Benin-Regulation of a dominant sector

Honfoga, Barthélémy ; Dedehouanou , Houinsou ; Houssa, Romain; Theriault, Veronique

Published in:
Benin Institutional Diagnostic

Publication date:
2019

Document Version
Publisher's PDF, also known as Version of record

ECONOMIC DEVELOPMENT & INSTITUTIONS

BENIN INSTITUTIONAL DIAGNOSTIC WP19/BID06

CHAPTER 5:

REGULATION OF A DOMINANT SECTOR: A CASE STUDY OF COTTON

Barthélémy Honfoga

Université d'Abomey-Calvi

Romain Houssa

University of Namur

Houinsou Dedehounaou

Université d'Abomey-Calvi

With discussion by

Véronique Thériault

Michigan University

August 2019

Table of contents

1 Introduction

Cotton has a long history in Benin's development strategies and it continues to play a major[1] economic role today, accounting for about 50% of export revenue (excluding re-exports) and 45% of tax revenue (excluding customs revenue).[2] It contributes to the livelihoods of about one-third of the population[3] and it constitutes 60% of physical capital in Benin's industrial sector (19 ginning factories, four textile factories, and two agro-food factories for vegetable oil extraction) where it generates about 3,500 paid jobs (Ministère de l'Agriculture de l'Elevage et de la Pêche, 2008). In addition, cotton contributes to activities in the services sector (e.g. transport and construction), and also plays a socio-political[4] role in rural development in Benin (see, e.g., Kpadé, 2011).

Several indicators have been proposed to assess the economic performance of the cotton sectors in African countries (e.g Tschirley, 2009) but data limitation forces us to focus this analysis on three main indicators: production; yield; and acreage. In some cases, we discuss performance related to two additional indicators: the producer price of seed cotton; and Benin's market share of cotton lint in the international market. We derive data on the first key three indicators from the Food and Agriculture Organization (FAO) Corporate Statistical Database (FAOSTAT), allowing to make a consistent comparative analysis with other countries over a long time period (1961-2017).[5] Data from three other sources (the *Institut National de la Statistique et de l'Analyse Economique*-INSAE, the *Association Interprofessionnelle de Coton au Bénin*-AIC, and the *Programme Regional de Production Intégrée du Coton en Afrique*-PR/PICA) are used to discuss the performance of the sector over the recent period (2016-2018).

Figure 1 reports the performance of the cotton sector in Benin and in Burkina Faso, a neighbouring francophone country; it gives the production of seed cotton, yields, and cultivated area over the 1961–2017 period.[6] The left panel presents the performance in Benin and Burkina Faso in levels, whereas the right panel displays the performance of Benin relative to Burkina Faso (1961=100). The data in the right panel show a relatively poor

[1] It is, however, difficult to understand the methodology underlying many indicators related to the importance of cotton in Benin. The values of some indicators are inconsistent across sources and important information needed for the analysis is sometimes simply not available. For instance, it was not possible to get information from the the website of the *Association interprofessionnelle du coton au Bénin* (AIC) (www.aicbenin.org) because the website has been down since 2018. Therefore, there is a need to develop a coherent framework for data and other historical documents related to the cotton sector.
[2] Before cotton, palm oil- promoted by King Ghézo (1818–1858) - played the leading role in Benin's development. The relative roles of palm oil and cotton are displayed in Figure 11 in the appendix. In 1962, for instance, palm oil products accounted for around 60% of export revenue, against only 2% for cotton. From 1972, however, the share of palm oil decreased dramatically, to 19%, and in 2016 palm oil became almost non-existant in Benin's official export statistics. By contrast, cotton's share increased to 30% in 1972 and in 2016 it stood at 45% of export revenue.
[3] Benin's total population is 10.7 million.
[4] For instance, cotton farmers finance local infrastructure and a number of them hold political power at the village and district levels.
[5] Another source for an international comparison is the International Cotton Association (ICA) but we currently do not have access to their database.
[6] Burkina Faso is a good comparator for Benin not only because the two countries share a common border but also because the initial performance of Burkina Faso (in 1961) was close to that of Benin. Production in Benin and Burkina Faso were 2,482 tonnes and 2,352, respectively. Yield figures were 1,204 and 1,026 hectogram per hectare, while land areas allocated to cotton were 20,608 and 22,925 hectares, respectively. Cote d'Ivoire and Mali are two other possible comparators but their initial production levels were much higher than that in Benin while their performance did not significantly improve over time (see Figure 12 in appendix).

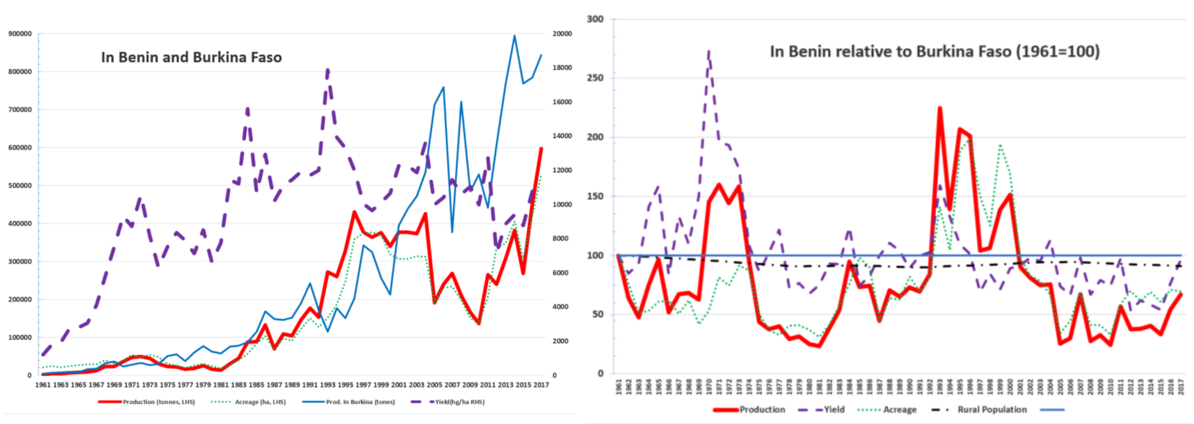
performance in Benin's production in 1962–1969, 1974–1992, and since the early 2000s. In 1961–1969, this was primarily caused by a more rapid expansion of acreage in Burkina Faso since Benin was doing relatively well in terms of productivity per land unit. In the period 1974–1992, Benin lagged behind both in terms of yields and acreage.

In contrast, Benin outperformed Burkina Faso in 1970–1973 and 1993–1997. In the first subperiod, Benin's performance was due to a spectacular improvement in yields, whereas in the second subperiod the result mostly stemmed from a more rapid extension in the area allocated to cotton. The left panel of Figure 1 shows that, up until 1993 and except for the subperiod 1970–1973, the output of cotton in Benin moved roughly hand in hand with the cultivated land area, suggesting that improvement in yields did not play a significant role. In Benin, yields thus appear to be volatile and, more worryingly, in recent years they have come down to the level where they were in the early 1970s.

What are the causes of the performance in the cotton sector in Benin? This paper aims to provide a diagnostic of the cotton sector in Benin. In particular, it reviews the underlying factors of the sector's performance, with an emphasis on the role played by institutional factors. Over the years the sector has operated under different modes of organisation, between public and private types, each of which has been reversed over time. We aim to elaborate on the underlying causes of these changes and their implications for the performance of the sector. For this purpose, we make use of academic and grey literature. Moreover, we obtained information from key informants within the sector.

Section 2 introduces the framework of the analysis. Section 3 summarises the historical background. Section 4 reviews the performance of the cotton sector in the period 1961–2016. It seems too early to provide an analysis of the sector after 2016, particularly because we lack crucial information on the current functioning of the *Association Interprofessionnelle du Coton au Benin* (AIC). We therefore do not provide an in-depth analysis on the performance of the recent period but we leave such an analysis for future research. Section 5 presents the synthesis of the diagnostic.

Figure 1: Performance of the cotton sector in Benin and Burkina Faso



Sources: Food and Agriculture Organization (FAO) Corporate Statistical Database (FAOSTAT). Data over the period 2016-2017 is obtained from INSAE and AIC and is being updated in the FAOSTAT database. Note that the data presented here are sometimes different from the values presented in studies (e.g. Gergely, 2009, Kpadé, 2011, Saizonou, 2008, and Yerima, 2005) citing AIC.

2 Analytical framework

2.1 Organisation of the cotton sector

There are nine main interrelated functions in the cotton sector:

1. input supply and distribution;
2. research (seed variety development);
3. technical and extension services;
4. production – seed cotton;
5. primary marketing;
6. processing – cotton lint, cotton seed, oil, etc.;
7. final marketing (of cotton lint, including export);
8. quality control; and
9. price-setting.

In this setting the performance of the sector depends on both domestic and external factors (e.g. Bourdet, 2004; Ahohounkpanzon and Allou, 2010, and Baffes, 2002, 2004; Cabinet Afrique Décision Optimale, 2010; Gergery, 2009; Kpadé, 2011; Saizonou, 2008; Yérima, 2005). We discuss the specific role of both of these sets of factors below.

2.2 External factors

External factors include international forces that cause fluctuations in the global cotton price. Figure 2 displays monthly data on world cotton prices in US dollars and CFA franc (CFA), together with the CFA franc/US dollar nominal exchange rate over the period 1980–2017. The figure also displays the real producer price, which we obtain by dividing the nominal price by the consumer price index (CPI). The co-movement between the nominal and real price series is strong (0.65). Therefore, the rest of the discussion will be focused on the nominal series.

The data show that variations in both the nominal exchange rate[7] and the dollar value of world cotton price have caused great fluctuations in the CFA franc value of the cotton price. In the second half of the 1980s, in 2001–2002, and in 2004–2009, for instance, the dollar value of cotton price exhibits a declining trend, amplified by a persistent appreciation of the CFA franc. We briefly discuss the causes of these fluctuations in the world dollar cotton prices. Thereafter, we elaborate on their impact on domestic cotton supply and the welfare of producers.

Understanding the fluctuations in world cotton prices

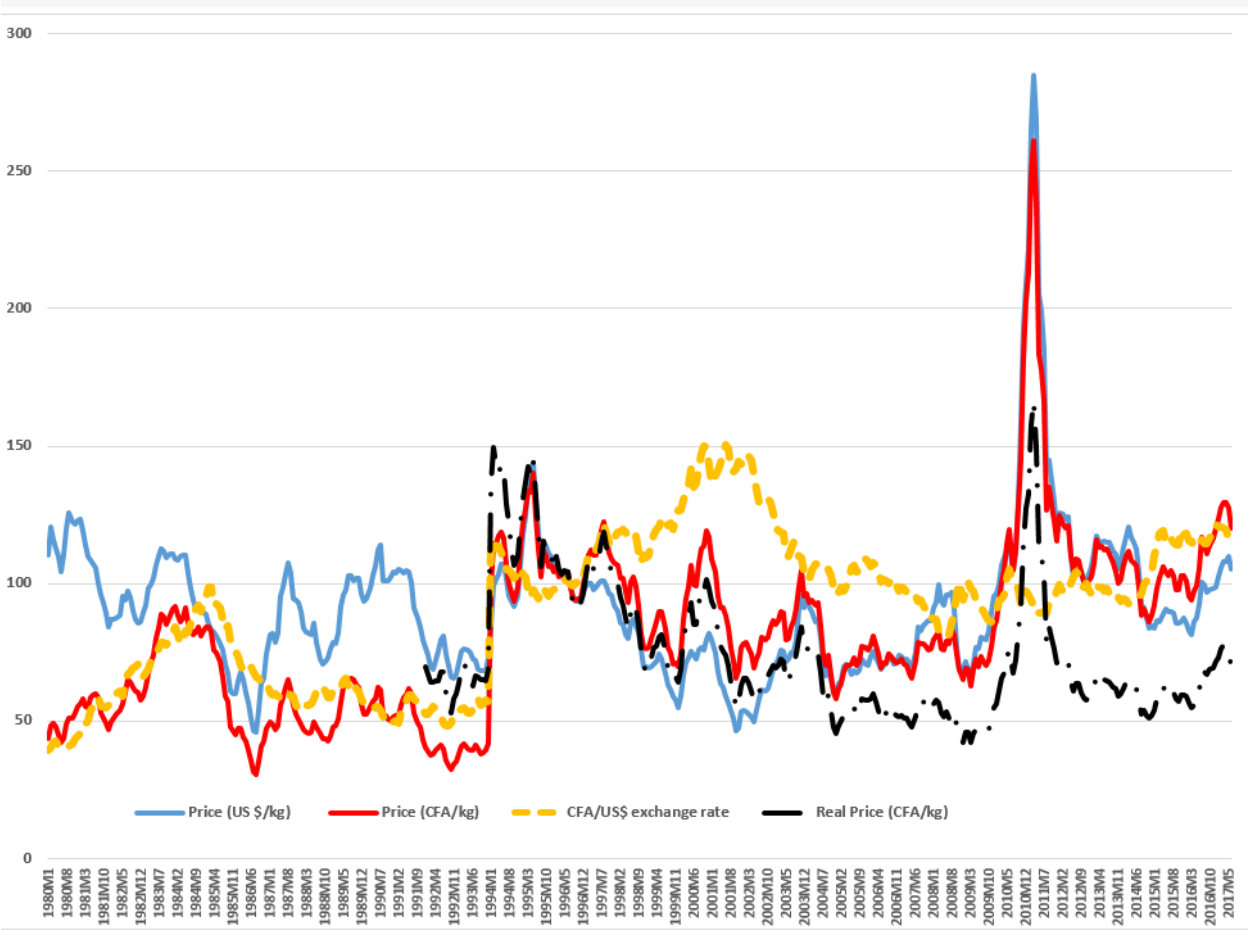
Fluctuations in the world dollar price of cotton are caused by both demand and supply forces (see, e.g., Janzen *et al*., 2018). The impact of world supply operates through the action of subsidies in some leading cotton-producing countries, the US in particular. For instance,

[7] Except for the 1994 devaluation in the CFA franc, the variations in the currency mainly reflect movement in the French franc (prior to 1999) and the euro (after 1999), to which the currency has been pegged.

FAO (2004) argues that world cotton prices would have been 10 to 15 percentage points higher in the absence of the subsidies to cotton producers in big producing countries. In value terms, the effect of subsidies amounts to a loss of about $150 million in the export earnings of West African cotton-producing countries (Tschirley *et al*., 2009). In 2003, a number of these African countries (Benin, Burkina Faso, Chad and Mali) submitted a case to the World Trade Organization (WTO) to request the elimination of such subsidies by the Organisation for Economic Co-operation and Development (OECD) and financial compensation. Following discussions at the WTO, the US removed around 15% of its subsidies to the cotton sector but did not provide any direct compensation.

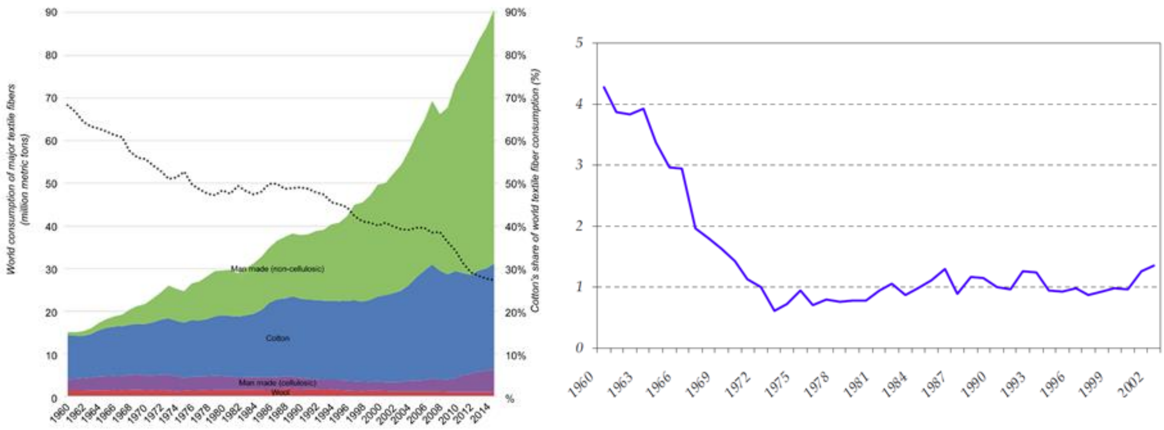
On the demand side, fluctuations in world cotton prices are explained by variations in global demand and by the development of substitutes in the form of synthetic fibres. Figure 3 demonstrates that the role of synthetic fibres in the global market has considerably grown over the past decades. In particular, the share of cotton fibres in the world market of textile fibres shrank considerably from 70% to below 30% between 1960 and 2014, due to the marked decrease in the relative price of synthetic fibres. For Benin and other West African countries, this new factor calls into question the sustainability of any long-term development strategy grounded primarily in the cotton sector. However, in absolute terms there is no decline in cotton fibre. We come back to this issue in Section 5.

Figure 2: World cotton price and the CFA franc/ US dollar exchange rate (1996=100)



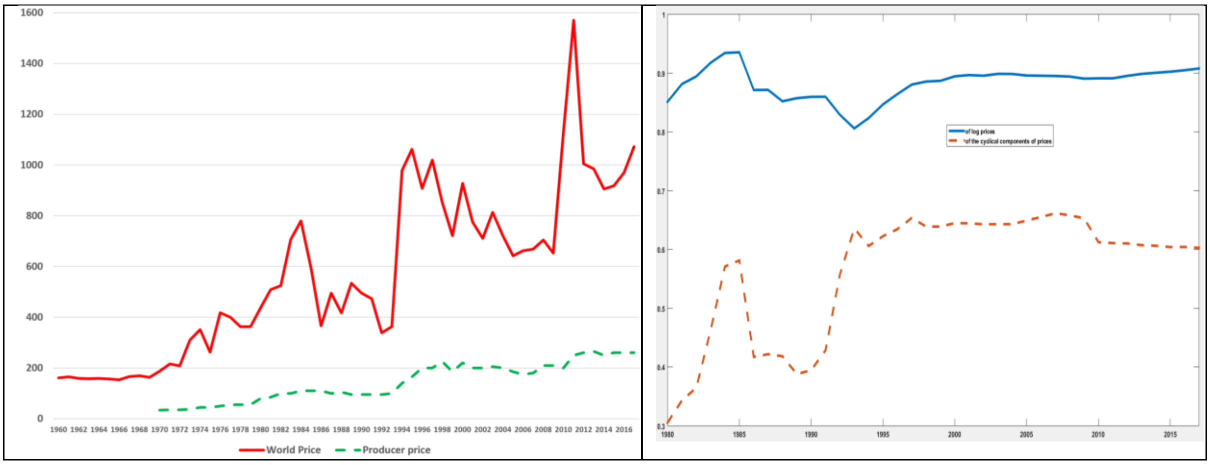
Source: International Monetary Fund (IMF) commodity database and IMF internal financial statistics. Note: Real price in CFA is obtained by normalising the nominal price by CPI. Due to missing data we were not able to construct the real price before 1991M12. After the CFA/kg were constructed all series were transformed in indices worth 100 in base year 1996. The real price is obtained by dividing the nominal price by CPI. The real series starts from 1991M12 because of missing information on CPI prior to that date.

Figure 3: Composition of global consumption of textile fibres and the ratio of synthetic to natural cotton prices



Source: Krifa and Stevens (2016) for the left panel and Baffes (2004) for the right panel, which reports the ratio of synthetic to natural cotton prices.

Figure 4: World and producer prices of cotton (CFA/Kg) and rolling correlation coefficients of the prices



Sources: The original world price of cotton comes from the World Bank and has been converted into CFA with the exchange rate series obtained from World Development Indicators. The producer price series comes from Baffes (2007) prior to 1980, Kpadé (2011) from 1980 to 2009, and the *Institut National de la Statistique et de l'Analyse Economique* (INSAE) for the remaining period. The right panel contains rolling correlation coefficients of the two prices. The correlation coefficient value for 1980 is obtained using information from 1970 to 1979. The correlation coefficients for the cyclical components are based on de-trended series using the HP filter where the value of the smoothing parameter is set to 100.

Welfare impact of cotton price fluctuation

Farmers are sensitive to the price of cotton, especially because cotton requires more labour effort and other inputs than other crops.[8] A number of studies find a positive response of the supply of seed cotton to production price and a positive effect of higher prices on producers' welfare in Benin (e.g. Ali *et al*., 2017; Minot and Daniels, 2002; Gergely, 2009; World Bank, 2004; and Hugon and Mayeyenda, 2003). For instance, Ali *et al*. (2017) report price elasticities of cotton's supply ranging from 1.3 to 2.6.[9] In a related study, Minot and Daniels (2002) find that a 40% reduction in the producer price of cotton results in an 6–8% increase in rural poverty.[10] Moreover, they estimate the multiplier effect of cotton: national income would be reduced by $2.96 for each $1 decrease in the income of cotton farmers.

These microeconomic findings are in line with the aggregate data reported in Figures 2–4. First, the right panel of Figure 4 shows a strong co-movement between the world price and the producer price, although the strength of the correlation is less pronounced before 1992 when the statistics are based on the cyclical component of the two prices. We elaborate later on, in Section 3, the producer price-setting rules. Second, following the drop in cotton prices observed during the years 2001–2009, both the output and the surface of land planted in cotton have declined significantly in Benin and Burkina Faso. However, Benin displayed a much larger negative response, suggesting that country-specific factors may also explain the behaviour of cotton supply.[11] Conversely, cotton supply increased sharply in the same countries following a strong increase in the dollar price and the devaluation of the CFA franc in 1994.

2.3 Domestic factors

There are three main domestic factors affecting the performance of cotton: climatic risks, technical skills, and the quality of institutions. Climatic risks are exogenous and cannot be directly acted upon. Cotton supply depends on specific climatic conditions across the growing cycle: the length of the rainy season, dry spells, flooding periods, temperature, and solar radiation (e.g. Blanc *et al*., 2008). The role of climatic risks is not systematically discussed in the chapter. Technical skills depend on training and experience and will also not be discussed further here. But, the role of institutions is of special interest to us. These include the type of coordination of the different functions in the supply chain and the specific rules and regulations that are involved.

There are two views regarding the required type of coordination in the cotton value chain: the French view and the World Bank view. The French view is based on the strategy developed by the *Compagnie francaise pour le developpement des fibres textiles* (CFDT), a

[8] For instance, Minot and Daniels (2002) report that cotton is 15% more labour-intensive than the area-weighted average of other crops analysed in their study on Benin (maize and cassava, cowpeas, groundnuts, sorghum, millet, yams). Moreover, the cultivation of cotton requires 23% more hired labour per hectare than the average of other crops

[9] Moreover, the authors estimate the cross-price supply elasticity related to alternative crops to cotton (maize, millet, sorghum and related crops, rice, yam, cassava and other tubers, beans and related crops, and peanuts and related crops) in the range -0.28 to -0.39%.

[10] The baseline poverty incidence is estimated at 40%.

[11] During the years 1984–1993, the continuous appreciation of the CFA also contributed to low cotton prices, yet this did not prevent cotton supply from rising perceptibly, not only in Benin but also in Burkina Faso. This again suggests that other factors than producer prices have been at work.

French parastatal company that modernised the cotton sector in the former French colonies of Africa. It advocates a vertical integration of the value chain through a single channel (a monopoly/monopsony) from farmers to ginnery companies and input suppliers. Moreover, the chain controls research activities for variety development, which are linked to extension services. In addition, it is in charge of promoting stable producer prices. After independence, the CFDT entered into joint ventures with African governments and the single channel was maintained. In the mid-1980s, when world cotton prices collapsed, subsidies from governments and money from donors were used to rescue the African cotton companies.

The World Bank view assumes that (state) monopoly is less efficient because of excessive public employment and political interference (e.g. Baffes, 2007). Such a monopoly can also be blamed for excessively taxing farmers who receive a rather small share of the world cotton price. Hence, allowing competition should decrease this tax and stimulate the supply of cotton. The view of the World Bank, also supported by the IMF, was dominant in the 1980s and was enforced through the structural adjustment programmes in many African countries in the 1980s and 1990s.

Conceptually, it is hard to say *a priori* which of the two modes of coordination would generate a better performance for the cotton sector, because each of the approaches has its advantages and disadvantages. For instance, while competition can boost producer prices, it typically implies higher coordination cost in a weak institutional environment characterised by imperfect credit markets, asymmetric information, and weak contract enforcement. In a system where ginneries provide input credit to farmers, competition will encourage side-selling[12] to cotton-buying competitors, discouraging credit supply by final buyers, thus causing inefficiencies in the input segment of the supply chain. By contrast, whereas a monopoly maintains a lower producer price it will achieve a higher degree of coordination and better limit the side-selling problem. Hence, it is shown that the organisation of the value chain implies a trade-off between competition and coordination (e.g. Tschirley *et al*., 2004, 2009, and 2010). A recent empirical analysis by Delpeuch and Leblois (2014) confirms this trade-off. They find that African cotton producers in a competitive system achieve higher yields but lower acreage and production, whereas in a regulated system of the CFDT type lower yields but higher acreage and production are observed. On a related point, Baffes (2007) argues that taxation of farmers has been reduced as a result of the liberalisation and privatisation of the cotton sector in Benin and many other African countries[13], as evidenced in Table 1[14] below.[15] Figure 4 above also shows that the world price of cotton is much higher than the producer price but we currently lack relevant and consistent information to discuss the underlying factors behind the difference.

[12] "Side-selling is the sale of seed cotton to a buyer other than the company that provided the producer with inputs on credit during the production season".(Poulton et al, 2004)
[13] However, Benin represents a special case as regards the timing and the nature of these liberalisation programmes, as we will discuss in the rest of the chapter.
[14] Note, however, that many other factors may be driving these nominal rate of assistance numbers and we do not have the necessary material to discuss this further. The data on producer prices and subsidies are also very noisy.
[15] The idea of taxation of African farmers goes back to Bates (1981)

Table 1: Nominal rate of assistance[16] to cotton farmers in West and Central African countries (%)

	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-05
Benin	-44	-49	-49	-5	-24	-22	-6
Burkina Faso	-44	-48	-58	-8	-26	-28	1
Cameroon	-41	-40	-37	33	-18	-22	3
Chad	-47	-48	-52	6	-21	-21	-3
Côte d'Ivoire	-32	-28	-50	-5	-30	-27	-5
Mali	-56	-55	-59	-17	-25	-33	3
Senegal	-46	-50	-59	-10	-19	-29	-11
Togo	-41	-46	-60	-14	-25	-24	-13
Average	-45	-44	-52	-3	-25	-26	-4

Sources: Baffes (2007)

Finally, there is also a debate about the mode of coordination among producers. For instance, should access to technical and agricultural services be organised at the individual or the farmer-group levels? Should production and input decisions be taken at the individual or the famer group level? Related to access to input and credit, a joint liability approach is used in the cotton sector of Benin and other West African countries. The joint liability approach may create, however, free riding problems, which will generate inefficiencies in a weak contract enforcement environment. Farmers often report this free riding problem in West African countries (Benin, Burkina Faso, and Mali) as evidenced by Theriault and Serra (2014). Theoretically, however, it is difficult to predict the efficiency of the farmers who report the problem. For instance, inefficient farmers may report more the problem if they are afraid that their relatively low level of production will not make it enough to cover credit at the reimbursement time. In this case, their assets may have to be seized in order to repay the loan. In the same way, efficient farmers may also report the free riding problem because they have to pay for those who fail to repay their loans. Theriault and Serra (2014) argue that producers who report more problems with the joint liability feature are more inefficient in a sample of West African countries (Benin, Burkina Faso, and Mali).

[16] The nominal rate of assistance (NRA) is based on the difference between the net price received by producers and world prices, controlling for freight and ginnery costs. A negative value indicates taxation whereas a positive value reflects subsidies to farmers. The author includes price subsidies but it is not clear how input subsidies and the price of credit have been taken into account in the estimation.

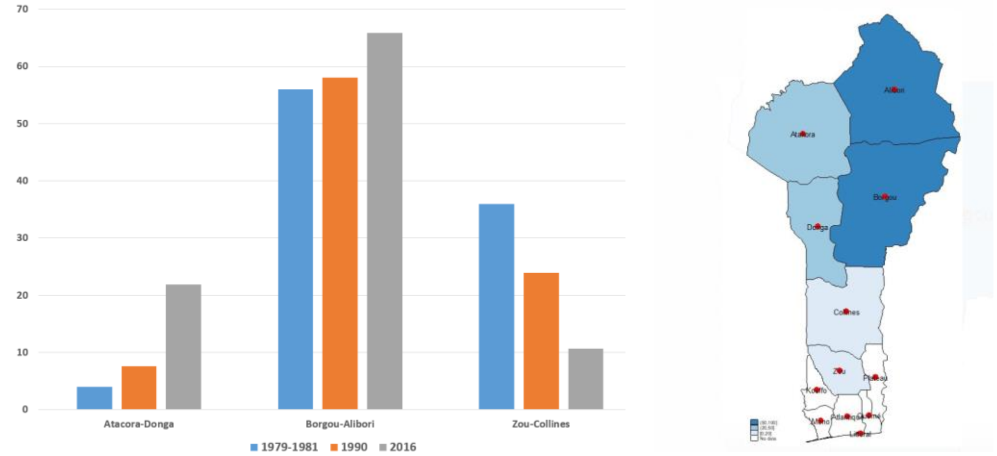
3 Historical background of cotton in Benin: 1641-1960

3.1 Pre-colonial period to 1949: private mode of organisation

The origin of cotton in Benin dates back to the pre-colonial period. Cotton was produced in the northern (Atacora-Donga and Alibori-Borgou departments) and central (Zou-Collines departments) regions of the country, and the raw cotton was entirely processed by the local artisanal textile sector (Manning 1980, 1982; and D'Almeida-Topor, 1992).[17] Figure 5 shows that the Alibori-Borgou departments easily dominated cotton production. Moreover, the data show that the central region, which was the second most important contributor to cotton production in the 1970s and 1980s, has declined considerably over time. In fact, the level of cotton production (not reported) has increased in the northern region, while it has decreased in the central region.

The northern region has a dry climate whereas the central has a humid climate. A humid climate is less favourable to cotton production and this partly explains the decline in cotton production in the central region (e.g. Ton, 2004). In particular, the producer cost of cotton is relatively high in that region, for example because farmers would need to consume relatively more pesticide to protect cotton from diseases. As a result, farmers switch more frequently to alternative crops when the relative producer price of cotton decreases (and/or the relative cost of cotton increases, or when the quality of input deteriorates). On the other hand, the support of development aid projects is one possible explanation for the increase in the production in the northern region.[18] We will elaborate on these points later.

Figure 5: Share of the main cotton-producing areas (percentage)



[17] Before 1999 Benin was divided into six departments: Atacora, Atlantique, Borgou, Mono, Ouémé, and Zou. In the 1999 reform each of these six department were divided into two departments, such that the country now includes 12 departments, as displayed in the right panel of Figure 5: Atacora has been split into Atacora and Donga; Atlantique into Atlantique and Litoral; Borgou into Borgou and Alibori; Mono into Mono and Couffo; Ouémé into Ouémé and Platteau; and Zou into Zou and Collines. Because of these changes it is difficult to trace the production of specific departments before 1999. Thus, when we refer to information related to Borgou department (before 1999) in the text we have in mind that this information also includes the Alibori department.
[18] There was also a project in the central region but it seems that more efforts were put into developing the northern region. For instance, in the 1980s and 1990s there were more projects for cotton development in the northern area.

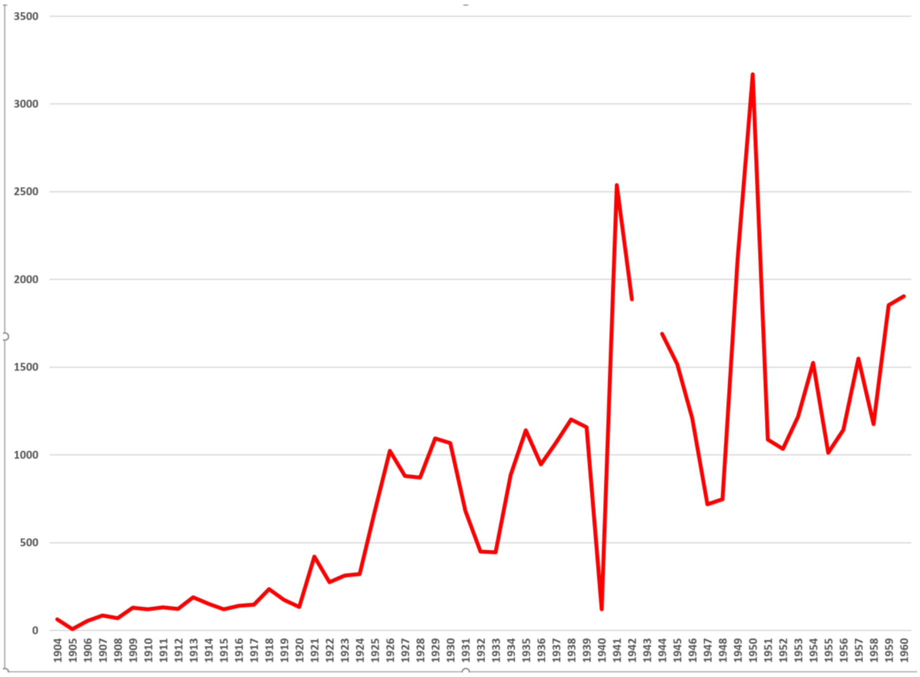
Sources: Kpadé (2011) and World Bank (1984). The map in the right panel displays the production shares for 2016

During the colonial period (1894–1959), French entrepreneurs encouraged the production of cotton with the purpose of supplying cotton to their textile industries in France.[19] They developed two main strategies, which seem to be still relevant today (Manning, 1982; and Kpadé and Boinon, 2011): i) introduction of new varieties of the Barbadense family of cotton to improve productivity; and ii) promotion of small-sized farming (in order to limit labour movement).[20] In this context, ginneries were built in the central area (in Savalou and Bohicon) in order to process raw cotton.[21]

The market structure of the cotton industry in this period was thus decentralised and potentially competitive with the private sector in charge of the main activities, including marketing and processing. Following these efforts cotton production improved and exports to France began around 1904[22] (Maning, 1982). The two ginneries were upgraded in 1924 (Savalou) and 1924 (Bohicon). However, the sector's development was still marginal around 1926[23] (Figure 5). One problem was the low producer price compared to other crops (coffee, cacao) that were subsidised by the colonial authorities. Moreover, due to several market imperfections that characterise Africa's rural areas, the market-based mode of coordination did not ensure an efficient provision of inputs and agri-services to farmers (Kpadé and Boinon, 2011).

[19] Cotton was also encouraged in other former French colonies at that time. French entrepreneurs were motivated to do this because of difficulties in importing cotton from the USA (Fok, 1993; and Kpadé and Boinon, 2011). For this purpose, they created the *Association Cotonière Coloniale* (ACC) which had a representative in each of the colonies. Emile Poisson was the representative for Benin at that time (Manning 1980, 1982; and D'Almeida-Topor, 1992).
[20] In addition, farmers were coerced to produce cotton with the help of the colonial administration.
[21] The construction of the first ginneries in the central region can be explained by the relative proximity of that region to the Port of Cotonou, through which cotton lint is exported to France. The fact that the colonial power settled first in the central region before the northern region could also be an additional reason.
[22] 1904 coincided with the period when Benin became a member of the *Afrique Occidentale Française* (AOF), the federation of the eight French colonial territories in West Africa (Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger, Senegal, and Togo).
[23] The Great Depression (1929) and the Second World War (1939–1945) also caused volatility in exports.

Figure 6: Cotton exports in 1903–1960 (tonnes)



Sources: Author's estimation based on Manning (1982) and Kpadé (2011).

The original data obtained from the two sources did not coincide in several periods.

The data reported here are a simple average of figures from both sources. Data is missing in 1942-1944 due to the second world war event.

3.2 1949–1960: private mode of organisation but regulated by the French government

The modern development of the cotton industry came after the CFDT[24] was created in 1949 to take over the management of the cotton industry in the colonial territories. A research body, the *Institut de recherche du coton et des textiles exotiques* (IRCT), was established with the aim of developing higher yield varieties of seed cotton in support of CFDT activities. These changes occurred in the context of a new strategy initiated by France to develop its colonies after the Brazzaville conference. The strategy was based on development plans which were designed for each territory and financed by a French organisation, *Fonds d'investissement pour le développement économique et social* (FIDES). In Benin, FIDES financed two development plans in 1946–1952 and 1953–1960 (Manning, 1982; and Sotindjo, 2016).[25]

In terms of organisation of the cotton industry, the CFDT promoted a single chain running from farming to exporting activities. In particular, the CFDT wielded monopsony power for the purchase of seed cotton from farmers and monopoly power for the supply of inputs, primary processing of seed cotton, and marketing of cotton lint. Typically, farmers would obtain inputs on credit before sowing, and they would pay this back in the form of seed

[24] In 2001 the CFDT became *Développement des Agro-Industries du Sud (DAGRIS).*

[25] The plans supported the development of agriculture, industry, infrastructure, and other public services. In agriculture, palm oil was promoted as well.

cotton after production was realised. The CFDT also supported the acquisition of equipment by farmers and it provided them with technical and extension services. In addition, it encouraged the production of high-quality seed cotton by offering a price premium. The producer prices were set on a pan-territorial basis and announced before the sowing season. The CFDT bought the whole harvest from the producers at the announced price. In order to process the growing production, two new ginnery factories were built in 1955 in Borgou (in Kandi) and in Atacora (Djougou).[26] Exports also improved, as can been seen from Figure 5.

[26] In September 1955 a stabilisation fund the *Caisse de stabilisation des priz du coton de la fédération de l'AOF* (CSPC) was created to jointly manage the producer price in the francophone cotton-producing colonies in West Africa. CSPC set the producer price and was managed by the general government of AOF, based in Dakar. It was financed from cotton revenue but also from subsidies received from the french textile marketing board (*Fond de Soutien des Textile*). When AOF ceased to exist in 1958, CSPC was replaced in September 1959 by a new regional stabilisation fund (the *Caisse de Stabilization Inter-Etats du Coton*), which from then on was jointly managed by the West African francophone countries. We currently lack additional details on these funds.

4 Understanding the performance of the cotton sector in Benin: 1961–2016

4.1 1961–1970: a private mode of organisation but regulated by the newly independent state

This period immediately following independence (in 1960) was characterised by political instability.[27] In line with the economic policy of the previous period, two development plans were implemented, covering the periods 1961–1965 and 1966–1970. These plans were largely financed by the French government through its development fund *Fonds d'Aide à la Coopération* (FAC), which replaced FIDES in 1959. The European Commission's special fund for development, *Fonds Européen de Développement* (FED), also contributed to the financing of the development plans in Benin.

After independence, many rules and decisions were enacted to organise the agriculture sector.[28] As the political context was characterised by a growing nationalist movement that had started during the colonial period, the new government started to promote parastatal companies and national players in various activities of the economy. For instance, a registration card was introduced to regulate the primary marketing of seed cotton.[29] In the same way, there was a rule limiting exports of raw cotton, so that it could be processed inside the country.[30] A national stabilisation fund, the *Fonds de soutien des produits à l'exportation* (FS)[31] was established in 1961 to protect agriculture exports when world prices became lower than the operating costs (producer price, processing costs, and transportation cost). FS was financed by export revenue and subsidies. Taxes were charged on all export products.[32]

The IRCT introduced a new high-yielding variety of cotton (Hirsutum) to replace the existing one (Barbadense). This was done in the northern region in 1962 and later, in 1965, in the central region (World Bank, 1972). While the two varieties were still produced in the country, the government issued a provision (August 1965) to regulate their distribution. More specifically, the rule imposed that the two varieties should be commercialised separately and

[27] There were many coups d'état that toppled several governments. For details see the appendix, Chapter 1, and Akindes, 2016.
[28] Other agricultural products, especially palm oil, were supported as well. For this purpose, the parastatal organisation *Societe Nationale pour le Developpement Rural du Dahomey* (SONADER), was created in 1961 to take over the management of agricultural production in the country. Another parastatal organisation, the *Office de Commercialisation Agricole du Dahomey* (OCAD), was created in 1962 to take over the management of the other components of the supply chain for these products (primary marketing, transport, processing, and export).
[29] We currently lack information on how the collection was organised before independence.
[30] Specific decisions were also taken as regards farmers. In June 1962, for instance, the government introduced a law imposing collective land for agriculture (*champs collectifs*) in each village in Benin. The idea was that groups of village farmers would join forces to generate income that would be used to finance local infrastructure. Besides these collective lands, however, farmers cultivated their individual land. Similar practices of local public goods financing were imposed by the colonial authorities through the organisations *Société Indigène de Prévoyance* (SIP) in 1929 and the *Sociétés Mutuelles de Développement rural* (SMDR) in the 1950s.
[31] The FS was initiated in parallel with the regional fund CSPC because the price support was seen to be insufficient for a number of cotton growers followed illegal route to export their production in neighbouring countries (Government of Benin, 1962).
[32] The lowest tax was applied to cotton (CFA 0.010 per Kg), whereas the highest was applied to groundnuts (CFA 0.75 per Kg). For palm oil products, the tax amounted to CFA 0.10 per Kg.

on different days in pre-defined local markets. In addition, two qualities of seed cotton were explicitly defined: high-quality cotton (*1er choix*), obtained from the current agricultural season and possessing attributes of homogeneity, whiteness, cleanness, and dryness; and low-quality cotton (*2ème choix*). Appointed controllers were charged with the task of identifying the quality of cotton offered for sale by any operator in the local market.

The price of high-quality seed cotton was determined on the basis of the processing price of cotton lint from the past year. A forecast was then made regarding the processing cost for the next cotton season, but the quality of these estimations was only indicative. As for the price of low-quality seed cotton, following a proposition by FS, it was fixed by the government at a given ratio to the price of the high-quality product. This price-setting rule was thus not based on any consideration related to the growers' production costs. Each year, FS transferred this price information to the government for announcement to the public.

In the meantime, the *Société D'Aide Technique et de Cooperation* (SATEC) and the *Bureau pour le développement de la production agricole* (BDPA – created in 1950), two other French parastatals[33], were established in central Benin (in the Zou and Collines departments) and the north-western area (in the Atacora and Donga departments), respectively, to take over the extension and technical services and the marketing of seed cotton (Sotindjo, 2017; World Bank, 1969). If the CFDT concentrated on the north-eastern (in the Alibori and Borgou departments) area for the realisation of these activities, it continued to be the main organisation for the processing and the exporting of all the cotton produced in Benin.

To expand its cotton sector, Benin received support from the FAC and the FED during the period 1963–1970. However, most of the funding was directly handed by the French agencies. The CFDT concentrated its efforts on the Borgou-Alibori department and SATEC concentrated on the central region. The project financed one government ginnery factory in Parakou in the Borgou department in 1968. Furthermore, the IRCT continued its research activities in relation to high-yielding varieties in the stations of Mono and Parakou. As a result, between 1961 and 1969, production and acreage increased from 2,482 tonnes and 20,608 ha to 23,959 tonnes and 31,884 ha, respectively.[34] Concurrently, yields increased from 1,204 hectogram per hectare (hg/ha) to 7,514 hg/ha over the same period.

Six cotton-processing factories, representing a total capacity of 60,000 tonnes, operated in Benin around the end of the 1960s (World Bank, 1972). This points to a serious problem of over-capacity since total production in the country was about 24,000 tonnes of seed cotton in 1969. The CFDT owned four of these factories, two of which were located in the central region (Bohicon and Savalou) and two in the northern region (in Kandi and Djougou[35]). The government owned the two remaining factories: one in the South-West (Mono) and the other in the North (Parakou). Through an agreement with the government, the CFDT managed the ginnery in Parakou, in addition to the four factories under its ownership. The *Societe Nationale pour le Developpement Rural du Dahomey* (SONADER) operated the second government ginnery in Mono. Formally, the agreement with the government stipulated that

[33] The French parastatals are locally known in Benin as *Société d'Intervention.*
[34] The major increase, however, took place after 1966, when the project's operations really started (see Figure 1). The delay was due to administrative and technical difficulties (World Bank, 1969). These problems were partly related to the political instability of the time.
[35] The ginnery in Djougou become defective sometime in the 1960s or 1970s.

the CFDT was not allowed to purchase seed cotton from producers in the Mono region. However, it remained in charge of the export of all cotton lint processed in Benin, including the product processed by SONADER in the Mono region. In 1969, however, the responsibility for cotton exports was shifted from the CFDT to the *Office de Commercialisation Agricole du Dahomey* (OCAD).

4.2 1971–1981: a public mode of organisation regulated by the Marxist-Leninist government

The positive impulse of the 1960s continued its effect till 1972, when seed cotton reached a peak of 49,590 tonnes (left panel of Figure 1). Thereafter, production started declining, from 1973, and reached a low level of 14,134 tonnes in 1981. We now detail a number of events that coincided with this poor performance of Benin's cotton sector in 1973–1981.

While the French parastatals (CFDT, SATEC, IRCT) contributed significantly to the development of the cotton sector in 1963–1972, their mode of operation was criticised on a number of points (World Bank 1970). For instance, the parastatals were blamed for their high operational costs, and for their single-crop development strategy, which ignored food crops and did not apply an integrated rural development approach in the areas of intervention. Moreover, the nationalist movement continued to grow, with the consequence that there was rising pressure to reduce foreign influence. In particular, the revolutionary government that took power in October 1972 promoted the ideas of 'self-reliance' and food self-sufficiency. Consequently, Beninese rural regional development agencies, known as the *Centres d'Action Régional pour le Développement Rural* (CARDERs), were promoted in the years 1969–1975, with a view to developing each department. This decision was taken in parallel to the creation in January 1971 of a national cotton agency, the *Société Nationale Agricole pour le Coton* (SONACO), charged with the development of the entire cotton sector in the country.

In order to further expand the cotton sector, however, foreign assistance was necessary because the country lacked technical skills and financial resources. In this context, a new project was implemented from 1972 onwards, jointly financed by the government (24.5%), a grant from the FAC (27.5%), and credit from the International Development Association (IDA) for the remaining 48%. A primary objective of this project was to develop the activities of the newly created agency (SONACO), which was intended to progressively take over the management from the CFDT and SATEC of all activities in the cotton sector: technical and extension services, supply and distribution of inputs, processing, and marketing.[36] Other activities of the project included the creation of a credit fund to finance inputs and equipment, the construction of two additional ginneries, and the rehabilitation of rural roads to facilitate the transport of cotton from the fields.

An important condition imposed on SONACO was that it should work in collaboration with the three French parastatals already operating in the cotton sector: SATEC, the IRCT, and the CFDT. In a first phase, it was expected that SONACO would concentrate on the management of the procurement of inputs and the agricultural fund. In addition, SONACO

[36] Other activities of the project included the creation of a fund to provide credit for inputs and equipment, the construction of two additional ginneries, and the rehabilitation of rural roads to facilitate the transport of cotton from the fields.

would contract with the CFDT and SATEC (with the former for the North and with the latter for the central region) to manage the project at the regional level (distribution of inputs, technical and extension services, transport, marketing). Moreover, through a joint venture with the government, the CFDT would manage all the cotton ginneries in the country. A similar joint venture between the CFDT and government cotton agency was successfully created in other francophone West African cotton-producing countries. Finally, it was expected that the IRCT would pursue its research and development activities in relation to higher-yielding seed varieties.

The project should have started in 1970 but serious institutional problems caused delays so that it was implemented only from January 1972. [37] In the beginning (1972), funds came from the FAC and the Government of Benin. As for IDA, it delayed its intervention until April 1973 because of institutional hurdles. In particular, SONACO unilaterally decided to take over the direct control of the extension services in the field, in violation of the initial agreement to contract those activities to the CFDT and SATEC. Furthermore, skills shortages and management problems at the top level of SONACO were a hindrance to the project's smooth unfolding. Also, with a new government coming to power (on 26 October 1972) there came big changes in the staffing of the government agencies. All these unforeseen changes increased uncertainty; hence the decision by IDA to postpone the disbursement of its funds. In the end, IDA's decision was proved to be the right one because the cotton sector performed very poorly from that time onwards (see Figure 1).

There are many reasons for the collapse of the cotton sector. First, SONACO was unable to adequately develop field activities, especially input supply and distribution. In particular, procurement problems (problems with the licensing of suppliers and non-transparent competitive bidding) caused delays in the delivery of inputs to farmers. Moreover, inputs were left unprotected in the port of Cotonou and their quality deteriorated after having been exposed to the rain. There were also problems in the delivery of ploughs. Furthermore, there were issues between producers and extension staff of SONACO, who were collectors of seed cotton at the village level. In particular, taking advantage of the illiteracy of the growers, some collectors tampered with the amount of cotton submitted by growers. All these problems were amplified when the CFDT and SATEC were forced to leave the country in 1974, when the regime adopted a Marxist-Leninist ideology and put more emphasis on food crops. This is where Benin differs fundamentally from other francophone West African countries. As a consequence of these problems, farmers turned away from cotton, especially in the central region of the Zou-Collines, and they started to produce more maize for the Nigerian market, where demand noticeably increased following the first oil shock. This period marked the decline of cotton production in the central region that we highlighted above.

[37] Project preparation started in 1967 and its implementation should have started earlier, in 1970, but political instability, characterised by many government changes, caused delays in its definition and approval. The rule of Colonel Christophe Soglo, who seized power through a coup in November 1965, was interrupted by a coup executed by Colonel Kouandoté on 17 December 1967, then followed by another military coup, this time at the initiative of Alley on 21 December 1967. Alley organised a general election, the results of which were not validated, and Dr Zinsou was finally appointed as the new president in July 1968. Thereafter, a new coup was executed by Kouandoté in December 1969, followed by a new general election in 1970, which was again contested. Thereafter emerged the triumviate system of government first led by Maga (May 1970 to May 1972), then by Ahomadégbé (May 1972 to 26 October 1972), and finally by Kérékou. After Kérékou took power, several administrative bottlenecks delayed the effective start of the project till April 1973.

Changes in the other segments of the supply chain also compromised the performance of the sector. For instance, the fact that OCAD took over export activities from the CFDT had the effect of reducing the quality of cotton lint exported by Benin. The *Société de Commercialisation et Crédit Agricole du Dahomey* (SOCAD) replaced OCAD in 1972, and it also took over the management of the stabilisation fund FS. The change did not, however, improve the situation and the agencies continued to suffer from weak management problems. All these issues led the government and the donor to prematurely end the project around 1975.

There were, however, three main positive outcomes from the project, which also affected the sector later on. First, one additional government ginnery (with a capacity of 18,000 tonnes) was constructed in 1972 in the central region (Glazoué). Second, the research unit IRCT developed new high-yielding varieties (although in 1973–1980 their effects on cotton yield were nullified by the disruption of inputs and extension services): BJA SM 67 and 444-2-70. Third, and most fundamentally, village groups of farmers known as *Groupements Villageois* (GV) were promoted in 1971 to take on some responsibilities in the cotton supply chain. GV do not use collective asset ownership (land and equipment), and neither do they practice common production; instead, they merely coordinate within their group the distribution of inputs and the primary marketing of seed cotton. For inputs, a joint liability system known as *caution solidaire* was introduced whereby farmers in each GV are jointly responsible for input credit to be recovered at the time of the primary marketing of cotton. As regards primary marketing, village collection centres were created where each GV sells its seed cotton jointly to the collector. The project introduced this change in order to counter the tampering with the amount of seed cotton by some collectors. For this purpose, the project initiated a training programme to develop GV's skills in cotton weighing, as well as their literacy skills. GVs were paid for their involvement in the primary marketing, and revenue generated from that activity ('*ristournes*') was invested in rural infrastructure, such as schools, wells, and health centres.

After having adopted a Marxist-Leninist ideology in 1974, in 1977 the government initiated two new types of farmers groups. One was the *Groupement Revolutionnaire a Vocation Cooperative* (GRVC), which is similar to the GV in terms of asset ownership and production organisation but it produces food crops in addition to cotton. Moreover, GRVC promote production in block of the members' plots and a high degree of centralisation of extension services. Second, the government promoted collectivist cooperatives known as *Coopératives agricoles expérimentales de type socialiste* (CAETS) and *Coopératives agricoles de type socialiste* (CATS).[38] Over time, however, CAETS and CATS did not succeed because they were not able to attract the most efficient producers (see, e.g., Yérima and Affo, 2011). Moreover, there were mismanagement problems. Only GV and GRCV have survived till today.

The Marxist-Leninist government also introduced institutional changes in the other steps of the supply chain of cotton. In 1976 SONACO was replaced by a new parastatal, *Société Nationale d'Agriculture* (SONAGRI), and the responsibilities of the later also included the management of inputs for food crops. In particular, SONAGRI was assigned the activities

[38] In the strategy developed by the government GRVC were expected to become CAETS at village level, which would themselves become CAETS at commune (district) level. In practice, however, CAETS and CATS did not succeed and only GV and GRCV have survived today.

related to processing and input supply in the cotton chain. In contrast, extension services were from then on transferred to the development agencies, CARDERs. In the same period SOCAD was renamed *Société Nationale pour la Commercialisation et l'Exportation du Bénin* (SONACEB) in 1976 and a new stabilisation fund, the *Fonds autonome de stabilisation et de soutien des prix des produits agricoles* (FAS), was created in the same year. Following these additional changes, cotton production deteriorated further, from 30,654 tonnes in 1974 to a very low level of 14,134 tonnes in 1981. Moreover, the financial accounts of the government agencies (CARDERs, SONAGRI, and SONACEB) continued to be problematic.

Around the end of 1977, however, the government took a renewed interest in cotton and called upon the support of donors. As such, a technical assistance programme was implemented in 1977–1981 to prepare new development projects. The assistance programme was financed by IDA (50%), FAC (31.25%), and the government (18.75%).

4.3 1981–1991: public mode of organisation; government agencies were restructured and reorganised

In 1981–1991 the cotton sector recovered strongly, as can be seen from the left panel of Figure 1: seed cotton increased almost eightfold over the period. This outcome was the result of four new projects that were developed by the government in collaboration with five donors (IDA, *Banque Ouest-Africaine de Développement* (BOAD), *Caisse Centrale de Cooperation Economique* (CCCE)[39], the International Fund for Agricultural (IFAD), and the Organization of Petroleum Exporting Countries (OPEC)).

The projects strengthened the capacity of the cotton sector both at the national and regional levels. At the national level, they helped in restructuring and reorganising the existing government agencies in the cotton sector. As such, in 1983, FAS, SONACEB, and SONAGRI were replaced by a single new organisation, The *Sociéte Nationale pour la Production Agricole* (SONAPRA), which became responsible for the management of input supply[40] as well as the final marketing of cotton. In addition to these institutional reforms, the government increased producer prices from around CFA 80 in 1981 to CFA 100 in 1982–1984, and to CFA 110 in 1985–1986.[41]

At the regional level the projects helped in strengthening the capacities of the CARDERs and the producer groups. In this respect, the first project concentrated on the Borgou region (1981–1988), the second targeted the Zou region, and the third focused on the Atacora region (1983–1988). Finally, the fourth project was a follow-up of the first project in the Borgou region (1988–1991). Hence, the most productive Borgou region received more support, which contributed further to the development of the region.

In 1981, the government transferred to the CARDERs all activities related to the transport and the processing of cotton, although these functions were formerly under the responsibility

[39] The CCCE is the French development cooperation agency, which holds a share in the CFDT. The CCCE became the *Caisse Francaise de Développement* (CFD) in 1992 and the AFD in 1998.
[40] The input supply was managed through a procurement system with international bidding. We do not currently have details about the firms that were assigned the import of input supply.
[41] It seems that the government reduced subsidies on inputs during that period but it is currently difficult to check this information.

of SONAGRI and should therefore have been passed on to SONAPRA. In addition, the CARDERs continued to manage extension services and the primary marketing of cotton, in collaboration with the GVs. Women's groups were also promoted for the first time during this project. For extension services, a training and visit (TV[42]) system was introduced in the fields. The projects supported the training of the CARDERs' staff and the GV members, which facilitated input delivery and the provision of extension services to farmers. Moreover, the projects supported the acquisition of equipment by farmers and the construction of rural roads.

Following these institutional changes and the producer price incentive that was provided during the period cotton production increased substantially from 14,134 to 88,098 tonnes in 1984, surpassing for the first time the ginnery capacity of 72,000 tonnes. From then, production further increased to 132,762 tonnes in 1986. In 1987, however, the sector experienced a crisis that caused production to regress to 70,203 tonnes. The crisis had to do with three main issues. First, Figure 2 shows a strong decrease of the dollar value of the world cotton price and a deep depreciation of the US dollar in 1984–1986. As a result, the CFA value of export revenue of the cotton sector depressed. Second, weak financial management by SONAPRA and the CARDERs combined with the continued support of the producer price value of CFA 110 led to a depletion of resources of the stabilisation fund in 1985. In this context, the further decrease of world cotton prices that occurred in 1986 could no longer be absorbed by the stabilisation fund without external funding because the government itself was also experiencing financial problems. The mis-allocation of the stabilisation fund included: excessive prefinancing of the working capital for CARDERs; and transport and other logistics by SONAPRA to manage the excess production of cotton. Moreover, the debt of SONAPRA and the CARDERs with respect to the banking sector and external suppliers stood at about CFA 7.6 billion. The cotton sector was therefore bankrupt in 1986.

In order to resolve this situation, a restructuring programme for the cotton sector was implemented in 1987–1991. The programme was executed by the government in collaboration with four donors (IDA, CFA, IFAD, and BOARD) within the framework of the second Borgou project, where money was provided to absorb the debt of SONAPRA and the CARDERs. An important condition imposed by the donors on the government in this restructuring programme was that external technical assistance should be mobilised to assist the management of cotton agencies. The CFDT was thus called to provide technical and managerial assistance to SONAPRA and the CARDERs. The programme included three main reforms. First, the management of ginnery factories was transferred from the CARDERs to SONAPRA. As such, SONAPRA gained control of the main activities of the cotton sector and the CARDERs were left with the status of SONAPRA subcontractors, to manage field activities. From then on, the cotton sector became integrated around the monopole SONAPRA, as was the case with the CFDT before 1972. A similar change occurred in other former francophone exporters of cotton, but Benin was different because unlike those countries the CFDT had no ownership share in SONAPRA. This was the case because the CFDT was forced by the Marxist-Leninist regime to leave the country in 1974.

[42] TV is a management method for organising extension services in a way that establishes a personal relationship between an extension agent and a farmer. The extension agent regularly visits the farmer (every one or two weeks) to provide advice on any matter related to the activities in the production cycle. Unsolved problems are reported back to the extension service for advice or research to find solutions.

Second, the stabilisation fund became the *Fonds de Stabilisation et de Soutien des Prix des Produits agricoles* (FSS) and was passed on to an independent management committee. Moreover, the producer price-setting rule was reformed to include a price floor, which was announced by the government before the sowing season around April. The determination of the price floor was based on an opaque rule which took into account the financial viability of the whole cotton sector. If the export price exceeded the cost (producer price and other costs of the cotton sector) in a given year the benefice was distributed in the next year among producers, SONAPRA, the FSS, and the government, according to a pre-defined sharing rule. There were, however, some problems with the implementation of this new rule. In particular, the determination of the price floor was not transparent. Moreover, the price floor was not directly related to the world cotton price, such that the FSS was not always able to stabilise strong adverse price shocks. In any case, the government reduced the producer price from CFA 110 to CFA 100 in 1987 in order to contribute to the financial viability of the system. Moreover, input and seed distribution were limited to the high-yielding regions in 1987. As a consequence of these two measures seed cotton production reduced considerably in 1987.

Third, various reforms were initiated to strengthen the administrative and financial procedures of SONAPRA and the CARDERs. For instance, internal audit units were established in these agencies in order to regularly check their financial viability. In the same way, administrative and accounting procedures were put in place to manage their invoicing systems. Furthermore, working capital was provided to SONAPRA and the CARDERs.

Following these reforms, the sector's performance improved significantly. For instance, the reorganisation of the government agencies helped in reducing operating costs and the export marketing procedure (World Bank, 1995). Cotton production surged from 70,203 tonnes in 1987 to 177,123 tonnes in 1991.[43] In the same way, the GV's revenue increased from their participation in the primary marketing, which they used to further finance local infrastructure. The promotion of women's groups may also have increased their voice in matters related to rural development in the cotton-producing areas. One of the first careful microeconomic analysis of the 'impact' of these reforms in the Borgou region claims that women gained the most from these changes, because they were previously less involved in the cotton value chain (Bruntrup, 1997).

The sector realised this performance despite the fact that world cotton prices continued to decline over the period. However, it was not clear whether without the second Borgou project the sector would be able survive a similar crisis in the future. Hence discussions started between the government and the main donors to privatise and liberalise the cotton sector. The context was also characterised by a structural adjustment programme that began in 1989 and the political transition towards a democratic regime with the national conference in February 1990. A new constitution was adopted in the same year and a market economy was re-established. Hence, a new institutional framework for the agriculture sector was elaborated in the *Lettre de déclaration de politique de développement rural* (LDPDR) by the government in June 1991, after Soglo won the first presidential election in April 1991.[44] The LDPDR stipulated that the government should transfer the main functions

[43] In the meantime, two ginneries were constructed for SONAPRA in Borgou to address the under-capacity problem: one in Banikoara and the other in Bemberekè. These were financed by IDA and CCCE.
[44] The first parliamentarian election took place in February 1991.

of the supply chain to the private sector (primary and final marketing, supply and distribution of inputs, and processing).

4.4 1992–1999: public mode of organisation under liberalisation of inputs and ginnery functions

Following the LDPDR, Benin began the liberalisation of the cotton sector in 1992 under the Soglo regime which ruled the country till 3 April 1996. A gradual approach was taken. First, the input function was gradually liberalised in 1992–1995. Second, the private sector was licensed to operate in the processing component, starting from 1995. Third, the government initiated a broader agricultural restructuring project, the *Projet de restructuration des services agricoles* (PRSA), in 1992–1999. PRSA aimed to promote a better quality of agricultural services by the private sector in the context of structural adjustment programmes that prescribed the reduction of government in various sectors of the economy. In the framework of PRSA many extension agents of the CARDERs were fired. In order to strengthen the capacity of the producers to take over new responsibilities in the sector, the *Fédération des producteurs du Bénin* (FUPRO-Benin) was created in 1994 as the national professional trade union of the GV (Wennink *et al*., 2013). The project was supported by seven donors (the Danish International Development Agency (DANIDA), FED, AFD, the German Technical Cooperation, Agency (GTZ), IFAD, the United Nations Development Programme, and BOAD).

The liberalisation of the input component proceeded gradually from 20% in 1992 to 100% in 1995. In 1992–1994 SONAPRA was responsible for the residual shares of input supply. The details of the liberalisation were as follows:

i. In 1992 20% of input supply and distribution was attributed to the private firm *Société de Distribution Internationale* (SDI), of which Talon was a major shareholder.
ii. In 1993 the share of SDI increased to 40%.
iii. In 1994 60% were attributed to the private sector now to be shared among two firms:
    - SDI obtained 50%; and
    - a new firm, *Société africaine de management, d'affrètement et de commerce* (SAMAAC) entered with 10% but it seems that it collaborated with SDI.
iv. In 1995 100% of input supply was transferred to the private sector, as follows:
    - SDI (46%), SAMAAC 15%), *Société des industries cotonnières du Bénin* (SODICOT) (15%); *Société générale pour l'industrie et le commerce* (SOGICOM (8%); and *Fruits et Textiles* (FRUITEX) Industries (16%).

The selection procedure of these firms for the input supply was done by SONAPRA according to its procurement system, which was limited to Beninese firms in the liberalisation process.[45] Why did the government not allow foreign firms to compete directly with the domestic firms? There are suggestive indications that the procurement and licensing procedures were not totally transparent. For instance, in a recent open letter in 2018 the then president Soglo argued that he took the cotton activities from the CFDT and assigned the input supply activities to a group of 10 entrepreneurs, including Benin's current president Talon.[46] Moreover, in 1992, SDI received directly the inputs from SONAPRA and it only

[45] Only the declining residual share was procured with international firms.
[46] See details of the letter here: www.jeuneafrique.com/560768/politique/benin-nicephore-soglo-repond-a-jeune-afrique/

reimbursed it afterwards (Yérima and Affo, 2015). It is also interesting to see that the number of firms increased greatly in 1995. We do not yet have a clear understanding of why this happened. However, 1995 was the year of the second parliamentarian election in Benin and it is possible that the competition to win that election could be related to the one to enter the input market.

In addition to these reforms, the CFA value of the world cotton price improved following the rise of the dollar value of the world cotton price and the CFA's 50% devaluation in 1994 (Figure 2). Figure 4 shows that the producer price also increased over the period but the gap between the two series became wider over the second half of the 1990s.[47] Following these changes cotton production continued its increase further after 1991 and reached a high value of 430,398 tonnes in 1996. The improvement in cotton production was such that Benin outperformed Burkina Faso in 1993–1996, and there was an under-capacity ginnery problem in 1994.

Note, however, that this improvement in cotton production was primarily driven by land extension. In particular, while yields increased in 1993, they declined in 1994 and followed a declining trend till 1998. Several explanations can be provided for declining yields in that period. First, the result could be due to the price effect of imported inputs following the CFA devaluation. As the price of inputs increased producers were likely to reduce their input consumption and this could have potentially caused yield to decrease. Second, this outcome could relate to liberalisation having reached more farmers and hence the observed increase in land area. If the newcomer-farmers were less efficient in cotton production or if they applied the cotton input for other crops, average cotton yields would have decreased. Third, the new private input suppliers could have been less efficient in managing and distributing inputs, causing delays in supply inputs or supplying a lower quality of inputs.

After president Kérékou took power on 4 April 1996, the number of private firms that obtained a licence to distribute inputs in the cotton sector further increased to 11 in 1996 and 12 in 1998. It is possible that this increase was related to the competition for the presidential election of 1996 in the sense that the Kérékou regime wanted to compensate some entrepreneurs for their support in winning that election. In the absence of clear evidence, this remains speculative, however. In any case the quality of inputs has deteriorated since the increased number of private firms in 1997–1998. Part of the explanation is that some of the newcomers were less efficient. We further elaborate on other institutional causes below. We first discuss the liberalisation of the processing component.

In order to address the under-capacity problem of the processing factories the Soglo regime initiated a liberalisation in 1995, when three new private ginnery factories of 25,000 tonnes capacity each obtained their licence to operate in Benin: ICB at Pehunco (Atacora); CCB in Kandi (Borgou); and SOCOBE in Bohicon (Zou). These three private factories are known as *first generation* (of the liberalisation period) ginneries.[48] They were granted a number of preferential treatments by the government. First, they obtained a preferential investment code regime (*régime C*), which grants a 100% tax exoneration on profit and an exoneration of duty on imported equipment and intermediate inputs for about seven years. Second, according to a regulation SONAPRA buys seed cotton from farmers and sells them to the

[47] The devaluation also made the inputs more expensive in CFA franc terms, but we do not have the necessary information to further pursue this analysis here.
[48] It seems that the current President Talon is the owner of these three gin factories.

private ginneries. This implies that SONAPRA supported part of the risk that should normally be taken by the producers and the private ginneries. Third, the amount of seed cotton to be allocated to the private firms should be proportional to their ginnery capacity and the total seed cotton production. Fourth, SONAPRA contributed 35% to the capital of each of these three private ginneries. Applying these preferential treatments created problems in the future when the number of gin factories increased.

In 1997–1998, the Kérékou regime granted licences to the *second generation* of ginnery factories. Their total capacity ranged from 40,000 to 60,000 tonnes. These included three new factories for SONAPRA (one ginnery in Bohicon in the Zou department and two ginneries in Parakou[49] in the Borgou department) and five new private factories (IBECO in Kétou (Patteau); LCB in Pouipnan (Zou); SEICB in Savalou (Collines), *Marlan's Cotton Industry* (MCI) in Nikki; and SODICOT in Ndali (Borgou)). This gives a total of 18 gin factories, of which 10 were owned SONAPRA and the remaining eight were owned by the private sector. With these new gin factories in business, there was again over-capacity, with a total capacity of 442,500 tonnes compared to a production of 377,370 tonnes. In 1998 the gin capacity further increased to 587,500. The management of this over-capacity problem has been a major issue facing the Benin cotton sector. Figure 5 displays the location of the 18 gin factories.

Following these changes, production started on a declining trend from 1997 onwards. The decrease in 1996 and 1997 was not systematically related to the producer price, which did not decline. The producer price even increased from 1997 to 1998, despite the fact that the world price marginally decreased (Figures 2 and 4). This implies that an alternative factor was responsible for the decrease in cotton production. A number of governance problems coincided with this poor performance. We first briefly discuss the change in producer prices and later elaborate on the factors behind the decline of cotton production. In April 1996 the FSS was replaced by the *Office Nationale de stabilization et de soutien des prix aux producteurs* (ONS) and a new price-setting rule came into effect. The new rule took into account the world price of cotton and also explicitly defined a margin for each of the main actors along the supply chain: producer; input supply and distribution, and ginnery factories.

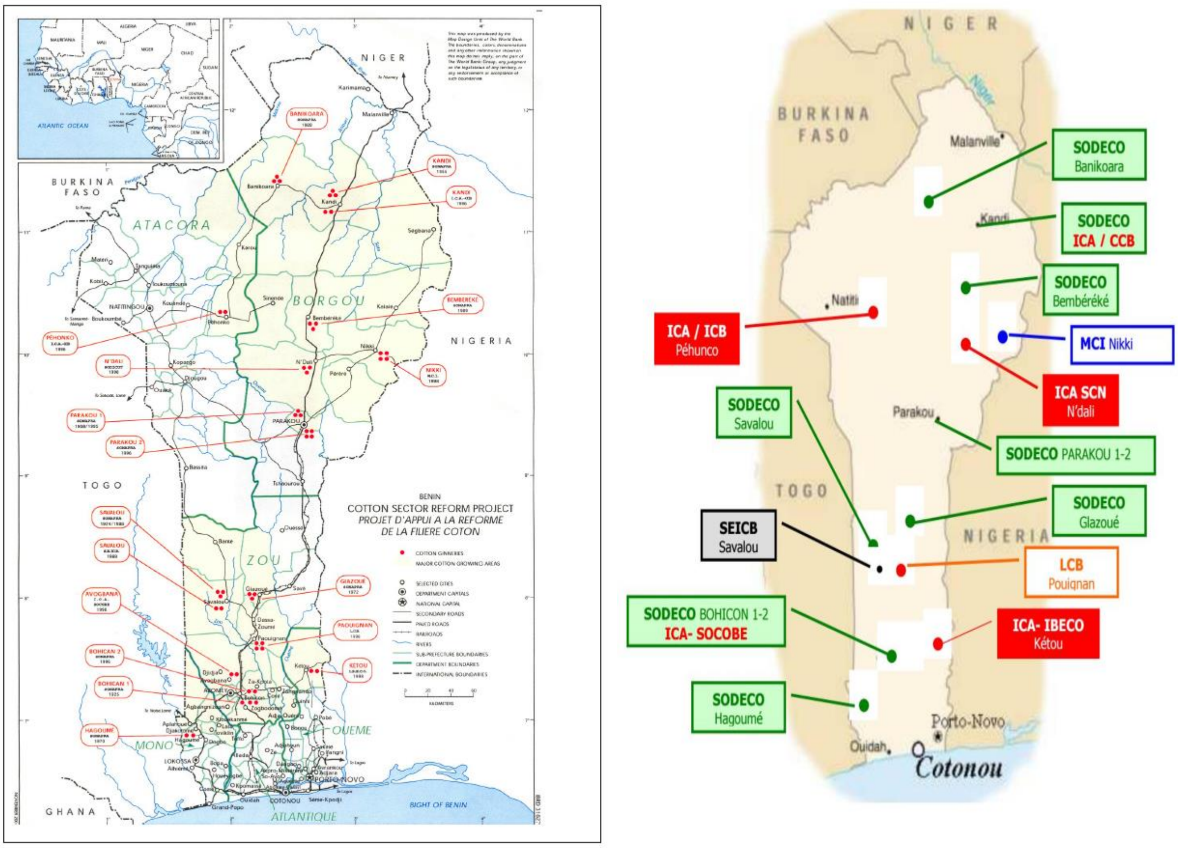
As regards governance issues, the cotton sector experienced two conflicts in 1996–1997. The first conflict involved the government and the first generation of gin factories. In 1995 the private ginnery factories accumulated a lot of profit given the high production of cotton processed but also because the CFA devaluation implied a high value of the world cotton price in CFA, but producer prices only marginally increased.[50] Given, however, that the firms were granted a preferential tax regime an agreement was reached between the government and the firms that firms would exceptionally contribute to government revenue in that year in the amount of 35 CFA per kg of cotton processed. In compensation for this contribution the agreement stated a decrease in the share of the government in the capital of those firms from 35% to 10%. When the Kérékou regime came in in 1996 the preferential tax treatment to these firms was reversed and the government wanted firms to continue to make the 35 CFA per kg contribution. The firms contested this in the judicial court (as well as the

[49] One of the new factories replaced the old government ginnery in Parakou.
[50] Lower producer share price following the CFA devaluation was also observed in other West African countries. It was criticised and fuelled further pressure for reforming the cotton sector in these countries (e.g. Badiane et al., 2002, Baghdadli et al., 2007)

Constitutional and the Supreme Courts) and when they won the Kérékou government's action was reversed.

The second conflict started in 1997 and related to issues between SONAPRA and the first private input providers (SDI and SAMAAC). The issues led SONAPRA to exclude these two companies from the input procurement in 1997. Following this decision SDI and SAMACC brought the case to the judicial court (and the Supreme Court), where they won. In addition, SONAPRA had to pay fines to these firms but an agreement was reached between the two parties. The agreement stipulated that SDI and SAMACC would take 50% of the input supply. This decision was applied from 1998 onwards and it contributed to further conflict because the other suppliers were left with a lower amount of input to be supplied; they contested this rule. This situation led to increased problems in the input component: higher price of input, lower quality of input, and delays in the distribution of inputs (e.g. Bidaux and Soulé, 2005).

Figure 7: Ownership of ginnery factories in 1998 (left) and 2012 (right)



Sources: The left-hand map is from World Bank (2004) and the one to the right is from Fludor Benin (2012). The ICA group and SODECO are now part of the same group. In 2017 the MCI factory was taken over by SODECO. Finally, a new gin factory (not shown on the map), with a capacity of 12,500 tonnes, was created in Parakou in 2018. This gives a total of 600,000 tonnes capacity for Benin.

In order to resolve the problems a number of actions were taken to privatise the management of the cotton sector. In 1998, for instance, the producer organisation FUPRO created the *Coopérative d'Approvisionnement et de Gestion des Intrants Agricole*s (CAGIA), to which the government transferred the management of input supply and distribution in

1999. Other professional associations were created in 1999: the *Association Professionnelle des Egraineurs du Bénin* (APEB) for ginners, the CAGIA for the management of input quotas between private firms, and the AIC for the management of the whole supply chain.

4.5 2000–2007: private mode of organisation by AIC

The important rules of the privatisation were decided at a national workshop in May 2000, which saw the participation of the sector's representatives. The seminar decided between two modes of private governance for cotton: i) a unique private and vertically integrated mode of organisation at the country level; and ii) a private integrated mode of organisation at the regional level. Stakeholders decided in favour of the first mode. Moreover, a number of rules were put in place, such as fixed prices for inputs and cotton seeds across the whole country.

In June 2000 the government suspended the monopole of SONAPRA on primary marketing but it continued to manage its 10 ginneries. Primary marketing was thus passed on to the *Centrale de Sécurisation des Paiements et de Recouvrement* (CSPR), which played a key institutional regulatory role in achieving the recovery of input loans to farmers and the payment of cotton seeds purchased by ginners. A development project funded by the World Bank, the *Projet d'Appui à la Réforme de la Filière Coton* (PARFC), was implemented in 2002–2007 by the inter-professional cotton association (AIC) to strengthen their capacity. One important change in this period was the fact that AIC started to manage the critical[51] functions of the cotton's sector, including technical and extension services that were previously under the responsibility of the CARDERs. It was also in the context where the CARDERs had to fire many workers as required by the PRSA project. As a result, AIC had to recruit private extension agents, which had to join forces with the remaining CARDERs technical staff to do the extension work. Figure 8 below summarises the organisational changes in the cotton sector before 1990 and after the liberalisations of the 1990s and the AIC period in 2000.

It is striking that this period of intense organisational change did not have any effect on cotton production. Moreover, conflicts emerged among the actors starting from 2002–2003. For instance, farmers complained about expensive input prices. In the same way, a number of private firms contested the outcomes of the input procurement procedure, whereas some ginneries found fault with the quotas of cotton seeds. As a result, they boycotted the AIC-CSPR-GARCIA system and started parallel activities. For instance, the dissident distributors attracted some farmers by proposing lower prices than what the official system was offering. However, the quality of the output delivered was not properly monitored. Likewise, the quality of privately supplied inputs could not be guaranteed and producers frequently complained that they were cheated in this regard. The ground was laid for a genuine crisis in the cotton sector. In particular, a lot of confusion was generated by the plurality of input sources and output outlets, and a number of farmers and ginners became severely indebted as the CSPR could no longer track their activities. The cotton sector in Benin thus experienced the side-selling problem discussed in Section 2. As a consequence, the system encountered delays in payments, which discouraged farmers. Many of them turned away from cotton production, which was depressed in 2005. The GV also experienced conflicts.

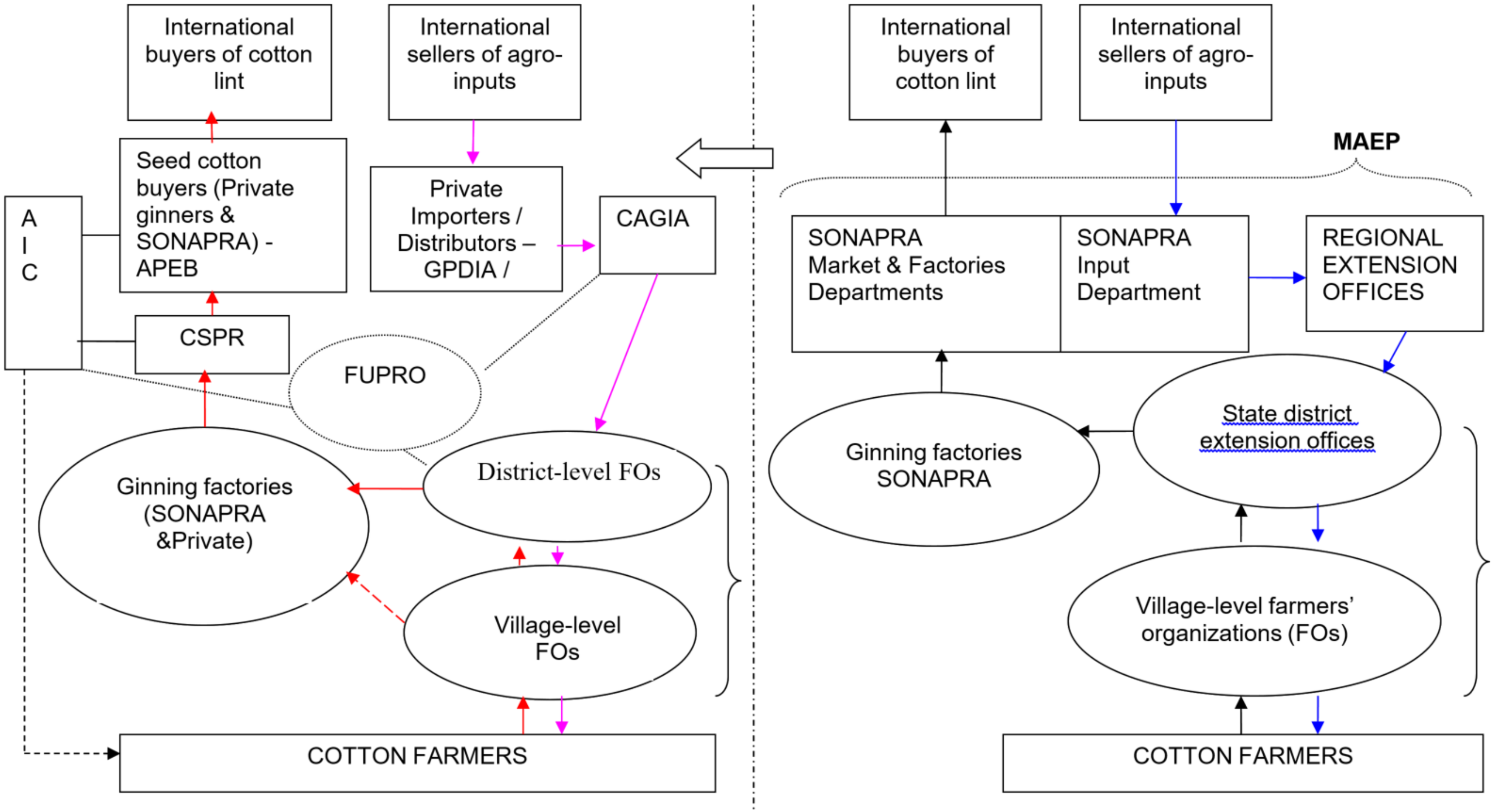
[51] The other critical functions include: research for new variety development; quality control; production and distribution of cotton seed; statistical data production; rural road maintenance.

The joint liability performed poorly and farmers also complained about poor financial management by their leaders. Another issue experienced by the sector was poor extension services because there were coordination problems between the private extension agents recruited by AIC and the ones that used to work in the CARDERs. The private agents also lacked technical skills. In fact, all the critical functions were under serious problems during that period.

The government's reaction consisted of stepping in to finance the debt shortfall. Moreover, it introduced in 2006 institutional reforms to strengthen the professional associations. The producer organisation became the Conseil National *des Producteurs de Coton* (CNPC) and was limited to cotton producers, in contrast to the old FUPRO; the association of the input distributors became the *Conseil National des Importateurs et Distributeurs d'Intrants Coton* (CNIDIC); CAGIA was replaced by the *Centrale d'Achat des Intrants agricoles* (CAI); and, finally, the organisation of gin factories was replaced by the *Conseil National des Égreneurs* (CNEC). Furthermore, the government adopted a framework agreement (*Accord-cadre*) in 2006 with AIC, but with no significant effect on the sector's performance.

In April 2007 the newly elected president (Yayi Boni) dissolved the agreement with AIC and an *ad hoc Commission Nationale* was established to manage cotton inputs. Moreover, the government allowed SONAPRA in that year to compete for input supply with private firms. This decision was surprising given that SONAPRA was already excluded from these activities.

Figure 8: Changes in organisational structure of the cotton before 1992 and after the liberalisation of the 1990s and from 2000



Sources: Adapted from Honfoga (2013)

4.6 2008–2012: private mode of organisation and privatisation of SONAPRA

In 2008, the industrial assets of SONAPRA were privatised and a new group, known as the *Société de Développement du Coton* (SODECO), was created to take over these assets after several problems in procurement management became manifest in 2006–2007. A first attempt to privatise these assets of SONAPRA failed in 2004–2005. The second also failed in 2007 due to problems involving a violation of the regularity procedure. SODECO was created as a joint venture between the government, accounting for a share of 66.5%, and a private company led by Talon, accounting for the remaining share of 33.5%.

In 2008 the government granted another licence for a new ginnery factory, SCN, in N'dali (Borgou) adding a capacity of 40,000 tonnes, despite the fact that the processing component was already experiencing an over-capacity problem. In 2009, a new framework agreement was signed between the government and AIC.

Overall, the domination by Talon's group further increased in the sector because it merged with the majority of gin factories to create the ICA group. Consequently, the sector came under the control of a private monopoly. The government continued, however, to intervene in the sector. Moreover, the new organisational changes failed to improve the situation in Benin's cotton sector. Yields and the cultivated area remained low.

4.7 2012–2016: public mode of organisation is back

In April 2012 an international commission reported serious management problems by AIC. The problems included an over-estimation of the value of input supplied in the field, under-estimation of seed cotton submitted at gin factories, and mismanagement of government subsidies. Hence, the government cancelled the agreement signed in 2009 with AIC and a public mode of organisation took over its management. An inter-ministerial commission assumed the responsibilities of AIC, and SONAPRA and ONS were the main operational organisations. This new public management remained in place till April 2016, when President Yayi Boni finished his term. During this period the cotton sector continued to suffer, however. One positive change perhaps was a strategy introduced to check input consumption in the field. The national statistics institute went into the field with GPS to check accurately the size of land area of cotton in order to verify the input consumption requested. Several times discrepancies were found, and the additional money was recovered. This system continues to be implemented today.

4.8 2016–present: private mode of organisation remains back

In May 2016 President Talon re-established AIC after he was voted into office in April. An audit requested by the Talon government reported several mismanagement problems in the public governance of the cotton sector in 2012–2016. The new regime abolished around 10 agricultural government agencies, including SONAPRA, ONS, and the CARDERs. Moreover, it initiated a broader reform agenda in the agricultural sector, where nine new regional development agencies were created. In addition, the government abolished subsidies to the cotton sector.

During the institutional survey developed for Chapter 3 the experts were not enthusiastic about these reforms.[52] Since 2016, however, seed cotton production has been increasing according to data published by INSAE[53] (451,000 tonnes in 2016 and 597,985 tonnes for 2017) and AIC (656,460 tonnes in 2018). These figures suggest that the sector has been improving in the last three years. The data presented in reports by the *Programme Regional de Production Intégrée du Coton en Afrique* (PR-PICA) also confirm this improvement in 2016-2018. The available information from AIC and INSAE indicate that the recent improvement can be explain by increase in both yields and acreage. Other this period (2016-2018) the producer price has not changed. As a result, this recent improvement in production, yields and acreage could be related to changes on the organisation and the management of the sector by AIC and the government.

It is too early to further elaborate on the recent performance as we currently lack information in this regard; we therefore leave this analysis for future research. Gérald Estur, an expert who is familiar with the issues the African's cotton is facing, argued in May 2019 that this recent improvement in Benin's cotton performance is related to changes in the management of the sector since the new government took power over the last three years. According to the expert, the changes have helped to restore trust among the stakeholders in the sector. The changes include: a vertically integrated coordination approach by the government; timely payment of cotton growers; and efficient delivery of inputs.[54]

[52] During the survey the experts had to provide a score between a value 0 (strongly negative opinion) and 4 (strongly positive opinion) on questions related to institutional performance. In addition, respondents were allowed to reply with 'I do not know' when they could not provide relevant answers to a question. The average score value related to the reform in the agricultural sector was around 2 and 23% of respondents either reported a neutral opinion or did not answer the question. See chapter 3 for more detail.
[53] See this link for details https://www.insae-bj.org/statistiques/statistiques-economiques
[54] See here for details http://www.rfi.fr/emission/20190517-le-benin-nouveau-champion-coton-africain

5 Concluding remarks

The cotton sector presents a unique opportunity to understand the causes and consequences of institutional changes in Benin over a long historical period. The sector has operated under different modes of organisation, oscillating between public and private monopolies over time as summarized in Table 2 below. Initially, the cotton sector was managed by French entrepreneurs. From the end of the 1940s the sector came under the control of a French parastatal monopoly, the CFDT, which helped to modernise the sector with the support of development aid. In 1972, the Marxist-Leninist regime of Kérékou nationalised the CFDT, which was replaced by a number of government agencies. The system thus disintegrated, which increased coordination costs and resulted in poor performance. Thereafter, the sector entered a first restructuring period in the early 1980s and the government agencies were re-integrated back into a single state agency, SONAPRA. Poor management problems and adverse world price shocks undermined the sector's performance in 1986. After another restructuring plan the sector started a liberalisation period in 1992, after the country achieved a successful democratic transition in 1990. In particular, a liberalisation plan was implemented in 1992–1998 and private Beninese entrepreneurs started operating in the inputs and ginnery components of the sector. Thereafter, the sector experienced a crisis from the late 1990s and an inter-professional association of private entrepreneurs, AIC, became responsible for the management of the sector in 2000–2006, but the government continued to play an important role. In 2007 a new government suspended AIC. Thereafter, SONAPRA was privatised in 2008 and a dominant private group emerged. AIC became responsible again for the sector in 2009 but new problems in the sector led the government to suspend ACI from 2012 until 2016, when AIC was again given the management of the sector.

What are the common causes of these institutional changes? What are the common institutional weaknesses in the cotton sector in Benin? What are their consequences for economic development in Benin? Can Benin develop a long-term development strategy based on cotton?

5.1 Institutional changes and institutional weaknesses: causes and consequences

There are a number of institutional weaknesses that can be derived from the foregoing analysis in the chapter: the discontinuity of regulations, reforms, policies, planned actions, or mandates of an organisation; the weak regulation of businesses (privatisation and liberalisation, licence management, financial management, accounting and auditing systems); weak capacity in public administration (including issues related to data management); vulnerability to world price shocks; excessive government and political interference; political appointments; overlapping responsibility; weak coordination; and imperfect credit markets, asymmetric information, and weak contract enforcement. These weaknesses are potentially caused by rent-seeking; election and mass support; low technical and financial capacity; donors' ideologies and their interests; poor management of conflict of interest; the ideology of political actors; colonisation and national anti-colonial revolution; culture; weak campaign financing; power concentration at the executive level; and distortions caused by subsidies in the dominant world cotton producers. We will now elaborate on a few of these institutional bottlenecks.

Table 2: Overview of mode of organisation of the cotton across the political regimes in Benin: 1960-present

Periods	**1960-1971**	**1972-1990**	**1991-1998**		**1999-2005**	**2006-2015**		**2016-present**
Quick outlook	**Post-independence**	**Revolutionary period**	**Onset of liberalization**		**Liberalization's rectification, cotton boom &disastrous management**	**Dwindling private and public management, and last crash in the sector**		**Recovery of the sector**
Trends in cotton exports			Upward Trend	Downward Trend		Mixed upward trend		-
Successive Presidencies	**1960-1971**	**1972-1991**	**1991-1995**	**1996-2000**	**2001-2005**	**2006-2010**	**2011-2015**	**2016-**
Presidents	Triumvirate*	Kérékou	Soglo	Kérékou	Kérékou	Yayi Boni	Yayi Boni	Patrice Talon
Approach of political control of the cotton subsector	Private oligopoly under spurious public control	Public monopoly under spurious collectivism	Embracing liberalization and privatization at the onset of democracy	Reconsidering privatization, Search for humanity in sectoral democracy	Political in-meshing and disastrous management of the cotton subsector	Enhanced private oligopoly and political interests in the cotton subsector	Strong clash between political interests and private benefits	Private mode of organization under AIC
	Exports performance and sector's competitiveness							
Cotton exports (1000 US$)	2193	22416	98800	162990	160716	135347	216895	

Discontinuity of regulations, reforms, policies, planned actions, or mandates of cotton organisations

This characterises a situation in which a government abruptly overturns existing regulations, reforms, policies, planned actions by the previous government, or re-assigns the mandates of organisations in the cotton sector. This type of institutional weakness has been common over the whole historical period. In 1972, for instance, the military regime unexpectedly reversed the agreed decision between donors and the previous government that SONACO would contract with the CFDT and SATEC to manage field activities (distribution of inputs, technical and extension services, transport, marketing). In the same way the governance of AIC was sharply interrupted several times by successive governments in the period 2006–2016. Furthermore, SONAPRA suddenly reappeared in input supply and distribution in 2007 and 2012–2016, whereas a regulation already excluded it from participating in these activities in 1995.

Several factors may cause this type of institutional bottleneck: for instance, the Marxist-Leninist ideology of the revolutionary regime of the 1970s, the pronounced anti-colonial revolution at that time, and rent-seeking by supporters of the regime may explain why the CFDT did not continue to play a dominant role in the cotton sector in Benin but instead SONACO and other newly created government agencies suddenly took over the responsibilities. In the same way, rent-seeking, weak campaign financing, and electoral institutions, as well as the poor regulation of businesses, that characterise Benin may promote business-politics clientelist contracts, as elaborated in Chapter 4, and this could potentially explain the conflicts that emerged following the liberalisation and privatisation of the cotton sector in the 1990s. The dominant power of the new actors in the cotton sector, the excessive power of the executive, together with weak campaign financing and electoral institutions, could in turn explain the fluctuation between the public and private types of governance that we have witnessed since the 2000s.

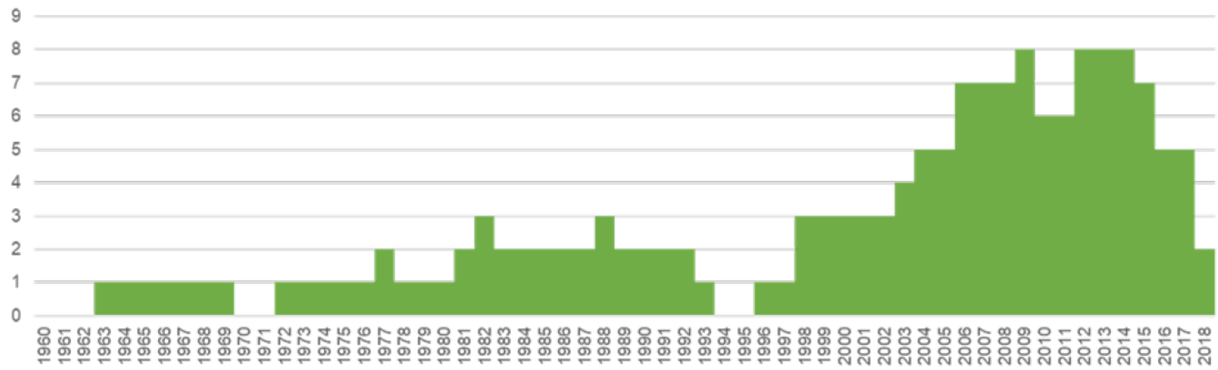
This institutional weakness causes an increase in uncertainty in the cotton sector and increases the cost of agriculture services and the quality of input required by the farmers. As a result, it will discourage the production of cotton and/or induce low yield, which in turn will undermine the welfare of producers.

Weak capacity in public administration, colonisation, donors' ideology and their interests

Donors, essentially France and the World Bank, have played a key role in the development of the cotton sector in Benin. The French colonisation and the interest of France to outsource its industries were the first explaining causes of the development of the modern cotton industry in Benin. The French cotton institutions, such as the vertical integrated system of the value chain and the price stabilisation mechanism, initiated in the colonial period continue to persist today in Benin. Because the public administration of Benin has weak capacity, Benin requested the World Bank to join forces in developing the cotton sector further. The World Bank's view of the organisation of the value chain is a bit different from that of France in that it promotes a competitive-type system. The World Bank's view has dominated in the institutional choices made for the management of Benin's cotton sector because the Marxist-Leninist government undermined the French interests in the 1970s because of anti-colonial sentiment that was observed at that time. Moreover, the pioneer role of Benin in its democratic transition and market economy in francophone Africa further contributed to making Benin different in the liberalisation and privatisation process in the cotton sector in West Africa.

In the 1990s, however, the liberalisation and privatisation of Benin's cotton sector generated problems as explained above. These problems then attracted more donors to the sector, as can be seen from Figure 9 below. If the new donors differed also in ideology as regards the organisation of the cotton sector then the increase in the number of donors could be expected to have increased the coordination cost to manage the influx of aid in the sector, and also further contribute to the problem the sector experienced. In the absence of evidence for this, however, this remains speculative.

Figure 9: Donors supporting Benin's cotton sector (number)



Source: Hougni and Moreira (2019).

5.2 Long-term development issues

We end the analysis with a discussion of two issues. First, is the current mode of organisation of the Benin cotton sector the most welfare-enhancing for the country? Second, should Benin still rely on cotton for its long-term development strategy?

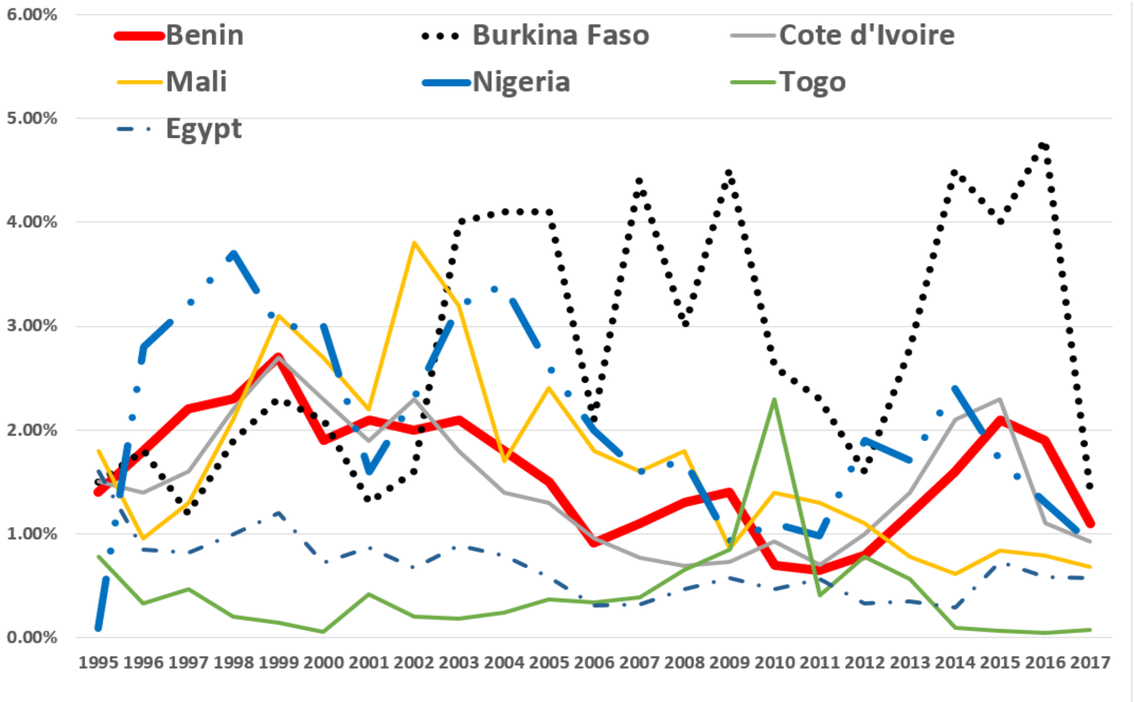
On the first question, the current system of a national integrated value chain is certainty less efficient than the alternative of regionalisation in the management of cotton's activities. It is now clear why the former was selected at the national workshop in May 2000. The other francophone countries in West Africa (Burkina Faso, Cote d'Ivoire, and Mali) currently operate with a regionalisation system, although a pan-national pricing system is still in place in a number of them. Perhaps one explanation for Benin's choice is because the system has created a dominant player that was afraid to lose power if the management were to be regionalised at that time, when the privatisation of SONAPRA had not taken place. The national integrated system is inefficient because cotton issues are being addressed in the same manner in the country as if the region producing areas were the same. We know, however, that the regions are different. For instance, because the Zou-Collines region's climatic conditions generate humidity more specific solutions should target the region. As a result, the research body should develop specific crop varieties that resist against the specific crop disease of each region instead of imposing a unique crop variety for the whole country as is currently done. In a recent study, Hougni et al (2016) show among seven varieties of cotton, E 944-2; E 956-2; H 769-5; H 782-3; I 875-3; K 768-3 and H 279-1, that cotton producing regions in Benin show significant differences in yield and production across these seven varieties. The pan-national pricing system of seed cotton and input cost is also inefficient because farmers are spread across different geographical locations and the current system implies that some farmers are subsidised by others. The system is therefore more egalitarian because it transfers resources from farmers that are more productive to the ones that are less productive. Note, however, that the farmers that seem to be less productive are more likely to be located in the central region where the majority of gin factories are located. As such, it is not clear a priori how the system actually works, and a more in-depth study would be need to shed light on the distributional aspect of the current system. A distributional analysis of the value added across the different actors in the cotton sector would be also needed as we currently lack information for such an analysis.

With regards to the second question, the answer will depend on the conditions related to the world demand for cotton fibres if Benin were to continue to specialise in the export of this type of output.[55] The data presented in the left panel of Figure 2 suggest that in absolute terms the world demand for cotton fibre is continuing to grow. The question that thus arises is to what extent Benin is competitive in producing cotton fibre, allowing it to maintain its market share in the world market. Benin has a comparative advantage in producing cotton, certainly in the Borgou region, where the agro-climatic conditions are the most favourable. A number of studies also claim that Benin has a revealed comparative advantage in the production of cotton (e.g. World Bank, 2017). Ideally, we would like to compare consistent production costs across countries and over time, but we currently lack such data and we leave it for further research. Instead, we present in Figure 10 below the market share of cotton export in Benin and a number of comparator countries in Africa in the period 1995–2017. Overall, the market shares of the majority of countries started to decrease from 2015–2016. If this trend continues then there is reason to worry about this issue. We will investigate this point further by including comparators outside Africa.

Burkina Faso easily outperforms the other countries. Benin displays an average performance although its situation improved significantly in the 1990s – but it deteriorated dramatically following the introduction of the AIC governance. The situation improved again in 2011–2015.

[55] The textile sector is currently less efficient mainly because of electricity costs and excessive imports of second-hand clothes from Europe and Asia.

Figure 10: Export market shares in the global cotton market (% of global export value)



Sources: Observatory of Economic Complexity.

References

Ahohounkpanzon, M. and Allou, Z. Y. (2010) 'Etude sur les mécanismes de fixation du prix du coton graine et la prise en compte des co-produits du coton au Bénin', USAID Project Report No. 624 A 00 07 000, Bamako.

Alia, D. Y., Floquet, A. F., and Adjovi, E. (2017) 'Heterogeneous Welfare Effect of Cotton Pricing on Households in Benin', *African Development Review*, 29 (2), 107–121.

Badiane O., Ghura, D., Goreux, L., and Masson, P. (2002) 'Cotton Sector Strategies in West and Central Africa', World Bank Policy Research Working Paper No. 2867.

Baffes, J. (2004) 'Cotton: Market Setting, Trade Policies, and Issues', World Bank Policy Research Working Paper 3218.

Baffes, J. (2007) 'Distortions to Cotton Sector Incentives in West and Central Africa', World Bank Working Paper No 50, Washington, DC.

Baghdadli, I., Cheikhrouhou, H. and Raballand, G. (2007) 'Strategies for Cotton in West and Central Africa: Enhancing Competitiveness in the "Cotton-4"', World Bank Working Paper N°108. Washington, DC: World Bank.

Bates, R. (1981) '*Markets and States in Tropical Africa: the political basis of agricultural policies',* Berkeley, Los Anglels, and London, University of California Press

Bidaux, A. and Soulé, B. G. (2005) 'Etude sur le mécanisme d'approvisionnement et de distribution des intrants agricoles au Bénin', AIC-Bénin. Bussigny (Switzerland), Cotonou (Bénin).

Blanc, E., Quirion, P., and Strobl, E. (2008) 'The climatic determinants of cotton yields: Evidence from a plot in West Africa', *Agricultural and Forest Meteorology*, 148(6–7).

Bourdet, Y. (2004) 'A Tale of Three Countries: Structure, Reform and Performance of the Cotton Sector in Mali, Burkina Faso and Benin', Country Economic Report No 2. Stockholm: Swedish International Development Co-operative Agency.

Cabinet Afrique Décision Optimale (CADO-80) (2010) 'Evaluation ex-ante de la mise en œuvre des stratégies de relance du pole coton-textile au Bénin', Coopération Technique Allemande, GIZ-Bénin.

Banque Mondiale (2004) 'Réformes du secteur coton: une analyse de la pauvreté et de l'impact social', Report No. 29951-BJ. Washington DC.

D'Almeida-Topor, H. (1995) *Histoire économique du Dahomey (Bénin): 1890–1920*. Editions Paris. L'Harmattan.

Delpeuch, C. and Lebois, A. (2014) 'The Elusive Quest for Supply Response to Cash-Crop Market Reforms in Sub-Saharan Africa: The Case of Cotton', *World Development* 64, pp. 521–537.

FAO (2004) 'Cotton: Impact of Support Policies in Developing Countries', Trade Policy Technical Note N°1.

Fludor Benin (2012) 'Une étude monographique sur le coton: la problématique du Bénin', CIPB.

Fok, A. C. M. (1993) 'Le développement du coton au Mali par analyse des contradictions : Les acteurs et les crises de 1895 à 1993', Document de travail de l'UR Economie des Filières 8, CIRAD, Montpellier, pp. 237.

Gergely, N. (2009) 'The Cotton Sector of Benin: Africa Region', World Bank Working Paper No. 125, World Bank, Washington, DC.

Government of Benin (1962) Mesure nationales de stabilisation des prix des produits de base au Dahomey: Communication du Gouvemement du Dahomey, Commission Economique pour l'Afrique, Réunion Africaine sur la stabilisation des produits de base. Lagos, Nigeria, 30 juillet-7 Aout, Points 4 et 5 de l'ordre du jour provisoire.

Honfoga, B. (2013), 'Cotton institutions and perverse incentives for fertilizer traders in Benin' *Journal of Development and Agricultural Economics* Vol. 5(1), pp. 19-34.

Hougni, A. and Moreira, A. (2019) 'L'aide au développement du coton avant et après 2003 et l'initiative C-4: le cas du Bénin', World Trade Organization.

Hougni, A., Imorou, L., and Dagoudo, A. (2016) 'Caractérisation Agro-Morphologique De Variétés De Cotonnier (Gossypium Hirsutum) Pour Une Régionalisation Economique Pour La Production Du Coton Au Bénin' *European Scientific Journal*, vol.12, No.36, pp. 210-227.

Hugon, P. and Mayeyenda, A. (2003) 'Les effets des politiques des prix dans les filières coton en Afrique zone franc: analyse empirique', *Économie rurale*, 275, pp. 66–82.

Janzen, J. P., Smith, A. D., and Carter, C. A. (2018) 'Commodity Price Comovement and Financial Speculation: The Case of Cotton', *American Journal of Agricultural Economics*, 100(1), pp. 264–285. Krifa, M. and Stevens, S.S. (2016) 'Cotton Utilization in Conventional and Non-Conventional Textiles—A Statistical Review', *Agricultural Sciences*, 7, pp. 747–758.

Kpadé, P. C. (2011) *Adaptation de la coordination et nouvelles contradictions entre acteurs du système coton au Bénin face à la libéralisation économique*. Thèse de Doctorat. Université de Bourgogne, France.

Kpadé, P. C. and Boinon, J.P. (2011) 'Dynamique des politiques cotonnières au Bénin. Une lecture par la dépendance de sentier (Dynamics of cotton policies in Benin: an explanation by path dependence'), *Économie rurale Agricultures, alimentations, territoires*, 321.

Manning, P. (1980) 'The technology of production in southern Dahomey c. 1900', *African Economic History*, 9, pp. 49–67.

Manning, P. (1982) *Slavery, Colonialism, and Economic Growth in Dahomey, 1640–1960*, Cambridge University Press, Cambridge.

Ministère de l'Agriculture de l'Elevage et de la Pêche (2008), *Plan Stratégique de Relance du Secteur Agricole*, Cotonou.

Minot, N. and Daniels, L. (2005) 'Impact of global cotton markets on rural poverty in Benin', *Agricultural Economics* 33 supplement 453–466.

Poulton, C. and Tschir, D. (2009) *A Typology of African Cotton Sectors*.

Poulton, C., Gibbon, P., Hanyani-Mlambo, B., Kydd, J., Maro, W., Nylandsted Larsen, M., Osorio, A., Tschirley, D., and Zulu, B. (2004) 'Competition and Co-ordination in Liberalized African Cotton Market Systems', *World Development* 32 (3), p. 519.

Saizonou, J. (2008) 'L'Association interprofessionnelle du coton au Bénin (AIC)', CTA, Inter-réseaux, rural development.

Sotindjo, D. S. (2017) '*Des aspects de l'histoire du Bénin (XVIe-début XXIe siècle)'*. Editions Universitaires Européennes. Germany

Theriault, V., and Serra, R. (2014) ‘Institutional environment and technical efficiency: A stochastic frontier analysis of cotton producers in West Africa’, *Journal of Agricultural Economics* 65(2), pp. 383-405.

Ton, P. 2004. La production du coton au Bénin. Projet d'analyse d'une spéculation agricole par pays, financé par le programme "Renforcement des capacités commerciales" de la F.I.P.A.(Fédération Internationale des Producteurs Agricoles). Projet N°: 2618. Arnhem, Pays-Bas, mars, 2004.

Tossou, R. C. 1993. Le Groupement Villageois : un cadre de participation communautaire au développement ou un instrument de réalisation d'intérêts individuels et conflictuels. *Bulletin de l'APAD*. Numéro 5. Wennink B., Meenink J.W. & Djihoun M. (Ed.) 2013 – La filière coton tisse sa toile au Bénin. Les organisations de producteurs étoffent leurs services aux exploitations agricoles familiales. Cotonou/Amsterdam, KIT Publishers.

World Bank (1969) ‘The Economy of Dahomey’, report N° AW-2. International Bank for Reconstruction and Development, International Development Association, Western Africa Department.

World Bank (1970) ‘Economic Situation and Prospects of Dahomey’, report N° AW-9a. International Bank for Reconstruction and Development, International Development Association, Western Africa Department.

World Bank (1972) ‘Appraisal of the Zou-Borgou Cotton project’, report N° PA-99. Washington DC.

World Bank (1978) ‘Project Performance Audit Report BENIN of the Zou-Borgou Cotton project (Credit 307-BEN)’, report N°2034. Washington DC.

World Bank (1995) ‘Performance Audit Report: Borgou Rural Development Project; Zou Province Rural Development Project; Second Borgou Rural Development Project’, report N°15218.

World Bank (2004) ‘Réforme du secteur Coton: Une analyse de la pauvreté et de l’impact social’, report N°29951-BJ. Unités sectorielles ESSD et PREM Région Afrique subsaharienne.

World Bank (2017) ‘Priorities for ending poverty and boosting shared prosperity: Systematic Country Diagnostic’.

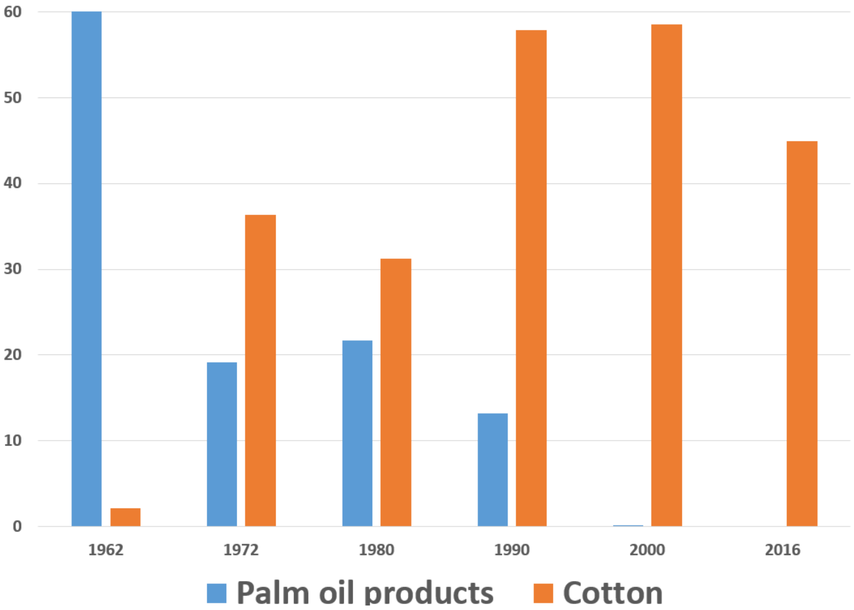
Yérima, B. (2005) *Système de rémunération et amélioration de la qualité du coton au Bénin*. Thèse de Doctorat, Agro-Montpellier, France.

Yérima, B., and Affo, F. (2011) ‘Normes, institutions et configurations politiques dans les reformes des filières cotonnières en Afrique de l’ouest: cas du Benin’, Background Paper 5. Africa Power and Politics Programme, London.

Appendix

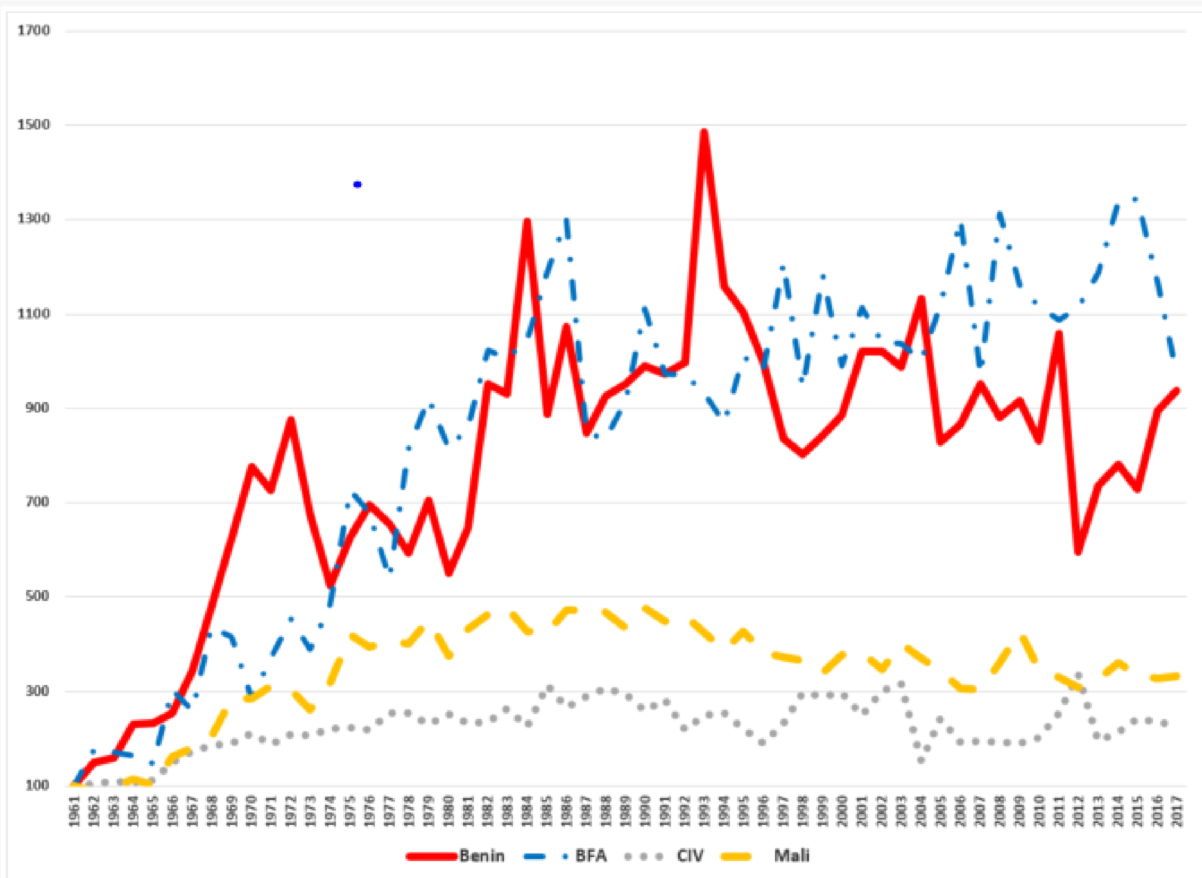
- First elected president – Maga: 1 August 1960–24 October 1963.
- Coup d'état by Colonel Christophe Soglo, chef d'état major: 27 October 1963– January 1964.
    - New constitution 11 January 1963.
- Apithy became president after election: January 1964–November 1965
- *Coup d'état* – A military government took power: November 1965
    - Apithy set back and Tahirou Congacou, president of the parliament, became president and ran a transition to a new government.
- Tahirou Congacou: 29 November 1965–22 December 1965.
- Coup d'état – General Christophe Soglo: 22 December 1965–16 December 1967.
    - Development project CFDT, SATEC.
    - Coup d'état by low-ranking officers.
- Coup d'état – Maurice Kouandété: 17 December 1967–21 December 1967.
- Coup d'état – Colonel A. Alley: 21 December 1967–1968.
    - New constitution 11 April 1968.
    - New election 15 May 1968, for which the three regional leaders were excluded as candidates; in the election only 26% of voters showed up.
    - Among the five candidates Adjou Moumouni obtained 84% of the votes.
    - The results of the election were annulled.
    - Alley formed a new government in May 1968.
- The military regime appointed Emile Derlin Zinsou as the new president: 31 July 1968–December 1969:
    - but he accepted only on the condition that a referendum regarding his appointment be held. His candidacy was supported by 76.4% of voters, with a 72.6% turnout.
- Coup d'état by Colonel Kouandoté: December 1969.
- Election in 1970 but the results were annulled because of an issue of low turnout during the election.
- *Conseil Présidentiel* was a triumvirate (Apithy-Maga-Ahonmadégbé) system of government: 7 May 1970–26 October 1972.
    - Maga: 07 May 1970–May 1972.
    - Ahomadégbé: 07 May 1972–26 October 1972.
- Coup d'état – Kerekou: 1972–1989.

Figure 11: Shares of palm oil and cotton products in export revenue of Benin (%)



Sources: Observatory of Economic Complexity.

Figure 12: Cotton yield in Benin and selected West African countries (Ha/Kg)



Sources: FAOSTAT

Discussion of 'Regulation of a dominant sector: A case study of cotton'

Along with starchy staple crops, cotton dominates the farming landscape in West Africa. Cotton is primarily cultivated under rainfed conditions in rotation with maize, sorghum, and/or millet on small family farms that average less than 10 hectares. Being the primary source of income for millions of smallholder farmers, cotton can help reduce poverty and improve food and nutrition security. As a main source of export revenue, cotton has wide-reaching implications for poor developing economies in West Africa.

The extent that cotton contributes to the socio-economic development of West African countries depends heavily on the economic performance of their cotton sectors. In turn, the incentive structure embodied in institutions influences the cotton sector's economic performance. Supportive institutions positively affect the ability of individuals and organisations to respond to new opportunities and challenges. Well-designed institutions create incentives for individuals and organisations to invest, can limit the economic and political power of the elites, and provide more equal opportunities for a larger portion of the population (Acemoglu, 2003).

Over the last several decades, major institutional changes have been experimented with in West African cotton sectors, with the goal of increasing economic performance. These have included changes in social, political, and economic institutions, coming especially from market liberalisation and privatisation. With institutional changes come shifts in incentives and distributional power. These shifts have affected the economic performance of multiple West African cotton sectors, including those of Benin, Burkina Faso, and Mali.

West African cotton sectors compete in a highly competitive and global environment. Although cotton production and exports are key to their economies, West African countries play a relatively small role in the international cotton market compared to larger cotton producers and exporters, such as China, India, and the United States. As smaller players on the global stage, they need the ability to adapt to external forces (e.g. price fluctuations, tariffs, subsidies). In addition, West African cotton sectors face internal constraints that can impede economic development, such as missing or imperfect access to inputs, financing, and insurance. Well-designed and implemented cotton-based institutions can help mitigate both external and internal challenges and support the socio-economic development of their countries.

Many institutional changes have occurred in the West African cotton sectors since achieving independence and a common goal has been improving economic performance. These changes can be grouped into four general periods: (1) contract with the French parastatal; (2) nationalisation of cotton gins; (3) implementation of market-oriented reforms; and (4) post-market reforms. Several indicators have been used to assess the economic performance of West African cotton sectors. These include production and yield; price; access to inputs, credit, and extension services; cotton quality; farm technical efficiency; research and development; export revenues; and profitability (Theriault and Tschirley, 2014; Theriault and Serra, 2014; Tschirley *et al*., 2009).

John R. Commons' institutional economic framework is well adapted to understanding the evolution in institutions and their related effects on economic performance (Theriault and Sterns, 2012). According to Commons' framework, actions to address limiting factors are the drivers of institutional changes. These actions have both intended and unintended consequences that affect economic performance, which can lead to the emergence of new limiting factors. New sets of limiting factors resume the cycle of institutional change. Each institutional change generates a new incentive structure and affects power dynamics within the sector. Stakeholders are more likely to resist changes that would decrease their power.

Contract with the French parastatal (1960 to mid-1970s) – Before the country's independence, the French parastatal, the *Compagnie française pour le développement des fibres textiles* (CFDT) had significant control over the cotton sectors in which it operated, managing farm input delivery and the grading and weighing of seed cotton, as well as exports. In return for its monopoly status, the French parastatal agreed to purchase all cotton production at guaranteed fixed prices announced before the planting season. During this period, production went up and the CFDT was profitable. However, much of the profits were retained by the French parastatal and little was reinvested in West Africa, and this impeded economic development.

Nationalisation of cotton gins (mid-1970s to mid-1990s) – One of the major institutional changes corresponds to the end of the monopoly contract with the CFDT. To encourage economic development after independence, several West African governments nationalised their cotton sectors, which gave them control over the allocation of cotton export revenue. During this nationalisation period, cotton became a primary vehicle for boosting agricultural productivity and helped to promote integrated rural development (Theriault and Tschirley, 2014). Both cotton and cereal yields benefited from greater public investments. State-owned enterprises played an important role in maintaining rural roads, ensuring access to drinkable water, and reducing illiteracy. Yet, in the absence of strong institutions, greater power created incentives for rent-seeking behaviours and political interference. Farmers were still lacking a voice in decisions related to cotton activities. The combination of low farm-gate prices, mismanagement, and inefficiencies in ginning operations led to significant debts and discontent among farmers.

Market-oriented reforms (mid-1990s to late 2000s) – In response to poor financial performance, donors started to push for market privatisation and liberalisation. The market-oriented reform process gave farmers the opportunity to better organise themselves to increase their voice within the cotton sector. Village-wide, multi-purpose farmer associations were transformed into formal groups focused on cotton farmers. More responsibilities, such as the management of farm input credit, were transferred to them. Even though farmers, through their organisations, became more involved in management activities, their limited negotiation power in the determination of the price they received from the gins remained a limiting factor (Theriault and Sterns, 2012).

Market reforms were unevenly and partially implemented (Theriault and Serra, 2014). Benin made stronger attempts to privatise and liberalise its cotton sector than Burkina Faso and Mali. However, the establishment of several new cotton ginneries in Benin did not lead to increased competition, since the vast majority of them fell under the same, private rather than public, ownership. Despite the creation of new gins in Burkina Faso, the former state-owned enterprise continues to be the dominant player. After years of privatisation discussions, the Malian cotton sector remains managed by the state-owned enterprise, although it did undergo a change in management. Several factors can explain the uneven and partial implementation of the reforms, including resistance to change due to a loss of governmental power, as well as scepticism about the need for change and expected outcomes.

Post-market reforms (late 2000s to now) – In the post-market reform era most efforts have been channelled towards increasing production. When world prices are high, increased production translates into greater export revenues. With greater export revenues, poor financial performance is less apparent, and therefore there is less push for market reforms. Cotton has been and continues to be produced under contract farming conditions, with guaranteed pre-planting pan-territorial prices, guaranteed seed cotton purchase, and input credit provision. Both farm-gate and input prices have been key limiting factors to increased production. Price incentives, in particular through governmental fertiliser subsidies, have been used to encourage farmers to increase cotton production and productivity. But this has not always been enough to keep farmers content, as evidenced by the repeated farmer boycotts in Burkina Faso recently. After years of decline, Benin cotton production has been rising again over the last few years. This increase coincides with the arrival of the new president, who has a vested interest in the Beninese cotton sector (Honfoga et al., 2019).

The current economic performance of West African cotton sectors remains highly affected by institutional structure. There is a trade-off between competition and effective coordination (Tschirley *et al*., 2009). Effective coordination tends to facilitate the provision of services and improve the quality of cotton. Market competition tends to provide incentives for higher farm-gate prices and greater cost efficiency at the gin level. In more regulated cotton sectors, such as in West Africa, farmers are provided with extension services and inputs on credit but receive lower farm-gate prices due to limited competition. The fact that no institutional structure performs unambiguously better across all performance dimensions can, in part, explain the abandonment of market reforms.

The institutional structure also affects the ability of cotton to spur food crop productivity. This indicator has been the strongest in the regulated cotton sectors of West Africa. Direct and indirect pathways, through which state-owned enterprises have contributed to food crop intensification, include input provision and extension advice for food crops and agronomic spillovers. Moving from a regulated to a more competitive market structure could have affected the food–cotton crop interdependence in West Africa, which may have threatened food security in the region.

Other limiting factors to the economic performance of West African cotton sectors include climate change, invasive species, low technology adoption, and lack of market influence. The increasingly erratic rainfall as a result of climate change has a detrimental impact on cotton production and productivity. The proliferation of counterfactual pesticides makes it more challenging to control for pests, while posing human, environmental, and financial risks to cotton farmers. With limited investment in agricultural research and development, West African cotton sectors are facing low and stagnant yields. Low adoption of technologies by farmers and gins result in low yields, limited traceability, and quality issues from contamination. With low processing capacity and domestic consumption, they are vulnerable to global development.

Moving forward, it is essential that any proposals to reform the West African cotton sectors take into account the institutional setting, such as the strong intertwined relationship between food and cotton crops, in order to avoid major discrepancies between expected and realised economic performance. Increasing farm productivity, while strengthening farmer resilience as well as ginning efficiency are key to improving the economic performance of the West African cotton sectors. The promotion of regional integration is a viable approach for West African cotton sectors to increase their influence in the international market. Building strong institutions take times, but once built, they help to ensure that economic development occurs in an effective, accountable, and inclusive way.

References

Acemoglu, D. (2003) ‘Root causes: A historical approach to assessing the role of institutions in economic development’, *Finance and Development*, 40(2), pp. 27–30.

Honfoga, B.G., Houssa, R. and Dedehouanou, H. (2019) ‘Regulation of a dominant sector: A case study of cotton sector’. in Bourguignon, F., Houssa, R., Platteau, J.P. and Reding, P. (eds.), *An Institutional Diagnostic of Benin*

Theriault, V., and Serra, R. (2014) ‘Institutional environment and technical efficiency: A stochastic frontier analysis of cotton producers in West Africa’, *Journal of Agricultural Economics* 65(2), pp. 383-405.

Theriault, V., and Tschirley, D.L. (2014) ‘How institutions mediate the impact of cash cropping on food crop intensification: An application to cotton in Sub-Saharan Africa’, *World Development* 64, pp. 298–310.

Theriault, V., and Sterns, J.A. (2012) ‘The evolution of institutions in the Malian cotton sector: An application of John R. Commons's ideas’, *Journal of Economic Issues* 46 (4), pp. 941–966.

Tschirley, D., Poulton, C., and Labaste, P. (2009) *Organization and performance of cotton sectors in Africa: Learning from reform experience*. The World Bank.