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The Cotton Sector Of Benin

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Abstract

This country study is a background paper prepared for the comparative analysis of organization and performance of cotton sectors in Sub-Saharan Africa, a study carried out by the World Bank, with the objective of analyzing the links between sector structure and observed performance outcomes and thus draw lessons from reform experience that can provide useful guidance to policy-makers, other local stakeholders, and interested donors agencies.. It describes and reviews the cotton sector situation in Benin and the reforms that the sector has undergone since the beginning of the 1990s.

Reforms entailed mainly the privatization of input supply, introduction of private ginners and creation of interprofessional bodies to take over the sector management, through a highly regulated system precluding competition among ginners. The outcome of these reforms were far beyond expectations, because of a lack of support from the Government, as well as because of the complexity of the regulation mechanisms which made them difficult to enforce and because of the weakness of farmers organizations. As a consequence of these shortcomings, the payment of seed cotton to producers became irregular, resulting in a steep drop in production. With the privatization of the main cotton company, SONAPRA, finally completed at the end of 2008, the sector is now moving towards a concentrated type, dominated by one private operator. This evolution calls for new regulation mechanisms, currently being considered by Government and stakeholders.

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COMPARATIVE ANALYSIS OF ORGANIZATION AND PERFORMANCE OF AFRICAN COTTON SECTORS

THE COTTON SECTOR OF BENIN

Paper prepared for the World Bank by

Nicolas Gergely

March 2009

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Acknowledgements

This is a background paper prepared for the comparative analysis of cotton sector reform in Sub-Saharan Africa, a study carried out by a World Bank team led by Patrick Labaste (Lead Agricultural Economist, SD Department, Africa Region, World Bank) and including David Tschirley (MSU), Colin Poulton (Imperial College London), Nicolas Gergely (consultant), John Baffes (DEC, World Bank), Duncan Boughton (MSU), and Gérald Estur (marketing and quality consultant). Grant Cavanaugh (J.E. Austin Associates) edited this report under the supervision of Malathi Jayawickrama.

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A first draft of this report, based on a desk review, was originally prepared in 2007 as a case study for the above comparative analysis. This report was revised, completed and finalized in May 2008, following a field visit to Benin by the author, including an update of the descriptive part and a more detailed analysis of the sector performance. This final version also includes, in an annex, a comparative analysis of performance with the eight other countries covered by the study.

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Abbreviations

AIC	Association Interprofessionnelle du Coton
APEB	Association Professionnelle des Egraineurs du Bénin
CAGIA	Coopérative d'Approvisionnement et de Gestion des Intrants Agricoles
CARDER	Centre d'Appui Régional au Développement Rural
CeRPA	Centre Régional de Développement Rural
CIF	Cost, Insurance, Freight
CFDT	Compagnie Française pour le Développement des Fibres Textiles
CNPC	Conseil National des Producteurs de Coton
CRA-CF	Centre de Recherche Agricole Coton et Fibres
CSPR	Centrale de Sécurisation des paiements et de Recouvrement
DAGRIS	Développement des Agro-industries du Sud (ex-CFDT)
DICAF	Direction du Conseil Agricole et de la Formation
DPQC	Direction de la Promotion de Qualité et du Conditionnement des Produits Agricoles
FCFA	Franc de la Communauté Financière Africaine (local currency in Western Francophone Africa)
FOB	Free on Board
FUPRO	Fédération des Unions de Producteurs
GDP	Gross Domestic Product
GDPIA	Groupement des Distributeurs d'Intrants Agricoles
GM	genetically modified
GVPC	Groupement villageois des producteurs de coton
GV	Groupement Villageois
IFDC	International Fertilizer Development Center
ONS	Office National des Statistiques
PADSE	Projet d'Appui au Développement des Systèmes d’Exploitation
PARFC	Projet d'Appui à la Restructuration de la Filière Cotonnière
SHB	Société des Huileries du Bénin
SITC	Standard Instrument Testing
SONAPRA	Société Nationale pour la Production Agricole
UCPC	Union Communale des Producteurs de Coton
UDPC	Union Départementale des Producteurs de Coton
WCA	West and Central Africa

Executive Summary

Benin is one of the West African Francophone countries that has most deeply reformed its cotton sector, in particular through suppressing the single channel relationship between ginners[1] and farmers, a common feature of the West African cotton sector model. Despite outcomes of the reform, which occurred between 1993 and 2005, and which fell far below expectations, an analysis of this experience is useful to understand the strengths and weaknesses of the system the reforms created, and to identify ways to improve it.

Benin is among the countries most dependant on cotton: in the 1980s the sector contributed to more than 10 percent of GDP, and benefited to more than 300,000 small farmers. The end of the marxist regime (1972-1978) allowed for the rapid development of cotton production with the creation of SONAPRA (1984), a Government owned cotton company. SONAPRA held a monopoly on the purchase of seed cotton, the sale of lint cotton and the delivery, on credit, of cotton inputs to farmers. At that time, the sector compared favorably to other West African cotton sectors, with higher yields and higher prices paid to producers. However SONAPRA incurred heavy losses by the end of the decade, and the Government, which had embarked on a structural adjustment program, decided in 1991 to withdraw from cotton production and liberalize the sector.

Most of the reform measures were implemented between 1993 and 2000 and included: (a) the input supply function was progressively transferred to the private sector, and SONAPRA withdrew from this activity in 2000; (b) eight private ginners were progressively licensed between 1995 and 1998 (resulting in a ginning over-capacity), and were attributed quotas of seed cotton by SONAPRA until 2000, by which time the monopoly of SONAPRA on seed cotton marketing was abolished; (c) national professional associations of grouping ginners, or input importers and distributors were created; (d) inter-professional bodies were created to manage the sector, in particular: (i) an inter-professional association[2], was put in charge of managing the critical functions of the supply chain operation, and coordinating the various professional families; (iii) a clearing house[3] was created through which all payments made by ginners would be channeled, so that the repayment of the input credit could be deducted before final payment to producers. The privatization of SONAPRA was also scheduled. The reform process and, in particular, AIC, was financially supported by the World Bank.

The reform policy was confirmed and updated in 2001, with the stated objective of "developing a private but nationally integrated cotton supply chain", the management of which would be transferred from the Government to the inter-professional body. The

[1] This term refers to the agro-industries that process seed cotton into lint and seeds
[2] Association Interprofessionnelle du Coton (AIC)
[3] Centrale de Sécurisation des paiements et de Recouvrement (CSPR)

reform strategy resulted in a highly regulated system, in which seed cotton was allocated by the inter-profession to (public and private) ginners proportionally to their ginning capacity, and without competition among them, while prices of seed cotton remained fixed and pan territorial (uniform throughout the country).

The Government soon began to give mixed signals on its commitment to withdraw from the management of the sector: the interprofessionnal agreement (signed in 2005), which gave a legal basis to AIC's regulating power, was cancelled by the Government in 2007; SONAPRA's privatization was postponed several times[4]; the Government kept interfering in the sector management allowing, or even encouraging, some private ginners and input distributors to by-pass the centralized payment system, resulting in the inability of CSPR to fully pay farmers for the seed cotton collected between 2002 and 2006.

As a combined effect of these payment problems and the fall of producers' prices (due to the world market trend), cotton production declined sharply from 2001/2 (400,000 tons) to 2005/6 (less than 200,000 tons), and remained at a low level in subsequent years. The fall in production increased the ginning overcapacity, which affected further the competitivness of the industry. Because it is a politically and socially very sensitive sector, the Government had meanwhile to compensate for the losses incurred by SONAPRA, to offset the debts to farmers for unpaid cotton, to subsidize in 2006/07 producers' prices, and more recently, to subsidize inputs.

It can be concluded that the difficulties encountered in the reform process were mainly due to the combination of a number of factors: (a) lack of willingness of the Government to play the game, while the highly administered system would have required strong Government support to operate smoothly; (b) the mechanism put in place was probably too complex, and too administered, and competition among actors did not really take place; (c) farmers' organisations were too weak to play their role of partners in the supply chain organisation. The system also, because it was highly administered, failed to transfer to the actors the right incentives and market signals, thus resulting in a structural lack of efficiency, in particular for input supply.

The sale of SONAPRA's industrial assets, finally completed in October 2008, will probably modify the overall picture of the cotton sector, as it has resulted in one large-scale private group controlling a very large part of the input supply and ginning activity. This move to a very concentrated sector might require other regulating tools than the ones currently in place, and a new reform is presently being considered by the Government.

[4] but finally achieved at the end of 2008

1 INTRODUCTION

The cotton sector of Benin

Benin's cotton sector was a success story until the mid 1990s. It developed somewhat differently from other West African Francophone countries, as it is one of the few cotton industries in WCA in which Dagris, the French parastatal cotton development company, does not play an active role. The interest in Benin lies in the fact that it is the first country in the FCFA zone to have deeply reformed its cotton sector in the 1990s, through a liberalization and privatization process clearly departing from the traditional exclusive zone approach. The reform process included the setting up of a complex institutional structure, aimed at introducing private investment in the sector and at ensuring coordination among actors.

The outcome of those reforms, which can now be assessed since the reform process started more than ten years ago, was clearly far below expectations, and resulted in a sharp decline of the performance of the sector. The difficulties experienced with the reform process in Benin contributed to a large extent to a reluctance to reform among cotton sector stakeholders in other countries.

After a decade of difficult and painful implementation of the reform, the situation seems in 2007/08 on the way to being stabilized, and the new rules of the game seem to have been more or less accepted by all parties during the two last campaigns, although there is a common feeling among actors that the current organizational system should be considered as a transition towards a more liberalized system. It is therefore particularly interesting to analyze why the reform process was so difficult to implement, how this new organizational system, which is a hybrid between monopolistic and competitive systems, compares with those two traditional types, and, finally, what are the prospects for the future.

Importance of cotton in the economy

The cotton sub-sector has been, since the 1980s, the very basis of the rural and agro-industrial economy in Benin: until recently, its contribution to GDP was estimated between 10 and 15 percent; it accounts for 70 to 80 percent of agricultural export value (see graph), and to 35 percent of fiscal income. It directly benefits more than 300,000 farmers, and contributes to the monetary income of around 3 millions persons. Cotton is particularly important in the North of the country, where it is the only cash crop cultivated on a large scale.

Because of its weight in the economy, the cotton sector has become highly politicized, as cotton growers play an important role in all elections.

Figure 1: Share of cotton among total agricultural exports, 1996-2004

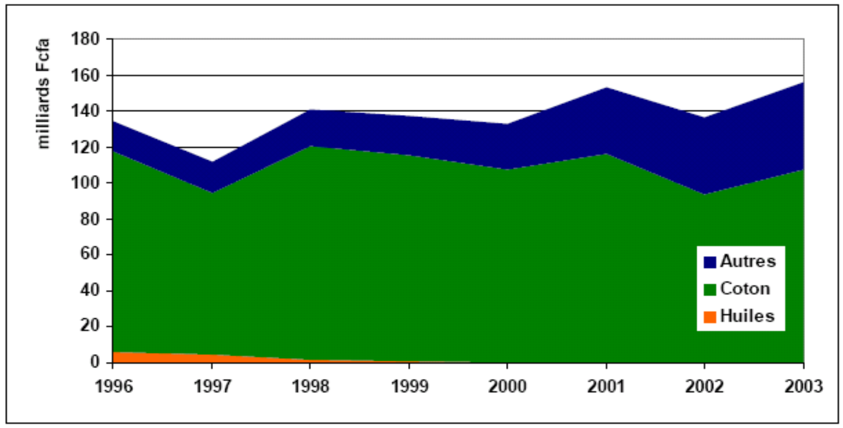


Figure 14 Evolution des exportations (1996 à 2003)

Source : FMI, 2004.

Cot

Source: IMF, 2004

2 HISTORICAL BACKGROUND AND REFORM PROCESS

2.1. HISTORICAL BACKGROUND

There was a long tradition of cotton cultivation and use in the making of traditional clothing in northern and central Benin, even before colonization. The French parastatal company CFDT was established in Benin in 1952, and started to develop cotton with a new variety (Gossypium hirsutum). After independence (in 1960), CFDT maintained its operation in northern Benin, while another French parastatal company, SATEC *(Société d'Aide technique et de Coopération*) was established in the central zone. Both companies developed their own extension services, and cotton production doubled within 12 years.

Under the revolutionary regime (1972-1978), the organization of the cotton sector was deeply modified and followed a different path from other Francophone Africa cotton-producing countries: CFDT and SATEC withdrew, while a new local parastatal, SONACO (later replaced by SONACEB) was created to take over extension, seed cotton purchase and ginning activities. In 1975, regional rural development agencies (CARDER) were created in each of the six regions of the country, and were given the extension and input supply responsibility for cotton and other crops, while the ginning and export activities were given to a newly created company, SONAGRI. During this period of institutional turmoil, producers' prices remained very low and areas under cultivation decreased by half.

Following a renewed interest by the Government in cotton, SONAPRA was created in 1984, replacing all institutions previously involved in the cotton sector with the exception of CARDERs, and new cotton development projects were launched, resulting in increases in area and production. Contrary to other Francophone countries, CFDT (and, later, DAGRIS) was not a direct stake holder in the process.

2.2. RATIONALE AND OBJECTIVES OF THE REFORM

Reforms in the cotton sub-sector started in the 1990s, mainly as a response to the first cotton crisis, in 1986-87, during which production exceeded ginning capacity, resulting in heavy losses for SONAPRA, while world prices had dropped. This crisis had shown the limits and the financial risks of a voluntary Government development policy for cotton, and called for a more liberal and cost-effective approach, in a country which had just undergone a long period of a socialist regime and needed structural reforms to stimulate its growth. The reforms were also viewed as a response to some weaknesses that were becoming apparent in the state-run cotton system: prices paid to farmers were well below world prices in the post-devaluation period (1994), and the ongoing organization was not able to increase productivity.

The reform of the cotton sector was part of the Structural Adjustment Program financed by IMF and the World Bank to restore macroeconomic stability. In line with the Structural Adjustment Programme and the Agricultural Sector Restructuring program, the Government issued a Letter of Rural Development Policy in 1991, which defined the broad orientations of the new agricultural development policy, and through which the Government of Benin committed itself to withdraw from the primary collection of seed cotton, from input supply to cotton producers, and from ginning and cotton lint export activities. The reform program (later revised in 2000) was aiming at "developing a private but nationally integrated cotton supply chain", the management of which would be transferred from the Government to an inter-professional body. It was based on the following principles: (a) a guaranteed pan-territorial minimum producer price; (b) a pan-territorial price for inputs; (c) the obligation for producers to sell their cotton to ginners; (d) the obligation for ginners to buy all the seed cotton from producers, at the pan-territorial price. From the early design of the reform, the emphasis was therefore clearly put on privatization, and on the need for a strong co-ordination and uniform rules within the cotton sector.

2.3. PRE-REFORM INSTITUTIONAL SET-UP

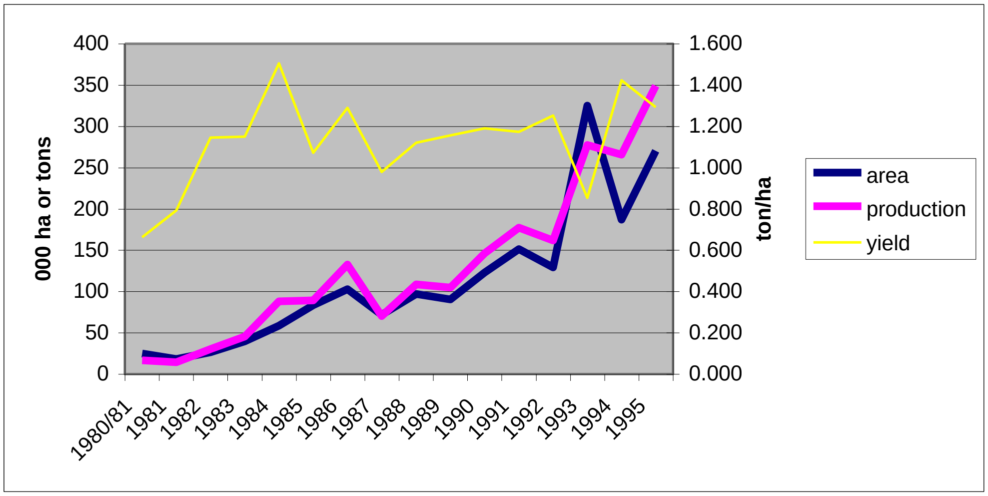
By the end of the 1980s, the cotton sub-sector was organised around a major actor, SONAPRA, which had a monopoly on seed cotton, was in charge of seed cotton collection, input supply (under a credit scheme associated with the sale of seed cotton to SONAPRA), ginning and exports of lint.

Extension services were the responsibility of Government structures. The central institution in charge of extension services is the *Direction du Conseil Agricole et de le Formation Opérationnelle* (DIRCAF). At the local level, the institutions in charge of extension were the CARDERs (parastatals in charge of rural development activities at the regional level) and the regional Centers for Rural Development (CeRPA). The institution in charge of research was the *Centre de Recherche Agricole Coton et Fibres textiles* (CRA-CF), which is a department of the National Agricultural Research Institute of Benin (INRAB). The overall management of the cotton sector was with the Government, who, inter alia, used to decide producer prices.

2.4. Sector performance before the start of the reforms (before 1994)

In terms of production, the cotton sector was performing well in the pre-reform period: the area under cotton cultivation grew regularly, at a very sustained rate between 1980 and the mid 1990s, whereas it was stagnating in most of other WCA producing countries; yields had reached an all-time peak of 1500 kg/ha (a record by WCA standards) in 1984, and averaged since then between 1000 and 1200 kg/ha. With a relatively stable producer price around 100 FCFA/kg, the ratio of producer price compared to world prices was around 52 percent[5] in the 1988-1993 period (before the 1994 devaluation), which was less than in many competitive cotton systems, but above the level in most other WCA countries at that time.

Figure 2: Area, production and yield in the pre-reform period



The financial performance of the cotton company was much less satisfactory, as it accumulated 7 billion FCFA of losses between 1985 and 1988, and would have been bankrupt, without financial support from Agence Française de Développement, conditioned by structural reforms and introduction of better management practices in the cotton company.

The development of the cotton sector was supported by internationally funded rural development projects (by the World Bank and AFD): the Zou region rural development project, in the beginning of the 1980s, the Bourgou Region rural development project. In addition, AFD financed through loans to the Government the construction of some new ginneries for SONAPRA.

[5] Reform of the cotton sector in WCA: Badiane and al; World bank, 2002

2.5. Key elements of reform and sequencing

The reform process started in 1993, including several phases.

Liberalisation of input supply (1993-2000)
The implementation of the reform started first with the progressive liberalisation of input supply: while SONAPRA was fully responsible for input supply before 1993, 20 percent was given to a private company within the framework of a pilot operation; in 1995, 80 percent of the input supply was ensured by the private sector, and in 2000, SONAPRA (as a condition of a World bank adjustment loan) had to withdraw entirely from this activity ,which was taken over by more than half a dozen of private local input importers and distributors[6].

Introduction of private ginners (1995-1998)
The second step was the liberalization of the ginning activity, which started in 1995, at a time when the ginning capacity of SONAPRA was not sufficient to process the increasing seed cotton production: the creation of 3 private ginneries was first allowed by the Government, soon followed by others, resulting, in 1998, in an additional ginning capacity of 225,000 tons (in addition to SONAPRA's own capacity of 350,000 tons), scattered among 8 ginneries, and exceeding clearly the seed cotton production (less than 400,000 tons at that time). The entry of the first private ginners took place at a time when world prices were high and West African cotton very competitive thanks to the 50 percent devaluation of the FCFA in 1994. This was not immediately followed by a corresponding increase in producer prices, and resulted in considerable profits for ginners, making the cotton sector very attractive to private investors.

It should be noticed that, during this first stage of the liberalization process, the Government kept, either directly or indirectly, through SONAPRA, full control of the organization of the supply chain: the seed cotton purchase monopoly of SONAPRA was suppressed only in 2000, and SONAPRA was responsible, until its suppression, for allocating quotas to private ginners authorised by the Government; the organization of tenders for procurement of inputs was under Government control until 1999; producers' prices were fixed by the Government. The first set of reforms could therefore be characterized as a privatization process under tight control of Government and without effective liberalization.

Building up of co-ordination and regulatory bodies (1998-2000)
In order to allow the transfer of management and coordination functions to the actors of the supply chain, a number of coordinating entities were created under the impetus of the Government:

- in 1998, the *Coopérative d'Approvisionnement et de Gestion des Intrants Agricoles* (CAGIA), a cooperative belonging to the National Federation of

[6] This move was temporarily reversed in 2007, when SONAPRA was granted by the Government the responsibility to import and distribute 80 percent of the fertilizers needed for the cotton campaign

Producers Unions (FUPRO), in charge of: (a) assessing the input requirements of their members, (b) selecting suppliers (through national tenders), to buy and distribute inputs to their members, (c) supervising quality control on inputs and dissemination of information; the cooperative had two local branches in the cotton growing area.

- in 1999, *l'Association Professionnelle des Egraineurs du Bénin* (APEB). APEB is a non-profit association with ginners as members; the association is supposed to coordinate the various ginners operating in the country and to represent them in the interprofessional bodies
- in 1999, *l'Association interprofessionnelle du coton* (AIC); AIC is also an association, grouping the two main families operating in the supply chain: ginners (through APEB) and producers (through FUPRO); AIC was in charge of (a) managing the critical common functions necessary for the operation of the supply chain, (b) acting as an interface between the Government and the professional families in the supply chain, (c) serving as a coordination body for the various professional families.
- in 2000, the *Centrale de Sécurisation des paiements et de Recouvrement* (CSPR), an association *(Groupement d'intérêt économique)* with the producers, the ginners and the input distributors associations as members plays the crucial role of payments clearinghouse; the role of CSRP is to (a) keep records and recover the debts of producers groups, in particular to input suppliers, (b) recover payments for the seed cotton delivered to the ginners, pay the producers, after deduction of their debts, and the AIC for the critical functions fees (c) repay to banks and input suppliers the amounts due related to the supply of inputs, and pay the AIC the fee for critical functions due by producers.

Empowerment of the inter-professional body (2005)

This organisation was established in 2005 with the elaboration of a framework contract (accord-cadre) between the Government and AIC. This document provides (more than 10 years after the beginning of the reform!) the legal and regulatory framework necessary for the enforcement of the new organisation. It states that the Government maintains regulatory power over the organisational structure of the supply chain (most decisions by AIC, including producers prices, have to be approved by Government) and the responsibility for the provision of public interest functions (extension, research, training, quality control, road maintenance), in some cases with financial contribution of AIC. It also recognises AIC as the coordinating body for all actors of the supply chain, and gives legal authority to its decisions.

Privatization of SONAPRA (scheduled for 2007)

The privatization of SONAPRA, which was scheduled to take place in 2004, had been delayed a first time, because financial offers received were, due to uncertainties about the future, far below the real value of the company's assets. The process was reactivated in

2007, under the impulse of the new Government[7], and three private investors, selected through a tender, were scheduled to take over 55 percent of the capital of a newly created holding company owning the industrial assets of SONAPRA. In July 2007, the Government abruptly announced a new scheme consisting of a new mixed public-private entity, with a strategic private partner due to hold 45 percent of the capital, the Government due to retain 35 percent, and the remaining 20 percent to be distributed among various stakeholders. In August 2007, the call for bids was announced. In October 2007, the Government announced the selection Société Commune de Participation (SCP), a company controlled by the main input supplier (Patrice Talon). However, in November 2007, the Government abruptly annulled the privatization.

2.6. Recent developments

In 2006, the newly-elected President[6] immediately took a number of new institutional measures concerning the cotton sector, some of them clearly contributing to strengthening the new sector organization, and others appearing as a move backwards in the reform process:

1. The professional entities of farmers (FUPRO), ginners (APEB) and input suppliers (GPDIA) were reorganized and renamed, respectively, as the *Conseil National des Producteurs de coton* (CNPC), the *Conseil National des Distributeurs d'intrants coton* (CNDIC) and the *Conseil National des Egraineurs de coton* (CNEC). The main difference between these new entities and the previous ones is that they were created by presidential decrees, which give them a legal mandate to represent the three stakeholder families (producers, ginners and input suppliers) in the inter-professional entities, and which make their decisions compulsory for all members within each stakeholder family. The representation of producers was also reorganized at the grass roots level: communal cotton producer councils (*Conseil Communal des Producteurs de Coton*, CCPC) were created by decree at the commune level for each of the 80 communes where cotton is grown, grouping all grassroot producers associations in the commune, provided they represent at least 25 percent of the local seed cotton production. The voting rights within the communal councils are proportional to the volume of production of each of the member organizations. Similarly, regional producers councils were created at the department level (*Conseil départemental de Producteurs de Coton*, CDPC), grouping representatives of communal councils, and the National coton producers council (CNPC) at the national level, grouping representatives of regional councils, the number of representatives being proportional to the volume of production of each department. This reform was clearly purposed at making impossible the creation of dissident or parallel professional organizations, which was in the previous years a major disrupting factor in the sector organization.

[7] President Yayi Boni was elected in 2006, succeeding President Matthieu Kerekou (1996-2006)

2. The framework agreement (Accord-cadre) between the Government and AIC, which was adopted by both parties in 2005, was unilaterally dissolved by the Government in May, 2007, and a new transitional cotton sector committee (*Comité National transitoire de la filière coton),* in which Government representatives were dominant, was created by decree for organizing the 2007/08 cotton campaign. This new committee, strongly opposed by AIC, never met, but, despite the absence of a regulatory framework, the system continued to operate during the campaign as it used to under the previous *accord-cadre*. A national commission for cotton input supplies (*Commission nationale ad hoc*) was also created to prepare the 2008/09 cotton campaign, with representatives from the Government and the inter-profession. A consultancy was launched by AIC to prepare a new legal framework (loi-cadre) on the cotton sector, but the law is still under review by the Government, more than one year after approval of the Consultant's report, and does not seem to be considered as a priority.

3. As stated above, the privatization process of SONAPRA was cancelled in November, 2007, and the Government committed itself to "elaborate a new strategy" for SONAPRA by the end of 2008[8]. By the time of the final editing of this report (November, 2008), SONAPRA's gins were finally sold to a newly created joint venture, including Talon group (the main input supplier and private ginner) and the Government (whose share in the joint venture is due to be reduced to 35% by the end of 2009). The details of the deal have however not been pubucly disclosed.

Meanwhile, in September 2008, the Government issued a new sector reform proposal aimed at strengthening its role in the cotton sector. This reform proposal has been strongly opposed by the cotton sector stakeholders, who have not been associated with its elaboration.

The two last moves give an ambiguous signal on the willingness of the new Government to continue on the path towards liberalization and Government withdrawal from the management of the cotton sector

3 OVERVIEW OF THE COTTON SECTOR

3.1. KEY MACRO-ECONOMIC FACTORS INFLUENCING THE SECTOR

The main macro-economic factors which have influenced the cotton sector in Benin are, as in all FCFA zone cotton producing countries, the decline in world prices over the past ten years (until mid 2007), aggravated since 2002, by the appreciation of CFA franc against the dollar. As shown in the figure below[9], the nominal dollar value in FCFA as well as real rate declined substantially between 2000 and 2007.

[9] The graph takes a purchasing power parity approach. With calendar year 1996 as the base, we calculate movements in the FCFA/USD exchange rate that would have maintained the purchasing power of the

Figure 3:Evolution of world cotton prices in USD and FCFA

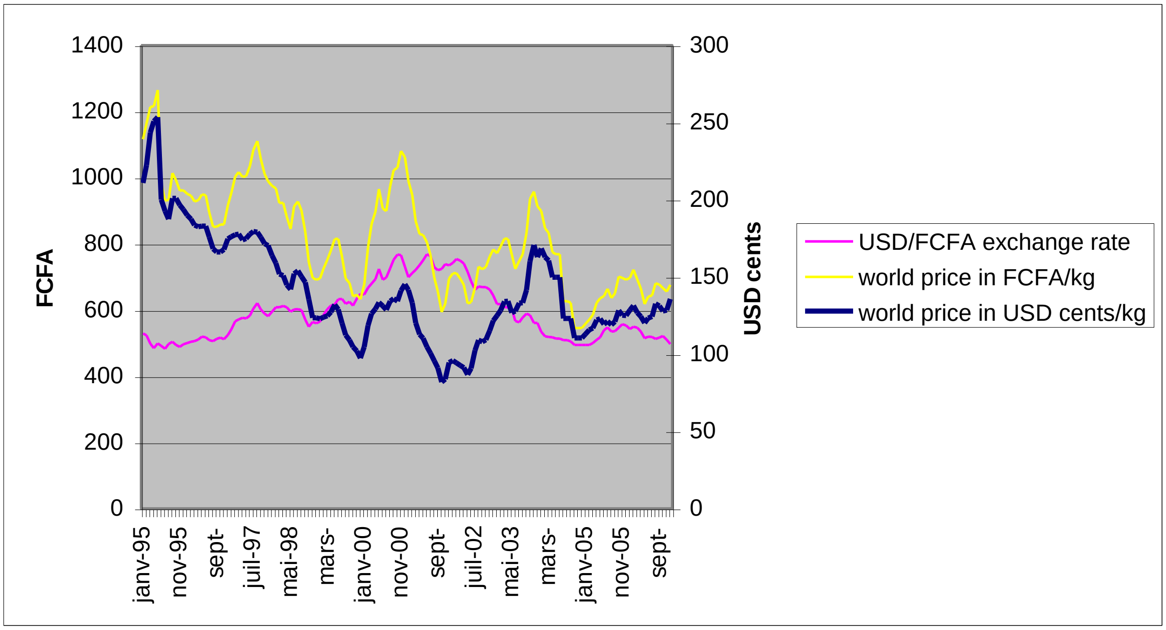
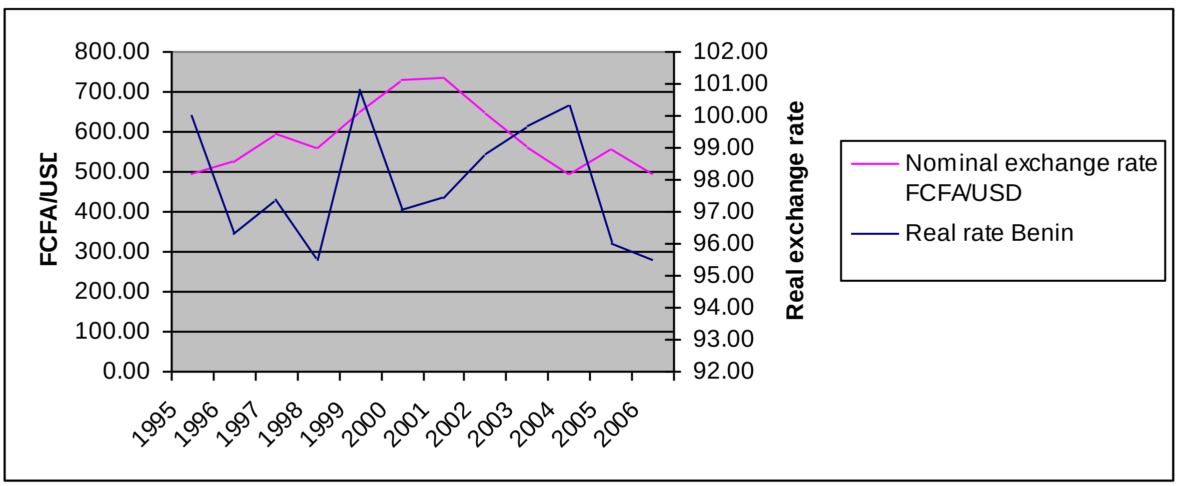


Figure 4: Nominal and real exchange rates between 1995 and 2006



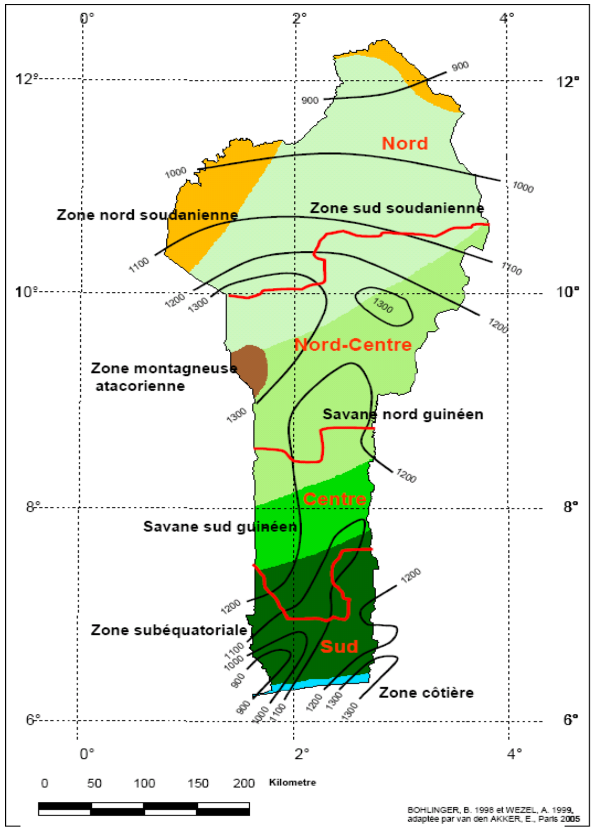
3.2. PRODUCTION OF SEED COTTON

3.2.1 Production zones

Benin includes 4 differentiated cotton growing areas: the northern zone (Alibori, Atacora), the north-central zone (Borgou and Donga), the central zone (Zou and Collines)

FCFA relative to the USD. Purchasing power is based on relative movements in the Consumer Price Index in each country. A value above 100 indicates that the FCFA had depreciated in real terms compared to 1996, while a value below 100 indicates real appreciation and the southern zone (Ouémé, Palteau, Couffo and Mono). The limits and locations of the zones are shown on the figure below:

Figure 5: Cotton zones



The northern and north-central zones present the best agro-climatic conditions for cotton. The main production area is the northern zone which accounted for 64 percent of total production in 2004, followed by the north-central zone (29 percent of production), and the central and southern zones, which have a marginal production (8 percent altogether). The share of the northern zone continued to increase dramatically in subsequent years, and reached 80 percent in 2007, as cotton has tended to be abandoned in more southern regions, where it is less profitable[10], and where alternative crops are available.

3.2.2 Production and area trend

After the rapid increase in the pre-reform period, areas and production did not benefit, as other FCFA zone countries did, from the devaluation of local currency, except the two first years (in 1994/95 and 1995/96). Areas stagnated between 1997 and 2000, during the first phase of the reform, and declined sharply in 2004 and 2006, as shown in the graph below.

[10] see section 5.3

Figure 6: Area, production and yield between 1994 and 2006

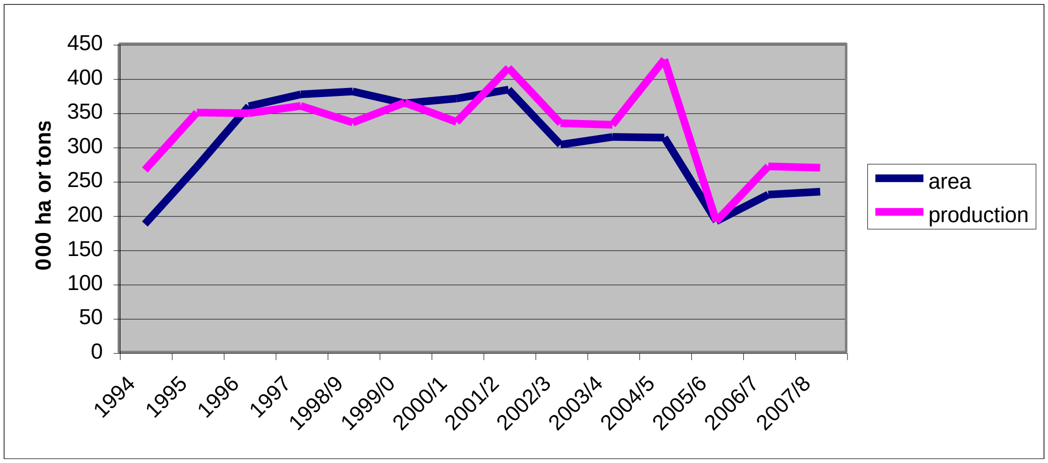


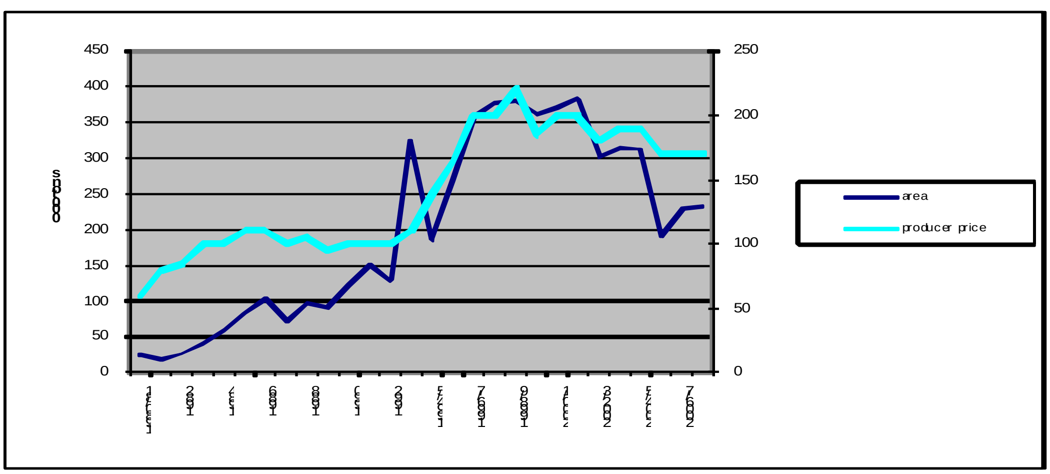
Table 1: Area, yield and production of cotton since 1994

Year	1994/5	1995/6	1996/7	1997/8	1998/9	1999/0	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6	2006/7	2007/8
Area (000 ha)	186	270	358	376	380	363	370	383	303	314	313	191	230	234
Production (000tns)	265	349	348	359	335	364	336	415	334	332	427	191	271	269

The decline of areas since 2005 is mainly due to a combination of factors:

- Increasing problems for payment of seed cotton to producers.
- Declining producer prices, in particular in 2005/6, which made cotton crop less profitable, especially in the southern part of the country. The elasticity of production and areas in relation to producer prices is evidenced on the figure below:

Figure 7: Area under cotton and producer price



3.2.3 Number and size of cotton farms

According to the 2002 agricultural census, the total number of cotton farms was 325,000, and the total number of persons involved in cotton cultivation was 2 million. The average area cultivated with cotton was **0.8 ha per farm**. These average figures have drastically changed in the past ten years with the decline of the share of the southern regions, where cotton farms are smaller, and the overall decline in area cultivated. According to AIC, the average cotton farm size has dramatically increased, in relation to the shift of production from South to North, and is currently close to **2.5 ha**. Meanwhile, the number of farms growing cotton has declined to 120,000.

There is no quantified information available on the size distribution of cotton farms. Cotton represents from one third to one half of the total cultivated area per farm. The area under cereals (maize, millet, sorghum) is about the same size as cotton, and the remainder is, depending on the zone, for groundnuts, cassava or yams, or orchards.

3.2.4 Cropping practices

Seeds

The STAM 18 was a variety predominantly used from 1996 to 2001 in all growing areas. It has now been replaced by the new H 279-1 variety, which has higher yields (+5 percent) and a higher lint to seed ratio (+1,5 percent). The same variety is disseminated throughout the country, despite very different soil and climatic conditions between northern and southern regions, in order to avoid the mixing of varieties in the ginneries.

Land preparation

Land preparation methods differ between the northern and the southern part of the country. In the North, animal traction is widely used, and direct sowing (with application of herbicides) is rapidly expanding. According to a survey done in 2006/07 by ONS, more than 60 percent of farmers use herbicides in the northern region. In 2000, the percentage of farmers using herbicides was estimated at less than 10 percent on average, which shows the rapid expansion of this technique. In the South, where animal traction is much less developed (because of trypanosomia), land preparation is predominantly done manually and herbicides are still only marginally used (by less than 10 percent of farmers).

Fertilization

Two fertilizer formulas are currently used: the classic one combines a compound fertilizer or bulk blending fertilizer with a nitrogen complement. Another formula consists in a compound fertilizer without nitrogen or potassium complement. The consumption of fertilizers for cotton is estimated, on the basis of the quantities of cotton-specific fertilizers distributed, to average 210 kg/ha (2/3 for complex fertilizers and 1/3 for urea). The actual application on cotton fields were however believed to be 10 to 15 percent lower in 2005, because some of the cotton fertilizer is used by farmers on other crops[11].

According to the above-mentioned IFTC study, the average application of fertilizers on cotton has remained relatively stable over the past years, which can be explained by the stability of the fertilizer/seed cotton price ratio, resulting from the administered price system. The ONS field survey done in 2006/07 confirms this finding, with an estimated average of 215 kg of fertilizer per hectare, very close to previous estimates.

Pesticides

Parasite pressure is a major problem, and losses in the absence of any treatment have reportedly reached 55 to 81 percent. As the training of farmers is not sufficient, the use of pesticides results in health risks for farmers, and cases of poisoning or death have been reported.

Pest management techniques (*Lutte étagée ciblée*), based on scouting and progressive treatments depending on the level of infestation, are being disseminated through some Farmers Unions, with the assistance of PADSE, a project funded by *Agence Française de Développement*. The dissemination rhythm is however slower than projected (9,000 farmers, for 18,000 ha, had adopted this technique by 2003) despite encouraging results in terms of saving in the treatment cost (from 36,000 FCFA down to 25,000 FCFA) and yield improvements (20 to 30 percent)

The above mentioned IFTC study estimated that the consumption of insecticides per hectare of cotton remains more or less stable (4.2 treatments), while the consumption of herbicides is rapidly increasing. The ONS field survey finds, in 2006/07, an average of 5.5 insecticide treatments, which suggests an increasing consumption in recent years.

In general terms, agricultural practices are reported to be sub-optimal, in particular concerning seeding dates (too late), late weeding and late fertilizer application, sub-optimal applications of fertilizers, and insecticide treatments which do not correspond to the recommended doses and strengthen resistances in insects.

3.3. THE DOMESTIC SPINNING INDUSTRY

Several processing units were created in Benin during the past decades: a French private group created the first industrial unit for the making of traditional garments (*pagnes fancy*) in 1968, through a local subsidiary (SOBETEX); in 1971, a joint partnership between the Government of Benin and European investors created IDATEX (later renamed as COTEB) for the export market; another Government-owned company, SITEX, was created in 1979. More recently, two new private companies were created, while SITEX merged into a joint partnership with Chinese investors in 2002.

The industry covers the whole value chain (spinning, weaving, printing, garment making) but the activity is regularly shrinking and processes now less than 2 percent of the lint

[11] IFTC study, 2005

production. As in all countries in the FCFA zone, the sector is facing an increasing competition from imports (often smuggled) and second-hand garments, in particular because of the high cost of energy and the low productivity of labor. All companies are facing considerable financial difficulties, and Benin has so far failed to demonstrate a comparative advantage in textiles despite this being a Government priority.

3.4. Oil sector

There are two private industrial units for oil extraction (SHB-Bohicon and FLUDOR-Bénin), with a total crashing capacity of 210,000 tons, corresponding approximately to the current production of seeds. These factories produce 30,000 tons of oil, i. e. around 50 percent of the market demand. The cotton seed oil is in competition with imported oils, often smuggled. The pressure on price is high. Cotton seeds were 31 FCFA/kg in 2006/07, down from 38 FCFA in 2003/04 and 35 in 2004/05.2002.

4 CURRENT INSTITUTIONAL ARRANGEMENTS AND PROCESS PERFORMANCE

4.1. Farmers organizations

Until 2006, cotton producers were organised into village level groups (Groupements villageois, GV), local Unions of GV (UCPC), and regional Unions (UDPC). A national apex Union (Fédération des Unions de Producteurs- FUPRO), created in 1993, represented producers in AIC.

Farmers groups are not specific to cotton producers. There were, in 2005, 4,000 GV, among which 2,400 were in cotton growing areas, 77 local Unions, and 6 regional Unions. GVs receive a fee for their participation in seed cotton assembly (4,800 FCFA/ton) [12] and input distribution (5 FCFA/liter of insecticide and 2 FCFA/kg of fertiliser). The groups also play a role in credit, as they grant a mutual guarantee to members.

Village groups and their Unions were considered as weak organizations, in particular because they lacked human resources, faced management problems, were not specific to cotton producers, and were too large with insufficient social solidarity to be able to exercise mutual guarantee. The financial situation of GVs started to deteriorate in 2001/02, due to their difficulty in recovering credit on inputs from members. Some GVs created, parallel to the FUPRO network, their own networks (in 2002, AGROPE, splintering in 2003 into FENAPRA, FENAGROP and AGROP), who did not recognise the interprofessional organizational scheme, and dealt separately with dissident ginners and input suppliers, thus adding to the organisational confusion of the supply chain.

To remedy to the weakness of GVs, FUPRO has adopted the same policy as in Burkina, and Mali, and has promoted new grass root organisations, Cotton producers village

[12] this activity is considered to be part of critical functions, and, as such, corresponding fees are paid by the inter-profession

groups (*Groupements villageois de Producteurs de Coton*- GVPC), which were scheduled to replace progressively GVs. GVPC are smaller groups, including exclusively cotton producers.

In 2006, a new organization scheme for producers associations was created, by a Government decree, based on the following: at the Commune level, a Communal Council of Cotton Producers groups, all cotton producers village-level groups existing in the Commune, with a voting power proportional to their volume of seed cotton production; Departemental Councils were also created, along the same principle, at the department level, grouping all Communal Councils in the Departement; a National Council of Cotton producers (CNPC) was also created, with full power to represent producers in the inter-professional discussions (thus replacing FUPRO). This new farmers organization seems to be more successful than the previous one, and no more dissidence has appeared since it has been in place.

4.2. Overall sector management

The overall sector management is ensured by the inter-professional body, AIC, which was empowered by the Government through the framework contract signed in 2005, but cancelled by the new Government in 2007.

The *Association Interprofessionelle du Coton* (AIC) brings together representatives of farmers, input suppliers and ginners as a steering group for the cotton sector as a whole. The AIC serves as a forum for negotiations between ginners and producers to set the annual pre-determined fixed price for cotton. It has dispute settlement mechanisms and acts as the representative of the sector as a whole vis-à-vis the Government. It has taken over SONAPRA’s role in the organization of “marketing” of cotton, i.e., the collection and distribution of seed cotton, with each of the ginners receiving an annual quota. The AIC is also responsible for contracting out the provision of “critical functions”, i.e., public services such as organization of seed cotton markets at the village level, seed provision, research, extension, grading of cotton and quality control, and rural infrastructure. In all these respects, it replicates SONAPRA’s functions. The AIC’s budget for critical functions, its own operations and those of the other institutions is funded by a portion of producer prices set aside for this purpose, also negotiated annually.

The financing of the critical functions is a major problem. The total financing need is close to 6 billion FCFA/year, which corresponds, on the basis of the current volume of production to a fee of 26 FCFA/kg of seed cotton, which is considerable, given the currently low lint cotton prices (a fee of 26 FCFA would represent 15 percent of the price paid to producers). The critical function budget includes the following items:

- AIC's operating costs
- Cost of extension services
- Financing of the research program
- Production and distribution seeds, which are given for free to producers (approximately 1.2 billions FCFA/year)

- Fees to the Quality control department (DPQC) (approximately 18 Millions FCFA/year)
- Fees to SONAPRA for lint cotton classing (approximately 300 millions FCFA/year)
- contribution to the cotton zone road rehabilitation program (200 millions FCFA/year)
- Insurance for seed and lint cotton stocks (120 millions FCFA/year)
- Fees to farmers groups for their intervention in seed cotton collection (between 1 and 1.5 billion FCFA/year, depending on the production volume).

In fact, the fee for critical functions has never reached the theoretically required amount: it declined from 20 FCFA to 15 FCFA in 2003/04, then to 10 FCFA in 2004/05, increased to 15 FCFA in 2005/06, and declined again to 5 FCFA in 2006/07. To compensate for the reduction of the fee, the Government decided, in 2007, to finance the cost of public services involved in the delivery of critical functions (extension, research, road maintenance, quality control), which represents an amount of 1.6 billion FCFA, and leaves an amount of 4.4 billion to be financed by AIC. In 2007/08, the fees collected by AIC were still not sufficient to cover the cost of the critical functions, and AIC had, at the end of the season, a debt of 2.5 billion FCFA towards producers groups for their intervention in the seed cotton collection. In 2008/09, the fee for critical functions has again increased to 20 FCFA, which should be enough to balance the corresponding costs.

In addition to the fees collected from producers, AIC's operating expenditures were also partly covered, until 2008, by the World bank project supporting the cotton sector reform process (Projet d'Appui à la Restructuration de la Filière Cotonnière, PARFC), which terminated in June 2008.

4.3. RESEARCH AND EXTENSION

Research

Research is considered one of the "critical functions" to be financed and monitored by the inter-professional body. The research system was not affected by the reform. It is still the responsibility of the *Centre de Recherhe Agricole Coton et Fibres* (CRA-CF). CRA-CF includes 3 departments: Agronomy, phyto-sanitary protection, and variety improvement. Its main areas of research are: genetic improvements, sustainability of cotton related production systems, plant protection, and lint quality improvement. CRA-CF has a team of 25 permanent agents and 58 under time contract, and benefits the assistance of 3 researchers from CIRAD. The activity programme of CRA-CF is established each year jointly by CRA-CF and AIC, which contributed to its financing up to 250 million FCFA each year until 2008 (out of which part is financed under the PARFC project from the World Bank).

The variety selection program was successful in the past and was responsible for the progress encountered in yields and lint ratio in Benin. Because of alleged insufficient resources and of a high turnover of staff, it is however reported that the performance of the research institute have been decreasing during the last decade. A recent study on the assessment of the reform program[13] notes also a lack of linkage between research and extension, resulting in poor dissemination of research findings.

During the last decade, CRA-CF has been able to successfully introduce three varieties: Stam F in 1991, STAM 18A in 1997, STAM H 279 in 2003. Two new locally selected varieties are currently in the pipeline and should be released shortly.

There has been no research on GM cotton, as the Government had decided on a moratorium until 2008. This moratorium was recently renewed, but allows some limited future research activities on GM cotton.

Extension

Extension is also considered one of the critical functions to be financed and monitored by the inter-profession body. The institutions traditionally in charge of extension services (a Directorate of the Ministry of Agriculture, *Direction du Conseil Agricole et de la Formation*, DICAF, at the central level and the regional Centers for Rural Development, CeRPA, and CARDERs, at the local level) were reported, in the late 90s, to lack human resources, as recruitments had stopped.

In this situation, AIC took over, with the assistance of World Bank and *Agence Française de Développement* projects, an increasing part in extension services and advisory services to cotton farmers. In 2007, the number of agents hired by AIC, in addition to the regular staff of public extension services, was 450 agents. According to the above-mentioned assessment study, extension activities carried out under AIC's control were considered satisfactory by beneficiaries. The Government decided, however, to transfer the extension activities back to DICAF and CARDERs in 2007 in order to "unify and strengthen" the cotton extension system. Most of the AIC extension agents were then transferred. In addition, the Ministry recruited more than 1000 new extension agents who still need to be trained. During its first year of activity, the new extension organization faced a number of problems (in particular late delivery of motorcycles and payment of transportation costs) which reduced its efficiency. The move from a sector-monitored to a public extension system does not seem likely to improve the quality of extension services in the near future.

4.4. SEED COTTON COLLECTION AND GINNING

The allocation of seed cotton quotas to ginneries was decided, until 2000, by the Government (through SONAPRA), and is now the responsibility of AIC. Quotas are currently allocated on the basis of existing capacities.

Ginners are required to pay to CSPR an advance of 40 percent prior to delivery of the seed cotton, as a security. This advance is used by CSPR to repay the credit on inputs. The final payment to producers takes place after payment of the seed cotton by ginners to CSPR. According to the regulations, this payment should take place within 21 to 34 days after seed cotton collection. Much longer delays have however been recorded in the past

[13] Horus (2004)

years, due to late payments by ginners. The ginners pay to CSPR the producer price, plus the fee to cover the "critical functions".

The quotas unused by some ginneries (either because they cannot pay the required advance payment of 40 percent before the start of the marketing campaign, or because they are not interested in ginning during the coming season) is reallocated among other ginneries. AIC also decides an allocation plan (*plan d'évacuation*), which determines from which communes each ginner should buy seed cotton.

In 2007/08, SONAPRA was allocated 162,000 tons of seed cotton (i.e. 52 percent of a production of 300,000 tons), the remainder being allocated to the seven private ginners, which is proportional to existing capacities.

The opening up of ginning activities to private investors, in the 1990s, resulted in the building up of eight new ginneries (in addition to SONAPRA's 10 ginneries), and to a clear problem of overcapacity, especially in the southern part of the country, where most of the ginneries are located: the overall capacity is currently close to 600,000 tons of seed cotton, while production decreased in recent years from 400,000 tons to less than 300,000 (of which 90 percent was in the northern zone). The administered system of quota allocations to ginners is reported, in the early stage of the reform, to have favored (through political interventions) a number of new private ginners, thus giving wrong market signals and creating an incentive to overcapacity. Out of the seven private ginneries remaining active in 2007/08, four are controlled by the same group (Mr Talon's group), which thus tends to become the major actor in the cotton sector in Benin (the group is also the main importer of inputs).

The dissidence of some ginners, who refused to comply with the common rules and started to buy seed cotton directly on their own, irrespective of the allocation plan decided by AIC, without paying fees due and, sometimes, without repaying input credit, resulted in 2004/05 in a situation close to paralysis of the whole system: during that season, 25 percent of the seed cotton was collected by parallel networks escaping the credit recovery scheme set up by CSRP, resulting in worsening tensions among actors, poor credit recovery performance, and increasing delays of payment by ginners to farmers. The situation seems to have improved with the empowerment of AIC, which did not, until 2005, have the legal power to prevent such dissidences, allegedly tolerated by the Government.

The quota allocation system is reported by AIC to have functioned correctly in the 2005/06, 2006/07 and 2007/08 seasons, except that, because production forecasts are systematically overestimated, initial quotas are well above the actual production and have to be revised during the season. Many actors complain, however, that the allocation plan of seed cotton is still not fully enforced as some ginners, in order to maximize their share of the production, bribe transporters to bring the seed cotton to their factory rather than to the one decided by AIC.

Contrary to the situation in other countries belonging to the FCFA zone, ginners in Benin play a very limited role in the collection of seed cotton. The assembly of seed cotton is the responsibility of farmers groups, the quality control is done by a Government controlled department (*Direction du Conditionnement)*, while the transport plan from village markets to the ginneries is decided by AIC.

4.5. INPUT AND CREDIT PROVISION

Institutional arrangements for input supply

Seeds
The seed production and distribution system under the new organization is very complex. The overall management responsibility is with AIC, which contracts with the various actors of the chain. The pre-base seeds are produced by CRA-CF. Multiplication is done by contract farmers, under the supervision of CARDERs. Treatment and conditioning are done by SONAPRA. Distribution of seeds is done, under AIC's control, by local Unions of producers and village-level farmers groups.

The seed provision was fully financed by AIC until 2007, and since then has been financed by the Government. Seeds are given free of charge to farmers.

Fertilizers and pesticides
As in all cotton-producing countries in Western Africa, cotton is by far the main market for fertilizers and pesticides. It accounts for nearly 90 percent of the consumption of fertilizers in the country.

Until 1992, import and distributions of pesticides and fertilizers were the responsibility of SONAPRA. Between 1992 and 2000, SONAPRA was still in charge of the overall organization of input supplies, but was in competition with private importers. Between 2000 and 2006, this function was managed by CAGIA on the basis of a very complex organizational scheme:

- procurement was under the control of a Cotton Input Commission, chaired by FUPRO and composed of representatives of producers, suppliers and ginners; this commission used to select for each zone local importers/distributors (from a list of authorized importers, who amounted to 11 in 2005) on the basis of a competitive bidding, and all importers/distributors had to reduce their offer to the level of the best offer; some authors have mentioned a lack of transparency in the selection process[14]
- the selling price for inputs was decided by the same commission; it is a uniform price for the whole country (for all distributors) and for the various types of inputs (urea and complex fertilizers are sold at the same price); in total the average price is supposed to be equal to the average cost plus a uniform distribution margin, but inputs were subsidized by the Government for some years. In order to encourage fertilizer usage, prices for insecticides are set above their theoretical price (import and distribution costs plus margin),

[14] IFTC and Horus studies

and thus subsidize fertilizers. The whole pricing mechanism is obviously lacking transparency.

- the inputs are delivered by stockists in the villages and distributed to farmers by AVs; the distribution scheme is associated with a credit, reimbursable by farmers upon delivery of seed cotton
- the reimbursement of the credit is the responsibility of CSPR, who deducts the price of inputs delivered from the sale value of the seed cotton

In principle, the system is intended to combine the benefits of an administered system (price stability, equal service throughout the country, credit security) with the benefits of competition among importers (the lowest bid becomes the basis for the calculation of the uniform price).

This system was modified to some extent in 2007 and 2008, following the dismantling of CAGIA, the replacement of GPDIA by CNIDIC and the dissolution of the accord-cadre.

For the 2007/08 season, the Government decided to re-introduce SONAPRA among operators allowed to bid for input procurement. After cancellation of the two first calls for bids, SONAPRA was finally awarded, at a price well below market price, three quarters of the imports of fertilizers. As the price of the bid was clearly unrealistic, SONAPRA finally had to default, resulting in delays for delivery and payment of a penalty, finally supported by the Government.

For the 2008/09 season, the organization of the tenders for input procurement was decided by a commission including Government officials and representatives of the inter-profession. The commission decided to have only one international call for bids for imports of fertilizers and pesticides. The winner is the bidder who proposes the lowest CIF price. In order to avoid monopolistic positions, the winner is allowed to supply 60 percent of the needs, while the second-place winner may supply the remaining 40 percent if he accepts the price proposed by the winner. The distribution of inputs at the village level is done by input distributors, selected among a list of 11 authorized distributors. Each communal council can choose among the list of authorized distributors. The remuneration of the distributors is administratively set on the basis of standard costs (*barême*), including transport costs, financial costs and a net margin of 3 percent.

For the 2008/09 season, based on an average CIF price of 293 FCFA/kg for fertilizers (corresponding to 223 FCFA for urea and 315 FCFA for compound fertilizers), the selling price at the village level would amount to 346 FCFA, according to the agreed price formula, i. e. an increase of 50 percent over the last season (during which the retail price was set at 235 FCFA), due to the rocketing world fertilizer prices. Such a retail price was considered as unacceptable by the farmers representatives, and a Government subsidy to maintain the previous season's price (amounting to roughly 30 percent of the cost) was requested as a condition for accepting the proposed producer price for the coming season, and accepted by the Government.

Cost performance of the input supply system

The cost efficiency of the input supply system could theoretically be measured by the evolution of the ratio between retail and CIF prices for inputs. This comparison is, however, not fully relevant, as the retail price is often distorted either by subsidies or by compensation between costs of fertilizers and pesticides.

A study done in 2004[15] tends to show that the ratio between CIF and farm gate price improved between 1991 and 1997 (during the first phase of the reform process), but subsequently returned to its previous level, which would mean that the reform had no impact on the cost efficiency of input supplies. In 2008/09, the ratio between the CIF price of fertilizers (293 FCFA/kg) and the retail price without subsidies (346 FCFA) is still 80 percent, equal to what is was at the beginning of the reforms.

Figure 8: Ratio between CIF and farmgate prices of fertilizers between 1991 and 2004

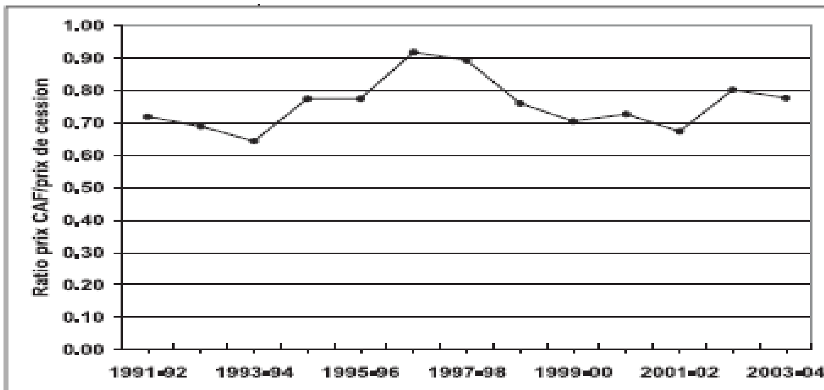


Figure 11. Ratios des prix CAF et prix de cession des engrais au Bénin, 1991-2004

Source: Study on input distribution in Benin (IFTC)

This ratio compares favourably with other WCA countries: in 2006/07, the retail price of compound fertilizer was 235 FCFA in Benin, 248 FCFA in Burkina (including a subsidy), 265 in Mali, and 310 in Cameroon. The comparison is however again not fully significant, as the transport cost are much higher in landlocked countries than in Benin. Assuming a differential transport cost of 20 FCFA/kg for Mali and Burkina (corresponding to an additional distance of 500 km and to a transport cost of 40 FCFA/T-km), Benin's performance would be comparable to those of Mali and Burkina. This comparison is again not conclusive, because of the compensation between costs of fertilizers and pesticides taking place in Benin.

Some studies done in 2004[16] (at the time when CAGIA was responsible for input procurement) have underlined a lack of transparency in the procurement process, in particular for pesticides, for which the IFTC study mentions the existence of a "private cartel of importers having replaced a state monopsony". It is probably too soon to assess

[15] Réforme des filières cotonnières en Afrique sub-saharienne: L.Goreux; DGCID/Banque mondiale; 2004
[16] Horus report on performance of reform (2004) and Study on input distribution in Benin, IFTC

the results of the new procurement organization established in 2006, but AIC claims that the situation has subtantially improved in recent years. The return of the Government to the procurement process is not, however, a positive signal in this respect.

Credit

The repayment performance for the credit on inputs deteriorated considerably in the beginning of the 2000s, because of the existence of parallel marketing networks escaping CSRP. The situation has improved over the two last seasons, but the repayment rate is still preoccupying, and does not exceed 95 percent for the 2007/08 season .

This situation is not specific to the Benin system, and is partly due to the weakness of farmers groups (at which level farmers are mutually responsible for the credit repayment), to the fact that the input package represents an increasing share of the value of seed cotton (more than 50 percent in 2007/08), and to the fact that farmers tend to over-estimate their need for cotton fertilizers, in order to benefit from credit on fertilizers for their other crops, in particular, for maize. What is specific to the Benin system is that credit defaults are not born by ginners or by inputs suppliers (who are paid automatically and by priority as soon as ginners pay the seed cotton), but result in a deficit for CSRP, which is not able to fully pay the seed cotton to farmers groups or which has to be subsidized by the Government. In 2007/08, an amount of approximately 2 billion FCFA was thus still due to producers at the end of the season.

Credit repayment is considered by AIC to be among the major problems that the sector has to face.

Strengths and weaknesses of the input supply system

Overall, the reform undertaken at the end of the 90s and recently modified, has indeed been able to privatize the input supply system without major disruption in the input supply chain. This is evidenced by the fact that the input consumption has remained stable at the same level as in monopoly systems existing in other countries in WCA (Mali, Cameroun, Burkina). There is no evidence that the cost efficiency has increased with the reform, but performance in this area seem to be similar to those of Burkina and Mali (although comparisons are not fully significant), which does not mean that it is optimal.

One of the most positive outcome of the reform has been the emergence of a local input import and distribution group (Mr Tallon's group), which has in recent years taken over more than half of the cotton input procurement in Benin, and is now able to compete at a regional level with international firms

This success, however, hides a number of structural shortcomings:

- One major cause for disruption in the input supply system, in the early 2000s, was the fact that some stakeholders (farmers groups, input importers and distributors, and ginners) developed parallel input supply systems, bypassing the common organization set by the inter-profession. AIC was not able to prevent those practices, as it did not have at that time a legal mandate to impose the common system, and was not effectively supported by the Government; those dissidences have considerably weakened the whole input supply and credit recovery system until 2005. These practices are reported to have ceased since the creation of the new professional organizations in 2006, and since the new Government stopped encouraging or permitting them. The input procurement system remains under tight control of the Government (which participates in commissions for organization of the procurement and has the final word on the selection of tenderers). This makes the whole system liable to political interference and arbitrary decisions, as illustrated, among others, by the re-introduction of SONAPRA as input supplier in 2007/08

Although there is no evidence that Benin is performing better or worse that other WCA countries in terms of cost efficiency of the input supply system, it is clear that the system is not fully competitive. In the organization functioning in 2008/09, there is indeed a competition at the import stage (as in other systems, such as monopolies, which usually procure inputs through international tenders). There is however no competition on costs at the distribution stage as prices are administratively determined. There is also no competition on transport costs, as independent transporters, who transport inputs on behalf of distributors, are paid according to an official price standard (*barême*), which seems to be on the higher side (41 CFCA/kg), based on usual transport costs.

The system does not allow the combining of delivery of inputs with the collection of seed cotton in order to minimize transport costs, as it is often done in integrated systems whereby the same operator is in charge of input distribution and seed cotton collection. This is structurally a factor of lower cost efficiency for the Benin system

Input imports and distribution to farmers are often late because of procedures delays and because of frequent cancellations of the calls for bids; such delays result in higher procurement costs, difficulties in delivery (when the distribution of inputs starts after the beginning of the rainy season) and late planting or pesticides/fertilizer application. Such delays have significantly affected the sector performance in the two last seasons.

The system for seed production and distribution is also not considered to be functioning in a fully satisfactory manner: problems of late delivery and poor quality of seeds have been reported. The AIC report for the 2007/08 season mentions that less than half of the quantities of seeds distributed has been effectively used in some departments. The fact that seeds are distributed for free accounts undoubtedly for the high level of wastage

One of the possible implicitly expected outcomes of the reform would be the development of the agricultural input market (for other crops than cotton), in relation to the creation of a private network of input importers and distributors. The study done by IFTC in 2004 notes however that there is no noticeable increase in the fertilizer consumption for other crops, which would suggest that the reform had no influence, per se, on the development of the fertilizer market beside cotton. It is true, however, that, under the new semi-liberalised system, credit on inputs remains linked to cotton, thus limiting the demand for other crops.

More fundamentally, the system does not create appropriate incentives and does not give a clear line of responsibilities among actors; for example:

– The estimate of the needs for inputs for the next season is made by AIC on the basis of farmers intentions to plant; the area to be planted is systematically over-estimated, resulting in excess supply, the cost of which is finally paid by farmers as the financial cost of the stock carried over is added to the administratively set price of inputs. Input suppliers and distributors have therefore no incentives to verify that the needs expressed by farmers correspond to the area planted, their own interest being to maximize their sales

– Input suppliers bear no responsibility for the repayment of input credit, as they are automatically paid when ginners pay for seed cotton.

Altogether, the input supply system set up by the reform entails structural weaknesses that limit its efficiency, reduce the accountability of actors on its good functioning, and make it more liable to political pressures and competition-distorting practices than integrated systems, by which ginners are responsible for providing inputs to contract farmers.

4.6. LINT MARKETING AND QUALITY PERFORMANCE[17]

The quality control of both seed cotton and lint is considered a critical function.

Quality control of seed cotton

Seed cotton grading remains regulated and carried out by Government services (*Direction de la Promotion de la Qualité et du Conditionnement des Produits Agricoles, DPQC*). Quality inspectors from DPQC inspect seed cotton both at the collection market and upon delivery at the ginnery. It is worth noting that ginners have no control over the quality of the seed cotton in the administered system of allocated quotas.

Seed cotton is graded in 2 grades by DPCQ. Seed cotton grading is lax, and the proportion of seed cotton classed as 2nd grade is minimal (less than 5 percent) and much lower than it should be.

Classing and quality control of lint cotton

All national lint production is classed by the parastatal ginning company SONAPRA according to national types. Manual and visual classing is supplemented by a testing laboratory equipped with two SITCs and one AFIS. About 5 percent of production is

[17] this section draws on the report on lint cotton quality and marketing performances, by Gerald Estur (2007)

instrument tested. In addition, SGS and Dunavant have one SITC each in Cotonou for checking parameters prior to shipment for the account of merchants or buyers.

Quality performance

Lint quality has been irregular over the last seasons due to delays in the distribution of inputs and in the beginning of the marketing season (due to prolonged discussions between ginners and producers about the producer price). Late payments of seed cotton have also been a negative factor for producer motivation. The proportion of production classed in Standard 0[18] (the highest quality) dropping from 82 percent in 1996/97 to less than 40 percent during the following three seasons, and fluctuating between 43 percent and 62 percent over the past five years. The percentage of production classed as Standards 2 to 4 (very low qualities) declined from 17 percent to 2 percent. Staple length improved significantly over the past five years. According to the 2005 ITMF contamination survey based on 8 mill evaluations, Benin is among the origins least contaminated, least affected by stickiness and least affected by seed coat fragments. Thus, the overall quality of Benin cotton is considered good but not reliably so, and with a declining trend.

The average price of the top types of Benin cotton was, in 2006/07, 2.5 cents above the cotlook A index (which is slightly lower than Burkina Faso and Cameroon, and similar to Mali). This premium decreased, however, from 3 cents in the previous decade.

4.7. Pricing of seed cotton

The pricing mechanism

While producers' prices were fixed by the Government until 1999, this responsibility was theoretically transferred to AIC in 2000, and a new mechanism was set up on the following principles:

a) a producer initial guaranteed price is determined before planting through negotiation within AIC; this negotiation takes into consideration a "supply" price, corresponding to the standard production cost, and a "demand" price corresponding to the world market trend, from which are deducted standard processing and marketing costs; the producer price decided by the inter-profession remains subject to a validation by the Government;

b) the final producer price is determined in October (just before harvesting) on the basis of the world market prices, after deduction of standard processing and marketing costs;

c) a reserve fund is supposed to be funded when the final price is above the guaranteed price; if the final price is below the initial guaranteed price, the reserve fund is due to pay the difference to ginners. The reserve fund can also be funded by the Government.

[18] African Standard 0 is close to Universal Standard Good Middling, Standard 1 to Strict Middling, and Standard 2 to Middling.

This mechanism was used only once, in 2002/03, but was not successful in reaching an agreement between stakeholders. In fact, the mechanism turned out to be non applicable for a variety of reasons: the description of the mechanism remains vague; the final word remains with the Government, which reduces the interest of a negotiation between parties; the reserve fund is non existent, as it has never been funded.

In subsequent years, the producer price was discussed within AIC between farmers and ginners representatives, on the bases of current world prices, production costs and costs of ginners (in fact, mainly on the cost of SONAPRA, the only one to be disclosed). As most often no consensus can be reached among actors, the final word remains with the Government, often resulting in "political" prices. When the price is too high in view of the market prospects, the Government has to fill the gap and subsidize the producer price, as ginners would not otherwise purchase seed cotton. Such a situation occurred in particular in 2001/02, and in 2004/05 (a subsidy of 43 FCFA/kg of seed cotton, amounting to 18 billions FCFA). In 2006/07, the Government promised to subsidize up to 10 FCFA/kg the producer price, but failed to do so.

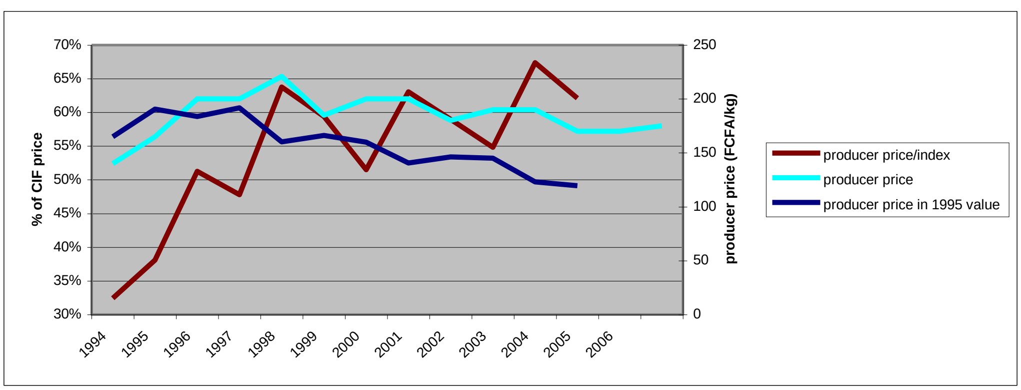
Table 2: Producer prices between 1994 and 2007

	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
net producer price	95	100	140	165	200	200	225	185	200	200	180	190	190	170	170	170	190

Prices paid to producers and share of CIF price

The ratio between the price paid to producers (net of their contribution to the financing of the "critical functions") and the Cotlook index[19], has increased from less than 50 percent before 1994 to an average of 60 percent between 1998 and 2005 (see graph below). The increase in the producer price in absolute value in the late 90s is due primarily to the devaluation of 1994, the benefit of which was progressively passed on to producers within a 3-year time period. It should be noted, however, that the ratio does not reflect the overall efficiency of the supply chain, as producers' prices had been subsidized several times during the last period.

Figure 9: Share of the CIF price to producers



[19] Cotlook average A index during the marketing period corresponding to each cropping season

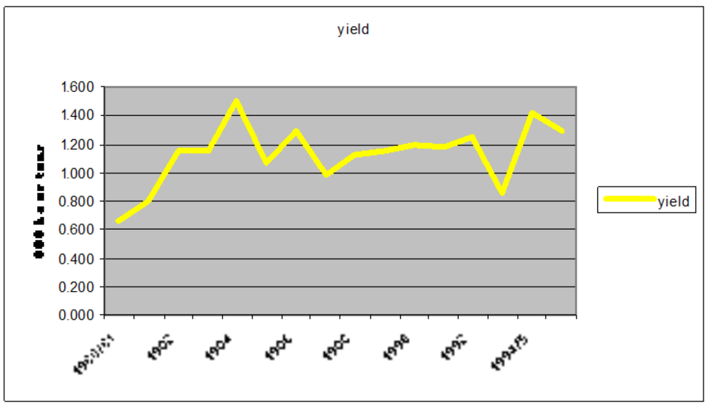
5 OUTCOME PERFORMANCE (YIELDS RETURN TO PRODUCERS, COST EFFICIENCY OF GINNERS, SUSTAINABILITY)

5.1. YIELDS

The yields are widely differentiated between the northern and the southern regions because climatic conditions are more favourable and the pest infestation is lower in the North. In 2006/07, the average yields were 1292 kg/ha in the North and only 547 kg/ha in the South.

One notices a sharp decline in yields between 1994 and 1998 (in the first phase of the reforms), for which there is no clear explanation. This trend is followed by an increasing trend since then, related to the increasing part of northern regions (where yields are higher) in the total production.

Figure 10: Trend in yields, 1980-1996



5.2. GINNING OUTTURN RATIO

SONAPRA's ginning outturn ratio was, in 1994, much lower than in other countries in the FCFA zone (36 percent). It increased, however, gradually afterwards, and reached an average of 43 percent in the 2003-2008 period, the best performance in SSA. This increase is reported to be mainly due to the introduction of a new variety.

5.3. PROCESSING AND MARKETING COSTS

Financial results for SONAPRA

Following the devaluation of the CFA franc (which did not result in an immediate parallel increase of the producer prices) the company made substantial profits until 1998, but did not keep them as reserves in case of a possible future decline in world prices. With the decline in world prices, the company made losses every year between 1999 and 2006, except in 2004. The accumulated losses during this period amounted to 36 billion FCFA, resulting in negative working capital and equities, which puts the company in an unsustainable cash situation.

year	Net result (M FCFA)
1994	18,9
1995	25,4
1996	8,1
1997	15,2
1998	8,2
1999	-12,8
2000	-6,8
2001	-2,3
2002	-1,8
2003	-2,3
2004	4
2005	-7,6
2006	-7,1

Compared costs for cotton companies

The detailed costs of SONAPRA are shown on the table below for the last three available cropping seasons:

Table 3: Compared cost of cotton companies

SONAPRA (bilan)	FCFA/kg lint cotton			USD/kg lint cotton (505FCFA/USD)		
	2004/05	2005/06	2006/07	2004/05	2005/06	2006/07
purchase of seed cotton (net paid to farmers)	362,8	404,6	396,9			
collection costs						
transport seed cotton	50,1	48,4	45,0	0,10	0,10	0,09
collection fee to prod groups[20]	11,4	11,4	11,4	0,02	0,02	0,02
other collection costs	0,7	0,7	1,3	0,00	0,00	0,00
sub-total collection costs	*62,2*	*60,5*	*57,7*	0,12	0,12	0,11
ginning costs						
fixed costs						
Amortization	12,2	24,6	10,6	0,02	0,05	0,02
salaries permanent staff	2,3	4,6	3,2	0,00	0,01	0,01
other fixed costs	3,9	9,3	5,8	0,01	0,02	0,01
variable costs						
Energy	12,4	21,5	25,0	0,02	0,04	0,05
Packaging	16,3	18,4	20,0	0,03	0,04	0,04
Other	50,1	39,1	25,7	0,10	0,08	0,05
sub-total ginning costs	*93,4*	*108,2*	*90,3*	0,18	0,21	0,18
cost from ginnery to FOB	37,3	48,3	34,7	0,07	0,10	0,07
Overhead	39,5	34,1	27,6	0,08	0,07	0,05
critical functions (research, sector organization,…)	11,9	5,1	0,3	0,02	0,01	0,00
short term financing cost	27,1	17,0	26,8	0,05	0,03	0,05
total cost from farm to FOT	234,1	231,6	202,9	0,46	0,46	0,40
total FOB cost (including purchase of s-c)	634,2	684,5	634,5	1,26	1,36	1,26
minus: sales of seeds	43,3	43,0	38,9	0,09	0,09	0,08
net FOB cost	590,8	641,5	595,6	1,17	1,27	1,18
sale of lint	550,2	630,7	603,8	1,09	1,25	1,20
profit/loss	-40,6	-10,7	8,2	-0,08	-0,02	0,02

The FOT cost ($0.40/kg of lint, excluding the purchase of seed cotton), which measures best the cost performance of the ginning company, is comparable to the costs in Burkina

[20] included in the critical functions and paid to the interprofession

($0.40) and slightly lower than the cost in Mali ($0.51). One of the main handicaps for SONAPRA (and all ginners) is the higher collection transport costs, due to the fact that ginning factories are located in the southern part of the country. The total FOB cost is slightly lower than in Burkina and Mali, reflecting the comparative advantage of Benin, because of its location closer to the port.

The real costs of the private ginners, who handle approximately 50 percent of production, are not known and considered as confidential. The cost estimates provided by these companies to the interprofessional committee in charge of discussing producer prices are usually similar to SONAPRA's costs, or even slightly higher. There are, however, good reasons to believe that their real costs should be substantially lower, in particular regarding overhead.

The 2008/09 producer price agreed by ginners (190 FCFA + 20 FCFA for critical functions) would result, if SONAPRA cost structure remains constant, in an FOB cost of 687 FCFA, equivalent, at current FCFA value, to 73 cents/pound for FOB, or 77 cents C+R[21], which is substantially higher than current world prices (68 cents/lb in May, 2008). SONAPRA will therefore probably make losses again in the coming season, and the anticipated loss, assuming an FOB cost of 687 FCFA, a Euro/dollar exchange rate at 1,55 and a world price of 68 cents/lb, would be around 10 FCFA/kg of lint cotton. If private ginners accepted this producer price, it is likely that their cost is at least 10 FCFA below SONAPRA's costs.

5.4. Cost competitiveness at farm level

5.4.1 Production cost and return to farmers

The most recent survey available on production costs and return to farmers is a survey on 1600 cotton farms done in 2006/07 by The Office de Soutien des Revenus Agricoles (ONS) and partly used by AIC for its annual review of costs and prices. The data base for the survey was communicated to the Consultant by AIC, which made it possible to breakdown cost items per type of farms, based on yield performance (farms with a yield of less than 700kg/ha, between 700 and 1000 kg, between 1000 and 1500 kg, between 1500 and 2000 kg, more than 2000 kg). A breakdown between northern production regions (which represent 80 percent of total production) and southern regions (20 percent of total production) was also introduced, as production techniques, farm size and yield are quite different in both areas. The results were later compared with previous studies to check consistency, in particular concerning labour time, which were not captured in the ONS survey[22].

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[21] FOB to Cost and Freight cost is estimated at 10 cents/kg or 4 cents/lb

[22] Wadell and ONS survey

[22] According to a less recent study (Adanguidi, Kassimou, M'barek; 2002; "coûts de production des speculations agricoles au Bénin"), the average labour requirement per hectare would amount to 105 men-days, with a minimum of 88 days in the southern region and a maximum of 113 days in the north-central region. Those estimates are quite in line with the findings in other Sahelian countries. The hired labour cost varies, according to the above mentioned study, depending of the type of work, with a minimum of 800 FCFA/day for harvesting and a maximum of 3 000 FCFA for spraying. The average labour cost for

The main results are shown in the table below for both regions:

Table 4: Production cost analysis in the northern region

Categories	less than 700 kg	700 to 1000 kg	1000 to 1500 kg	1500 to 2000 kg	more than 2000 kg	total	total USD
farm characteristics							
% of farms	16%	21%	36%	20%	7%	100%	
average farm size (ha)	1,95	2,69	2,41	3,26	3,60	2,65	
number of plows/farm	0,47	0,67	0,84	1,06	1,29	0,82	
production costs							
fertilizer consumption (kg)	154	149	247	242	253	215	
cost of fertilizer (FCFA/ha)	36 086	35 014	58 010	56 821	59 445	50 430	100
number of insecticides treatment s	5,31	5,74	5,82	5,92	5,91	5,75	
cost of inscticides (FCFA/ha)	27 270	29 428	29 884	30 358	30 314	29 500	58
cost of herbicides (FCFA/ha)	5 700	7 726	12 137	17 107	16 088	12 075	24
cost of manpower/ha[23]	87 339	88 934	137 711	162 005	175 006	131 172	260
numer of days of work/ha[24]	75	77	119	140	151	113	
cost of production/ha	*156 394*	*161 102*	*237 743*	*266 291*	*280 853*	*223 177*	*442*
Yield	368	826	1272	1742	2337	1292	
cost of production/kg	425	195	187	153	120	173	0,34
net income/ha	-93 792	-20 635	-21 432	29 929	116 425	-3 572	
remuneration per man-day	-86	891	980	1375	1933	1129	2,24

The table shows a correlation between the yield performance on one hand, and the level of farm equipment (number of ploughs) and the farm size on the other hand. This correlation is quite logical, and can be found in most Sahelian cotton producing countries.

Some cost items may have been overestimated in the survey, in particular for the category of farms with lowest yields, especially for labour costs and fertilizers, which may be used on other crops, although bought for cotton. The survey suggests however that, with the producer price of seed cotton set at 170 FCFA/kg (price for the 2006/07 season), cotton is not profitable for farms with yields below 1500 kg, i. e. almost ¾ of cotton farms. For these farms, the remuneration per day of labor, assuming that all the labor is family labor, is below the average cost of hired labor, which means that farmers would be better off hiring out their workforce rather than cultivating cotton. As in most West African countries, the reason why these farmers continue to grow cotton is that it is the only way to access fertilizers, used partly on cereal crops.

hired labour is estimated at 1200 FCFA/day. It is commonly estimated that 2/3 of the labour requirements is provided by family labour, and 1/3 by hired labour (mainly for harvesting and weeding). This proportion varies of course depending of the size of the farm. This estimate seems to be on the high side, probably because one of the purposes of the study was to be a negotiation basis within the inter-profession for the setting of the producer price.

[23] including family labor, the cost of which is calculated by using the same unit cost as for hired labor; the breakdown between family and hired labor in not available in the survey data

[24] assuming a unit mean cost of 1160 FCFA/day, consistent with findings of other surveys

Table 5: Production cost analysis in the southern region

Categories	less than 700 kg	700 to 1000 kg	1000 ot 1500 kg	1500 to 2000 kg	more than 2000 kg	total	total USD
farm characteristics							
% of farms	79%	14%	7%	1%	0%	100%	
average farm size (ha)	1,64	2,13	2,79	2,34	0,00	1,78	
number of plows/farm							
production costs							
fertilizer consumption (kg)	202	202	327	292	0	216	
cost of fertilizer (FCFA/ha)	47 519	47 549	76 817	68 542	0	50 776	101
number of insecticides treatment s	5,3	5,9	6,1	6,0	0,0	5,5	
cost of insticides (FCFA/ha)	28 816	31 730	32 743	32 329	0	29 500	58
cost of herbicides (FCFA/ha)	697	4 642	1 535	0	0	1 407	3
cost of manpower/ha	110 199	109 246	118 284	136 867	0	111 217	220
numer of days of work/ha	87	86	94	108	0	88	
cost of production/ha	*187 231*	*193 167*	*229 380*	*237 737*	*0*	*192 901*	*382*
Yield	375	810	1 219	1 645	0	547	
cost of production/kg	499	239	188	145		352	0,70
net income/ha	-123 444	-55 514	-22 148	41 913	0	-99 830	
remuneration per man-day	-152	622	1027	1651		129	0,26

In the southern regions, a large majority of farms produce less than 700 kg/ha, while the cotton farm size is significantly smaller than in the North. The yields are not, as in the South, correlated to the size of the farm, but probably to other factors (such as suitability of the soil), not captured in the survey. Cotton is not profitable, under current price conditions, except for an insignificant minority of farmers reaching yields above 1000 kg/ha[25].

5.4.2 Evolution of the margin after payment of inputs

The margin after payment of inputs, which is considered by cotton companies as one of the main indicators of the economic sustainability of the technical itinerary proposed to farmers, declined in nominal terms since 2002 (because of the combination of an increase in the cost of inputs and a decrease in the price of seed cotton), while it was stable between the devaluation and 2002. In real terms (using CPI as deflator), the gross margin decreased sharply between 1995 and 2006.

[25] it is however very unlikely that farmers in this category actually apply the quantity of fertilizers declared in the survey, and most probably a part of these fertilizers are used on other crops, thus increasing the real profitability of cotton.

Table 6: Evolution of the margin after payment of inputs (FCFA/ha)

Years	1995/96	2002/03	2006/07
sales of cotton	203 077	219 600	219 606
inputs on credit	51 566	67 755	92 006
gross margin after payment of inputs	151 511	151 845	127 600
gross margin in 1995 constant prices	151 511	116 899	89 594

Sources: Wadell reports for 1996 and 2003, ONS survey for 2006/07

5.4.3 Impact on poverty

According to the Benin Poverty assessment of 2003, the cotton producing areas are among the poorest, and poverty increased in those areas between 1996 and 1999 as in the rest of the rural areas. In cotton growing areas, farmers who grow cotton are not significantly better off than those who do not. However, those who have grown cotton some time during the past 5 years, but are no longer growing it, have a consumption level 8 percent higher than those who have never grown cotton. It appears therefore that cotton might have been used as a springboard, to start/expand other apparently more profitable income generating activities, thanks to easier access to cash, credit and inputs[26].

It is not surprising that the indirect impact of cotton on poverty is more important than the direct impact through income distributed, if one considers the average profitability of cotton on the past decade: assuming an average gross income of 120,000 FCFA/ha (after payment of inputs), the income per farm would be in the range of 52,000 FCFA (after deduction of hired labour), or less than 10,000 FCFA/person, whereas the poverty line was 51,000 FCFA/person in 2000.

5.5. FISCAL IMPACT

If the cotton sector represented in the last decade a substantial source of fiscal income, in particular through profit taxes on ginneries, the fiscal impact has become negative in recent years. It is difficult to measure the overall fiscal impact of cotton, because of a lack of transparency, in particular concerning input subsidies and the incidence on the Government budget of SONAPRA's losses. It can, however, be assessed that the Government contributed more than 40 billions FCFA to the cotton sector during the last five years, including an 18 billion subsidy on producer price paid in 2006/07, a payment by Government of 2.8 billion FCFA to cotton producers corresponding to a debt of the sector for the sale of seed cotton, a 20 billion loan to SONAPRA which was never paid back, and a 6 billion subsidy on inputs in 2008/09. In addition, the recent decision by the Government to take over a number of critical functions (seed provision, extension, research) previously financed through sector fees will imply an additional budgetary cost.

[26] Benin Poverty assessment, September, 2003 - World bank publication

6 CONCLUSIONS AND LESSONS LEARNED

It is widely recognised that the difficulties encountered in implementing the reforms decided during the last decade were mainly due to the combination of a number of factors: (a) lack of willingness of the previous Government to play the game, to enforce the new organization, to give to AIC the real decision power on the organization of the supply chain, and to privatize SONAPRA; (b) the mechanism put in place was probably too complex (resulting in a dilution of responsibilities), and too administered to benefit from an increased competition among actors, which, in fact, did not really take place; (c) farmers organisations were too weak to play the role of partners in the supply chain organisation which they were supposed to play, and were probably not given enough support for institutional strengthening.

Fundamentally, the highly regulated sector resulting from the reform leaves little room to market forces and competition among actors, and its performance is highly dependant on the capacity or willingness of the Government to support AIC in its regulatory role, which makes it very fragile. Because the responsibility of the global efficiency of the system is highly centralized at the AIC level, the system fails to transfer to the actors the right incentives and market signals, thus resulting in structural lack of efficiency:

- In more competitive systems, the ginneries would have by themselves remedied to their unbalanced location (concentration of ginneries in the South, while production is concentrated in the North) by moving some factories from South to North. They did not do so, probably because of social and political pressures, and because ginners are not responsible for transport costs of seed cotton, born by the interprofession
- The fact that input supply and seed cotton collection are performed by different actors results in higher transport costs, as it makes it impossible to combine both transports
- The administrative allocation of quotas of seed cotton to ginners by AIC probably contributes to increasing collection costs, and prevents dissemination of locally adapted varieties in the different agro-ecological zones (in order to avoid mixing up of varieties in ginneries), as it used to be in the past
- It can also be argued that it encourages overcapacity of ginneries (as it is based on existing capacities), and prevents the least efficient ginners from being driven out of the market
- The fact that half of the seed cotton production is still allocated to SONAPRA, a public company, prevents fair competition among ginners (as SONAPRA is incurring structural losses and is indirectly subsidized by the Government)
- There is no clear incentives for input suppliers to minimize the cost of inputs, in particular as there is no competition on prices at the distribution level
- There is no clear incentive to limit the supply of inputs to the strict needs of cotton cultivation, as input suppliers and farmers have a common interest in

maximizing the quantity of inputs delivered on credit (and partly used on other crops), and as no one is specifically accountable for bad repayment rates on input credit

- While ginners have a clear interest in maximizing production and quality of seed cotton, they have no direct leverage on the main factors to achieve this objective, such as technical advice to farmers, timely and adequate provision of inputs, quality control.

At the time of publication of this report (November, 2008) the need to move to more competition in the sector is widely recognised, and Government issued in September 2008 a new sector reform proposal. The first draft of the reform proposal does not clearly show the direction proposed for the sector, but Government seems ready to engage in a dialogue with stakeholders and with technical and financial partners. Meanwhile, the sale of SONAPRA's industrial assets, effective in October 2008, modifies drastically the picture of the cotton sector, as the winner of the bid is the Talon group, who now controls more than 80 percent of the input supply and of the ginning activities. Sector structure is therefore moving toward a highly concentrated system, which probably requires other regulating tools than the ones currently in place. In particular, a number of questions will have to be addressed: is there still a need for an administrative allocation of seed cotton to ginners? Should not the *de facto* integration of input supply and ginning activities be recognized? How can the interest of farmers be protected in such a highly concentrated system? How can a better balance of power be brought to the Interprofession (which groups three families, out of which two are dominated by the same group)? What should be the role of Government in the overall monitoring of the sector?

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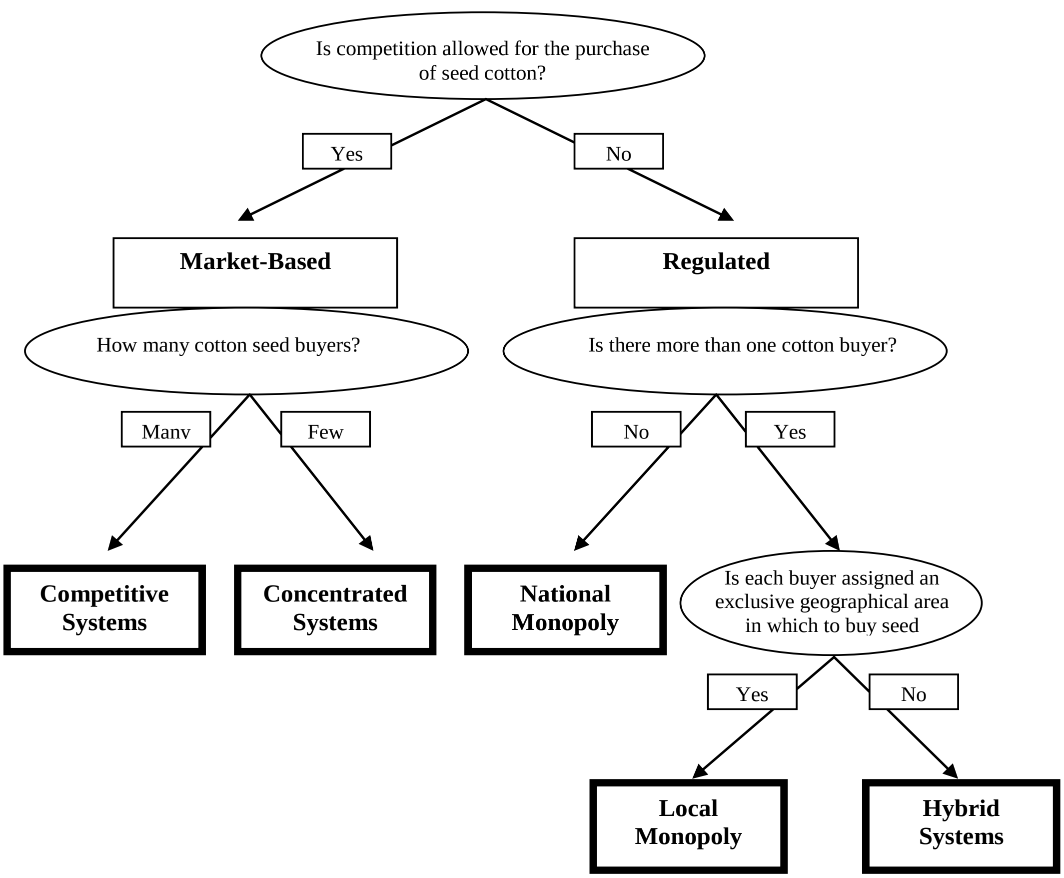
ANNEX 2:CHARACTERISTICS OF BENIN'S COTTON SECTOR: WHERE TO PLACE IT IN THE TYPOLOGY OF COTTON SECTORS IN SSA?

Introduction: Typology of cotton sectors in SSA and specific characteristics of Benin's cotton sector

The World Bank recently carried out a comparative study of cotton sector structures in a number of countries of sub-Saharan Africa (Mali, Cameroon, Burkina Faso, Benin, Uganda, Tanzania, Mozambique, Zambia and Zimbabwe) in order to establish a typology relating to the modes of organization in the existing sectors, compare the performance of the different structure types and allow policy makers to make informed choices with regard to institutional changes for each sector type in each country. The study outlined a typology based on four sector types: those where seed cotton is marketed through a national monopsony (Mali, Cameroon), those where seed cotton is marketed by regional monopsonies through territorial concessions (Burkina since 2005, Mozambique), those (such as Tanzania) where there is unrestricted competition between cotton seed buyers (competitive subsectors) and those (such as Zimbabwe and Zambia) where a small number of operators purchase seed cotton (concentrated subsector). The diagram below depicts the decision tree leading to the typology of cotton sectors:



Benin's cotton sector does not clearly belong to any of these organizational types and has therefore been classified as a hybrid system. A workshop was held in Cotonou on May 20, 2008 to present the results of the study. Participants in the event expressed the need for a more precise definition of Benin's system within the typology so that its performance could be compared with the different types identified in the study. This policy note aims to address this request.

Benin's cotton sector reforms and organization

Until the beginning of the 1990s Benin's cotton subsector was controlled by a vertically integrated state-owned company (SONAPRA) which had a monopoly on the purchase of seed cotton and on the marketing of cotton lint and seeds. This type of single-channel system was historically dominant in West Africa. Benin's sector benefited from major public investment in production and industrial equipment. This led to significant development and growth in cotton production, but resulted in major losses for SONAPRA at the end of the 1980s (when world cotton prices fell), putting in evidence, as in other countries of the sub-region, the limitations of a state-managed sector.

In the framework of the Structural Adjustment Program, Benin undertook an extensive reform of the sector during the 1990s which aimed to establish a privatized, but still nationally integrated, cotton sector. The reforms entailed several phases: the agricultural inputs market was transferred to the private sector between 1990 and 1999; the operation of private ginneries in the sector was authorized from 1994 onwards, leading to the establishment of 8 new ginning companies; SONAPRA's monopoly on buying seed cotton and marketing lint and seeds was phased out in 2000 and a system of allocation of seed cotton production between the various plants (including SONAPRA), based on their installed ginning capacity, was introduced. Each ginning company was able to freely market its production.

At the same time, organizations were set up to represent and coordinate sector stakeholders, including producers (FUPRO - Federation of Producers' Unions) in 1998, ginners (APEB - Professional Association of Ginners of Benin) in 1999 and input distributors (GPDIA - Professional Group of Agricultural Input Distributors). The Interprofessional Cotton Association (AIC) was established in 1999 to bring together the various groups of operators with the goal of managing the critical functions and coordinating the different professional groups. Finally, CRSP, the *Centrale de Recouvrement et de Sécurisation des Paiements et des Crédits* (credit recovery and securization agency), was established in 2000 with the core mandate of centralizing financial flows within the sector (seed cotton payment, input credit recovery and payment of critical functions). The privatization of SONAPRA, intended to complete the reform process, was, however, delayed several times and was only recently finalized (September 2008).

Implementing these reforms was more difficult than expected. The main factors were the following: (i) some operators refused to comply with the operating rules that had been set out at the interprofessional level, (ii) AIC was unable to comply with these rules, (iii) the privatization of SONAPRA was delayed (which introduced distortions in competition between ginners) and (iv) Government played an ambiguous role by repeatedly failing to discourage conflicting attitudes.

After gradual adjustments were made to the original plan, the organizational structure of the cotton sector can now be summarized as follows:

- For each cropping season, the price to be paid to producers for their seed cotton is fixed at national level prior to planting and is negotiated by the AIC with Government making the final decision.
- The AIC allocates seed cotton production to the ginners, i.e. SONAPRA and private ginners, according to their ginning capacity. Each ginner purchases the seed cotton at a price fixed for the cropping season and pays the applicable price to the CRSP.
- Producer groups bring the seed cotton together at village level and are paid by AIC as part of the critical functions process
- Inputs are imported by private operators selected through a competitive bidding process, then supplied to villages by authorized distributors sponsored by community and producer councils; costs and margins are fixed according to a regulated fee structure set by Government.
- Input credit is provided by importers and distributors (who must pre-finance imports), then by the ginners (who must pay the CRSP 40% of the value of the cotton that has been allocated to them); this percentage is supposed to match the cost of the inputs). However, none of these stakeholders actually assumes the credit risk, since the CRSP makes it a priority to earmark credit repayment out of the moneys received from the ginners.
- The AIC was partly responsible for the technical assistance and supervision of producers until 2007. Government services have now taken over this function.
- Government services are also responsible for quality control at the point of purchase.

Benin's position in the typology

The analysis of Benin's cotton system using the classification of sector types confirms that it is definitely a hybrid system. It potentially belongs to the regulated systems, but with one major difference: ginning companies are not involved in producer support/guidance, nor in input supply functions. This feature sets it apart from the monopolistic systems where either the cotton companies (for example in Burkina and Mali) carry out these functions or where the cotton company and producer associations carry them out jointly (as in Cameroon); it differs also from the concentrated systems where cotton companies are responsible for these functions (as is the case in Zambia and Zimbabwe).

Benin's system can therefore be defined as a regulated system that is not fully vertically integrated, where all the critical functions are carried out by different operator groups, but are coordinated at the national level by the AIC under Government's supervision.

The lack of integration and the existence of autonomous actors require a greater level of coordination, and therefore regulation, than in the integrated systems.

Performance of the different systems

The World Bank comparative study identified a number of sector performance criteria that are reviewed below.

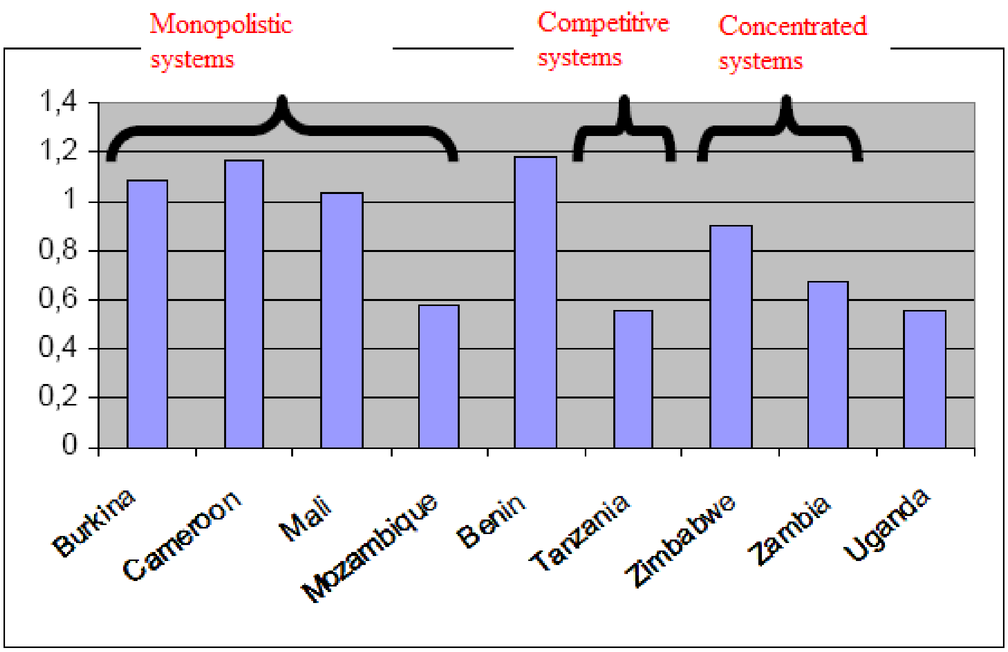
Input supply, credit and yields

The study confirms that the monopolistic systems (with the exception of Mozambique) are the most capable of meeting producer input requirements, as well as providing input credit guarantee. This means that almost all producers have access to inputs, and thus yields are higher and less variable. These systems also allow cotton companies to carry out support and extension functions. Competitive systems only allow a limited number of producers to have access to inputs. The level of performance of concentrated systems in this area is between these two extremes.

After the reforms, Benin's system has maintained the same level of credit availability to the producers had been achieved in the monopolistic systems. However, the complex supply system that replaced the single channel model is beset by a number of recurrent problems, mainly because it dilutes stakeholder responsibility and increases the risk of political interference. The problems include delays in delivery, errors in forecast requirements, poor product quality and low credit repayment levels. These all result in less consistent overall performance than in the monopolistic systems.

Yields are, as was to be expected, higher in those systems where the supply of inputs can be guaranteed. The level of public investment in the sector (much higher in West Africa where monopolistic systems were the norm) also explains the differences in yields. Benin's performance in this area is similar to that of monopolistic systems and is among the best in the sample range.

Graph 1: Comparison of cotton yields (2006/07, seed cotton kg/ha)



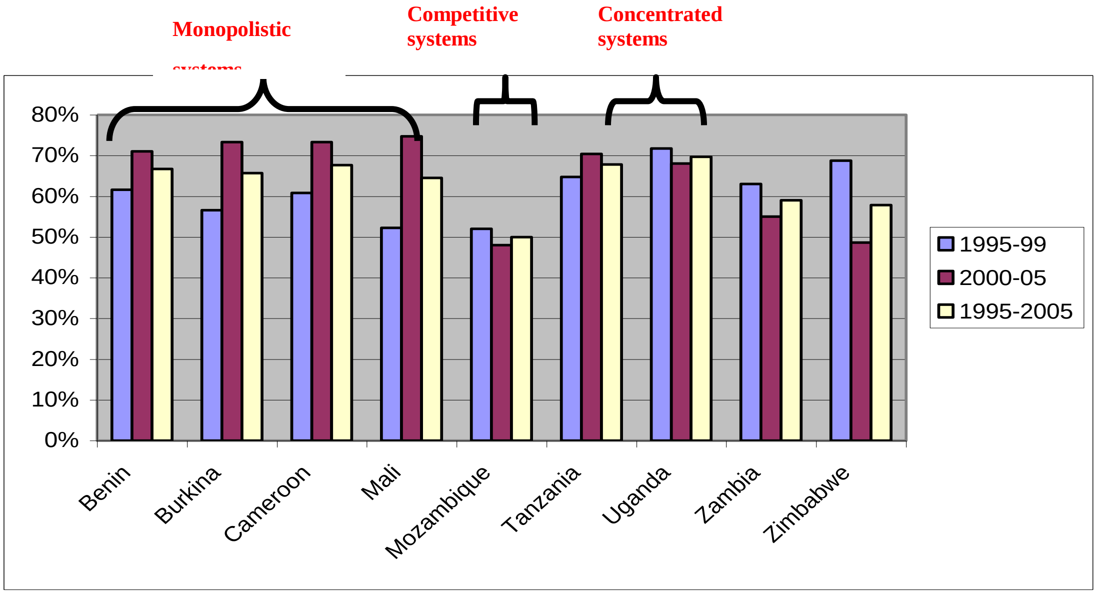
Producer price

With regards to seed cotton pricing, competitive systems were able, during the ten years in review (1995-2005), to pass on to farmers the highest percentage of the factory-gate cotton lint price. In contrast concentrated systems did not perform as well in this area: the lack of regulatory mechanisms may result in agreements being made between operators. Performance of the monopolistic systems is intermediate; the high prices paid over the last five years was basically due to "political" price fixation at levels that did not allow the sectors to break even[27].

Price determination mechanisms in Benin's cotton sector are similar to those in the monopolistic systems of West Africa. Performance levels during the 10 years in review (1995-2005) were comparable to the West African monopolistic systems, i.e. poor during the period 1995-2005 and very high during the period 2000-2005 due to more "political" price determination that was eventually indirectly subsidized.

[27] Mozambique is a unique case, where performance is poor due to lack of regulation.

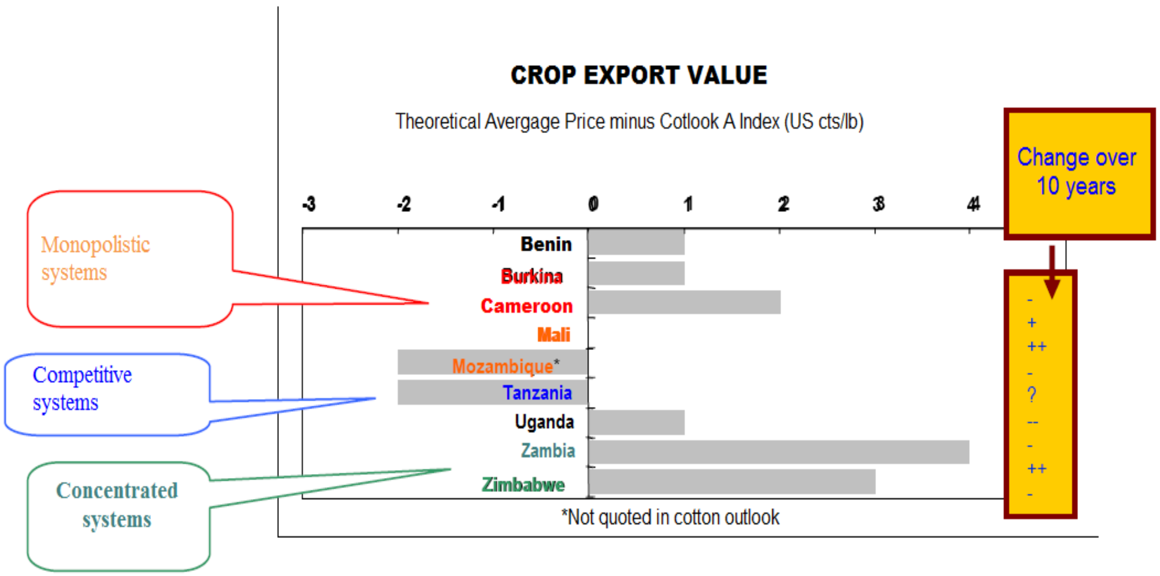
Graph 2: Comparison of producer price/factory-gate price ratio



Quality management

Quality management appears to be only partly linked to sector type. Performance is measured by the theoretical premium (i.e. the origin-based quality premium received on international markets) and by the change in this premium between the two years in review (2005/06 and 1995/96). Concentrated systems, in which each cotton company is able to implement a quality policy, show the best performance, while competitive systems, where the ginning companies barely have any control over quality of seed cotton and do not pass on to the producers the premiums obtained when the cotton lint is sold, show the lowest performance. Performance in the monopolistic systems varies from country to country, and depends essentially on how rigorous and effective the quality control is at the point of purchase.

Due to relatively lax policy, Benin's performance on quality is comparable to that of the monopolistic systems, although it is outperformed by that of Cameroon. In addition, the level of performance deteriorated slightly during the decade under review.



Seed pricing

Seed pricing is in general better in the concentrated and competitive systems than in the monopolistic systems, since there is greater competition between cottonseed oil processors. Other factors can also play a role, in particular the relative importance of cottonseed oil production with respect to domestic oil consumption which influences demand.

Cottonseed oil represents a major share of Benin's domestic oil market. Performance in terms of seed pricing is better than in the monopolistic systems, while still much lower than in the competitive and concentrated systems of Eastern and Southern African countries.

Table 1: Seed pricing performance

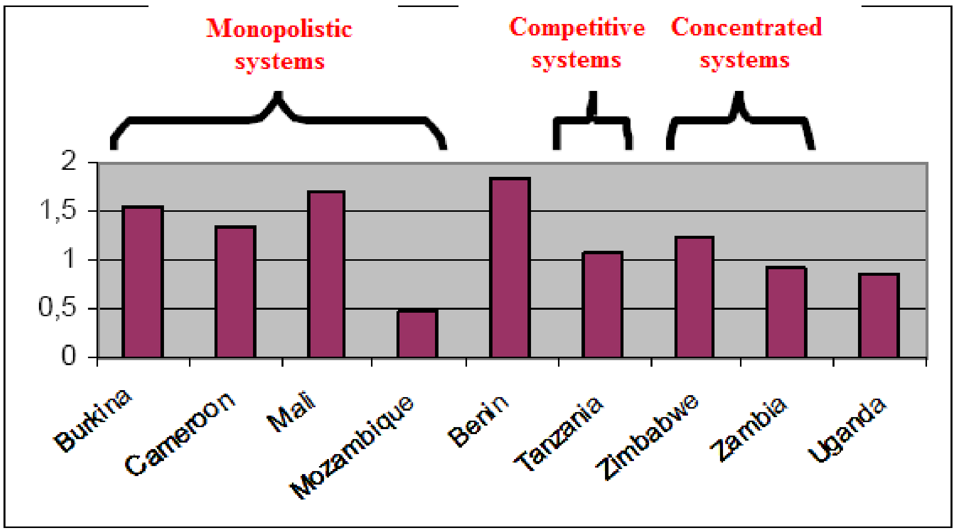
	Benin	Burkina	Cameroon	Mali	Mozambique	Tanzania	Uganda	Zambia	Zimbabwe
% of production/ market	53%	57%	18%	50 %	6%	8%	4%20%27 %		
Number of operators (2006)	2	11	1	2	0	13+	4	3	6+
Seed price (US$/ ton) 2006	63	44	59	50	55	27-117	86	71	95

Profitability at producer's level

Profitability for the producer, measured by the net income per working day, depends on producer price, yield, cost of inputs and labor productivity. Profitability (calculated for the 2006/07/cropping season) was highest in the monopolistic systems (with the exception of Mozambique), since these systems have been able to promote the development of cultivation based on animal traction, as well a from exceptionally high producer prices which are unfortunately not sustainable over the long-term.

According to available surveys[28], Benin's performance in this area compares favorably with that of monopolistic systems, particularly due to the comparative advantage of being close to the port of shipment and also to the shift of cotton cultivation towards the more suitable northern part of the country.

Graph 3: Comparison of income per working day (in US$, 2006/07)



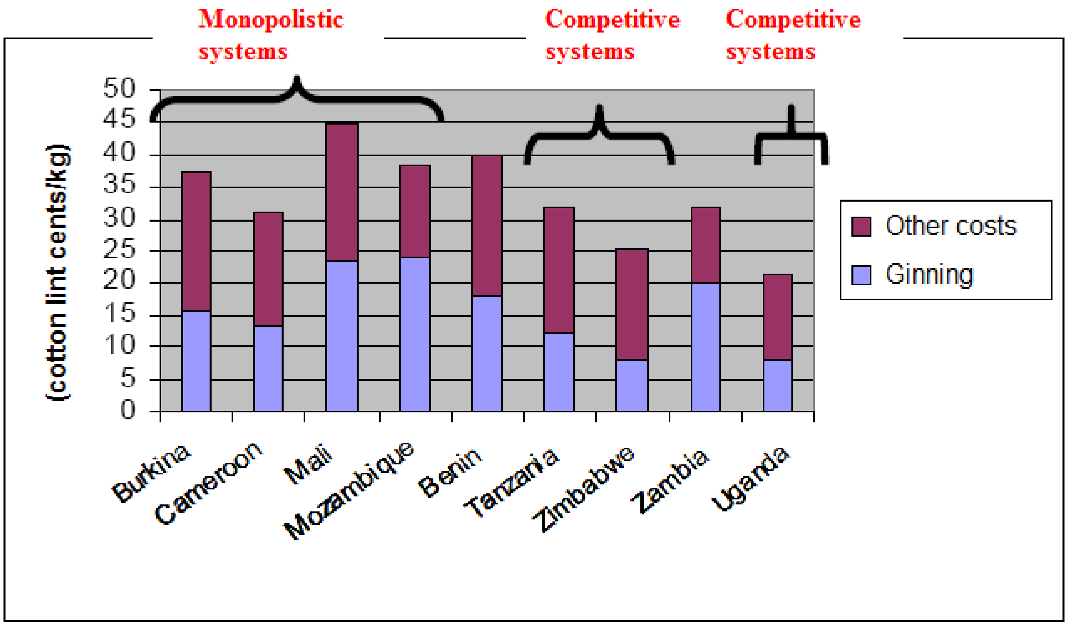
Cost-effectiveness of cotton companies

Cost effectiveness of cotton companies can be measured by the operating costs incurred for collecting seed cotton at factory-gate, processing it onto cotton lint and seed, and shipping the final products. It is considerably greater in the competitive systems where the companies always have an incentive to maximize their economic performance. Costs in the most efficient sector (Tanzania) are 50% lower than those in the least efficient (Mali).

Considering only SONAPRA's performance (the only company whose data are available) then Benin is at the level of the least cost effective monopolistic systems. Private companies in Benin, whose financial statements are not published, probably have costs at least 5% lower than those of SONAPRA, but this still puts them at a performance level that is considerably lower than that of the fully competitive systems. The underlying causes of this poor performance include not just the absence of competition, but also specific factors such as higher collection and transport costs (since the factories are not located within easy reach of production areas) and excess installed ginning capacity.

[28] ONS survey (2006/07).

Graph 4: Production cost, factory gate (cotton lint cents/kg)



Overall competi

The overall sector competitiveness, measured by the ratio between the ex-factory production cost of the cotton lint (after deduction of the cost of seeds) and the ex-factory price, is a composite indicator resulting in particular from the efficiency of the cotton companies, seed cotton production costs and quality premiums obtained. At the average rate effective during the 2006/07 harvesting season (cost/price ratio close to or higher than one), the monopolistic systems were in general, not competitive, whereas the competitive systems and the concentrated systems were still competitive, despite the unfavorable rates at that time[29]. This means that the monopolistic cotton subsectors can only continue to operate at such rates by generating losses for the stakeholders or by being subsidized by the State.

Despite Benin's comparative advantage of being close to the port of shipment, its performance in terms of overall competitiveness is only equivalent to the average performance of the monopolistic systems.

Country	Burkina	Cameroon	Mali	Benin	Mozambique	Zambia	Zimbabwe	Uganda	Tanzania
Cotton lint production cost/ ex-factory price ratio	1.05	0.99	1.15	1.05	0.8	0.76	0.85	0.93	0.83

[29] It should be underscored that the unfavorable trend in the CFA franc/ dollar exchange rate has adversely affected the West African cotton sectors.

Impact on the budget

During the 2006 reference year all competitive and concentrated cotton subsectors appeared to make positive contributions to budget revenues, whereas the monopolistic subsectors received net transfers from the State due to their lack of competitiveness and because producer prices were often fixed at "political" levels. With regard to the impact on the budget, Benin's performance is again comparable to the controlled systems.

Conclusion

Overall, Benin's system shows the same benefits and also the same structural weaknesses as the monopolistic systems. There are, in addition, other specific weaknesses, due to the splitting of functions between many autonomous stakeholders, and the need for a heavily controlled system, making it more vulnerable to being destabilized than the monopolistic systems, as well as the poor economic efficiency (which prevents Benin from taking full advantage of its natural competitive advantage) and recurrent problems, particularly for input procurement, provision of credit and producer pricing. The organizational model of Benin's cotton sector has globally not delivered the results that could be expected from the reforms: it has hardly resulted in any new benefits compared to the monopolistic model and shows the same drawbacks, as well as additional risks and higher transaction costs. This assessment suggest that Benin should consider moving toward a system that would allow increased competition between operators and give increased responsibilities to the ginners.

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