The cotton sector in the three countries constitutes a kind of "second-best" world, where distortions, market imperfections and state interventions are pervasive. All this makes it hardly possible to disentangle with certainty the impact of the different components of the institutional arrangements and of piecemeal reforms on various dimensions of performance. This being so, the conclusions that we draw from the comparative analysis should be regarded as tentative.

A first lesson is that external factors, in particular the decline of the price of cotton fibre on the world market, have played a dominant role in the performance of the cotton sector. The impact of the price decline is most obvious on the profitability of the ginning sub-sector. Producer prices have only been marginally affected by this decline because the formation of producer price is largely a political process that is de-linked from the price fluctuations on the world market. A consequence of higher producer prices is that the production of seed cotton has continued to increase at a rapid rate, with the exception of Benin.

A second lesson concerns another "external" factor, namely the devaluation of the CFA franc. This had different effects in the three countries. In Mali, the gains of the devaluation were to a large extent appropriated by CMDT in the form of higher profits in the mid-1990s and mostly inflated operating costs at CMDT. In Burkina Faso, where SOFITEX benefits from a monopsony and monopoly situation, which is much like that of Mali, the devaluation resulted in higher profits for SOFITEX (than at CMDT) and more funds were devoted to the price stabilisation scheme. The same institutional arrangement leading to different outcomes suggests that another factor is playing a critical role,

<sup>61</sup> In 2000–2001, SONATRA produced 50 percent of cotton fibre while its share of ginning capacities was 54 percent.

seemingly the quality of corporate governance. In Benin, the impact of the devaluation on ginning activity and profitability was more difficult to assess because only the profits of SONAPRA were known, and because of the entry of no less than 8 new ginning mills during the four years following the devaluation. The large gains of the devaluation in this country resulted thus in new ("excess") entry of enterprises and actors aiming inter alia at capturing the longer-term gains of the devaluation.

A third lesson concerns the impact of reforms on performance. Regarding the timing of reforms, Benin is the country that started earliest by deregulating critical stages of the supply chain as far back as the mid-1990s, followed by Burkina Faso in the late 1990s. By and large, Mali is still contemplating reforms. Yet, it seems hard to find any clear positive impact of the reforms on performance in Benin. Producer prices are higher but the price advantages over the two other countries is smaller than in the 1980s and therefore cannot be ascribed to reform policy. Further, the growth of seed cotton production has been lower in this country and the deterioration of yields (productivity) greater. Finally, the profitability of ginning activities has worsened more significantly in the country as a result of operating costs that have increased more rapidly and the building up of considerable excess capacities (some 40 percent). A likely reason behind this outcome in Benin is the persistent widespread and poor intervention of the government in the cotton sector. The scope of the private sector has expanded considerably but the sector is still strongly regulated, which favours the development of harmful rent-seeking activities.

# 5. Reform Policy: Unresolved Issues

The reform of the cotton sector is a recurrent theme of the debate between the multilateral donor community and the governments of cotton growing countries in West Africa. It has been going on since the 1980s and received a new impulse in the late 1990s, fed by the financial difficulties of the cotton sector. Two main components of the reform proposal are the privatisation of the state-owned ginning enterprises and the deregulation of the sector, that is the removal of vertical restrictive arrangements and the entry of new private actors at every stage of the supply chain. The two main proponents of the reform have been the World Bank and the IMF. A factor that contributed greatly to the attitude of the Washington institutions was the large gap observed between the producer price and the international price in the aftermath of the CFA devaluation, which indicated that cotton farmers did not benefit (or only benefited to a little extent) from the devaluation.<sup>62</sup> The role of home government as initiator and designer of reform has been rather limited, albeit growing somewhat over time. In other and more modern words, the governments of the cotton-growing countries own little of the reforms introduced in the sector. There are two reasons behind this limited ownership of home government. The first is the strong opposition of a part of the urban elite and some farmer associations in cotton producing countries to the privatisation of the state-owned ginning enterprises, which are at the centre of the network of institutions and actors composing the cotton sector. The second is the opposition of some bilateral donors, in particular France as the main bilateral donor, to the deregulation of the sector.<sup>63</sup> No doubt this "lack of enthusiasm" on the part of the home government of cotton producing countries and some bilateral donors has contributed to the slow pace and mixed outcome of reforms.<sup>64</sup>

<sup>62</sup> Between 1994 and 1997, the ratio of domestic producer price to international price amounted to 36, 39 and 41 percent in Mali, Burkina Faso and Benin, respectively. Badiane et al. (2002), p. 11. To a non-negligible extent, the low ratio can be ascribed to the fact that the producer price was fixed before the planting period, that is before the devaluation, while the international price integrated the impact of the devaluation of the CFA franc by 50 percent.

<sup>63</sup> For an illustration of this, see the preface by Charles Josselin, former Minister in charge of foreign aid, in *Coton et Développement* (1999), pp. 4–5.

<sup>64</sup> How disagreement between multilateral and bilateral donors affected the pace of reform in the cotton sector in Mali is illustrated in Guillaumont et al. (2001), p. 265.

The objective of reform policy is to improve the overall performance of the cotton sector. A more precise and accurate definition is given by James Tefft for whom the objective of reform policy should be to find "the best way of organizing individual and collective action to improve productivity at different levels of the subsector, and to improve coordination among those levels, while taking into account economies of scale and avoiding rent-seeking behavior".<sup>65</sup> This formulation of the objective of reform policy raises a number of additional issues of more fundamental, systemic character. For various reasons, these issues have not received the attention they deserve in the current debate involving the home governments, the donor community and the various actors engaged in cotton production, in spite of their vital importance for the outcome of reform policy. Two related issues are the "optimal" degree of vertical integration, and the softness of budget restrictions and the way they can be hardened.

### **Searching for the "optimal" degree of vertical integration**

Vertical integration refers to the extent to which the different stages in the production chain are under the ownership and/or management of a single company. Vertical integration can proceed backwards, through increased ownership or control of activities supplying inputs to the company, or forwards, through increased ownership or control of upstream activities, which further process the product of the company or which are in charge of the marketing of its products on the world market. Historically, the degree of vertical integration in the cotton sector has been high, especially that of backward integration.<sup>66</sup> Examples of this are the vertical contractual agreements between cotton farmers and milling enterprises that give the latter an exclusive right over seed cotton in a well-delineated territory in exchange for assistance to cotton growers in the form of input credit, the distribution of inputs, the transportation of seed cotton from villages to ginning mills, and various extension services. But there are also a few examples of forward integration like the CMDT's minority ownership in COPACO, the company in charge of marketing the major share of Malian cotton on the world market. The question that arises is why vertical integration through restrictive contractual, long-term arrangements has been chosen to such an extent in the cotton sector as to co-ordinate the activities of adjacent stages of the supply chain, instead of spontaneous co-ordination through the market and the price mechanism without any longer-term relational commitment. A related question is whether conditions supportive of vertical integration have changed over time implying that contractual long-term arrangements between adjacent activities are no longer a better alternative than spontaneous recurrent co-ordination through the market. An answer to these questions is most relevant to reform policy and to its

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<sup>65</sup> Tefft (2000), p. 214.

<sup>66</sup> The vertical integrated structure of the cotton sector has not been imposed from outside at the outset but has emerged progressively as a result of factors like the introduction of higher-productivity cotton varieties by some ginning companies and the desire to better control the quality of cotton supplied by farmers. For an illustration focusing on CMDT, see Fok (1999), p. 22. By the same token, the quasi-monopoly situation of SOFITEX in the distribution of inputs in Burkina Faso is not the consequence of barriers to entry raised by the authorities, but has emerged over time as a result of the company supplying better quality inputs at more competitive prices. See e.g. IMF (2000), p. 27.

long-term success, because the breaking up of vertical agreements between ginning firms and farmer associations is one of the main measures included in reform policy. This pertains to Benin today but can pertain to the other two countries as well in the future.

Two sets of factors militate in favour of some degree of vertical integration in the cotton sector. The first set has to do with market failures and suggests that cotton production would not have experienced such a rapid growth without the existence of vertical contractual arrangements between ginning operators and cotton farmers. A first reason behind this is the poorly functioning credit market in the countries concerned, which implies that cotton farmers cannot on their own finance the purchase of inputs necessary for cotton cultivation.<sup>67</sup> The fact that cotton farmers are poor with a high degree of risk aversion contributes to this development. A second reason concerns research and development, which create strong incentives for ginning companies to finance all or part of research and development expenditures to secure the rewards of such investment through a vertical, contractual arrangement with cotton growers. Such an arrangement is the only way to avoid some ginning enterprises capturing the reward of investment in research and development made by other ginning companies. This is the case if the former enterprises purchase seed cotton from farmers, who have benefited from higher quality, more productive cottonseed supplied by the latter enterprises. A vertical contractual arrangement is therefore often the best way to encourage investments in research and development, which are necessary for increasing longer-term productivity, quality and growth of cotton production.<sup>68</sup>

There is another set of factors that militates in favour of a certain degree of vertical integration. The existence of contractual long-term arrangements between adjacent stages economises on various transaction costs, such as search costs, negotiation costs and enforcement costs.<sup>69</sup> The higher these costs, the more advantageous the long-term binding arrangement between the parties at adjacent stages of the production chain, and the less advantageous the short-term recurrent contracts through the market. The under-developed regulatory framework and deficient law enforcement suggest that these various costs may be substantial in the countries examined here, which may further motivate the existence of contractual arrangements between ginning mills and farmers (or farmer associations). These cost advantages should, however, be weighed against internal transaction costs in the form of administrative expenses and control costs. These costs associated with the enforcement of vertical contractual agreements should also be taken into account to determine the better alternative, vertical long-term arrangements or spontaneous recurrent co-ordination through the market.

<sup>67</sup> The lack of well-delineated and transferable property rights (land titles) is often put forward to explain the poor functioning of credit markets in Sub-Saharan Africa because land cannot be used as a credit guarantee in such situations. For a qualified discussion, see Platteau (1996) and (1998).

<sup>68</sup> The impact of liberalisation on research and development has received little attention. The financing of R & D is secured in varying proportions by the domestic governments, the ginning companies and the donor community. There is no pooling of R & D resources at the regional level (including all the cotton producing countries in West Africa). Because of the scarce resources devoted to R & D in each country, this seems to be the best policy to overcome the budget constraints on R & D activities. For a discussion of the role and problems of R&D in the cotton sector in West Africa, see CIRAD (2000).

<sup>69</sup> How the nature and height of transaction costs affect vertical integration and other forms of vertical market restrictions is analysed extensively in the work of Oliver Williamson, See e.g. Williamson (1975), chapters 5–7, and (1985), chapters 4 and 5.

Benin is the only country of the three, where backward vertical restrictive arrangements between the ginning mills and cotton farmers have been removed or reduced to a minimum. Since 2000, a new inter-stage agency, CSPR, has been in charge of the handling of credits, the financing of inputs, and the allocation of seed cotton between ginning enterprises. These activities were performed previously by SONAPRA, the state-owned ginning company. Another new agency, CAGIA, is in charge of the evaluation of input needs and the allocation of input licences. A third agency, AIC, is in charge of the overall monitoring of the cotton sector. The new institutional structure has been in force for two years and only very tentative lessons can thus be drawn from its short-time experience. These lessons are of two kinds: higher transaction costs, especially endorsement costs, and rapid increase in rent-seeking activities. The very functioning of the new structure implies higher transaction costs as compared to the previous situation. There are several examples of this. One example is of course the operating costs of the new agencies. These have been estimated at 2.5 percent of the price paid to cotton farmers.<sup>70</sup> But this is probably an underestimate of the longer-term operating costs of the new institutional structure. The new structure benefits from financial assistance from the World Bank and a part of the costs is likely to be borne by the sector itself once the project of the World Bank ends in 2005. Another example concerns more particularly endorsement costs that seem to be higher now. CSPR encounters serious difficulties in recovering payment from ginning enterprises and also in paying cotton farmers.<sup>71</sup> Furthermore, the role given the newly created organisation in the allocation of seed cotton among ginning mills, but also where seed cotton should be collected, has contributed to a rapid increase of rent-seeking activities. This takes the form of attempts by ginning enterprises to influence the quantity of seed allocated but also where seed cotton is coming from. The latter issue is all the more important in Benin because part of the production of seed cotton originates in the south where the humid climate influences negatively the quality of seed cotton. A similar spreading out of resource-consuming bargaining processes and rent-seeking practices has been observed in input distribution with the introduction of the system of import licences.<sup>72</sup>

Several factors militate thus in favour of a certain degree of vertical integration in the cotton sector, and the changes that have taken place in the conditions supportive of vertical arrangements over the past two decades do not seem to be substantial enough to reverse this conclusion. But the experiences of the three countries show, however, that some activities like transportation and some extension services can be more advantageously performed by private actors or taken over by farmer associations. The advocates of deregulation put forward the entry-impeding effects of vertical restrictions and their adverse impact on competition. According to them, vertical arrangements block the entry of new competitors and result in anti-competitive practices, which are most harmful in already concentrated markets. Further, the negative

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<sup>70</sup> Macrae (2002), p. 46.

<sup>71</sup> See e.g. Macrae (2002), p. 42, and Salé et al. (2001), p. XI.

<sup>72</sup> See e.g. Macrae (2002), p. 38.

effect on economic welfare of vertical restrictions is likely larger than their benefits for the society as a whole. This is ultimately an empirical question and until now there is no study that gives a clear answer to it. It may well be so that a certain degree of vertical integration can be combined with more competitive market structure and behaviour. In the case of the three countries under study, this can take the form of a privatisation of ginning companies not as a whole, which increases the risks of private monopoly, but by groups of two to three mills.<sup>73</sup> A complementary measure could be to increase the scope of price competition among ginning companies by removing the system of unique producer price for the whole country.<sup>74</sup>

### **Hardening budget restrictions**

Soft budget restrictions refer to situations when enterprises can rely on external sources of funding in case of financial difficulties or when bankruptcy threatens.<sup>75</sup> The concept of soft budget constraint has been most often used in relation with socialist countries and/or public ownership of enterprises. The state in such situations works as an insurance company that guarantees financial losses and that helps the company in financial trouble to avoid exiting. The public guarantee can take several forms, like financial subsidies, tax exemptions, tax postponement, and low-interest (soft) loans. The fact that such enterprises cannot be bankrupt influences the way they are managed. Enterprises under soft budget constraints have weaker incentives to raise efficiency, tighten financial discipline and avoid losses.

That the concept of soft budget constraints pertains to the state-owned ginning companies in Mali, Burkina Faso and Benin is apparent. From time to time, ginning companies have received various forms of governmental assistance that have permitted them to overcome recurrent financial crises. The form of assistance has taken various forms like the postponing of tax payments, soft loans or financial subsidies. It is likely that the existence of soft budget constraints in the ginning sub-sector has weakened incentives to minimise costs and improve efficiency, thereby contracting the share of the domestic value added accounted for by the other actors, in particular cotton farmers. This is most likely to be the case in Mali where the state-owned ginning company, CMDT, is neither exposed to competition from other (private) ginning operators like in Benin nor under the control of farmer associations in their capacity of shareholders like in Burkina Faso. No doubt that part of the significantly

<sup>73</sup> The choice of privatisation approach should reflect the scope of economies of scale in ginning. There is no study of technical economies of scale in ginning, which tells us the minimum scale ginning mills need to attain in order to survive in the longer run. Applying the survival test to Benin, where independent ginning mills compete with each other, suggests that the minimum optimal capacity may approach 25,000 tons of seed cotton per year. This is actually the capacity of the smallest ginning mills that remain alive in Benin. If 25,000 tons is the minimum efficient scale, there is room for increased competition in the ginning sub-sector. Dividing the domestic production by the minimum efficient scale gives the potential number of ginning mills and competitors in the countries studied. This exercise shows that there is room for some 20, 12 and 14 mills in Mali, Burkina Faso and Benin, respectively. This should be compared with the actual number of mills, 17, 12 and 18, respectively. Note, however, that the minimum efficient size may be larger if one takes into account economies of multi-gin operations in, for instance, research and development and distribution.

<sup>74</sup> A poverty and fairness argument is used to justify the system of unique producer price over the whole country. From an economic perspective, it is preferable to give the better endowed and better located region better growth opportunities, through a higher producer price, and use other policy instruments to help the less favourably endowed and located regions.

<sup>75</sup> On the soft budget-constraint concept, see e.g. Kornai (1996).

higher production costs displayed by Mali (see Figure 8) can be ascribed to the softer nature of budget constraints in this country. A complementary factor in Mali is the poor quality of governance that was extensively illustrated in a recent World Bank report on corruption and anti-corruption policy.<sup>76</sup>

The measures included in the reform programmes of the cotton sector aim at hardening the budget constraints faced by ginning enterprises. The most decisive measure is the privatisation of state-owned ginning companies, which is expected to break, or at least loosen substantially, the strong links between the state and these companies. Privatisation means that the state will no longer automatically play the role of "insurer" of last resort. This is likely to put strong pressures on privatised ginning enterprises to improve efficiency and to tighten financial discipline. Note, however, that only partial privatisation is planned in Mali and Burkina Faso, which should temper the hardening of budget constraints. In order to be effective, the privatisation requires two more things: an increase of competition in the ginning sub-sector and a change of attitude on the part of the government with a clearer separation between the political sphere and the private sector. This change should be credible and irreversible so as to avoid the risk of re-softening of the budget constraints in the future. The hardening of budget constraints should therefore run parallel with improved governance and a clear commitment that binds the hands of the government and prevents it from intervening in the cotton sector.

There is another dimension of the softness of budget constraint in the cotton sector that has received little attention in the various reform programmes. It concerns the role of Dagrís (former CFDT) in two of the countries examined. Dagrís is majority owned by the French state and interacts regularly with the French development assistance agency (AFD: *Agence Française de Développement*). From time to time, the French public aid agency has intervened in the cotton sector in the form of *inter alia* financial assistance.<sup>77</sup> When assistance took the form of debt relief, financial subsidies or soft loans, it contributed to softening the budget constraints faced by state-owned ginning companies and thereby to weakening the incentives to raise efficiency in the ginning sub-sector. The interplay between Dagrís and the French government contributed to maintaining soft budget constraints through another channel. Actually, Dagrís with the support of the French government opposed the rapid deregulation of the cotton sector, which should have favoured the entry of new private operators and hardened budget constraints for established ginning enterprises.<sup>78</sup> The best way to weaken the link between Dagrís and the

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<sup>76</sup> Banque Mondiale (2002).

<sup>77</sup> For example, assistance of the French public agency to the cotton sector during the 1980s represented no less than 43.5 percent of French assistance to the rural sector in Burkina Faso (Mainguy and Zett (1996), p. 3). Alliot (1999) gives an overview of the assistance granted by AFD to the cotton sector in Sub-Saharan Africa since the 1970s.

<sup>78</sup> In mid-2002, the opening up of the OHVN zone to a new private ginning operator was delayed by the opposition of Dagrís (IMF (2002c), pp. 7 and 9). The involvement of the French government in the reform of the cotton sector raises the crucial question of its conflicting objectives. The question is whether the French government acts in the capacity of shareholder in a company that benefits from a quasi-monopoly situation or in the capacity of development partner that wants to maximise the economic benefits of reform policy. Another example of the interaction between French assistance to Mali and Dagrís occurred after the devaluation of the CFA Franc when debt relief from France to Mali was made conditional on the reimbursement by the CMDT of debts to the Malian government (Tefft (2000), p. 228). All this also raises the issue of the political economy of reform in the cotton sector, an issue that remains to be analysed by further research.



French authorities is to privatise Dagrís. It is also the best way to further harden budget constraints for ginning companies, to tighten their financial discipline and to raise their longer-term efficiency.<sup>79</sup> Note that this applies even in the case after the privatisation of ginning companies in Mali, Burkina Faso and Benin, because of the minority shares held by Dagrís in the capital of the ginning companies in these countries.

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<sup>79</sup> The privatisation of Dagrís should make it easier for CMDT to sell its share in the capital of COPACO. In the long run, the sale of ginned cotton through competing international trading agents has turned out to be a more profitable alternative than through COPACO. The persistence of a vertical arrangement between CMDT and COPACO in the form of a minority share (6 percent) in COPACO can therefore hardly be motivated if the objective is to secure the highest attainable fob price.

# 6. Conclusion

Cotton is one of the few products for which Sub Saharan countries have gained market shares over the past three decades. The performance is most striking for West and Central Africa whose share of the world market increased markedly during the period (from 5 to 15 percent between the 1970s and the early 2000s). This "success story" is all the more remarkable because of the large and growing subsidies granted to the cotton sector in many producer countries. According to the International Cotton Advisory Committee (ICAC), the price on the world cotton market in 2001–2002 would have been 74 percent higher in the absence of subsidies. Subsidies have resulted in huge export losses and contributed to significantly slowing down the rate of economic growth in Mali, Burkina Faso and Benin. The losses of export revenue brought about by subsidies represented in recent years about 2–3 percent of GDP in the three countries (using the ICAC estimate of the impact of subsidies on cotton price). This figure should be compared for example with the value of debt service relief under the HIPC initiative, which represents only about 1 percent of GDP. Until now cotton farmers have received about the same price for their seed cotton, which means that the costs of subsidies for them have taken the form of foregone revenue. The positive impact of such foregone revenue on poverty alleviation would have been substantial because cotton is grown by poor, small-scale farmers and because poverty is principally a rural phenomenon in the three countries examined. More direct costs of subsidies have been borne by the other actors of the cotton sector, not least the state in the form of curtailed tax revenue and increased subsidies to the cotton sector.

The price decline and sharp fluctuations on the world cotton market have put strong pressures on the cotton sector in Mali, Burkina Faso and Benin. The relations of the actors involved in cotton production are steered by a network of institutions and rules and a structure of ownership that have an impact on the allocation of production resources and the efficiency of the production process and its various components. The three countries have chosen various ways to reform the institutional and organisational structure and to improve efficiency in the various sub-sectors of the production chain. The World Bank and, to a lesser extent, the IMF have played a driving role in the initiation, formulation and implementation of reforms. Many reforms were introduced during the

second half of the 1990s but in Mali the most critical reforms are still to come. Most rapid and broad progress was achieved in the opening up of transportation and input distribution to private actors. Because of the short lapse of time since the introduction of the various measures, it is difficult to draw robust conclusions on the most appropriate comprehensiveness and timing of reforms. A tentative analysis of the performance of the cotton sector in Mali, Burkina Faso and Benin provides mixed results. A reason behind this finding is that other factors, in particular the quality of governance and the strength of competition, seem to matter. Another is that some systemic, fundamental aspects of the institutional structure, not addressed by the reforms afoot, seem to have an impact on the performance of the cotton sector. An improvement of the corporate environment, in terms of governance and the scope for competition, and a better assessment of the role of vertical arrangement and the softness of budget constraints are essential for the lasting success of reform policy in the cotton sector in Mali, Burkina Faso and Benin.

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SWEDISH INTERNATIONAL  
DEVELOPMENT COOPERATION AGENCY

SE-105 25 Stockholm Sweden  
Phone: +46 (0)8 698 50 00  
Fax: +46 (0)8 698 56 15  
sida@sida.se, www.sida.se