

**Economic and social importance of cotton
in West Africa:**

Role of cotton in regional development, trade and livelihoods

Sahel and West Africa Club Secretariat/OECD

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NOTE:

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This overview has been prepared as part of the Agricultural Transformation and Sustainable Development Unit's Work Programme, which focuses on the trends and challenges of agricultural transformation in West Africa. An earlier draft of this paper was prepared as a substantive contribution to the OECD Development Assistance Committee Briefing on the Development Dimensions of African Cotton, organised by the OECD's Development Co-operation Directorate in collaboration with the OECD's Sahel and West Africa Club (Paris, 28 January 2005). Comments received from participants and a wide variety of West Africa experts and actors have been taken into account in this revised paper. The authors are particularly grateful to the following persons for their insights, their detailed comments and the information they kindly provided to strengthen the paper:

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The paper summarises a wide range of information on the production and trade of West African cotton and its social and economic importance for the region. It aims to **provide impartial information on this sub-sector that can be a lasting resource to inform debate** between West African actors and the international community and **support the process of identifying appropriate actions to be taken both in the region and internationally** in the months ahead. It draws on a range of SWAC work and data on the transformation of West African agriculture and local and cross-border development to provide a **regional perspective** on the nature and dynamics of change in the cotton sub-sector in West Africa.

NOTE ON THE SAHEL AND WEST AFRICA CLUB /OECD

The Club was created in 1976 at the initiative of Members of the Organisation for Economic Cooperation and Development (OECD) and some West African leaders from the Sahel in response to the devastating droughts and related food security crisis in the Sahel.

In 2001, the SWAC's Strategy and Policy Group, its Board of Directors, decided to broaden the mandate of the Club du Sahel to cover the whole of West Africa to take into account the interdependence and complementarity between the Sahel and the other West African countries. The Club du Sahel thus became the Sahel and West Africa Club. Its activities cover the 15 member states of ECOWAS, Mauritania, Chad and Cameroon, occupying an area 7,800,000 km² with a population of approximately 290 million, or 43% of the population of sub-Saharan Africa.

The Club maintains a close partnership with the Permanent Interstate Committee for Drought Control in the Sahel (CILSS), but also with other West African organisations, such as the Economic Community of West African States (ECOWAS), its main partner in the region.

The SWAC Secretariat is administratively attached to the OECD and is financed by contributions from OECD Member countries. The Club is facilitated by a Secretariat composed of a small team of experts in based in Paris. This Secretariat benefits from the support of networks of local correspondents In West Africa and a range of experts from diverse origins and backgrounds.

The SWAC Secretariat focuses on four areas of interest to the region and the international community: medium- and long-term development perspectives; agricultural transformation and sustainable development; local development and the process of regional integration; and governance, conflict dynamics, peace and security (see <http://www.oecd.org/sah> for more details on the SWAC's mission, Work Plan and outputs).

The Club plays a bridging role between West Africa and the OECD to:

- Promote better understanding of West Africa by emphasising its dynamics of change;
- Facilitate exchange among regional actors and those from OECD Member countries;
- Support African efforts and initiatives that promote regional development and integration;
- Promote informed debate that leads to innovative decision-making, both within and outside the region, in order to build a better future for West Africa.

ABBREVIATIONS AND ACRONYMS

ACA	<i>Association Cotonnière Africaine</i>
ACP	African, Caribbean and Pacific group of states
AOPP	Association des Organisations Professionnelles Paysannes (Mali)
ATSD	Agricultural Transformation and Sustainable Development Unit (SWAC / OECD Secretariat)
Bt	<i>Bacillus thuringiensis</i>
CEMAC	<i>Communauté Economique et Monétaire de l'Afrique Centrale</i>
CFDT	<i>Compagnie Française de Développement des Textiles</i>
CILSS	Permanent Inter-State Committee on Drought Control in the Sahel
CIRAD	<i>Centre de coopération Internationale en Recherche Agronomique pour le Développement (France)</i>
CMDT	<i>Compagnie Malienne des Textiles (Mali)</i>
CNCA	<i>Caisse Nationale de Crédit Agricole (Burkina Faso)</i>
CNEARC / INRA	<i>Centre National d'Etudes Agronomiques des Régions Chaudes / Institut National de Recherche Agronomique</i>
ECOLOG	<i>Economie Locale</i>
ECOWAP	ECOWAS Agricultural Policy
ECOWAS	Economic Community of West African States
ERAN	Environmental Rights Action of Nigeria
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GCC	Ghana Cotton Company
GDP	Gross Domestic Product
GM	Genetically Modified
GMO	Genetically Modified Organism
ICAC	International Cotton Advisory Committee
IER	<i>Institut d'Économie Rurale (Mali)</i>
IMF	International Monetary Fund
MFA	Multi-Fibre Agreement (WTO)
NEPAD	The New Partnership for Africa's Development
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Cooperation and Development
OHVN	<i>Office de la Haute Vallée du Niger</i>
PO	Producer Organisation
PRS	Poverty Reduction Strategy
ROPPA	<i>Réseau des organisations paysannes et de producteurs de l'Afrique de l'Ouest (West African Network of Farmers' and Producer Organisations)</i>
SADC	Southern African Development Community
SODEFITEX	<i>SOCIÉTÉ DE DÉVELOPPEMENT DES FIBRES TEXTILES (Sénégal)</i>
SOFITEX	<i>Société des Fibres Textiles (Burkina Faso)</i>
SWAC	Sahel and West Africa Club (OECD)
UNCTAD	United Nations Conference on Trade and Development
UNPCB	<i>Union nationale des producteurs de coton du Burkina Faso</i>
US	United States of America
WABI	West African Borders and Integration Network
WAEMU	West African Economic and Monetary Union
WTO	World Trade Organisation

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EXECUTIVE SUMMARY

Cotton has played an important part in the economic development of a number of West African countries and has remained a key source of livelihood for many farmers. Cotton has been grown in West Africa for more than a hundred years and a significant traditional textiles industry has existed in the region for more than 50 years.

Hundreds of varieties of cotton grain exist in Africa. Some of them are indigenous and have been traced back to the 10th century. Cotton is produced all across the sub-humid and semi-arid zones in areas benefiting from 600-700mm to 1200/1300mm annual rainfall. Its cultivation at low latitude in Togo and Benin is the result of the southern distortion of the 1200mm isohyet in West Africa. Cotton production in West Africa has rapidly increased over recent decades, rising from some 150,000 tonnes of cotton lint in the 1970s to over 1 million tonnes in 2003-2004.

Most West African cotton is produced in Sahelian areas of West Africa, although a significant amount is also produced in the inland areas towards the Sahelian zone of coastal countries such as Benin, Ghana, Nigeria and Côte d'Ivoire. The CFA Franc zone, which has benefited from long term investment in structured national commodity chains, produces more than 80% of the region's cotton.

Between two and three million households in West and Central Africa cultivate cotton on part of their small farm plots usually no larger than one hectare. Cotton production in West Africa is entirely rain fed and often concentrated in semi-arid areas with variable rainfall. Up to 16 million people are estimated to directly or indirectly benefit from cotton production. Practically all cotton is produced on small family farms almost exclusively as a cash crop which is a particularly important in the Sahel, where historically there have been limited alternative cash crops.

Cotton production is usually one, among several agricultural and non-agricultural activities undertaken by farmers, that is normally part of a diverse production system involving the production of cereal, vegetables and other activities that are designed to satisfy farmers' consumption and income needs. West African cotton is produced using relatively low levels of inputs and relatively cheap family labour compared to Northern producers. It is hand-picked and therefore of higher quality than machine-picked fibre in the North (longer fibres). Due to this price/quality ratio West Africa could be expected to have a natural comparative advantage in producing cotton. This comparative advantage partly explains why the production of cotton dramatically increased in terms of area cultivated and volume produced over the past forty years. Indeed, cotton has been seen as one of the key "success stories" in Sahelian agriculture where it has contributed to the improvement of incomes, livelihoods, and access to social facilities (education, health centres and pharmacies, etc.). It also correlates to rapid increases in cereal production thanks to the cotton production support system (maintained by the state and national cotton companies) and its promotion of agricultural innovation processes. In zones that have benefited from the cotton production support system, a cotton boom might have been accompanied by an agricultural revolution that contributed to increased cereal production and has had positive impact on pastoralism and milk production via animal feeds from cotton.

In Burkina Faso and in many other countries, there is evidence that the rotation of maize and cotton has been favourable for soil fertility. If the fertiliser needed by cotton is applied, better results are observed for maize grown on cotton fields the following year. However, such intensive use of soils and some characteristics of the demand placed by cotton plants on soil nutrients and water can result in soil degradation over time.

It is important to note however that maize is produced for African markets where demand is variable and tight and therefore currently remains marginal when compared to cotton as source cash income. This example illustrates that if the cotton production system is seriously damaged, maize and millet production could also suffer and farmers may be tempted to disengage from the market economy.

These strategies would likely reduce overall agricultural surpluses and value added available thus producing negative impacts on poverty, food security, nutrition. The evolution of cotton and maize production has clearly been close and inter-dependent.

Given the importance of these issues for West Africa and the OECD, the SWAC Secretariat was requested by its regional partners to undertake initiatives that would contribute to constructive dialogue between West Africa and the OECD. These initiatives have focused on compiling information from a range of sources to help deepen the understanding of the importance of cotton for West Africa, the nature of the problems the sub-sector faces, highlight the perspectives of diverse West African actors involved in the sub-sector and identify issues that need to be addressed in finding solutions for the sub-sector.

Because of the vulnerability of cotton production and trade to external factors in the international economic system and price variability, farmers will clearly benefit from the diversification of income-earning opportunities over the long-term, whether that be through new crops or non-agricultural activities. However, it will take time and investment to develop economically feasible diversification opportunities, particularly in the Sahel. Hence cotton is likely to remain important in the short- and medium-term.

Over the last 20 years, West African farmers have increased the land area allocated to cotton cultivation to preserve production levels in the face of liberalisation, and in order to maintain and improve incomes when confronted with a structural price reduction on the international market to levels that many producers felt were below the cost of production. However, it could also be that yields decreased precisely due to the increase in area cultivated while all other factors of production remained largely unchanged – particularly labour and capital (Fok, personal communication). This was a particularly important strategy during the late 1990s when increased consumption of synthetics, support for cotton production in the North and supply to international markets rose substantially. In 2002, the price of cotton dropped to 35 cents per pound – a level below production costs with which African producers found nearly impossible to compete given that they receive little protection from such price volatility in terms of safety nets.

Areas planted with cotton shift regularly in West Africa in response to climatic factors, availability of water and fertility of soils. In Burkina Faso, cotton production zones shifted from the northern part of the central areas towards the south and south-western parts of the country due to environmental degradation and land becoming less fertile. This may primarily be related to rainfall patterns shifting southwards over recent decades, but might also be linked to increased population and livestock pressure, and possibly to negative environmental effects of the cultivation of cotton itself.

From the 1980s, there was a concerted effort in Mali between producers, cotton companies and rural credit funds to establish an effective cotton production support system. The BNDA (Banque Nationale de Développement Agricole) was the key source of credit for producers in rural areas, offering a package of services to individual producers. This was complemented by the activities of the parastatal company, the CMDT (Compagnie Malienne de Développement des Textiles) based on the model of the French CFDT (Compagnie Française de Développement des Textiles). Since Mali's independence the CMDT undertook the coordination of the sub-sector from providing inputs to producers to collecting and trading cotton produced. It has also attempted to address constraints faced by producers and assist in the formation and training of village associations, some of which have become effective producer organisations. The CMDT thus claimed to play a role both as an economic operator while also promoting social development in cotton production zones. The efficiency of CMDT's activities has been questioned in recent years and a number of reforms have been initiated. It should be noted that the development process in Mali's cotton-producing zones has been based on an alliance between rural finance institutions, cotton companies, producer organisations, the ginning industry and other local organisations. These alliances built over time were critical to the movement that led to effectively placing the difficulties faced by the West African cotton sub-sector at the top of national, regional and international trade and agricultural policy agendas from 2002 onward.

Innovation processes are complex and may need a holistic approach to be effective. The “cotton production support system” has in these areas fostered agricultural innovation with secondary impacts on agricultural development. Besides supporting education initiatives, the CMDT and its network of field staff undertook activities that contributed more broadly to improved livelihoods and food security in rural areas, i.e.: helping producer organisations with the collection and marketing of cereal crops; promoting cattle feedlots (using ex-draught oxen), promoting sheep fattening (the ram for Tabaski), promoting the production of bullocks to replace draught oxen; and promoting women’s income generating activities (e.g. processing). For all these activities, CMDT provided technical assistance (supervision) and facilitated access to credit.

In Chad, the situation is somewhat similar: for villages in the cotton zone, revenue from cotton is the sole source of community development devoted to the satisfaction of their basic needs and the improvement of their quality of life. Community development is based on the use of repayments to producers where these payments represented the only source for farmers to invest in collective resources at the village level: schools, dispensaries, credit groups, stores, water pumps etc. These resources were also available to people who did not produce cotton. Farmers fear that these rebates might disappear with reforms in the cotton sub-sector underway. This would result in less income or resources to maintain or replace community equipment and infrastructure.

In Burkina Faso, the national cotton support systems were established in cotton-producing countries under colonial administrations in order to ensure continuity between upstream (inputs supply, extension) and downstream aspects of production (collect and marketing). Cotton producers have benefited from credits from the national cotton company, SOFITEX, and the national agricultural credit bank, CNCA, to purchase inputs such as fertiliser, pesticide and herbicide. Short-term loans to cover the pre-harvest period and loans to purchase ox-ploughs have also been made available to cotton producers in recent years (Government of Burkina Faso 2001).

At the national level, the contribution of cotton to the GDP varies according to country in West Africa. It provides 3 to 5% of GDP in Benin, Burkina Faso, Mali, Chad and Togo and less than 2% for other cotton producers. However, cotton exports generate significant resources for national economies in many West African countries. Nigeria, Côte d’Ivoire and Cameroon have more diversified economies that are more dependent on petrol and cocoa revenues, and less dependent on cotton.

Most West African cotton is exported unprocessed in the form of cotton fibre and is very vulnerable to price fluctuations on international markets. Certain economies, particularly those in the CFA Franc zone, are highly dependent on cotton exports for national revenues. The main exception seems to be that of Nigeria, whose traditional textile industry and textile factories consume a significant amount of cotton produced nationally.

Gerald Estur of the International Cotton Advisory Committee (ICAC) has argued that eliminating contamination is potentially the best way to improve the competitiveness and the selling price of cotton in West Africa (personal communication). Contamination of West African cotton lint by foreign matters (other than leaves and bark, mostly plastic strings) during picking and storage and stickiness of cotton due to pests offsets the comparative advantage. Some spinners have refused to buy any hand picked cotton due to such problems hence demand for West African cotton has decreased in international markets.

In this increasingly tense international and national context, reliance on export crops and primary commodities is clearly not a secure route to poverty reduction due to price volatility, climatic and environmental risks among other factors. Opportunities for West African countries to reduce their dependence on agricultural commodity exports and to foster regional trade, processing and diversification therefore need to be sought.

African farmers have demonstrated that they are ready to adapt their livelihood strategies where possible and beneficial, to respond to demand and diversify when it is possible to do so and incentives exist. Various proposals have been made for diversification over time, such as promoting production of gum Arabic, vegetable fuels, or cashew nuts or diversification strategies combined with water retention methods (see Fok *op cit.*). However, diversification may be very difficult in many parts of the Sahelian zone and in many cases new activities require initial investment that funders have often failed to support. This will be the case for remote areas poorly connected to urban grain markets. Indeed, there are limited alternatives to cash crops and other income earning opportunities. Even where diversification possibilities are feasible, a long term decline of cotton production could therefore be accompanied, at the local level, with a decline in the cultivation of maize and other associated cereals with perhaps unintended consequences for supply of food grains to urban centres, farmer incomes and food security. At the national level, a decline would threaten the stability of state budgets through the fall in export earnings.

The regional importance of cotton is underlined by the fact that cotton is cultivated to some degree in all eight member states of the West Africa Economic and Monetary Union (WAEMU) making a significant contribution to national foreign exchange revenues in many cases. It is also produced in several ECOWAS member states, with countries such as Nigeria and Ghana being significant producers in addition to the WAEMU. In this context, in 2003 /2004 the WAEMU launched an ambitious proposal to rapidly develop cotton processing capacity by developing a regional textile industry.

There may now be an opportunity, with the existence of strengthened regional organisations such as ECOWAS, to develop a strategy of targeted protection of strategic products at the regional level. This may even be possible within the framework of WTO regulations and international trade negotiations such as the EU/ACP Economic Partnership Agreements - if sufficient political will existed. However, it may be possible to move from exporting raw cotton and cotton lint to cotton yarn so as to increase economic returns. As an example, Pakistan was one of the largest exporters of raw cotton in the mid-1980s, and today is one of the largest exporters of cotton yarn and a net importer of lint. The shift was made possible by insulating the domestic market from imports and by devaluating the national currency. Textile exports from the West African CFA Franc zone would have great difficulty in being competitive unless the CFA Franc was devaluated. The current high value of the CFA Franc encourages imports from Asian textile producers such as China.

Due to the devaluation of the FCFA in 1994, and successive falls in the value of the Naira and Cedi as compared to international currencies, the nominal price of cotton in local currency has grown substantially in cotton producing countries since the mid-1990s. Nonetheless, given high rates of inflation, the real price of cotton has remained basically stable, or has actually fallen.

There has been a clear difference between countries in the CFA Franc zone and the Anglophone cotton producers, Ghana and Nigeria. In these two countries, the change in cotton prices has had a limited impact on the national economy due in part to their higher levels of national consumption of cotton fibre.

The introduction of agricultural biotechnology in West Africa has remained very controversial and politically charged for many civil society, non-governmental and producer organisations. Several NGOs and producer organisations, however, campaigned against the introduction biotechnology and specifically the use of genetically modified cotton. In July 2004, the Association des Organisations Paysannes Professionnelles in Mali (AOPP) widely distributed a declaration against the introduction of genetically modified organisms in general, and Bt cotton in particular: *Manifeste: le Mali face à la menace des O.G.M.* These actors have argued that living modified organisms threaten biological diversity, could contaminate other agricultural products and may harm ecosystems in West Africa.

However, supporters of Bt cotton argue that it presents economic advantages, reduces dependence on international companies involved in the distribution of pesticide and fertiliser, and according to several studies, holds no known environmental or human health risks. West Africa has moved further as a region towards establishing a coherent biosafety and regulatory framework for biotechnology than other parts of Africa.

Despite the apparent stimulus cotton production may provide to cereal production in certain zones, links between nutritional status and cotton production are complex. A detailed set of field studies undertaken under the Mali Agricultural Growth-Nutrition Linkages Project led by Michigan State University indicates that nutritional status and access to food, particularly of vulnerable groups such as children, might have been lower in some cotton production zones than elsewhere. Vulnerability to fluctuations in cotton prices (and thus household incomes), lack of nutrition advice and monitoring in health centres or, indeed, sub-optimal food preparation and consumption preferences might also contribute to this situation. Further work is needed to confirm the relationship between nutrition and cotton production, and the underlying causative factors, across West Africa.

The need for a very gradual process of cotton system reform appears to be necessary in African countries given the sub-sector's important contribution to wider agricultural innovation, development and livelihoods, and the continued agricultural support provided to the cotton sub-sector in OECD producer countries, particularly in the US and European countries that may have a downward affect on prices. The North as well as China remain net consumers of cotton most years as they require enormous amounts to satisfy their textile industries.

Three dimensions of cotton production sustainability also need to be addressed.

- Economic sustainability by strengthening access to inputs, supply and marketing; developing quality and traceability of products to ensure capacity to sell to international markets.
- Environmental sustainability by increasing soil fertility; increasing the use of organic fertilisers and pesticides where feasible; and developing both regional markets for cotton products and international markets for cotton of African origin.
- Social sustainability by strengthening of cotton producer organisations; increased participation of producers in international value chains; gender equality and equitable access to services and profits related to cotton production.

Some particular issues that merit special consideration in order to address difficulties faced by the West and Central African cotton sub-sector in the future arise from the consultations and analysis that informed this paper.

- *Poverty reduction efforts* and public *awareness of the importance of policy coherence in richer nations in order to support development* need to be improved.
- Specific actions are necessary to *enhance the quality, efficiency and competitiveness of West African cotton* on international markets (in terms of cost of inputs and labour, yields, price, etc.).
- *Opportunities for rural diversification* need to be explored over time and related upstream and downstream infrastructure developed. However, diversification will not solve the current price crisis. Time will be required to develop viable economic alternatives.
- *Developing processing capacity in the region* to allow for increased value added to cotton fibre, grain and oil products is a key recommendation of the WAEMU. However, West African textiles may not be able to match the price / quality ratio of Chinese or other Asian textiles for a very long time, especially now that the textile trade quota system has now been removed. One option to be more competitive in textiles might be to subsidise the prices of lint sold to domestic mills and textiles industry, but this would be at the expense of prices paid to growers.

Some strategic questions also need to be addressed while addressing the cotton sub-sector:

- *Considering interconnections between cotton production and other economic sub-sectors, and the need to maintain diverse livelihood strategies at the household level, how are farmers adapting their strategies to cope with the fall of the world price of cotton?*
- *The WAEMU proposal to develop regional processing capacity provides an example of what might be done at the regional level. Given past efforts with mixed results, how might support for a new regional textile processing strategy really foster a profitable and competitive textile industry in West Africa, given the existence of economies of scale for other powerful players in the international economy? Will the removal of subsidies in the North really produce expected gains in Africa?*
- *Vulnerable players and powerful countries in the international economy stand to gain from rules-based trade system. How can options be developed where positive sum games can emerge? How can institutional aspects of negotiation processes be adapted to take account of constraints felt by poorer nations in order to address the poverty reduction objective?*

I. INTRODUCTION

Hundreds of varieties of cotton grain exist in Africa, some of which are indigenous and have been traced back to the 10 and 13th centuries. Cotton has played an important part in the economic development of a number of West African countries and has remained a key source of livelihood for many. Cotton has been grown in West Africa¹ for more than a hundred years and a significant traditional textile industry has existed in the region for more than 50 years (see e.g. Gardi 2003). In recent decades, volumes of cotton produced have exponentially increased. For example, in Mali alone production has risen from some 61,000 tonnes in the mid-1970s to more than 500,000 tonnes per year in 1997.

When Chad and Cameroon are included, up to 3 million households are estimated to produce cotton in West Africa, and up to 16 million people are involved in cotton production, processing and trade in some way. According to UNCTAD, some 6 million people are directly involved in the cotton industry in the region². Indeed, the region of West and Central Africa together is set to become the world's 2nd largest exporter of cotton after the United States. Many observers have claimed that since the 1960s cotton has been one of the major successes in West African agriculture, perhaps even the key factor at the heart of economic development and an agricultural revolution in certain zones, particularly in Francophone Africa.³ Cotton production has notably been linked to rapid increases in cereal production, pastoralism and milk production⁴.

Since 2003 and the stalemate at the World Trade Organisation (WTO) Cancun Ministerial meeting, West African cotton has become a priority issue in the "Doha Round" of international trade negotiations. At the Cancun Ministerial meeting Benin, Burkina Faso, Mali and Chad argued that high export and production subsidies to cotton producers in the North (particularly in the US and Europe) were distorting cotton prices on international markets, dramatically lowering prices and hence incomes for their countries and cotton producers.⁵ They demanded action to eliminate such subsidies and compensation to West African countries that suffered from dramatic price fluctuation and sustained low prices for cotton. In Cancun there was no agreement between the US, EU and West Africa on this issue, leading to a stalemate that put West African cotton at the top of the international agenda. Despite numerous consultations, international meetings to identify policies and programmes to enhance the economic viability and sustainability of African cotton production since early 2004 (see Hussein K., Hitimana L. and Perret C. 2005), the issue remains critical. Its satisfactory resolution will be vital to ensure agreement at the WTO Ministerial meeting in Hong Kong in December 2005 that will aim to achieve a successful conclusion to the Doha "development" round of international trade negotiations.

¹ In keeping with the SWAC's mandate, West Africa is taken to include the 15 ECOWAS Member States and Cameroon, Chad and Mauritania.

² <http://r0.unctad.org/infocomm/anglais/cotton/sitemap.htm#references>

³ See for example, Tefft, J., 2004, 'Building on successes in African agriculture. Mali's white revolution: Smallholder cotton 1960-2003'. Michigan State University. Focus 12. April. http://www.ifpri.org/2020/focus/focus12/focus12_05.pdf

⁴ On the links between cotton and milk production in the SODEFITEX cotton production zone in Senegal, see, for example, Aurore Gaulier (2005) 'Etude des innovations dans les ceintures laitières périurbaines de haute Casamance (Sénégal)'. Dissertation CNEARC/INRA. For AFDI. January. This indicates the role of cotton in promoting the progressive intensification of livestock production including use of cotton seed for feed and training provided to farmer groups by SODEFITEX.

⁵ This is supported by ICAC Secretariat research which suggests that 'the removal of subsidies worldwide would result in average international cotton prices 5 cents higher than realised in 2002/03 and 2003/04 and production would shift to non-subsidising countries in the medium and long term'. Estur: http://www.icac.org/cotton_info/speeches/estur/2005/beltwide_05.pdf

The underlying price trend has had serious impacts on key West African economies dependent on foreign exchange from cotton revenues, on small farmer incomes in West Africa and ultimately on the broader process of agricultural transformation. In the WTO's 2004 July Framework Decision, all sides agreed the need to resolve the West African cotton issue through the agricultural trade negotiations at the WTO and for the implementation of appropriate accompanying development assistance measures. This decision aimed at restoring confidence in the Doha Round negotiations by WTO members and integrating African countries into the agriculture negotiations by ensuring that a special effort would be made to resolve the cotton issue rapidly. It also confirmed the willingness of WTO members to work towards removing price-distorting subsidies in agriculture over time. However, it remained unclear how this commitment would be implemented and in what timeframe.

A further WTO ruling in autumn 2004 stated that many of the agricultural support measures provided to US and EU farmers in the cotton and sugar sub-sectors were against WTO regulations, encouraged overproduction and artificially lowered international prices with harmful effects on developing country producers. In this context, in 2005 a number of initiatives are underway that bring together African states and developed countries in an attempt to address the fundamental issues behind the cotton crisis. In parallel, a growing number of OECD Member countries and the OECD itself have become concerned with fostering greater coherence between trade and agricultural policies to ensure that trade policies support rather than undermine development and poverty reduction objectives.

The challenges faced by the cotton sub-sector in Africa are, however, complex. Subsidies in the North are only one cause of low cotton prices⁶. Other key factors include sustained increases in cotton production worldwide⁷, increasingly strong competition from synthetics, advances in technology, improved pest management techniques, the rapidly growing application of biotechnology in cotton production by Northern producers in Asia and even in South Africa. In addition, government measures continue to support producers in some countries. As a consequence, world cotton cultivation areas are expected to decrease by only 1.5% in 2005/06, still the second largest area in 10 seasons. In September 2005, ICAC predicted that world cotton stocks would also increase in 2005/06 to 10 million tons, the highest since 1998/99, just as lower prices and less favourable weather are leading to a 7% decline in world production in 2005/06. Further, expectations of rising stocks in 2005/06 caused prices to fall from 58 cents per pound in April 2005 to 52 cents per pound in August 2005, despite the anticipation of record imports by China. Cotton prices may rise in 2006 to approximately 62 cents per pound as Chinese imports are expected to double from 1.4 million tons in 2004/05 to a record of 2.8 million tons this season. But at the same time cotton's share of world fibre use is expected to decline to 38.1% in 2005, down from 40.4% in 2001, and US exports are expected to reach 3.1 million tons in 2005/06.

Given the importance of these issues for West Africa and the OECD, the SWAC Secretariat was requested by its regional partners to undertake initiatives that would contribute to constructive dialogue between West Africa and the OECD. These initiatives have focused on compiling information from a range of sources to help deepen the understanding of the importance of cotton for West Africa, the nature of the problems the sub-sector faces, highlight the perspectives of diverse West African actors involved in the sub-sector and identify issues that need to be addressed to find solutions for the sub-sector. In accordance with the mandate of the Sahel and West Africa Club to foster dialogue between West Africa and the OECD on strategic issues facing the region's development⁸, the SWAC's work on cotton has aimed to assist actors in identifying concrete actions needed to address both development and trade-related aspects of African cotton. This has been done with a view to finding solutions that build on and maximise

⁶ Rising use of synthetics and new cotton producing countries are also important factors.

⁷ For example, in 2004/5 world cotton production is estimated to reach an all-time high of 25 million tonnes, an increase of 4.2 million tonnes or 20% over the previous season, according to an ICAC Press release January 3, 2005.

⁸ See "Note on the Sahel and West Africa Club" above. More information can be found on the SWAC web pages: <http://www.oecd.org/sah>

the economic and social contribution of cotton production in the region, that support African development and at the same time strengthen the multilateral rules-based trade system for the benefit of all actors⁹.

As part of this process, the SWAC Secretariat prepared a series of briefings and actively participated in a wide range of events on cotton and policy coherence from 2003-2005 at the international (e.g. WTO, EU, IFAP, etc.) and regional (e.g. ROPPA, Saly consultation between NGOs and government representatives) levels and at the OECD. Throughout its work on the challenges facing the cotton sub-sector since 2003, the SWAC Secretariat has sought to:

- provide opportunities for informed dialogue on cotton between OECD Members and West African actors while at all times playing the role of an impartial facilitator of debate;
- bring together, synthesise and share diverse information on the place of cotton in West Africa;
- highlight the priorities and perspectives of West African actors regarding cotton, and its place in producer livelihoods, its role in the broader transformation process of West African agriculture and its contribution to West African economies in the region;
- use this information to foster dialogue among West African actors, OECD Members and the international community on options for action.

This overview has been drafted to underpin the SWAC's contribution to international debate. It assesses:

- *the evolving importance of cotton production and trade in West Africa over recent decades;*
- *the changing place of cotton in farmers' livelihoods;*
- *the contribution of cotton to West African development;*
- *the strategic issues to be considered as actors determine the most appropriate actions to be undertaken in the sub-sector,* taking into account the need to consider adaptation to a changing context while maximising the contribution of cotton to West Africa's broader development.

While it is considered important to refer to the subsidy and price issues here to illustrate the context for West African cotton, *this document does not attempt a detailed analysis of cotton prices, price trends and the impacts of subsidies* as this has been undertaken by other more competent analysts (see for example, Goreux 2003, Baffes 2004, Oxfam 2002, and publications by ICAC).

This paper aims to provide a distinctly regional perspective while drawing on national and sub national data on the sub-sector to illustrate points. The data on cotton production in West Africa contained in this report should also be useful to inform Africa-wide cotton sub-sector initiatives currently underway or in the process of being developed.

Finally, the paper draws on and complements the extensive materials available on the SWAC Secretariat's web-pages devoted to cotton (www.oecd.org/sah - click on cotton)¹⁰. This site provide links to materials from diverse regional and international actors, ongoing consultations with West African governments and regional organisations (e.g. ECOWAS, the WAEMU, the CILSS), private sector (e.g. ACA), producer networks (e.g. ROPPA, UNPCB) and international agencies on regional agriculture priorities and cotton. It also draws on the SWAC's work on the transformation of West African agriculture (available at: <http://www.sahel-club.org/en/agri/index.htm>), field studies in cross-border cotton production zones (see <http://www.afriquefrontieres.org>), as well as joint work with other OECD Directorates on the impacts of trade and agricultural policies in West Africa, policy coherence for development, and the Development Assistance Committee's work on donors best practices.

⁹ See Peter Holmes 'In defence of the WTO: Hard rules are better than no rules at all' in *Insights: Development Research* No. 49 December 2003 (<http://www.id21.org>).

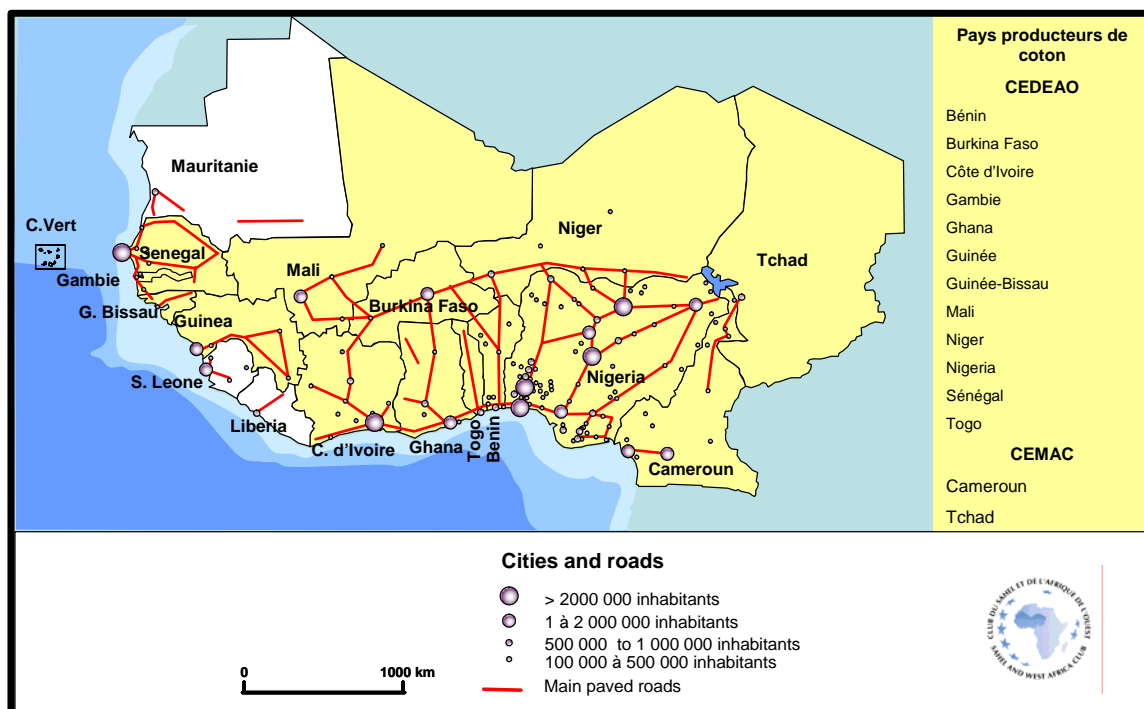
¹⁰ These web pages are updated from time to time with new material on cotton in West Africa. If you would like us to consider including additional material on these web-pages, please send contributions to: leonidas.hitimana@oecd.org.

II. COTTON AND THE DYNAMICS OF CHANGE IN WEST AFRICAN AGRICULTURE

The West Africa region covered by this paper includes all 15 ECOWAS member States¹¹, Mauritania, and Cameroon and Chad, members of CEMAC: 18 countries in total (see map below). This region therefore includes the key cotton producing countries in Central Africa included in the West and Central Africa sectoral initiative on cotton, submitted to the WTO in 2003.

In 2003, there were approximately 290 million inhabitants, which is approximately 43% of the population of Sub-Saharan Africa. This represents some 4.6% of the world's population, 64% of the population of the European Union, roughly equivalent to that of the United States and 2.2 times the population of Japan. West Africa is characterised by a process of rapid demographic, social, agricultural and economic transformation. The population is growing faster than anywhere else in the world and may reach 600 million by 2050. Any action to support the development of agricultural sub-sectors needs to keep the dynamics of this broader process transformation in view. The cotton producer countries in West Africa are highlighted in the map below.

Figure 1: The West Africa Region covered by the Sahel and West Africa Club



Source: SWAC Secretariat

The SWAC's work on trends, dynamics of change and prospects in West African agriculture confirmed the strategic importance of cotton in the important regional agricultural transformation process. Significant expanding population and rapid urbanisation have increased regional demand for agricultural products. West African farmers have demonstrated their capacity to respond to increased demand for staple foods and cereals, illustrated by cereal production having kept pace with rapid population growth and demand over the last 40 years. This is explained as most cotton is produced on family-run farms that combine diverse agricultural and livelihood activities. In areas of the Sahel cotton is one of the only viable cash crops for small farmers and the collection system organised by cotton companies for a seasonally fixed price has been one of the more secure sources of cash income. Given the *vulnerability* of cotton production and trade to external factors in the international economic system and price variability, clearly

¹¹ Cape Verde, Senegal, The Gambia, Guinea-Bissau, Guinea, Sierra Leone, Liberia, Mali, Burkina Faso, Niger, Côte d'Ivoire, Ghana, Togo, Benin, and Nigeria.

farmers will benefit from the diversification of income-earning opportunities over the long-term – whether that be through new crops or non-agricultural activities. However, it will take time and investment to develop economically feasible diversification opportunities, particularly in the Sahel, hence cotton is likely to remain important in the short term.

West African cotton is produced using moderate levels of inputs compared to Northern producers and relatively cheap family labour; it is hand-picked and therefore of higher quality than machine-picked fibre in the North (longer fibres). Due to this price/quality ratio West Africa could be expected to have a natural comparative advantage in producing cotton. This comparative advantage partly explains why the production of cotton dramatically increased in terms of area cultivated and volume produced over the past forty years. Indeed, cotton has been seen as one of the key "success stories" in Sahelian agriculture where it has contributed to the improvement of incomes, livelihoods, and access to social facilities (education, health centres and pharmacies, etc.). It also correlates to rapid increases in cereal production thanks to the cotton production support system (maintained by the state and national cotton companies) and its promotion of innovation processes. In zones that have benefited from the cotton production support system, a cotton boom might have been accompanied by an *agricultural revolution* that contributed to increased cereal production. This is confirmed by work undertaken by the SWAC on structural trends in West African agriculture. This agricultural revolution has no doubt been stimulated to some extent by the use of inputs intended for cotton on cereal crops, but also on an institutional evolution that enabled a technical revolution to take place. Furthermore, work undertaken at CIRAD suggests that as cotton does not call for specific cultivation techniques and equipment, this automatically induces a positive spill-over effect on food crop production by making labour and resources available¹². It seems that the cotton production support system, with its associated institutions and technological support, contributed to a process of extensive use of land accompanied by intensive production of cereals as cash crops to supply urban markets. The social evolution in villages and extended household are also responsible for this extension of cultivated land: young people leaving their elders to set up their own farms have had to clear new land¹³.

The competitiveness of West African cotton has been questioned in recent years. Dramatic price fluctuation and losses in foreign exchange earning capacity have also been factors pushing governments and producers to increase cotton production in order to maintain income levels. Reliance on export crops and primary commodities is clearly not a secure route to poverty reduction due to price volatility and environmental risk among other factors.

Gerald Estur of the International Cotton Advisory Committee has argued that eliminating contamination is potentially the best way to improve the competitiveness and the selling price of cotton in West Africa (personal communication). Contamination of West African cotton lint by foreign matters (other than leaves and bark - mostly plastic strings) during picking and storage and stickiness of cotton due to pests offsets the comparative advantage¹⁴. Some spinners have refused to buy hand picked cotton due to such problems hence demand for West African cotton has decreased in international markets.

Burkina Faso provides an example of the national cotton support systems established in cotton-producing countries under colonial administrations in order to ensure continuity between upstream (inputs supply, extension) and downstream aspects of production (collect and marketing). Cotton producers have benefited from credits from the national cotton company, SOFITEX, and the national agricultural credit bank, CNCA, to purchase inputs such as fertiliser, pesticide and herbicide. Short term loans to cover the pre-harvest period and loans to purchase ox-ploughs have also been made available to cotton producers in recent years (Government of Burkina Faso 2001). The case of *Mali* is even more striking. From the 1980s,

¹² Personal communication by Michel Fok, CIRAD.

¹³ Personal communication: Michel Fok, CIRAD.

¹⁴ See for example, Estur 2005: http://www.icac.org/cotton_info/speeches/estur/2005/e_cotton_outlook_march.pdf; Estur 2003: <http://www.ictsd.org/dlogue/2003-07-20/Presentation%20Estur.pdf>; and http://www.icac.org/cotton_info/speeches/estur/2005/beltwide_05.pdf

there was a concerted effort between producers, cotton companies and rural credit funds to establish an effective cotton production support system. The BNDA (Banque Nationale de Développement Agricole) was the key source of credit for producers in rural areas, offering a package of services to individual producers. This was complemented by the activities of the parastatal company, the CMDT (Compagnie Malienne de Développement des Textiles) based on the model of the French CFDT (Compagnie Française de Développement des Textiles). Since Mali's independence, the CMDT has undertaken the coordination of the sub-sector from providing inputs to producers to collecting and trading cotton produced. It has also attempted to address constraints faced by producers and assist in the formation and training of village associations – some of which have become effective producer organisations. The CMDT thus claimed to play a role both as an economic operator while also promoting social development in cotton production zones. The efficiency of CMDT's activities has been questioned in recent years and a number of reforms have been initiated. Here, most importantly the development process in Mali's cotton-producing zones has been based on an *alliance* between rural finance institutions, cotton companies, producer organisations, the ginning industry and other local organisations that are linked to local cotton via secondary means, e.g. blacksmiths associations. These alliances built over time were critical to the movement that led to effectively placing the difficulties faced by the West African cotton sub-sector at the top of national, regional and international trade and agricultural policy agendas from 2002 on (Hussein K., Hitimana L., Perret C. (2005), SWAC Secretariat, Paris).

Key questions

- ✓ Does field evidence confirm that in parts of semi-arid and Sahelian West Africa cotton really has been at the heart of an agricultural revolution based on institutional development, technical change supported by coordination of upstream (e.g. inputs, agricultural services, etc..) and downstream (e.g. marketing, social service provision, etc.) support to producers? Where have there been failures and inefficiencies? How has this affected development and poverty reduction objectives in these zones?
- ✓ What combination of policy measures and aspects of the support system in cotton zones best account for this? What implications should this have for policy reform processes in cotton zones and for strategies to promote rural development and an agricultural revolution in West Africa?
- ✓ If the cotton sub-sector collapses in West Africa due to price volatility, what will be the likely impacts on livelihoods, access to services, cereals availability, poverty reduction and other development multipliers? How many people will be affected?

Between two and three million households in West and Central Africa cultivate cotton on part of their small farms, usually on small family plots usually no larger than 1 hectare in size. Cotton production in West Africa is entirely rain fed and often concentrated in semi-arid areas with variable rainfall (Pursell and Diop 1998). **Up to 16 million** people are estimated to directly or indirectly benefit from the impacts of cotton production. Practically all cotton is produced on small family farms almost exclusively as a *cash crop* designed to meet a household's cash needs for both consumption and investment which is particularly important where historically there have been limited alternative cash crops, with cocoa and other sub-humid cash crops dominating the coastal zone. Cotton production is usually *one activity that is normally part of a diverse production system* involving the production of cereals, vegetables and other activities that are designed to satisfy farmers' consumption and income needs.

Indeed, the SWAC's work on the Transformation of West African agriculture estimates that some 80% of West African agriculture is undertaken on small family farms varying from as small as 2 hectares to 10 hectares in size (see Toulmin and Guèye 2003). These farms depend largely on household labour and farmers opportunistically switch types of production over time to manage risk and adapt to changing constraints (e.g. climate, soil quality etc), opportunities (new urban markets, processing and marketing possibilities etc.), and shocks. Family farms generate some 30-50% of national GDP in West Africa – depending upon the country – and in some countries they generate the largest export revenues.

They also produce almost all of the region's staple food crops, oilseeds and cash crops although they are important consumers of diverse imported fruit, vegetables and processed foods.

This contrasts strongly with the situation in the US or Europe where a smaller number of more specialised farmers produce cotton on large, highly mechanised farms characterised by high input use. For example, in the US there are only some 25000 cotton farmers that produce cotton on farms that are sometimes over 100ha in size. In Europe, average farm size might be smaller but the pattern of input use is equally high.

Since the 1940s, cotton production has guaranteed an important source of cash income for producers in semi-arid zones where there are limited alternative income opportunities. To address this, cotton companies promoted maize as an alternative cash crop. Maize, however, competed against cotton when it was also provided a pre-determined purchasing price. Cereal market liberalisation in the 1980s modified the economic context and led farmers to be more committed to cotton, encouraged by the success in linking producers to exporters and importers and the fixed price that allowed farmers to be able to predict incomes earned to some degree. Governments played their role in this process of guaranteeing purchasing price.

However, given the persistent volatility of commodity prices in the international economy, increasing emphasis is being placed on diversification, i.e. the identification and uptake of new economic and agricultural activities to replace cotton as a key source of farmer income.

Key questions

- ✓ What economically viable opportunities for diversification exist for cotton producers in the current regional and international economic context, particularly those in the Sahelian zone of West Africa?
- ✓ What might be a realistic timescale for profitable alternative sources of cash income to be identified and identify systems to ensure equitable access for small farmers to be established? What kind of material support and investment will be required in the transition process?

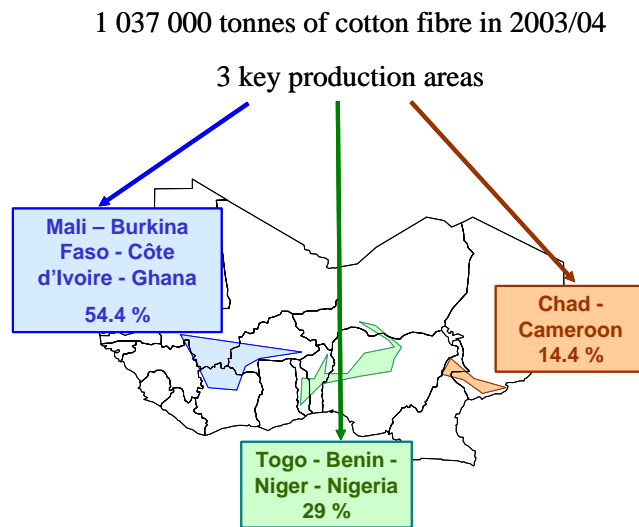
III. STRATEGIC IMPORTANCE OF COTTON PRODUCTION AND TRADE IN WEST AFRICA

3.1 *West African cotton: the regional level*

Cotton has been cultivated for over a century in the Sahelian and Sudanian savannah zones of West Africa in both coastal and landlocked countries. It is produced all across the sub-humid and semi-arid zones in areas benefiting from 600-700mm to 1200/1300mm annual rainfall. Its cultivation at low latitude in Togo and Benin is the result of the southern distortion of the 1200mm isohyet in West Africa (see map). Cotton production has rapidly increased over recent decades in West Africa rising from some 150,000 tonnes of cotton lint in the 1970s to around 500,000 tonnes in the 1990s and over 1 million tonnes of cotton lint in 2003-2004.

Most West African cotton is produced in Sahelian areas of West Africa although a significant amount of cotton is also produced in the inland areas towards the Sahelian zone of coastal countries such as Benin, Ghana, Nigeria and Côte d'Ivoire (see map below). There are **three main zones of cotton production** as indicated below. The CFA Franc zone, which has benefited from long term investment in structured national commodity chains, produces more than 80% of the region's cotton. It is particularly important for five countries where it ranges between 5 to 10% of GDP. Most of the rest is produced in Nigeria and to a lesser extent in Senegal and Ghana. While cotton exists in other countries, production is comparatively limited in Niger, Guinea, Guinea-Bissau and The Gambia.

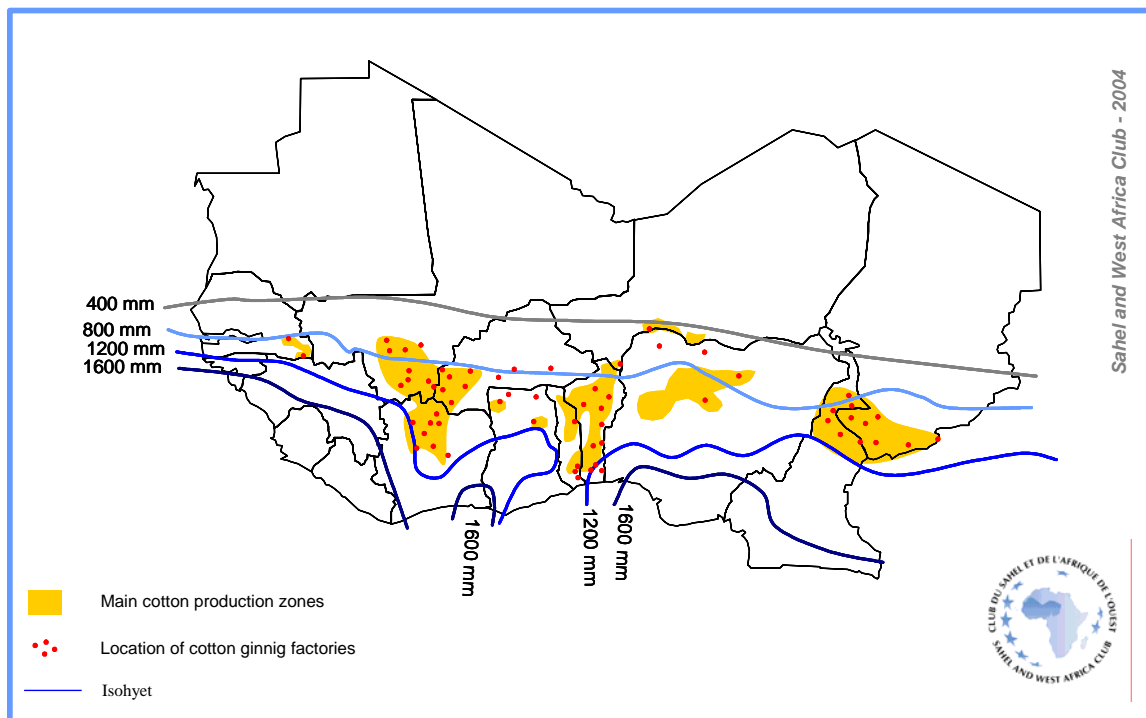
Figure 2: Three key cotton production zones in West Africa



Source: SWAC Secretariat (using ICAC data)

The *regional* importance of cotton is underlined by the fact that cotton is cultivated to some degree in all eight member states of the West Africa Economic and Monetary Union (WAEMU) making a significant contribution to national foreign exchange revenues in many cases. It is also produced in several ECOWAS member States, with countries such as Nigeria and Ghana being significant producers in addition to the WAEMU.

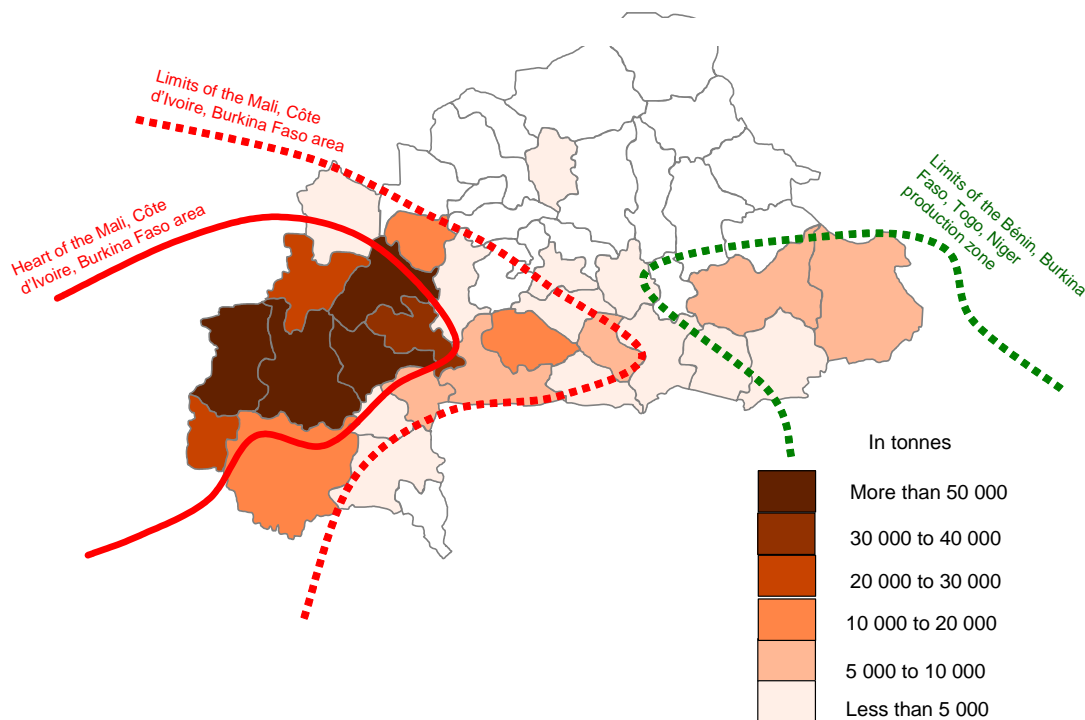
Figure 3: Cotton production and ginning in West Africa: A regional view



The map below shows the national geographical areas bounded by state border areas in which cotton policy frameworks normally apply. This is contrasted with the reality of cotton production zones which stretch beyond borders with neighbouring countries (See Figure 3 above). Within these zones different policy frameworks apply to cotton production and trade, i.e. differing impacts of borders on the movement of goods; variable degrees of access to extension, training, supply of inputs, marketing support; and

a different pace of reform concerning the public/private mix in the cotton sub-sector in Burkina Faso, Mali and Côte d'Ivoire. These policy differences can create market distortions and prevent maximising the benefits from inter-country cooperation and comparative advantage. The map suggests that further examination of the potential for *developing more inter-country cooperation in West Africa on cotton sub-sector policies and management systems to ensure the maximum benefit is drawn from synergies and policy coherence* should be considered. This could be undertaken with support from the regional organisations, i.e. the WAEMU and ECOWAS which have already launched some initiatives in this direction, and through the ECOWAP (ECOWAS agricultural policy). The role of regional organisations in stimulating such cross-border synergies will have to carefully complement that of private operators in the post-privatisation context.

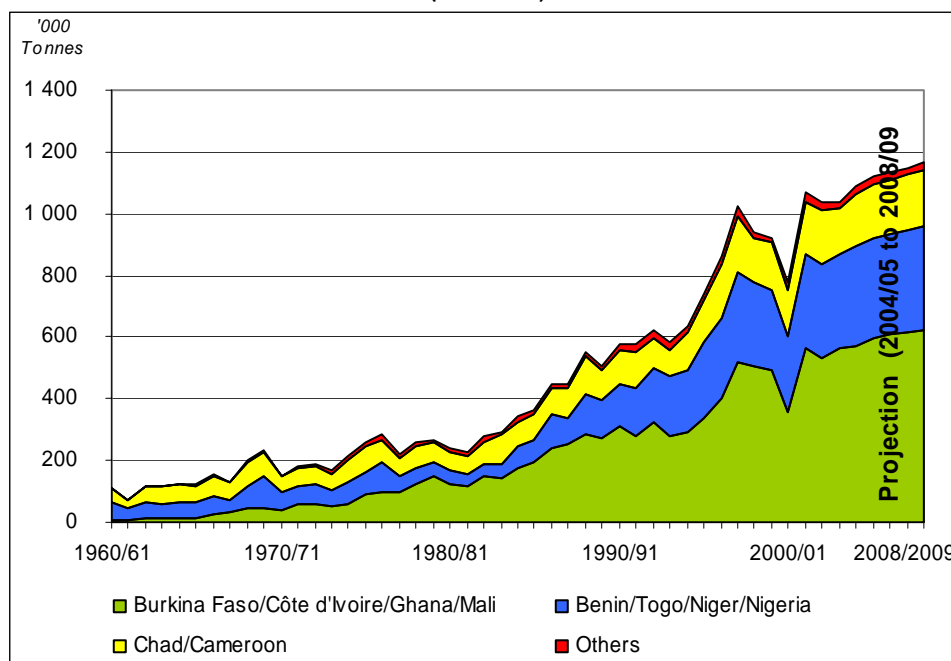
Figure 4: Cotton production areas in 2002



Source: SWAC Secretariat

Cotton has been one of the most important “success stories” in agriculture in the Francophone Sahelian countries in particular. In countries colonised by Belgium and France in West and Central Africa cotton promotion programmes were introduced and cotton became a central part of the national economy in the 20th century. For example, cotton has been a critical part of the Burkina Faso economy and society before colonisation, providing cloth for daily use and clothing. Similarly, in Mali, the historic importance of cotton is illustrated by the example of Gao with its workshops to manufacture cotton cloths. Also, in the Belgian Congo, cotton production has been promoted with impressive results since the 1920s. The European Community supported development of the cotton sub-sector and the World Bank complemented this effort by launching cotton promotion programmes in Burkina Faso and elsewhere in the region during the 1970s (World Bank 1988). Cotton was promoted by parastatal companies whose multiple agricultural support activities contributed to improved livelihoods in cotton production zones. In the 1990s, governments in the region continued their support programmes for the cotton sub-sector via the supply of credit, inputs, extension and research services and support for marketing normally through national cotton companies often majority-owned by the State (e.g. SOFITEX, Burkina Faso; CMDT, Mali; Ghana Cotton Company, Ghana). Governments were keen to strengthen the contribution of cotton export revenues to national budgets. While governments paid a fixed purchase price for cotton and contributed to service provision, they were not the only actor to cover the costs of the process: this is a good example of inter-professional cost sharing (Fok, personal communication).

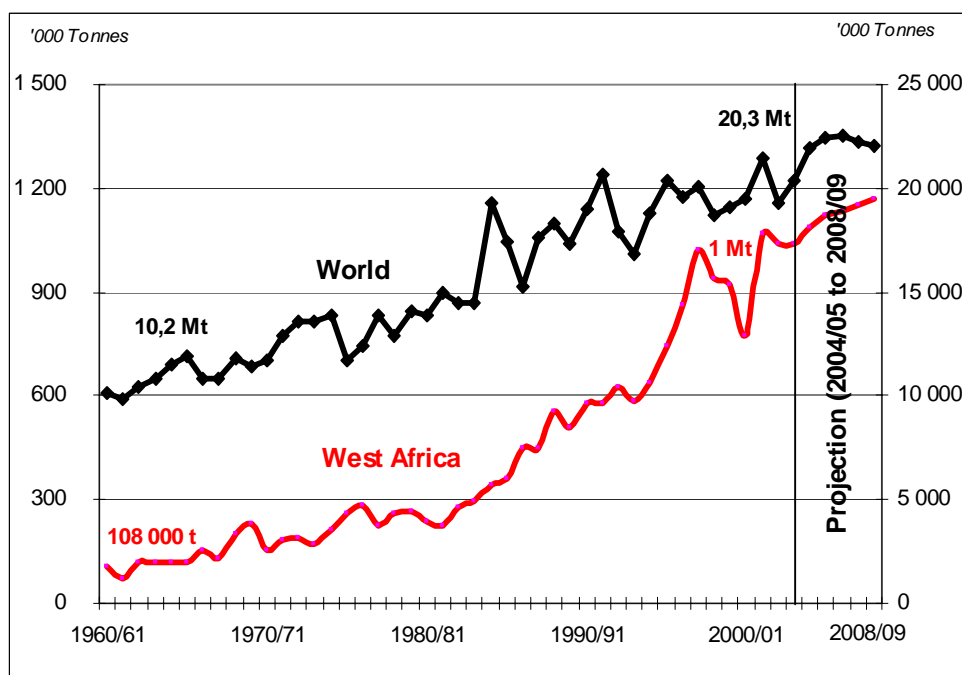
Figure 5: Dramatic increase of cotton lint production in the three main zones of West Africa (1961-2006)



Source: SWAC Secretariat (using ICAC data)

The rapid increase of cotton production over the last two decades is to some degree linked to the process of economic liberalisation that was implemented as from the 1980s. Prices reflected international fluctuations more and reduction of support for input use began in the late 1980s, being completely suppressed at the beginning of the 1990s. The need to maintain revenues and purchasing power in a context of reducing prices coupled with the promotion of equipment to improve productivity via externally-supported credit schemes (e.g. for Mali, schemes supported by France, The Netherlands and the World Bank) gave farmers incentives to increase production. This has occurred in all three main production zones identified above, with overall production rising from about 200,000 tonnes in the 1970s to over 1 million tonnes per year in the early 2000s (fibre, lint and seed counted together - but with seed accounting for only 5-10% exports). Production of cotton fibre in 2003/2004 reached 1,037,000 tonnes (ICAC 2004). Most of this dramatic increase in production in recent decades has been achieved by expanding the area of land on which cotton is grown rather than through intensification (e.g. input use per hectare) as production levels have been stagnant or falling in recent years (see Figure 6 below). This expansion can also be temporary as data indicates that farmers are very responsive to pressures and opportunities. When cotton prices fell in the early 1990s, farmers in Burkina Faso reduced the areas planted with cotton. Similarly, in the 2004-2005 season, Burkinabé producers have indicated that due to low prices for cotton, they have replaced cotton with maize in some of their fields.

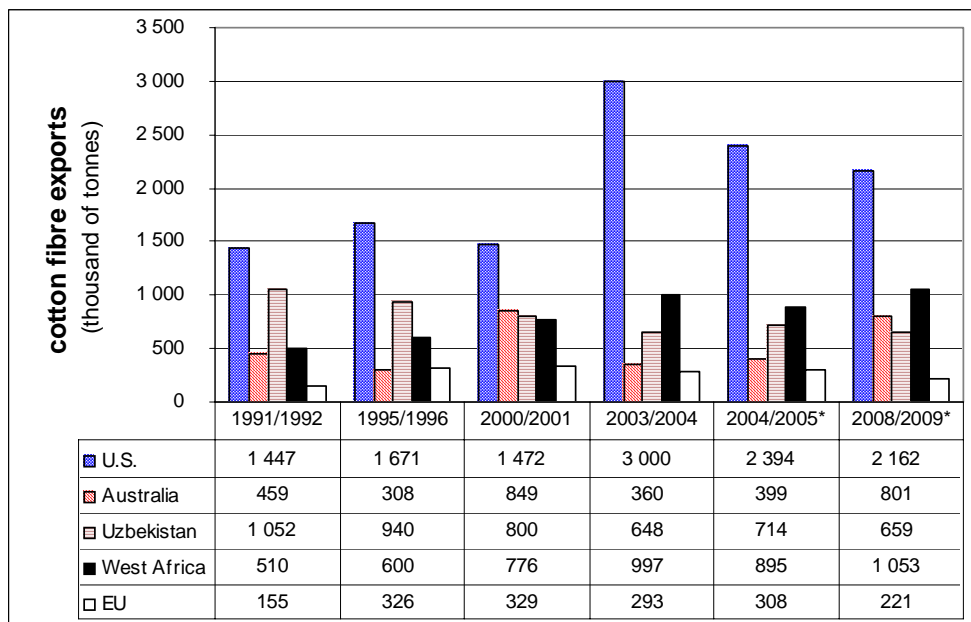
Figure 6: West Africa's increasing cotton lint production compared to the rest of the world



Source: SWAC (using data from ICAC)

The bar chart below shows the breakdown of West Africa's share of world cotton exports in relation to other key producers.

Figure 7: West Africa's share of cotton lint exports compared with major world cotton producers



Source: SWAC (data from ICAC)

Over the last 20 years, West African farmers have increased the land area allocated to cotton cultivation to preserve production levels in the face of liberalisation, and in order to maintain and improve incomes when confronted with a structural price reduction on the international market to levels that many producers felt were below the cost of production. However, it could also be that yields decreased precisely due to the increase in area cultivated while all other factors of production remained largely unchanged – particularly labour and capital (Fok, personal communication). This was a particularly important strategy

during the late 1990s when increased consumption of synthetics, support for cotton production in the North and supply to international markets rose substantially. In 2002, the price of cotton dropped to 35 cents per pound – a level with which African producers found nearly impossible to compete given that they receive little protection from such price volatility in terms of agricultural support or other safety nets.

In this increasingly tense international and national context, ***reliance on export crops and primary commodities is clearly not a secure route to poverty reduction, due to price volatility, climatic and environmental risk among other factors.*** Opportunities for West African countries to reduce their dependence on agricultural commodity exports and to foster regional trade, processing and diversification therefore need to be sought.

A number of incentives exist for farmers to continue to produce cotton as a key route to cash income, particularly in the Sahelian zone of West Africa:

- ✓ a crop suited to climate (limited rain);
- ✓ natural comparative advantage given the low production cost and high quality of West African cotton fibre;
- ✓ existence of international demand;
- ✓ availability of a support infrastructure, agricultural and social services (e.g. extension, pharmacies, schools, etc.) and established marketing channels;
- ✓ until the crisis generated by the sustained trend of falling prices for cotton on international markets that emerged from the mid-1990s, West African cotton had been highly competitive at the international level in terms of production cost, quality and price;
- ✓ perhaps, most importantly there are limited alternative cash crops suited to these zones for which there is sufficient market demand.

However, the situation is different in some cotton-producing coastal countries where cotton is not a major export commodity. For example in Ghana the northern region where cotton is produced is poorer than the south where cocoa, a key export crop for the country, is grown. Historically, Ghanaian political authorities have shown less interest in promoting cotton than their counterparts in the West African Sahelian countries where cotton is a major source of greatly needed export earnings. Nonetheless, poor cotton producers in northern Ghana have depended for decades on the cash income, albeit limited, that cotton offers. Without it, their situation would be more precarious.

3.2 Regional cotton processing, textile industry and trade: capitalising on regional synergies

Most cotton seed by-products are processed in the region for example ***cotton oil*** and ***oil cakes for livestock feed*** produced using the unused parts of the cotton plant once the fibre has been extracted for export¹⁵. However, intra-regional trade of cotton and related products is not significant, limiting the scope for the development of this industry. Even cotton oil plants that exist have problems obtaining sufficient raw material required to keep factories functioning at the highest levels of efficiency due to informal barriers to intra-regional trade of cotton in certain border areas (e.g. between Benin and Nigeria).

Although a traditional textile industry and market has existed for a long time in certain countries such as Mali, Ghana and Nigeria (see Gardi 2003 and Igué 2003), few modern textile factories of regional scope exist in West Africa and virtually no West African textiles are sold outside the region. Several attempts to industrialise by establishing textile factories have been made in the past without much success. This limits the region's capacity to benefit from value-added derived from textiles and other products related to cotton processing, and makes it more vulnerable to price fluctuations for raw materials in international markets.

¹⁵ For more information on the constraints and opportunities related to cotton oil production and trade see the documents provided by Fludor Benin, a company involved in processing cotton oil, <http://www.oecd.org/sah> – click on cotton.

There may be some opportunities to develop this sector however, especially if regional demand were to grow. Nigeria in particular seems to have developed an efficient local cotton processing industry that uses the majority of cotton produced internally. Ghana once consumed most cotton lint produced in its local textile industry but this has since changed with incentives to encourage export and foreign exchange earnings. Employment related to the production of traditional cloth and clothing (spinning, dyeing, cloth-making, sale etc.) is, according to one study by the Sahel and West Africa Club, the second largest employer in West Africa after agriculture. This study states that some 65 to 70% of artisans in Mali, 50% in Burkina Faso and 30 to 40% in Ghana are employed in the traditional textile industry (Igué 2003:285). Indeed, high regional demand continues to exist for the elegant traditional robes (“boubous”) worn formally and for special occasions. However this market remains more regional than international and while of high quality, the products tend to be more expensive than many clothing imports from Asia and indeed more expensive than most local consumers can afford.

However, competition from cheap Asian imports and especially the legal trade and smuggling of second-hand clothes (*friperie*) is the major problem facing the development of the regional textile industry. Since the 1980s, cheap second-hand clothes coming largely from Europe, supported by a number of development NGOs, have flooded West African markets. Today donations of second-hand clothing to charitable organisations are then sold to private intermediary businesses who in turn sell this clothing to second hand clothes shops. Approximately 32% of all second-hand clothing collected in the West are exported and most often to West Africa. At the end, one out of six pieces of clothing collected is resold on the African market.

This trade rapidly developed during the 1980s with the opening of markets and structural adjustment policies were initiated by the International Monetary Fund (IMF) and the World Bank. This provoked a significant fall in West African consumers’ purchasing power. This situation produced an “eviction effect”, that is to say a substitution of the local transformation of cotton by imported clothing. Importation of low-priced textiles from second-hand clothing began at the beginning of the 1980s taking a considerable part of the market share to the detriment of local industrial textile development.

In Senegal, around 7000 tons of second-hand clothing is imported every year, close to 70% in volume of the internal textile market (Perrin 2005). In Cameroon, second-hand clothing imports are estimated at 21,000 tons. The second-hand clothing market sharply increased during the 1990s so that in 1996-1997 it attained income equal to 60% of that of the national textile industry (Viallet 1998).

The consequences are that today only three, out of the fifty textile industries that could be counted in West and Central Africa during the 1980s, were still functioning by the end of the 1990s. All the others have gone into liquidation or are barely surviving. In Cameroon, the second-hand clothing market has put the clothing manufacturing industry out of business over the last ten years, a business which during the 1980s employed around 7000 people. Some businesses which are currently in trouble are operating in a limited market producing work clothes and school uniforms. It is the same in Senegal. Second-hand clothing has put a large part of local tailors out of business, who made pants, shirts and dresses to measure.

However, it is important to note that at the regional level a significant consumers market exists which has a very particular clothing culture. If ready-to-wear clothing has unquestionably taken over the market share during the last twenty years, 77% of Malian women (versus 26% of men) continue to dress in fabric made by a local tailor despite the slightly higher price than second-hand clothing. Now traditional West African cotton garments tend to be worn for special occasions or in remote villages (see Gardi 2003). This is a remarkable sign of a clothing culture which still resists the effects of western fashion. Fashion style is a factor of cultural identity factor that cannot be overlooked. For example, Fridays (the day of prayer for Muslims) and ceremonial days (marriages, traditional holidays) are days when everyone wears a “boubou”. There is also a genuine proudly defended African fashion. Also stylists and fashion designers adapt traditions from the “western” cuts and “African” fabric demonstrating also an open mind, adaptability and creativity.

However, the issue of the impact of second hand clothing exports on the African textile market divides the profession. Pierre Duponchel, Director General of “The Relais”, states that second-hand clothing remains a sustainable development tool, as much in the Northern countries as in the Southern countries. According to him, the labour-intensive activity of sorting out the clothing enables the creation of many jobs for populations without qualifications, often marginalised. Sorting also has an ecological advantage of limiting textile production which, as is well-known, can be highly polluting (for example, the drying up of the Aral Sea by the irrigated cotton culture, chemical dumping from the textile industry, etc.)

Finally, taking note that since 2001 the second-hand clothing sector in Europe has undergone a crisis linked to the massive Asian textile imports which influences the entire ready-to-wear market where the price competition is too steep for second-hand clothing to keep up.

In this context, in 2003/2004 the WAEMU launched an ambitious proposal to rapidly develop cotton processing capacity by *developing a regional textile industry*. It calls for investment to develop a dynamic regional textile industry by 2010 that will process 25% of cotton produced in the eight countries of the WAEMU area. The intention is to create 50,000 new jobs, capitalising on local knowledge and experience (e.g. artisanal craftsmanship, tradition design, etc.) to develop products that add value to cotton through trade in the regional and international markets. The implementation of this proposal in a relatively short amount of time (5 years) depends on the effective resolution of a number of factors:

- Existence of adequate regional demand for West African cotton products and traditional clothing;
- Development of products with adequate quality and low price to satisfy consumers and effectively compete with cheap imports;
- Development of adequate regional economic, industrial, energy and transport infrastructure to make these industries viable;
- Sufficient funding from the state and private sector to support the range of investments required.

In the same vein, ENDA Perspectives Dialogues Politiques has argued for the region to increase its capacity to process cotton so to take advantage of added value on the raw exported product and has underscored that this is only feasible through a regional framework. Specifically, ENDA suggests the *cross-border integration of cotton processing so to maximise the benefit from the comparative advantages of neighbouring countries*. It proposes that the only way for industrial units to be sustainable is to take advantage of each country’s value-added: one country may have cheaper infrastructure costs, another may have cheaper and constant access to electricity; others may possess cotton ginning plants and infrastructure while some may have good road, rail and sea transport routes (WABI 2003). While innovative in principle, this notion of countries cooperating on an economic sub-sector would require a readiness from West African states for much deeper regional integration and greater capacity to jointly manage economic activities, investments and profits than currently exist. It remains to be seen whether the political will can be created to promote such regional economic development initiatives and steps that naturally require states to accept higher degrees of economic and policy interdependence.

It is unlikely that such a regional strategy to promote textile production and consumption could work without effective protection of the West African textile market as West African products would find it difficult to compete with cheaper Asian textile imports that now dominate the world market and benefit from economies of scale that could only be dreamt of in West Africa. Further, West Africa would perhaps be entering into a policy of protection too late in the game: the room for manoeuvre for countries or regions to set up and implement protectionist policies is rapidly reducing as the world edges within the framework of agreements at the WTO.

Indeed, a budding textile industry might require some degree of protection. There may now be an opportunity, with the existence of strengthened regional organisations such as ECOWAS, to develop a plan to protect strategic products at the regional level. This may even be possible within the framework of WTO regulations and international trade negotiations such as the EU/ACP Economic Partnership Agreements if sufficient political will existed. However, Pakistan, as an example, was one of the largest exporters of raw cotton in the mid-1980s, and today is one of the largest exporters of cotton yarn and

a net importer of lint. The shift was made possible by insulating the domestic market from imports and by devaluating the national currency. Textile exports from the West African CFA Franc zone would have great difficulty in being competitive unless the CFA Franc was devaluated. The current high value of the CFA Franc encourages imports from Asian textile producers such as China.

The most significant development in this regard is the completion of the Multi-Fibre Arrangement (MFA) at the end of 2004 and its replacement the new WTO 'Agreement on Textiles and Clothing' which entered force in January 2005. The MFA Arrangement set rules that governed world trade in textiles and clothing. It allowed for restrictions on imports to be imposed within the framework of an overall liberalisation of international trade. Now, as noted in the OECD report *A New World Map in Textiles and Clothing* (OECD 2004), countries will no longer be able to protect their own industries by restricting the quantity of textile and clothing products imports. As of 2005, large retailers in developed countries will have greater liberty to purchase products on a global basis. The OECD report predicts that due to such processes the textile industry's capacity will migrate to the most competitive countries. There is increasing evidence that the more competitive suppliers in China, in particular, will capture international textile markets. This will leave little room for new textile producers in developing regions such as West Africa. The EU and US have already tried to protect their textile industries by agreeing on limited import quotas with China. However, even these countries are finding it difficult to maintain the quotas as they are harming the retail industry and limiting consumer access to cheap products. In this context, the challenge for the development of a competitive West African textile industry becomes much greater. The greatest opportunities may lie in developing the fair trade cotton and textile markets.

Partnership between private companies involved in supporting cotton production and trade, NGOs that are committed to finding solutions to the cotton crisis in West Africa to improve livelihoods (Oxfam, Enda, etc.) and some categories of decision-makers in the region and internationally (e.g. ECOWAS, EU, ACA, UNPCB/ROPPA) could help promote fair trade cotton.

A niche market may exist for organic fair trade cotton. Several initiatives have emerged to support sustainable fair trade cotton supported by northern NGOs such as Max Havelaar, northern buyers such as IKEA, and working closely with cotton companies such as CMDT in Mali. A four country pilot initiative facilitated by this NGO has yielded impressive results although as yet affecting only a small proportion of cotton producers. It is broadly accepted that there is room to expand such activity although it is always likely to remain a niche market. French and Swiss textile sales outlets and industries involved in fair trade with the Max Havelaar label, e.g.: Kindy socks, Active Wear and Soft Grey of La Redoute, Armor Lux, the Bocoton cotton label, Celio, Hacot and Colombier, Eider have developed a joint initiative to address fair cotton trade.

Key questions

- ✓ In 2003/2004, under 0.05 % of cotton lint produced in the WAEMU region is processed in West Africa. Given past efforts to develop the regional textile industry with disappointing results, how might a new regional textile processing strategy break the cycle and foster a profitable and competitive textile industry in West Africa? How can West Africa compete with other powerful players in the international economy and Asian producers that benefit from vast economies of scale and the end of the Multi-Fibre Arrangement? How can this strategy build on the past successes of existing regional traditional textile manufacturing industry? (e.g. the case of Kente and Faso Fani cloth; see Igué 2003).
- ✓ Where will the investment funds for the regional textile industry come from? Will private investors see the advantages in funding this development given hesitancy to invest in regional markets and price volatility?
- ✓ What incentives and conditions would be required to lead West African countries to take advantage of regional synergies, collaborate in the management of the cotton sub-sector, share infrastructure, power and investment in processing, as suggested by ENDA? Can regional organisations play a role here?

3.3 West African cotton: The national level

3.3.1 Importance of cotton in the national economy

The contribution of cotton to national GDP varies according to country in West Africa. It provides 3 to 5% of GDP in Benin, Burkina Faso, Mali, Chad and Togo and less than 2% for other cotton producers. However, cotton exports generate significant resources for national economies in many West African countries for example, in 2001 export receipts for Burkina Faso were 51.4%, for Benin 37.6% and for Chad 36.2%. For Mali the figure was 25% and Togo 11.2% (see Table below). This percentage varies from country to country and is linked to the structure of each country's economy. On the other hand, Nigeria, Côte d'Ivoire and Cameroon have more diversified economies that are more dependent on petrol and cocoa revenues and less dependent on cotton.¹⁶

Table 1: Importance of cotton exports (grain and fibre) as a proportion of national export revenues and GDP in West Africa

Average 1998-02 (millions of US\$)	Cotton fibre exports	Share of total West African cotton exports	Share in total exports of the country	Share of the agricultural exports of the country
Benin	144,2	17,5%	37,6%	72,6%
Burkina Faso	107,0	13%	51,4%	70,6%
Cameroon	91,7	11,1%	5,4%	19,6%
Cape Verde	-	-	-	-
Côte d'Ivoire	114,9	17,6%	3,4%	6,0%
The Gambia	0,2	0%	1,3%	1,6%
Ghana	3,0	0,4%	0,2%	0,5%
Guinea	2,3	0,3%	0,3%	7,4%
Guinea-Bissau	2,2	0,3%	4,4%	3,7%
Liberia	-	-	-	-
Mali	167,3	20,3%	25%	62,1%
Mauritania	-	-	-	-
Niger	0,4	0,1%	0,2%	0,6%
Nigeria	32,7	4,0%	0,2%	7,9%
Senegal	11,2	1,4%	2,0%	8,6%
Sierra Leone	-	-	-	-
Chad	73,5	8,9%	36,2%	58,7%
Togo	43,5	5,3%	11,1%	41,1%
TOTAL	824,2	100%	-	-

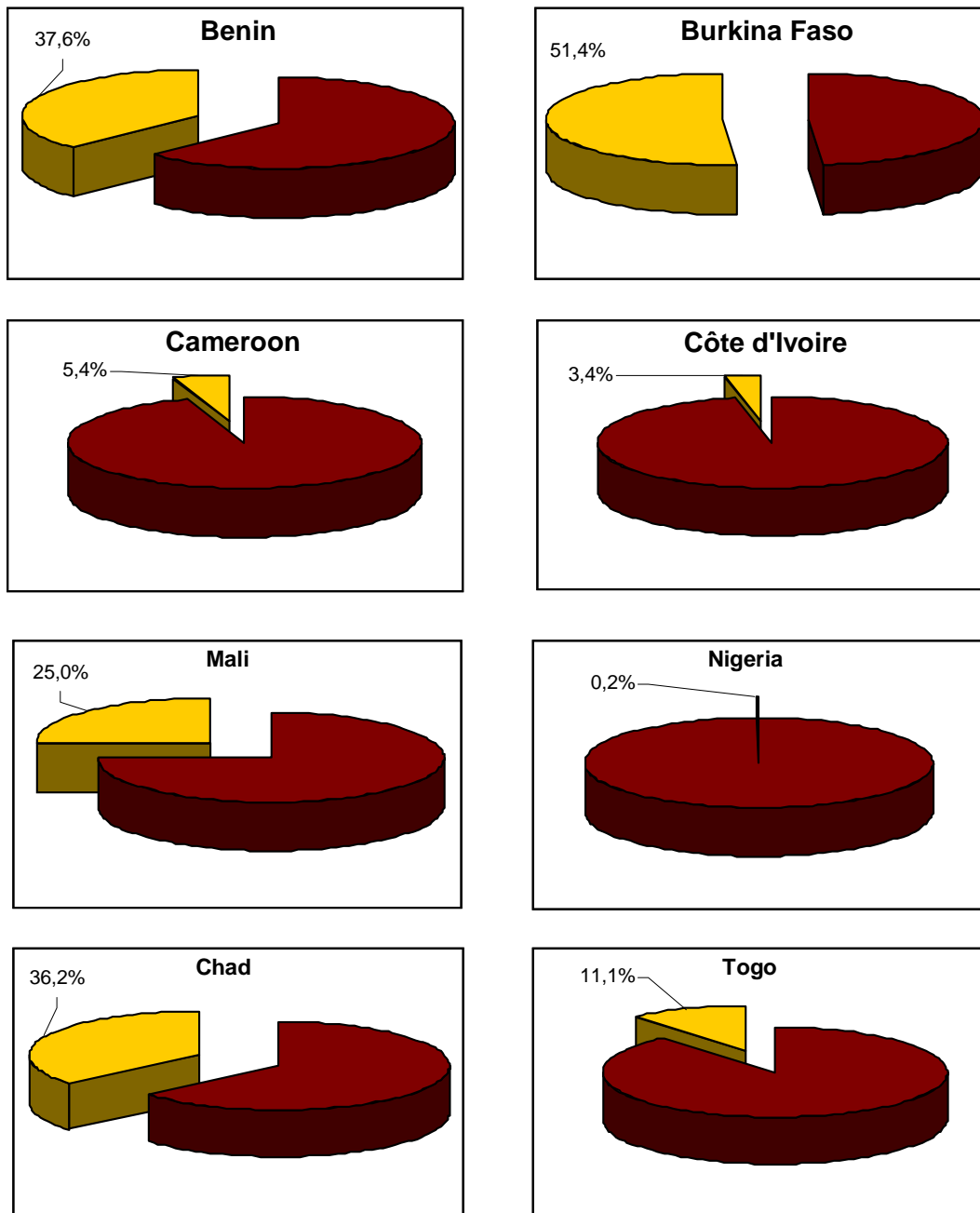
Source: FAOSTAT database, 2004; WDI World Bank, 2004

Most West African cotton is exported unprocessed in the form of cotton fibre and is very vulnerable to price fluctuations on international markets. This graph shows that West African cotton exports have progressively risen over the last forty years. When combined with cotton produced in Central Africa in 2004/2005, cotton produced in West Africa is set to establish the region as the second largest exporter of cotton in the world, just behind the US, with some 13% of the international market. Certain economies, particularly those in the CFA Franc zone, are highly dependent on cotton exports for national revenues. For example, cotton accounts for almost 50% of Burkina Faso's national export revenue, between 32% and 36% for Benin and Chad and 25% for Mali. It is evident that these revenues are of strategic importance for economic stability and broader development investment in these countries.

¹⁶ Data compiled from the IMF and FAO, 2003.

The pie charts below show the degree to which eight West African countries are dependent on cotton for their export revenues and national budgets.

Figure 8: Importance of cotton fibre exports as a share of the total national exports in eight cotton producing countries (averages for 1998-2002)

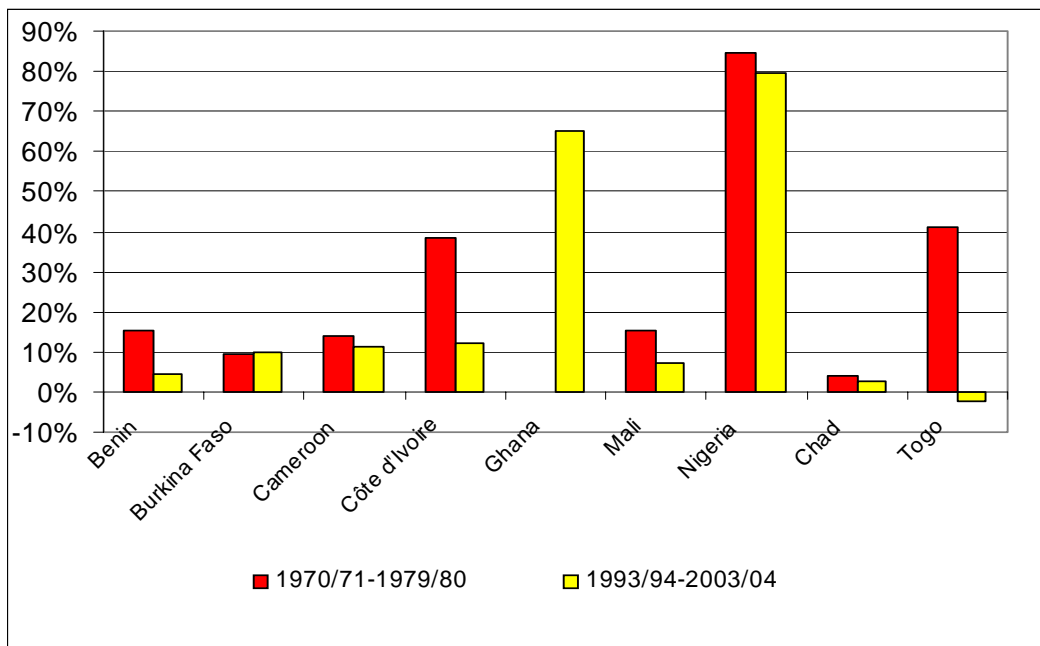


Source: SWAC using data from FAOSTAT Database, 2004 and WDI World Bank, 2004

These charts illustrate cotton's importance as a source of export revenues for a selection of key producing and exporting countries in West Africa. The main exception seems to be that of Nigeria, whose traditional textile industry and textile factories consume a significant amount of cotton produced nationally. Nigeria produces some 150,000 MT cotton but official figures show that it exports only 8 to 10%. The figure below shows a generally reduced use of cotton fibre in the region which may correlate with less processing capacity even a process of effective *de-industrialisation in the textile industry*. However it also demonstrates that Nigeria and Ghana stand out in the region as, according to official figures,

they appear to consume a large proportion of the national production of cotton in-country. It can be deduced that they are therefore less affected by issues related to international trade.

Figure 9: National consumption of cotton production in selected producing countries



Source: SWAC using data from ICAC (note: data refers to annual averages for each producing country)

Key question

- ✓ What will be the place of cotton production and trade in international trade agreements such as the Economic Partnership Agreements (EPAs) being negotiated between the EU and ACP countries between 2004 and 2008? Is there a case for protecting the cotton sub-sector from full liberalisation in the first stages to maintain state and farmer revenues? What is the role of West Africa's regional organisations here?

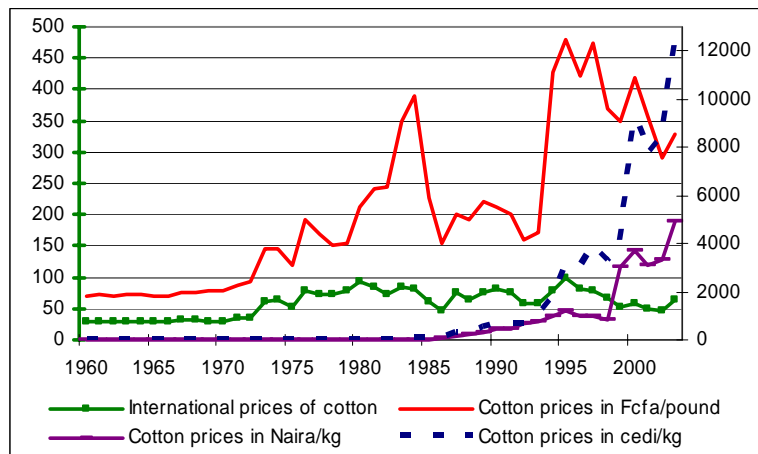
3.3.2 Differentiated effects of price volatility on local purchasing power

Usually, in the CFA Franc zone cotton producing countries, a single price is fixed for seed cotton before planting each year. The producer then receives a payment that takes account of the difference between the weight of the cotton at the time of sale and the factory weight. The cotton companies directly deduct the reimbursement of credit given for the purchase of inputs needed for cotton cultivation from the price paid to cotton producers. This system can, on the one hand, enable producers to obtain a relatively stable income. But, on the other hand, the percentage of revenue received by producers can be relatively low when compared to other cotton producing regions in the world. A World Bank study estimates that between 1994 and 1997 seed cotton prices expressed in terms of their equivalent in cotton fibre reached between 40 and 60% of world cotton prices in CFA Franc zone countries, as against 60% to 80% in Zimbabwe and more than 90% in India¹⁷.

¹⁷ Perspectives cotonnières, juin 1999. Les enjeux du coton en Afrique de l'Ouest et du Centre. http://www.wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/03/24/000012009_20040324090258/Rendered/PDF/253560Cotton0Brief10French.pdf

International price volatility of cotton has had differentiated impacts across West African producers. The nature of the effects of international price volatility on local economies is affected by changes in official exchange rates and inflation rates in West African countries.

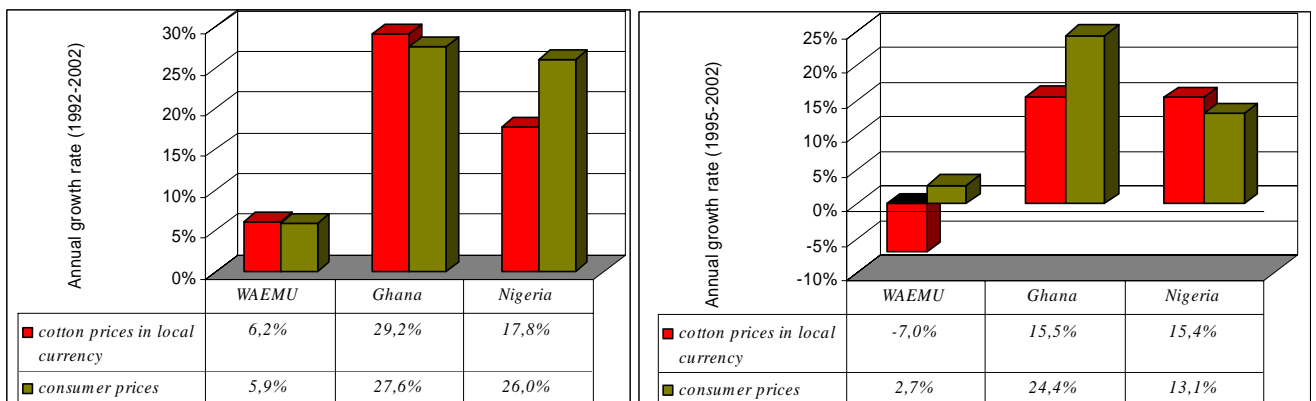
Figure 10: Comparison of the price of cotton (ICAC Indice A) in local currency in selected West African cotton-producing countries: CFA Franc zone, Nigeria, Ghana (CFA Franc, Naira and Cedi)



Source : IFS, IMF, 2004

Due to the devaluation of the CFA Franc in 1994 and successive falls in the value of the Naira and Cedi as compared to international currencies, the nominal price of cotton in local currency has risen substantially in cotton producing countries since the mid-1990s. Nonetheless, given high rates of inflation the real price of cotton has remained basically stable or has actually fallen.

Figure 11: Comparison of trends in cotton prices in local currency and the consumer price index



Source: IFS, IMF, 2004

Hence, cotton prices in FCFA have fallen by 7% per year between 1995 and 2002 while the inflation rate in the WAEMU zone was 2.7% per year. The real price of cotton in the CFA Franc zone has therefore dropped sharply. In the same way, purchasing power of Ghanaian cotton fell while it increased slightly in Nigeria. The rates of inflation in Ghana and Nigeria were still very high during this period as they reached an average annual rate of 24.4% and 13.1% respectively, compared to an annual growth rate of cotton prices in local currency of some 15.5% and 15.4%. Prior to the devaluation of the CFA Franc in 1994, the inverse situation could be observed. The real price of cotton in Ghana and in the WAEMU zone rose slightly while it fell in Nigeria. In general, it seems that the purchasing power of cotton for producer countries has declined over the last ten years.

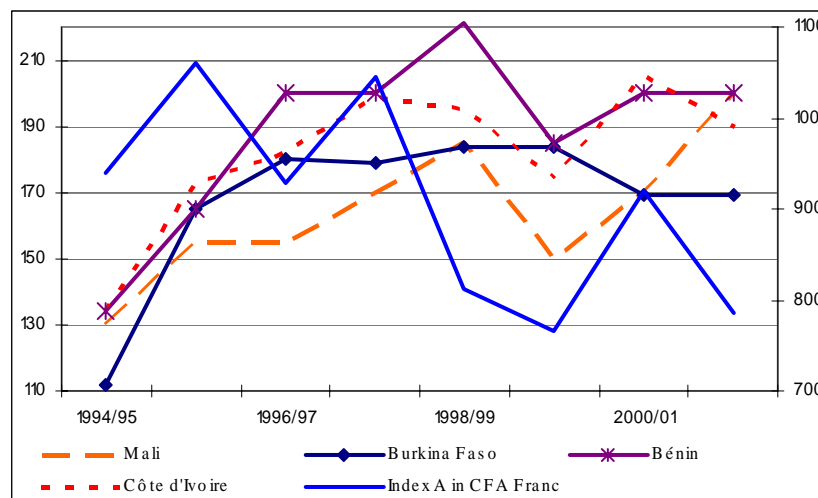
This change has not had the same consequences in all West African countries, however. There has been a clear difference between countries in the CFA Franc zone and the Anglophone cotton producing countries, Ghana and Nigeria. In these two countries, the change in cotton prices has had a limited impact on the national economy due in part to their higher levels of national consumption of cotton fibre. According to official records, half of the cotton produced in Ghana appears to be consumed in-country and the figure rises to up to three quarters of the amount produced in Nigeria. This is the opposite of the situation in the CFA Franc zone, where countries export some 90 to 95% of the amount of cotton produced. The CFA Franc zone countries are therefore more vulnerable to international price changes. This dependence on international markets raises the question as to whether increasing local cotton consumption and processing might limit the influence of international fluctuations on local markets and livelihoods.

Cotton markets and the producer purchase price for seed cotton

The effects of the devaluation of the CFA Franc on the price of cotton sold for export were positive overall with the price of cotton in local currency having almost doubled between 1994 and 1995. This situation was very beneficial for producers in the CFA Franc zone in West and Central Africa: prices for seed cotton rose from between 15% in Chad to up to 70% in Burkina Faso.

Cotton prices fell in terms of their CFA Franc value from 1997/98, following the general fall in international prices. In this context, the producer purchase price remained relatively stable, or dropped slightly. Consequently, the percentage of the price of seed cotton received by producers rose from 15% between 1994 and 2002. This situation helped producers acquire more influence in the management and negotiation of prices in the cotton sub-sector.

Figure 12: Indice A and the producer purchase price in the CFA Franc zone (FCFA)



Source : IFS, IMF ; Goreux, *Réformes des filières cotonnières en Afrique subsaharienne*. Ministère des Affaires étrangères, France ; Ministère de l'Agriculture, 2004, Tchad.

Producer purchase price and farmer revenues: The case of Burkina Faso

Besides the direct effect of rising purchase prices for seed cotton on producer revenues, there is also an indirect impact of rising yields. In fact, one year after the devaluation of the CFA Franc and the parallel rise of the farmgate price of cotton, the yields recorded by cotton producers also rose sharply. For example, in Burkina Faso these yields rose from less than 800 kg/ha in 1993/94 to more than 1 tonne per hectare from 1996/97 to 2000/01. However, the question remains as to what extent the change in the farm gate price of seed cotton influences the incentives to producers to cultivate cotton as well as to increase cotton yields?

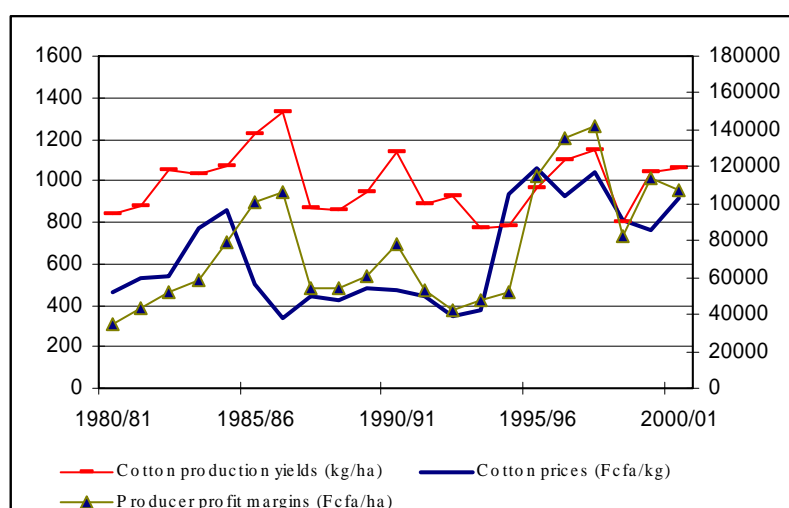
Table 2 : Seed cotton production yields and the producer purchase price: The case of Burkina Faso

Year	Yields of cotton seed production (Kg/ha)	Purchase price of seed cotton (CFA per kg)
1993/94	767	112
1994/95	777	112
1995/96	968	165
1996/97	1095	180
1997/98	1145	180
1998/99	802	180
1999/00	1037	180
2000/01	1061	170

Source : VOGNAN. G, 2002: Impact économique de la recherche agricole sur la culture du coton et stratégie de lutte contre la pauvreté, Actes FIRSIT 2002

If this trend is correct, the rise in farm gate prices would have a positive effect of producer revenues via the direct impact and rise in agricultural yields which are also linked to the marginal gains after the cost of inputs has been reimbursed. Since the devaluation of the CFA Franc, marginal returns after reimbursement of inputs have risen by more than a third rising from nearly 80 000 CFA/ha to 110 000 CFA/ha.

Figure 13: Evolution of the profit margins of producers after reimbursement of inputs has been taken into account in Burkina Faso



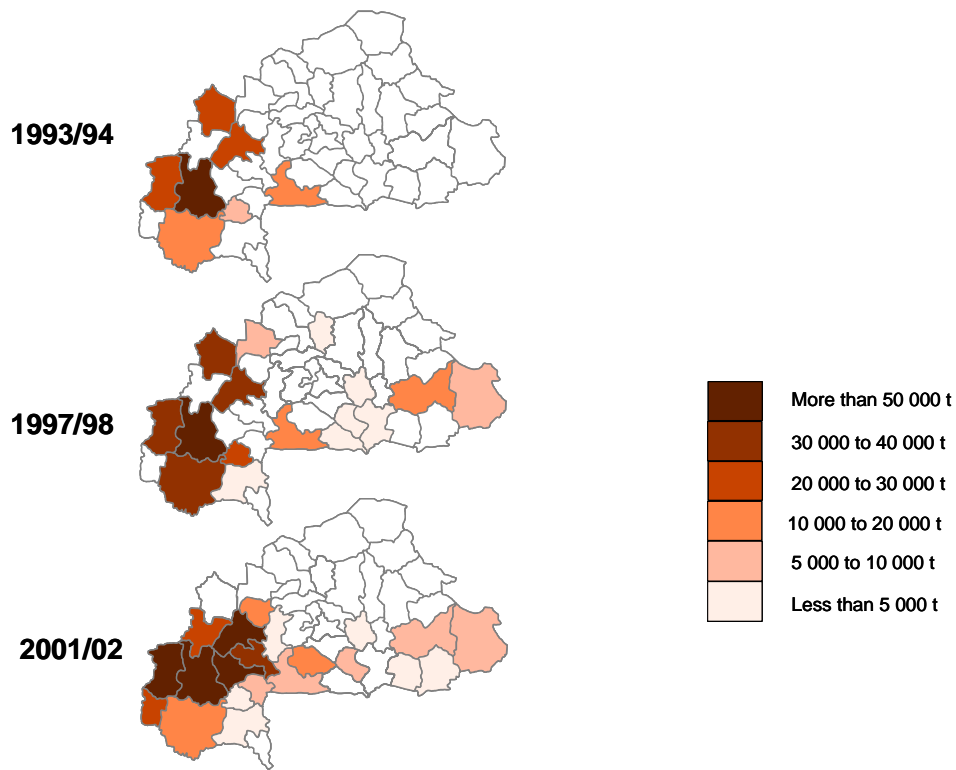
Source : VOGNAN. G, 2002: Impact économique de la recherche agricole sur la culture du coton et stratégie de lutte contre la pauvreté, Actes FIRSIT 2002

3.3.3 Subnational distribution of cotton production

Areas planted with cotton shift regularly in West Africa in response to climatic factors, availability of water and fertility of soils. In Burkina Faso, cotton production zones shifted from the northern part of the central areas towards the south and south-western parts of the country due to environmental degradation and land becoming less fertile. This may primarily be related to rainfall patterns shifting southwards over recent decades but might also be linked to increased population and livestock pressure, and possibly also to negative environmental effects of the cultivation of cotton itself. (Hårsmar 2004).

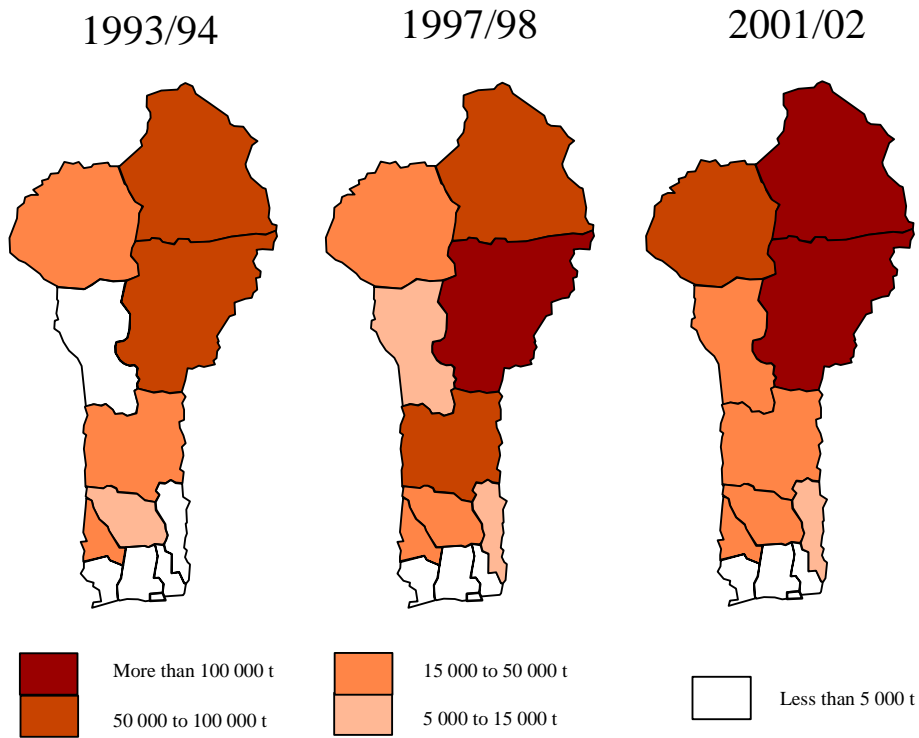
The maps below show further detail on the subnational or district level distribution of cotton production in key cotton producing countries: Burkina Faso, Benin, and Mali. This shows cotton production areas in each country and the way in which these have evolved over the last 10 years. It demonstrates the changing of producers' strategies which could be in response to e.g.: market price changes; climatic variability; field and soil management practices related to trends in soil fertility and rotation; changing policies concerning supply of services to producers. Specifically, it illustrates a general spread in areas on which cotton is cultivated in each country supporting the assertion that cotton farmers are increasing the area cultivated to maintain and increase incomes and purchasing power in the face of downward price pressures.

Figure 14: Dynamics of change in cotton production zones in Burkina Faso



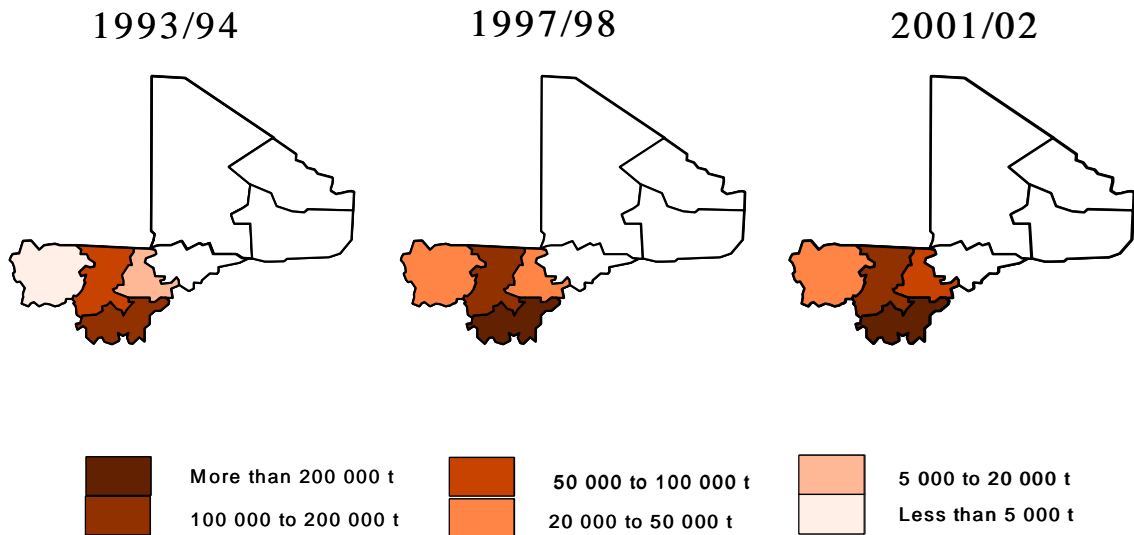
Sources: SWAC using data from Ministry of Agriculture data, Burkina Faso

Figure 15: Change in cotton production areas in Benin



Sources: SWAC using data from Ministry of Agriculture data, Benin

Figure 16: Change in cotton production areas in Mali



Sources: SWAC using Ministry of Agriculture data, Mali

While the geographical area suited to cotton cultivation remains fairly stable in aggregate terms, the specific local areas and fields allocated to cotton production may change each season depending on crop rotation practices, soil fertility and the changing strategies of farmers in response to market incentives. For example, in 2004/5 farmers in Burkina Faso reported choosing to plant maize instead of cotton in fields usually planted with cotton due to low cotton prices.

IV. ROLE OF COTTON IN LIVELIHOODS AND ACCESS TO SERVICES

4.1. Better access to innovation in cotton production areas: The cases of Mali and Ghana

The role of the cotton support system in agricultural innovation processes is illustrated by the cases of Mali and Ghana. In Mali, access to agricultural innovation generally appears to be better in cotton production zones, due to the cotton production support system introduced initially by the colonial administration: providing consistent access to fertilizer, pesticides, extension advice, credits, technology and inputs in a number of countries. SWAC fieldwork on access to agricultural innovation in Mali undertaken in 2004¹⁸ illustrates the way in which the strong cotton production support system has fostered access to innovation. However, it identifies a number of risks related to the reforms underway and the scaling down of the cotton production support system provided to date by the parastatal company *Compagnie Malienne pour le Développement des Textiles (CMDT)*. A case study on Ghana also shows the close links between cotton and access to innovation, but here Ghana has historically provided less support to the cotton sub-sector, preferring to prioritise investment in the cocoa sub-sector as the main source of foreign exchange revenue from an agricultural product. Hence, the agricultural innovation processes in cotton production zones in Mali and Ghana occurred in contexts where levels of State support were very different.

In Mali, there is evidence that cotton production areas are also zones that have experienced an “agricultural revolution” where increased farm productivity, the creation of added value and the improvement of rural livelihoods has been observed. From the mid 1970s onwards, responsibilities were increasingly shared across actors in the sub-sector. This started with the transfer of cotton seed marketing, and more radically, distribution of community and public funds which contributed greatly to improved livelihoods (Fok, personal communication). The “cotton production support system” in these areas has fostered agricultural innovation with secondary impacts on agricultural development. Besides supporting education initiatives, the CMDT and its network of field staff, supported by external funders keen to support integrated rural development, undertook activities that contributed more broadly to improved livelihoods and food security in rural areas, for example: helping producer organisations with the collection and marketing of cereal crops; promoting cattle feedlots (using ex-draught oxen), promoting sheep fattening (the ram for Tabaski), promoting the production of bullocks to replace draught oxen; and promoting women’s income generating activities (e.g. processing). CMDT provided technical assistance (supervision) for all these activities and facilitated access to credit.

As a result of this support from CMDT, cotton zones tend to be areas where the largest amounts of cereals and other food crops are produced. CMDT ensures access to inputs, assistance in developing post-harvest activities related to all these crops, and offers help with marketing the cereal harvest. This innovation process was also enhanced by a demand-driven approach to agricultural service delivery based on contractual agreements between the CMDT, the *Office de la Haute Vallée du Niger (OHVN)* and the *Institut d’Economie Rural (IER)* that clearly defined expected results. These contractual agreements are financed exclusively by the cotton sub-sector via CMDT. During the 2002/03 and 2003/4 cropping seasons, the contract was of a value close to 300 million CFA Francs. But at the same time the cotton sub-sector has undergone dramatic changes in Mali and the respective roles of the public and private sectors in the producer support system are being reassigned. Research is more vulnerable to temporal shifts in funding and long term projects receive less attention. Producers fear that these changes will be harmful to their livelihoods at a time of downward price pressure on cotton in international markets. The important multiplier effects of the rest of agriculture of commodity-based support for input use might be jeopardised with negative effects on productivity and incomes.

In Ghana, the cotton sub-sector was fully liberalised and privatised in 1985. In 2001, however, Ghana decided to shift its approach to liberalisation so as to increase quality and establish local monopolies in specific zones. Now, cotton marketing is in the hands of 12 private cotton marketing companies,

¹⁸ The agricultural innovation case studies can be accessed on the web at the following address: <http://www.oecd.org/sah>, click on cotton, then additional SWAC materials.

the Ghana Cotton Company (GCC) being the largest. Most local production is sold to local textile companies and only a small quantity is exported. Some innovations introduced by the GCC in its areas of activity have increased productivity.

- (i) *Introduction of high yielding cotton varieties from Burkina Faso and the promotion of the cotton-maize/millet rotation system.* Inspired by practices used by farmers in Burkina Faso, the GCC is now encouraging producers to adopt a rotation that contributes to maintaining the fertility of soils by alternating cotton with maize or millet. These changes resulted in yield increases of close to 20% as compared to standard practices.
- (ii) *Establishing a quality grading system.* The cotton judged to be of “second quality” attracts 80% of the price set for the highest quality. The GCC feels that at present, 75% of the output is top quality while five years ago that figure was 50%. This system is especially important for promoting cotton exports.
- (iii) *Incentives for personal reimbursement of loans obtained for inputs.* In the past, the GCC along with other cotton companies tried various modalities for recovering inputs costs. For a period they recovered costs of inputs via the purchase price for seed cotton but this was only satisfactory if sufficiently large amounts of cotton were purchased. In moving back to pricing inputs, the GCC recovered loans given to farmers for inputs when purchasing the cotton produced. With the new system, producers who choose to make personal reimbursements are granted a 3% debt reduction as an incentive for farmers to reimburse themselves. This system encourages producers to be independent in their borrowing and repayment operations. Thanks to this reform and to fertilisers being applied properly in the soils, cotton yields increased. Before this reform, producers treated fertilisers as “free” (although the company recovered its investment via sales); made little effort to plough them into the soil; and allowed fertiliser to be washed away with the rains. These changes undertaken by private companies, particularly the GCC, have contributed to the increase of cotton production and yields.
- (iv) *However cotton production dropped substantially in Ghana with liberalisation.* It now stands at some 5000 tonnes annually and Ghana has become a net importer of cotton, mostly from Mali.

Innovation processes are complex and may need a holistic approach to be effective. The example of the role played by the CMDT in fostering innovation demonstrates the way in which a holistic approach contributed to improved livelihoods, increased cotton and cereal production, and produced better yields. There has been less political interest in and support of cotton production in Ghana. There has also been less external support for the development of the cotton sub-sector and related services, reducing interest in cotton production and hampering the ‘scaling up’ required to reduce the costs of service provision. At the same time producers in Ghana’s cotton zones have not experienced the same improvements in livelihoods as in the CFA Franc zone and no generalised ‘agricultural revolution’ has been observed.

It is also important to mention that the Ministries of Foreign Affairs of France and The Netherlands and CIRAD have set up a regional project “CottonNet” (in French ‘R socot’) in six countries: Benin, Burkina Faso, Cameroon, Ghana, C te d’Ivoire and Mali. The project aims to assist cotton sub-sectors in sub-Saharan Africa to assess the performance of the various cotton sectors’ organisation methods. The programme started in 1999 and ended in 2003. Outcomes of the project were the characterisation of the ways in which the cotton sub-sector is organised though a common grid to assess performance and progress (Fok M. and Tazi S. 2003).

Key questions

- ✓ What is the most appropriate mix of public–private–producer organisation responsibilities to meet the requirements for liberalisation while maintaining the holistic approach to producer support that may best foster innovation processes, productivity and competitiveness of agriculture in West Africa? Can a value chain analysis help identify the most effective and complementary roles for these actors in their partnership to dynamise agricultural development? What is the most appropriate phasing of decreased public sector involvement to maintain maximum efficiency and capacity in the sub-sector? What alliances are required to achieve an appropriately phased privatisation process?
- ✓ How will the cotton sub-sector reform and the CMDT privatisation process affect producer access to agricultural inputs, fertiliser, technology and profitability in the short- and medium-term? How will reduced access to inputs and innovation affect the production of food crops, producer livelihoods and wider agricultural development? How can short-term costs be mitigated while maintaining efficiency and welfare gains that reforms might generate in the medium-term? How will States, their development partners and producer organisations be able to effectively ensure continued producer access to technical support and inputs? How can mutual understanding of the stakes be fostered to avoid the political and economic costs of mistrust?

4.2 *Biotechnology and cotton in West Africa*

The most known type of genetically modified cotton is Bt cotton (see Box). It represented more than 30% of global cotton production in 2003–2004. Optimistic claims indicate that it has the potential of dramatically reducing production costs particularly by reducing the number of pesticide sprays needed in a season. For example, in China, one study indicated that farmers who do not use Bt cotton spray 12 times on average whereas farmers who use Bt cotton spray 3 to 4 times during the cropping cycle. This is an important aspect as pesticides are relatively important in the production costs related to cotton: in the US pesticides are said to account for two thirds of the total costs of chemical inputs (fertilisers and pesticides), albeit that in the CFA Franc zone they account for only one third of total chemicals costs. Genetically modified cotton was introduced in the United States in 1996 and many other important producer countries have adopted it, including China, India, Mexico, Australia, Argentina and South Africa. This poses a challenge to the competitiveness of African cotton.

Box 1: *The Economics of Genetically Modified Cotton*

Genetically modified (GM) cotton, a result of technological developments of the 1990s, has the potential of reducing the cost of production, hence increasing profitability of the early adopters of this technology. In fact, GM-type cotton (as well as all other GM products) acts as insurance against pests, insects or weeds. The grower pays a premium for the pest-resistant seed (as they would when buying other types of insurance). If the insect attacks the crop, the grower's benefit comes through the lower costs from not spraying. For example, the average number of pesticide application used against bollworms in the US fell from 4.6 in 1992–95 to 0.8 in 1999–2001. Furthermore, the grower is likely to experience higher yields because spraying conventional cotton always involves sub-optimal elements and hence yield losses. For example, yield increases due to switching to GM cotton range between 19% (China) to 80% (India). In developing countries there might also be health benefits because small growers spray with hand-held devices, thus any reduction in spraying would also imply reduction in poisoning risks. On the other hand, if the insect does not attack the crop, growers simply lose their premium (i.e. the cost difference between conventional and GM cotton). Research has shown that, on balance, GM cotton users are much better off compared to users of conventional cotton.

There are two types of GM cotton: *Bt* cotton and herbicide-tolerant cotton. *Bt* (*Bacillus thuringiensis*) is a naturally occurring soil bacterium that has been used as a biological pesticide for many years. The gene that produces the relevant insect toxin has been transferred from that bacterium into the cotton plant. In turn, the plant produces its own toxin and there is no need for the grower to apply pesticides. Herbicide-tolerant cotton is a cotton plant that has been genetically modified to resist a herbicide that would otherwise kill both weeds and the cotton plant. Consequently, the herbicide can be applied without exterminating the cotton plant.

...

Producing GM cotton is a multi-step and complicated process, which is why most developing cotton-producing countries have not embraced the technology. First, the legal and regulatory framework must be established which includes issues such as the selection of company to undertake trials; pricing issues; copyright of genetic material issues; whether growers are allowed to recycle GM seeds or have to purchase the seeds every year; time duration of the GM license; etc. The second stage involves field trials to develop seeds appropriate to local growing conditions, for example there are about 35 GM cotton varieties in the US and 22 in China, each designed for particular pest populations and growing conditions. The third stage involves actual adaptation by the cotton growers.

GM cotton was first grown in the US in 1996. A number of cotton producing countries have introduced GM cotton technology since then including China, India and Mexico in the northern hemisphere and Argentina, Australia and South Africa in the southern hemisphere. Other countries are in the approval process or at the trial stage, including Israel, Pakistan, Turkey, Brazil, Indonesia and Zimbabwe. Major producers that have not approved GM cotton (as of 2003) are the European Union, Central Asia and Francophone Africa (except Burkina Faso, which is conducting trials) (Cotton Outlook 2004).

Who receives the benefits of GM cotton? There are four groups whose welfare is likely to be affected by the use of GM seeds: the companies that manufacture the seeds, the farmers that use them, the farmers that do not use them and end users. Falk-Zepada et al. (2000) estimated that of the \$215 million in surplus generated in 1996-98 per year due to the switch from conventional to GM varieties in the US, farmers' net income increased \$105 million while the seed companies received \$80 million. Increased cotton output reduced the world price generating about \$45 million of gains to consumers (both in the US and elsewhere) but cotton farmers in other countries (i.e. farmers that did not use GM cotton) lost an estimated \$15 million because of lower cotton prices. The methodology of these welfare effects was based on a standard economic surplus model developed by Alston et al. (1995).

Source: FAO (2004), cited by John Baffes (2005) in the 'cotton problem', The World Bank, Washington D.C.

The introduction of agricultural biotechnology in West Africa has remained very controversial and politically charged for many civil society, non-governmental and producer organisations. Several NGOs and producer organisations, however, campaigned against the introduction biotechnology and specifically the use of genetically modified cotton. In July 2004, the *Association des Organisations Paysannes Professionnelles* in Mali (AOPP) widely distributed a declaration against the introduction of genetically modified organisms in general and Bt cotton, in particular: *Manifeste: le Mali face à la menace des O.G.M.* These actors have argued that living modified organisms threaten biological diversity, could contaminate other agricultural products and may harm ecosystems in West Africa. GRAIN, an international NGO based in Benin, went further and described Bt cotton as a "poisoned gift" as farmers may become too dependent on multinationals for the purchase of cotton seed, could be fined if they share transgenic seed with their neighbours, and might easily become indebted. It advocates that other measures be taken to reduce the use of harmful insecticides in cotton fields rather than the introduction of Bt cotton (GRAIN 2004). Environmental Rights Action of Nigeria (ERAN) and the Nigerian branch of Friends of Earth International have also declared to be against their government's decision to introduce agricultural biotechnology and a group of international and West African NGOs¹⁹ distributed a statement rejecting the introduction of LMOs and calling for a moratorium of at least 5 years at the ECOWAS regional meeting on biotechnology held in Bamako in June 2005.

Many West African countries and scientists in African agricultural research institutes have been convinced for some time of the advantages of agricultural biotechnology and Bt cotton, in particular. Its supporters argue that Bt cotton appears to present economic advantages, to reduce dependence on international companies involved in the distribution of pesticide and fertiliser, and according to several studies, to hold no known environmental or human health risks. West Africa has moved further towards establishing a coherent biosafety and regulatory framework for biotechnology than other parts of Africa. Countries such as Burkina Faso had already begun trials on genetically modified cotton by 2004 and it has moved forward rapidly to set up a regulatory framework in accordance with the Cartagena Protocol on Biological Diversity and the International Protocol on Biosafety. Others, like Mali, are in the process of approving trials. Ghana has completed the process of developing its own regulation mechanisms and the Nigerian government has supported several initiatives on biotechnology for a wide range of crops.

¹⁹ Including ENDA, GRAIN, and the Coalition pour la protection génétique in Francophone Africa.

Furthermore, producer organisations in some countries have embraced biotechnology despite the strong opposition of organisations such as Mali's AOPP.

Box 2: Biotechnology cotton: a success story for poor farmers with possible risks over the medium- and long-term

Cotton genetically engineered to express the insecticidal toxin *Bacillus thuringiensis* (Bt cotton) has been celebrated as a success story for poor farmers in developing countries. Transgenic cotton varieties have been adopted by commercial and smallholder farmers in several developing countries including China, South Africa and India. In 2002, transgenic cotton varieties occupied 20% of the global cotton area and more than half of the national cotton acreage in China. An estimated 90% of smallholder cotton farmers in the Makhatini Flats area of KwaZulu-Natal, South Africa planted Bt cotton.

Transgenic technology is popular with farmers because it appears to provide effective control of important cotton pests, principally bollworms. Consequently it has been rapidly adopted and it is now possible to review the experiences of transgenic cotton farmers over several growing seasons. A number of recent studies have claimed that there are clear benefits for cotton farmers. In China, transgenic cotton commercialised in 1997 is reported to have contributed to increased yields, financial and labour savings and a reduction in poisonings linked to pesticide use. The total benefits were calculated at US\$334 million nationally, most of which was secured by farmers. In South Africa, the reportedly higher cost of transgenic cotton seed commercialised in 1997 was offset by lower chemical use and yield increases in the order of 20 to 40%.

However, the experience of India serves as a reminder that the Bt gene cannot protect cotton against diseases or non-targeted pests which can wipe out profit margins. Paying the higher price for transgenic seeds remains a risky choice especially for poor-cash producers constrained to produce primarily for home consumption. Research in China has indicated that success in controlling bollworm as the primary pest may lead to their place being taken by an increase in the number of secondary pests such as aphids and red spider mites. The particular ecological dynamics of cotton pests requires dynamic, ongoing management. There is concern in both China and India that pest resistance to the Bt toxin may already be emerging. According to IDEAS Centre (www.ideascentre.ch), there is some data indicating the development of pest resistance after extended exposure to Bt cotton. The risks can be mitigated and can be reduced with proper crop management practices such as intermittent planting of non-Bt varieties in order to break the selection process in pests that favours Bt-resistant species. Pest refuges are recommended as a way of controlling this problem but these may be unworkable or ineffective on the tiny plots of land farmed by smallholders. Non-Bt maize is a key refuge crop in China's Bt cotton growing areas. Policymakers fear that, if Bt maize were commercialised in the north-eastern provinces, seed would quickly travel south and be used in the cotton zones. Having Bt maize and Bt cotton in the same zones could undermine **biosafety principals** in smaller farms. Furthermore, for crops where China is a centre of origin – rice and soya beans, for example – biodiversity concerns cannot be taken lightly.

These specific crop management processes are relatively easy to implement and manage on large farms. On smallholdings, however, the respective practices require co-ordinated action among all producers within defined areas of production. This is a significant issue in Africa where the majority of farms are small family farms, often less than 3 hectares in size. Producer organisations may have a key role to play here.

Access to agricultural inputs remains an important issue. In India and South Africa, the smallholders adopting transgenic varieties tend to be the richer and better-established farmers who have access to productive land and credit and can afford the higher up-front costs of transgenic cotton-seed. In many countries, cotton is an important export crop that is supported by an infrastructure of input supply and marketing. In this respect access to input and agricultural biotechnology need to be addressed.

Source: Hitimana and Hussein, SWAC 2005 drawing on materials from the Institute of Development Studies, UK (<http://www.ids.ac.uk/ids/env/biotech/pubsBriefings.html>) and IDEAS Centre (www.ideascentre.ch)

In June 2004, a high level Ministerial Conference was held in Ouagadougou, sponsored by the US, on harnessing science and technology to increase agricultural productivity, improve food availability and improve people's livelihoods in the West Africa region²⁰. This aimed to identify West African perspectives on the adoption of scientific innovations, including biotechnology. This focused on the best way to use biotechnology, how to ensure its proper regulation and use while maximising its benefits for farmers. The way in which Bt cotton had reduced pesticide costs, improved yields and livelihoods of small farmers in developing countries such as South Africa was discussed. However, it should be noted that at around 400 to 500kg/ha of cotton seed, yields had always been lower in South Africa than in parts of West Africa, about half the average yields in Mali.

²⁰ For the conference closing statement by the US Under Secretary, Farm and Foreign Agricultural Services see <http://www.fas.usda.gov/icd/stconf/event6/event6pennclosing.html>

A major issue that emerged was the *need for regional cooperation and partnerships on science and technology*: given that financial and technical resources are limited, it is most efficient and effective to identify problems and apply scientific knowledge to find solutions at the regional level. The roles of regional economic and research institutions such as ECOWAS, the WAEMU and the CILSS were seen as key, as were those of new organisations such as the African Agricultural Technology Foundation. Given the costs of establishing regulatory systems for biotechnology, the meeting underscored the usefulness of developing a harmonised, transparent and predictable regulatory system at the regional level.

In January 2005, a meeting was held in Bamako (Mali) on the place of cotton in the WTO trade negotiations. This brought together Ministers and West African ambassadors to Washington from Benin, Burkina Faso, Mali, Senegal, Chad and US government representatives. The Final Declaration stated, however, that Bt cotton is not the panacea vis-à-vis the current international trade negotiations and the way in which they need to address the crisis in the cotton sub-sector.

The ECOWAS regional Ministerial Conference on biotechnology in West Africa held in Bamako in June 2005 led to the agreement on a regional framework to introduce agricultural biotechnology in West Africa²¹. It appears that most countries in the region will now move forward to adopt BT cotton in the coming months and years, albeit that certain countries, such as Benin, have been reticent to date. Indeed, the June meeting decided a number of concrete actions for regional cooperation on biotechnology and biosafety. Among the recommendations, the Ministers urged ECOWAS to develop a detailed action plan for implementation of the programme and to hold the next Ministerial conference on Biotechnology in Accra, Ghana in June 2006.

West African governments and civil society have had different perspectives on the introduction of agricultural biotechnology cotton, Bt in particular. However, the strength of the West African position in the international trade negotiations concerning cotton has benefited greatly from producers, the private sector, civil society and governments developing a united position at the regional and international levels. It will be important for these West African actors and decision-makers to establish an agreed position and approach on the introduction of biotechnology, specifically BT cotton, at the regional level. Here, the setting up of a regional mechanism to monitor and regulate the introduction of biotechnology may help. Biotechnology should not be seen as a magic bullet, however. Research and innovation can contribute in other ways to resolving constraints to the production and profitability of quality cotton. Some believe that Integrated Pest Management (IPM) technologies are viable alternatives to Bt cotton. However, more general constraints to effective national and regional agricultural research also need to be addressed, e.g.: broader access by scientists to information technology; increased experience of participatory methods and consultative approaches, etc.

²¹ See SWAC contributions to this event: (i) Hitimana and Hussein, SWAC (2005) *Agricultural biotechnology and the transformation of West African agriculture: Regional challenges, access, regulation and future perspectives*. Background document to inform a regional consultation. SWAC Secretariat, June. (ii) Zoundi, J. (2005) *Agricultural biotechnology and the transformation of West African agriculture: Challenges and regional perspectives*. Summary of the regional consultations of West African actors. SWAC Secretariat, June. The main conclusions and recommendations of the Ministerial conference can be found at : <http://www.coraf.org/documents/report%20final.pdf>

Key questions

- ✓ Some countries are embracing genetically modified cotton and rapidly expanding the area planted, while neighbours remain reticent. Those that delay adopting BT cotton may lose their competitive edge in a tight market where prices are falling and other countries are adopting BT cotton but are concerned about potential medium- and long-term risks related to environmental, human, and equity factors. There is concern that cotton products enter the food chain through cotton oil and therefore may affect other crops. Others argue that biotechnology will reduce risks (related to pesticide use, for example) and that it does not pose problems relating to human health as it is not a foodstuff. International protocols on biosafety stipulate that countries that adopt biotechnology should establish monitoring and regulatory procedures at the national level. Given that biotechnologies may have effects that cross national boundaries and affect other crops (via pollination for example), *is there a role for regional coordination, monitoring and regulatory measures concerning the introduction of BT cotton?* This could provide a balanced assessment of the advantages and risks for different producers adopting biotechnology over the short- and medium-term. If so, which regional body would be best suited to undertake this function? What lessons can be learned from other developing country regions' attempts to develop regional regulatory mechanisms (e.g. Southern Africa/SADC)?
- ✓ Given the increasing use of genetically modified cotton internationally (set to reach 50% of total cotton produced by 2007), will adoption of BT cotton be the key to increasing productivity, competitiveness and sustainability of African cotton? What are the implications for financial and environmental sustainability?
- ✓ What will be the costs of increased dependence on agribusiness for the supply of biotech plants? Where BT cotton is introduced, how can access be ensured for small and large-scale producers alike?
- ✓ In a context of stiff competition from synthetics and increased global production, is there sufficient demand for standard West African cotton or organic cotton to make them viable alternatives to BT cotton? Is there a remunerative market niche for Africa in developing organic cotton?

4.3 Links between cotton and cereal production

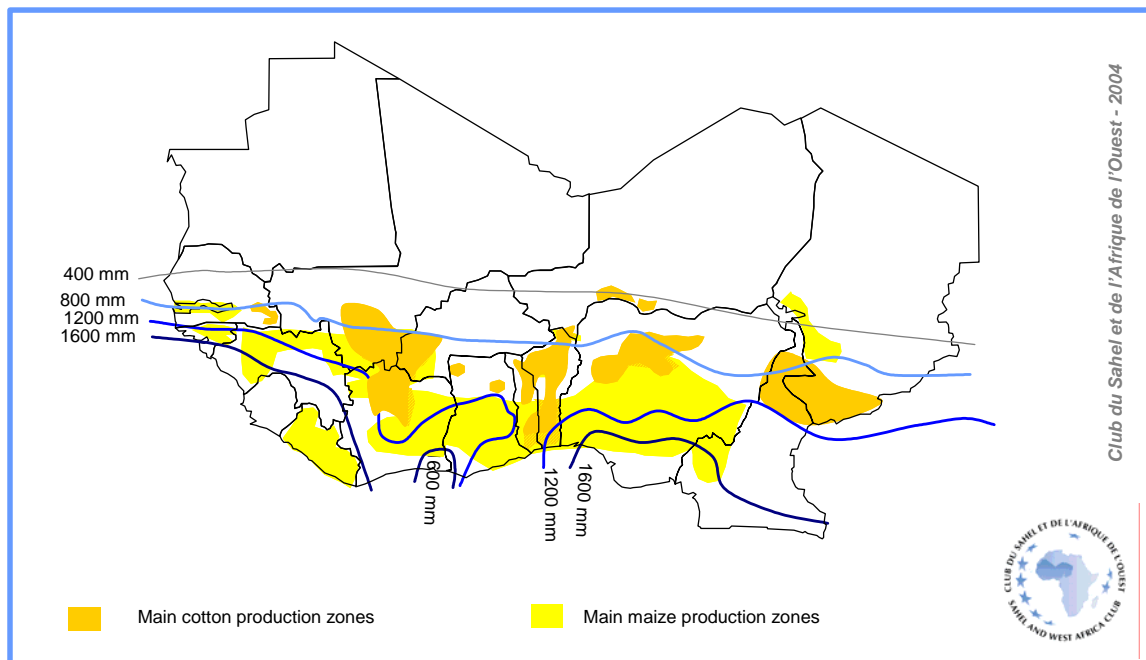
The Savanna zones of West Africa have always been suited to cultivation of both cotton and cereals. In a report for the SWAC on the regional and spatial dimensions of West African development, the geographer, Roland Pourtier confirms the historic co-existence of food grain and cash crop production, and rotation between the two, on farms in the region:

« Mieux arrosée que le Sahel et en cela épargnée par les crises climatiques extrêmes, la zone des savanes du constitue la colonne vertébrale de l'Afrique de l'Ouest. Aux traditionnels mils et sorgho s'ajoute, depuis le XVIème siècle, le maïs. La culture, la conservation, la commercialisation et les usages des céréales sont communs à l'ensemble des pays de savane. Aux espaces des céréales se superposent ceux du coton. Culture vivrière et culture de rente sont en général associées dans les exploitations, la succession coton/céréales sur une même parcelle permettant à celui-ci de bénéficier de l'arrière-effet des engrais apportés à celui-là »²².

²² *La régionalisation en Afrique de l'Ouest*, Roland Pourtier, 2003. "Wetter than the Sahel and with that spared from the extreme climatic crises, the Savanna zones form the spine of West Africa. In the 16th century corn was added to the traditional cereals of millet and sorghum. The cultivation, storage, trade and use of these cereals are common to all of the Savanna countries. Cotton cultivation areas are superimposed on cereal cultivation areas. Food crop cultivation and cash crop cultivation are generally associated, the cotton/cereal rotation on the same parcel of land allowing them to benefit from the after effects of the fertiliser provided by previously planted crop".

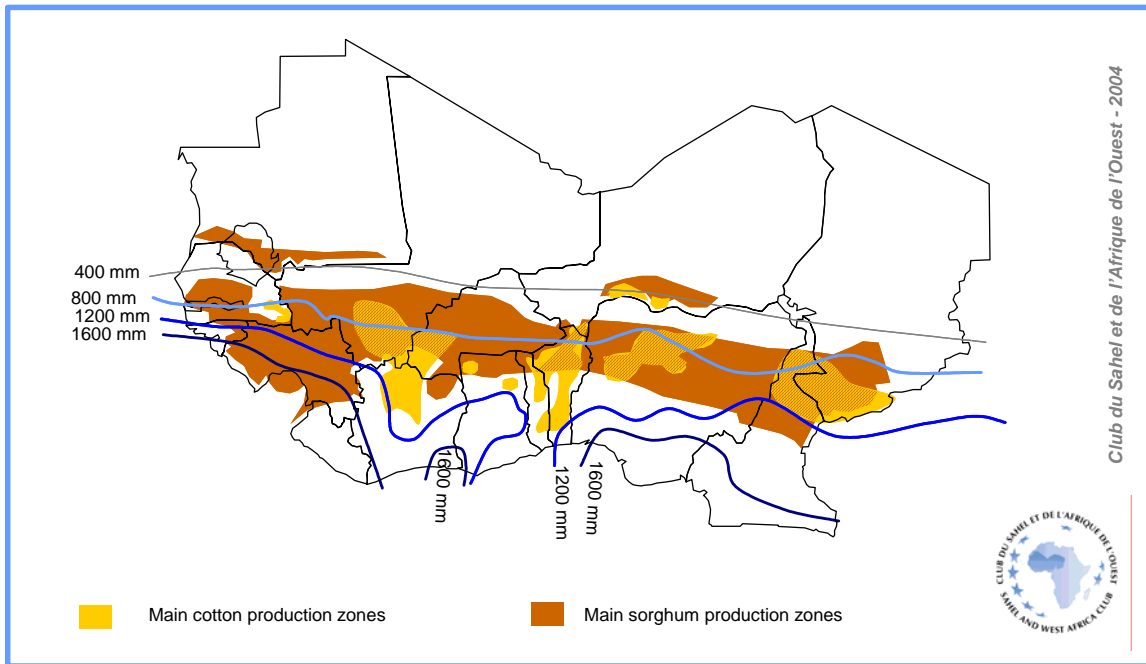
There may indeed be a strong correlation between increased cotton production and increased cereal production. There is evidence from Burkina Faso that the rotation of maize and cotton is favourable for soil fertility. If the fertiliser needed by cotton is applied, better results are observed for maize grown on cotton fields the following year. However, such intensive use of soils and some characteristics of the demand placed by cotton plants on soil nutrients and water can result in soil degradation over time (Hårsmar 2004). The three maps below use FAO data to illustrate the correlation between cotton and cereal production zones in more detail.

Figure 17: Main cotton and maize production zones in West Africa



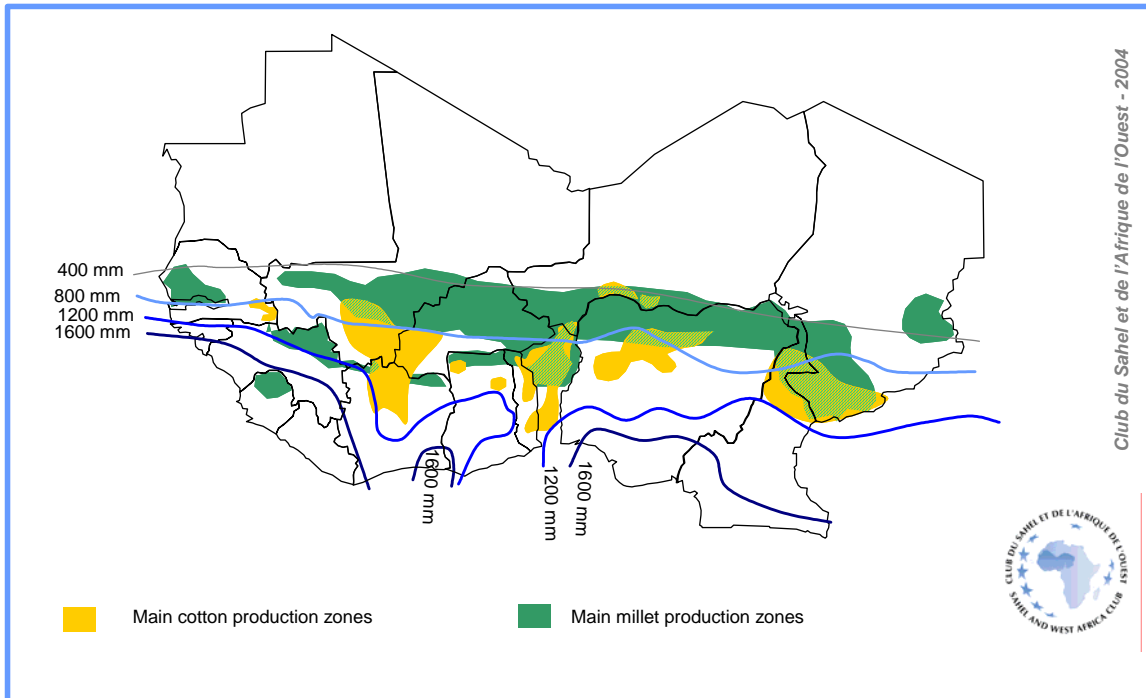
Source: Sahel and West Africa Club/OECD and FAO Smiar

Figure 18: Main cotton and sorghum production zones in West Africa



Source: Sahel and West Africa Club/OECD and FAO Smiar

Figure 19: Main cotton and millet production zones in West Africa

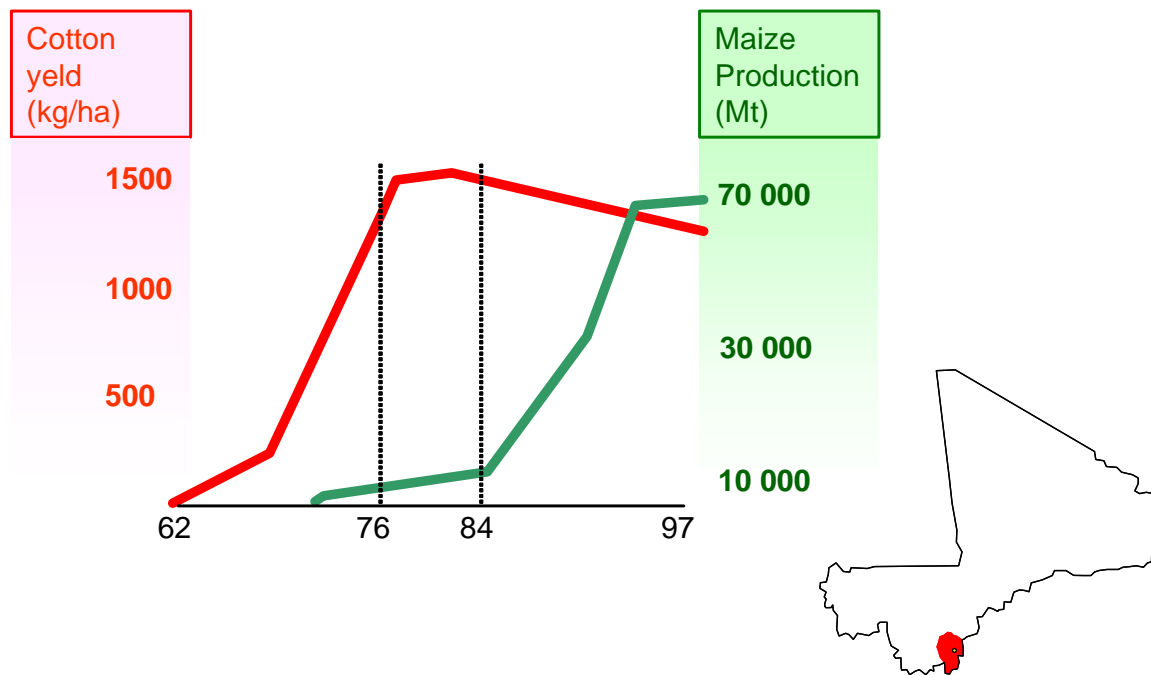


Source: Sahel and West Africa Club/OECD and FAO Smiar

The SWAC Secretariat's "ECOLOC" studies on local economies in Mali's Sikasso zone in the 1990s showed that the loosening of the regulatory aspects of the cotton production support framework in the mid-1980s allowed farmers to freely manage the allocation agricultural inputs. At the same time

the CMDT provided incentives to farmers to increase yields from 200 kg to 1,600 kg over time, encouraged limiting areas sown to cotton and provided fertiliser, which farmers distributed across different farm plots. They began to apply this fertiliser to maize for which there was growing urban demand. Maize then became a major cash crop. Farmers increasingly used their animal-drawn ploughs to increase areas sown. Farmers expanded areas cultivated, spreading the use of animal traction from cotton to other fields, and increasingly integrated crop and livestock activities. Similar patterns were observed in Bobo Dioulasso, Burkina Faso and Korhogo, Côte d'Ivoire: between 1984 and 1997, average farm size in the Sikasso zone expanded from 1 hectare to 3 to 4 ha. Between 1977 and 1997, maize production increased from 10,000 tonnes to 70,000 tonnes per year. At the same time, while yields fell, the area sown for cotton rose from 15,000ha to 78,000ha. However, this trend changed when incentives to farmers were reduced or shifted (Fok, personal communication).

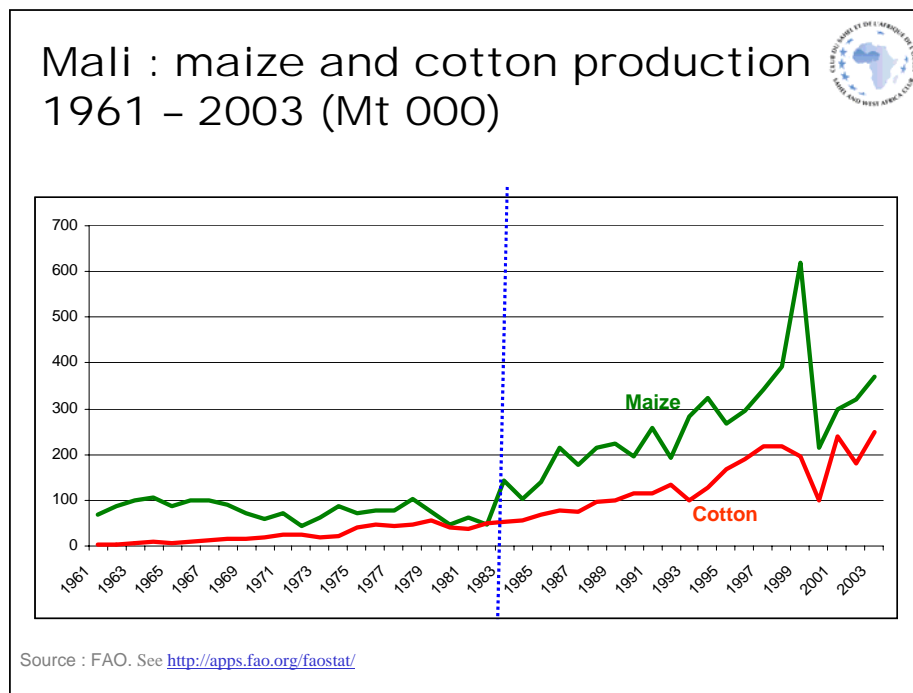
Figure 20: Links between maize and cotton production in Mali: 1962-1997



Source: SWAC/OECD (ECOLOG Study of Sikasso)

The graph above further illustrates the interdependence of cotton and maize production in Sikasso. It shows the remarkable increase in maize and cotton production and the way in which the maize curve closely follows the cotton curve with an initial gap of 10 years yet rapidly narrowing. Confirming the linked trends, maize production also declined when cotton production fell dramatically in 2000 to 2001, largely due to a prolonged strike by cotton producers in dispute with the government over cotton sub-sector reforms. It is important to note that however, maize is produced for African markets where demand is variable and tight. Therefore, it currently remains marginal when compared to cotton as cash income. However, this example illustrates that if the cotton production system is seriously damaged, maize and millet production could also suffer and farmers may be tempted to disengage from the market economy. These strategies would likely reduce overall agricultural surpluses and value added available, thus producing negative impacts on poverty, food security, nutrition.

Figure 21: Trends in cotton and maize production in Sikasso, Mali



This graph, using data from SWAC ECOLOC studies, shows that trends in cotton and maize production have been close and interdependent in Mali's Sikasso zone in recent decades. A major rise in maize production has accompanied rises in cotton production. More recently, the trajectory for maize seems to continue upwards while cotton has stagnated.

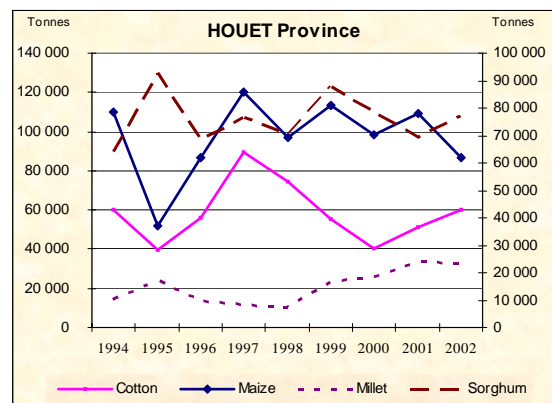
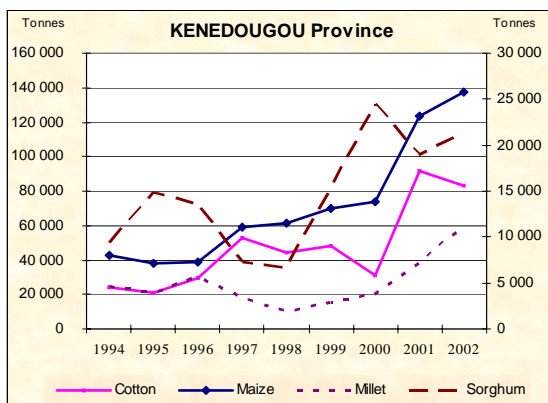
This relationship is not primarily due to State intervention or incentives as these became gradually less important after the mid-1980s. Rather, rapid urban growth, rising demand in neighbouring countries, availability of inputs via the cotton support system, and the favourable relationship between maize and cotton (i.e. the capacity to switch to maize which has higher yields per hectare than other key cereals, thus allowing farmers to allocate more land to cotton) have been key factors behind this increase. A similar relationship has been noted by regional actors in other zones between cotton and traditional food grains such as millet and sorghum although this remains anecdotal. This relationship principally arises through sharing of inputs, availability of infrastructure, technical innovation, access to agricultural services and increased capacity to invest in agriculture due to cotton cash incomes. ***These examples also illustrate that family agriculture can diversify in response to changing incentives and demand when the conditions are right.*** Furthermore, farmers can adjust the level of intensification according to their assessment of incentives and risks at a particular time (cf. Fok *op cit.*).

Agricultural transformation is accompanying this process, with the introduction of crop rotation and mixed farming systems that combine crop and livestock activities, replacing historic forms of itinerant farming. The current challenge is to introduce effective methods of soil regeneration and end fallow. A similar transformation seems to have begun in other parts of the Sahel. ECOLOC studies in Korhogo and Bobo-Dioulasso have also experienced this type of change, with minor differences. Furthermore, according to an independent observer, Gérard Magrin, the combination of a worsening political climate and volatile cotton prices is causing a similar shift in southern Chad. Although the level of urbanisation in this area is low and the capital, N'djamena, is far from producing zones, overall domestic demand for cereals has increased due to growing urban demand from neighbouring countries (e.g. Cameroon and Central African Republic). Chad's "cotton" farmers are producing cereals for these countries, in spite of problems related to distance and poor transport links.

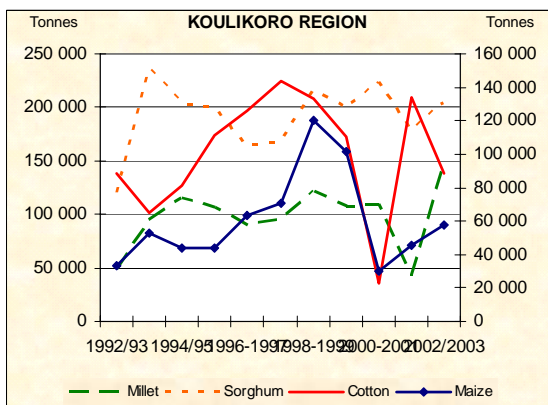
Cotton cultivation seems to have played a determining role in the farming systems of the Sikasso and Bobo-Dioulasso area. It is linked to agricultural diversification as well as to the introduction of new techniques related to use of livestock, principally the introduction of animal traction. In these areas, cotton farming has contributed to the emergence of mixed cropping, specifically: millet, sorghum and, for the last 20 years or so, maize. Indeed, maize has become the crop known to have the best results in association to cotton due to the existence of agricultural service providers that have promoted this crop association, provided access to inputs, support for post harvest activities, and marketing.²³ Data at the Departmental and District level in West Africa can help to illustrate the role of cotton in promoting cereal production – particularly maize, millet and sorghum, which are all key crops for food security. Taking the examples of Benin, Burkina Faso, Mali, the following graphs illustrate the correlation between cotton and cereals at a local level.

Figure 22: Evolution of the production of cotton and cereals in regions of Burkina Faso, Mali and Benin

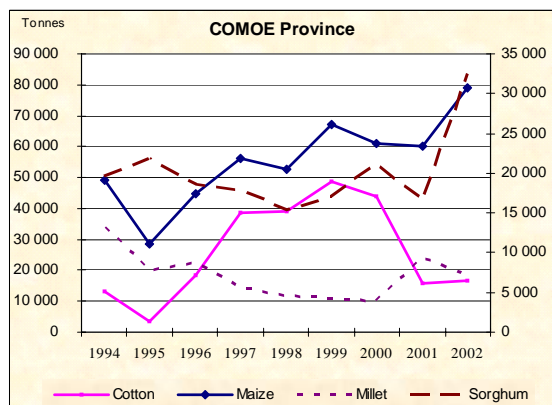
Burkina Faso Provinces



Region in Mali

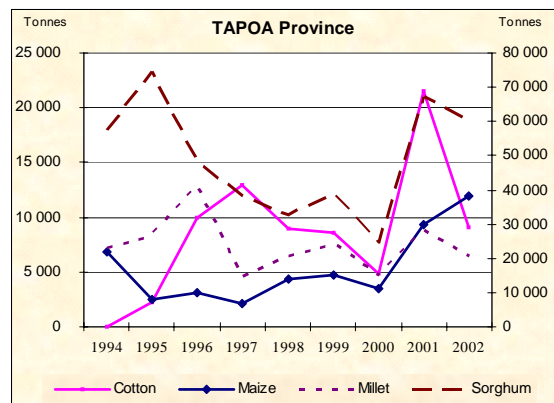
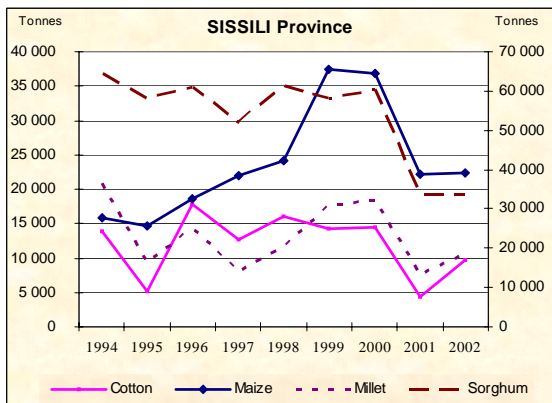


Burkina Faso Province

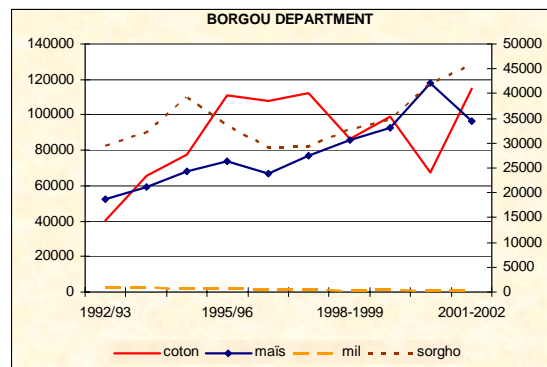
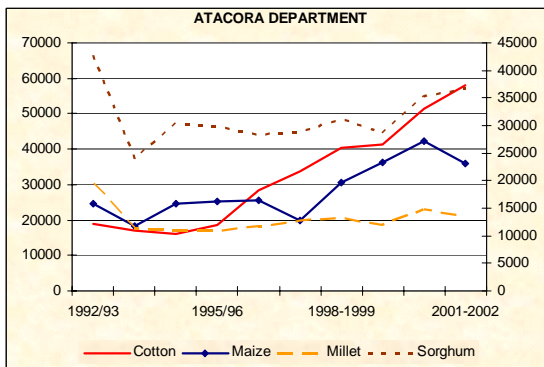


²³ See *Espaces frontières et intégration régionale, le cas de SKBo* by Enda Diapol, published by the SWAC.

Burkina Faso Provinces



Benin Departments



The links between cereal and cotton production differ according to the production zone. In the Sikasso, Korhogo, Bobo Dioulasso areas, the association of cotton and maize has been stronger than in other regions. On the other hand, the cotton/sorghum/millet association seems closer in Burkina Faso's Tapoa and Sissili zones. These associations are continually changing in response to opportunities and constraints in markets, availability and affordability of inputs, and change in the natural and policy environments.

Despite the apparent stimulus cotton production may provide to cereal production in certain zones, links between nutritional status and cotton production are complex. On the one hand, evidence presented here indicates that there has been a positive relationship between cotton production and cash incomes in good years, which should result in an increased capacity of rural households to purchase food. However, a detailed set of field studies undertaken under the Mali Agricultural Growth-Nutrition Linkages Project led by Michigan State University seem to indicate that nutritional status and access to food, particularly by vulnerable groups such as children, might have been lower in some cotton production zones than elsewhere²⁴. One of this Project's studies indicates that up to 50% of children aged from 12 to 17 months suffer from retarded growth due to malnutrition in cotton zones, as opposed some 32% in zones devoted to the cereal production. This is surprising as the cereal production dependent zones, such as Mali, actually have a food production deficit in relation to consumption needs. This study indicates that this problem is in part gender-related: a more important proportion of household revenue tends to be earned by the male head of household in families that produce cotton. Vulnerability to fluctuations in cotton prices (and thus household incomes), lack of nutrition advice and monitoring in health centres or, indeed, sub-optimal food preparation and consumption preferences might also contribute to this situation. Further work is needed to confirm the relationship between nutrition and cotton production, and the underlying causative factors across West Africa.

²⁴ See Tefft, J., et al, 2003 at: <http://www.aec.msu.edu/agecon/fs2/fact/malinutritionfact.htm>

Key questions

- ✓ Are the links between cotton and cereal production dependent on geographical area or agro-climatic zone? Are the key determinant policies, agro-ecological conditions or farmer strategies defined by culture and practices?
- ✓ Is the relationship between pastoralism, livestock rearing, milk production and cotton production always positive across the region? What effects will a decline in cotton production have on livestock production and the availability of milk and meat over the medium- and long-term?
- ✓ What are the relationships between cotton production, access to food and nutrition? Where infant nutritional status is poor in cotton production zones, what are the underlying determinants of this situation? How can an equitable intra-household distribution of the benefits of cotton-based cash incomes be encouraged?

African farmers have demonstrated that they are ready to adapt their livelihood strategies where possible and beneficial, respond to demand and diversify when it is possible to do so and incentives exist. Various proposals have been made for diversification over time such as promoting production of gum Arabic, vegetable fuels, or cashew nuts or diversification strategies combined with water retention methods (cf Fok *op cit.*). However, such diversification may not be possible in many parts of the Sahelian zone and in many cases new activities require initial investment that funders have often failed to support. This will be the case for remote areas poorly connected to urban grain markets. Indeed, there are limited alternatives to cash crops and other income earning opportunities. Even where diversification possibilities are feasible, a long term decline of cotton production could therefore be accompanied, at the local level, with a decline in the cultivation of maize and other associated cereals with perhaps unintended consequences for supply of food grains to urban centres, farmer incomes and food security. At the national level, a decline would threaten the stability of state budgets through the fall in export earnings.

For Sahelian countries and zones more dependent on cotton production, a longer term transition process is probably necessary. This would involve targeted investment over time in economically viable alternative economic activities and creation of new markets, accompanied by a carefully sequenced withdrawal of support for the cotton sub-sector over a period of 10 to 20 years.

The need for a ***gradual process of cotton system reform appears to be necessary in African countries*** given the sub-sector's important contribution to wider agricultural innovation, development and livelihoods, and the continued agricultural support provided to the cotton sub-sector in OECD producer countries, particularly in the US and European countries that may have a downward affect on prices. The North as well as China remain net consumers of cotton most years as they require enormous amounts to satisfy their textile industries hence its agricultural support has minimal downward impact on world cotton (see Table 2, next page).

4.4 Access to infrastructure and services

Cotton production has led to the development of socio-economic infrastructure and farmer services through at least two different approaches. In countries like Mali, what has been called the “cotton system” took shape where cotton companies have historically been very strong. In others, such as Chad, communities could use cotton-related payments to farmers allowing them to invest in local social services.

In countries that have historically had a strong coordinated cotton production system, an elaborate network of producer support services and infrastructure helped facilitate access by producers and in many cases access by the wider community to inputs and extension services, to new skills such as organisational management, health centres, pharmacies, schools, and roads. This is especially the case for the key producers in the CFA Franc zone. These coordinated services and infrastructure were designed to increase and sustain productivity in a strategic sector of the economy and were usually provided by the State or national cotton companies. It was also hoped that this might attract young educated people in urban areas to return to rural areas and invest in rural development, although there is little evidence on whether this has been achieved. The integrated support system has thus contributed to an increase in well-being and human development, and could serve as a model for enhancing the contribution of agriculture to wider development in other zones. A rapid analysis of data available for Mali in the late 1980s implies that there is a correlation between cotton production areas and improved access to social as well as economic and productive services (see tables below).

It could be that the combination of services provided has even been a key stimulus to the link between cereal and cotton production and an agricultural revolution in certain areas. Current reforms in the cotton sub-sector in certain West African countries may lead to a scaling back of these services (see Box on extension services in Mali, below). If there is a collapse of cotton production in response to falling prices and reforms in the provision of services in cotton zones, this could have unintended consequences not only for wider agricultural development but also for human development and the attainment of the Millennium Development Goals. This relationship merits further confirmation through field work on the evolution of livelihoods and access to services in cotton zones compared with non-cotton producing zones in the current period. If access to such services has degenerated, and with it human development indicators, continued investment in such services may be justified.

Further examples from Mali and Chad illustrate the importance of the cotton production support system in providing access to infrastructure and services. Besides supporting agricultural production, cotton companies such as CMDT in Mali provided economic infrastructure (e.g. rural roads) and social infrastructure (e.g. training of producer organisations; health and education services; access to drinking water) with a view to improving the overall productivity of the system and more broadly human development²⁵. The CMDT initially focused on a more narrowly interpreted economic mandate. It was entrusted by the government with this wider function of service provision on the basis of its network of staff, links with poor rural communities and strong external donor support for integrated rural development approaches. Provided to the entire community, these services benefited the livelihoods of more than solely cotton producers themselves. Hence, in 1987 regions such as Koulikoro and Sikasso seemed to be better equipped with socio-economic infrastructure than other regions in Mali, excluding Mali’s capital Bamako. For example, the ratio of the number of inhabitants to school for each dispensary was generally lower in cotton producing regions (see table below). It would be useful to confirm this ratio today after many years of reform, economic adjustment and liberalisation and population growth. Furthermore, it is important to confirm the impacts of reform and disengagement from certain social functions on the overall human development impact of cotton production in these zones.

²⁵ J. S. Zoundi, 2003 :*L’innovation technologique dans le processus de changement structurel de l’agriculture familiale en Afrique de l’Ouest*. SCSSAO Paris.

Table 3: Distribution of social services in Mali (1987)

Regions (1987)	Population	No. of inhabitants/ dispensary	No. inhabitants/s chool	No. inhabitants/ drinking water point	Dispensaries (%)	Schools (%)	Drinking water points (%)
Kayes*	1 066 968	9 198	5 009	82 074	13,86	12,95	1,51
Koulikoro*	1 197 770	4 970	3 103	9 818	28,79	23,47	14,15
Sikasso*	1 310 750	7 490	4 648	15 066	20,91	17,14	10,09
Ségou*	1 339 650	11 450	5 902	6 665	13,98	13,8	23,32
Mopti	1 282 600	11 660	7 329	80 163	13,14	10,64	1,86
Tombouctou	459 316	17 666	7 291	45 932	3,11	3,83	1,16
Gao	380 725	15 229	5 288	38 073	2,99	4,37	1,16
Bamako	658 287	24 381	2 900	1 633	3,22	13,8	46,75
Total	7 696 066	12 755			100	100	100

Source: Étude d'investigation et de diagnostic sur la situation de l'aménagement du territoire au Mali, November 2003

* Cotton producing zones in Mali.

In Chad, the situation is somewhat similar: “for villages in the cotton zone, revenue from cotton is the sole source of community development devoted to the satisfaction of their basic needs and the improvement of their quality of life”²⁶. Community development is based on the use of repayments to producers where these payments represented the only source for farmers to invest in collective resources at the village level: schools, dispensaries, credit groups, stores, water pumps etc. These resources were also available to people who did not produce cotton. Farmers fear that these rebates might disappear with reforms in the cotton sub-sector underway. This would result in less income or resources to maintain or replace community equipment and infrastructure.

However, regarding access to agricultural services, the data is less clear-cut: the cotton company in Burkina Faso, SOFITEX, has had its own extension agents since 1992, numbering some 480 agents for 200,150 cotton producers. That is a ratio of 2 extension agents for 1000 farmers less than the FAO recommended minimum. Even if there are more cotton sub-sector extension agents in Mali now, the ratio to producers is still relatively low with 4 agents per 1000 farmers. Table 4 provides the number of extension agents for the cotton sub-sector in Mali and Niger. This ratio has to be considered in conjunction with the farmers who were trained to play a “relay” extension role to other farmers. In Mali, the technical teams in village associations were expected to provide technical support previously provided by extension agents, to farmers at the local level. Some have argued that this relay farmer system was relatively successful when compared to the weaknesses of government extension systems based on Training and Visit methodology (cf Fok *op.cit*).

Table 4: Extension agents in the Mali cotton system

	1998	1999	2000	2001
Total No. of CMDT technical agents	1187	1160	1126	1191
Total No. of technical agents in the OHVN		153	160	156

Data from Resocot IER/CIRAD, 2003

CMDT: Compagnie Malienne de Développement des Textiles

OHVN: Office de la Haute Vallée du Niger

²⁶ *Analyse de l'impact social et de la pauvreté. Réforme du secteur coton au Tchad. Analyse qualitative ex-ante, Première phase* (no date).

4.5 Institutional development and producer organisations

Another key development is that the historic support for institutional development in cotton areas provided by cotton companies or agencies has facilitated the rise of strong producer organisations. For example, in Burkina Faso, the UNPCB has emerged as an influential national cotton producer organisation ready to represent and advocate the interests of its members in national, regional and international policy fora.

Indeed, producer voice has become increasingly important in national and regional agricultural policy formulation although producer representatives are not consistently involved in decision-making on the cotton sub-sector. However, producer organisations are not all equally structured, close to their membership and able to effectively interact in national, regional or international policy arenas. Indeed, a community development / producer organisation-strengthening approach to cotton development in the FCFA zone has not only enhanced technical and productive capacities in relation to cotton, but has also contributed to improved agricultural practices and overall living conditions. This is due to income from cotton but also secondary activities, e.g.: coordinated marketing of cereals; support for additional economic activities (e.g. CMDT support for livestock development and income generating activities for women in Mali).

4.6 Equity and sustainable development

As noted, where cotton production support structures have existed in West Africa, cotton producers and their families have often benefited from multipliers that reduce vulnerability to poverty, increase cash income, improve access to schools and clinics (via extra earnings or services provided by cotton companies). However, as we have seen above, links between cotton production and nutrition levels have not always been encouraging. Further, the gender, equity and sustainability issues surrounding cotton production and trade are also complex.

The **gender and equity impacts of cotton production** are also worth considering. There are more detailed studies on these aspects elsewhere that will not be cited here. It is worth noting here that the successes related to cotton have led to cotton producers being considered as better-off, having more access to services and more capable of emerging from poverty. The need to continue investment of governmental and development aid in a productive sub-sector such as cotton has been questioned in a policy context where aid and development programmes focus on poverty reduction. Furthermore, there has been some evidence of inefficient resource use by cotton companies, creating the climate for the current emphasis by international finance institutions on the reform and privatisation process in the cotton sub-sector in West Africa. However, while incomes from cotton production have not always been equitably distributed, there is evidence that cotton production and related multipliers produced positive social change in rural areas. Cotton production instigated change that was not always positive, including inter-generational conflict for control of assets and profits, modification of farm holdings and re-distribution or concentration of productive assets. However, women and children have gained in voice, skills and access to assets through the income derived from cotton production and the support system.

The **sustainability** of cotton production is a key consideration. There are three key dimensions to sustainability: economic; environmental; and social sustainability. In the current environmental and international economic context, it would be reasonable to have serious concerns as to the environmental, economic, financial and social sustainability of West African cotton. UNCTAD held a major regional policy workshop involving key international agencies, West African Ministries, private sector and producers on this issue in March 2005. A detailed report was discussed that examined the sustainability of the cotton sub-sector in key cotton producing countries in West Africa: Benin, Burkina Faso, Cameroon,

Chad, Côte d'Ivoire, Mali and Togo²⁷. The study aimed to assess how to optimise the productivity of the cotton-based agricultural production systems in West Africa while maintaining sustainability and proposed a programme to improve the sustainability of cotton production in West and Central Africa.

With regard to environmental sustainability, the damaging health and environmental effects of improper use of chemical pesticides and fertiliser banned products and other inputs were highlighted. The need to switch to organic substances and inputs was underscored, although the economic viability of this approach in the short term is unclear. Clearly, the same levels of production could not be maintained in West Africa if an attempt was made to shift completely to organic production.

While African cotton is generally of good quality and cost competitive, the UNCTAD meeting confirmed that there is much room for improvement in the way the value chain operates, input supply networks, quality assurance and marketing. Given that cotton is an input-intensive crop, the environmental effects of input use need careful consideration in the sub-sector's sustainability. Each area of sustainability needs to be addressed:

- **Social sustainability** (strengthening of cotton producer organisations; increased participation of producers in international value chains; gender equality and equitable access to services and profits related to cotton production, etc.);
- **Economic sustainability** (strengthening access to inputs, supply and marketing thus increasing productivity; developing quality and traceability of products to ensure capacity to sell to international markets and benefit from opportunities offered by fair trade initiatives; increase value-added via, for example, efforts to develop cotton fibre and cotton seed processing activities in West Africa such as oil and animal feed; establishing effective and resilient credit and financing systems, etc.). A sustainable cotton sub sector may, according to some, now depend on increasing the capacity to process cotton fibre in West Africa and the regional trade of finished products.
- **Environmental sustainability** (increasing soil fertility; increasing the use of organic fertilisers and pesticides where feasible; and developing both regional markets for cotton products and international markets for cotton of African origin).

The following issues need to be urgently addressed:

- Deepening the understanding of the complex factors affecting the competitiveness of West African cotton: balancing the effects of agricultural subsidies and price falls against high cost of inputs, a poorer production cost/sale price ratio; falling yields and productivity; inconsistent size of fibres and quality; and the impact of inefficiencies in the cotton support system.
- Addressing environmental and health hazards and shifting to the use of more sustainable integrated pest management techniques;
- Investing in measures to improve the organic status of soils through promoting the use of organic inputs and organic matter and in integrated soil management and crop protection techniques;
- Spreading participatory and consultative approaches to agricultural service delivery and increasing access to agricultural innovation;
- Strengthen the skills and capacities of producers and their organisations;

²⁷ Resources available at : <http://r0.unctad.org/infocomm/anglais/cotton/sitemap.htm> The workshop was entitled 'Amelioration de la durabilité de la production du coton en Afrique de l'Ouest' and the report debated at the workshop was drafted by Peter Ton (Ton 2004).

- Addressing producer indebtedness related to the cost of pre-financing inputs;
- Developing markets for fair trade and organic cotton in the region, but, primarily, in the North;
- Maintaining the State's capacity to perform its regulatory functions and guarantee producer access to agricultural services whether supplied through the public or private sectors.

Despite the importance of addressing these issues related to sustainability, two priorities for action stand out:

- The importance of achieving rapid progress in reducing northern agricultural support measures that can distort prices on international markets; and
- Developing economically viable options for diversification and comprehensive area development strategies that go beyond cotton and agriculture to embrace new rural-urban linkages, as a single sub-sector such as cotton will not be sufficient to provide the growing population in the region with a sustainable route out of poverty.

Key questions

- ✓ What is the most appropriate mix of public-private-producer organisation responsibilities to meet requirements for liberalisation while maintaining the holistic approach to producer support that may best foster innovation processes, productivity and competitiveness of agriculture in West Africa? Can value chain analysis help identify the most effective and complementary roles for these actors in their partnership to dynamise agriculture?
- ✓ How will the cotton sub-sector reform and the CMDT privatisation process affect producer access to agricultural inputs, fertiliser, technology and profitability? What will be the gains in terms of efficiency, market opportunities and incomes? What will be the losses related to the dismantling of the cotton support system? How might changes in access to inputs and innovation, particularly by poorer producers affect the production of food crops, producer livelihoods and broader agricultural development? Who will ensure continued producer access to technical support, inputs and infrastructure? Are there lessons from cotton sub-sector reform processes in other parts of Africa on how to strike the right balance between State and private sector roles? (see perhaps the experience of Mozambique).

V. WEST AFRICAN PERSPECTIVES ON KEY PROBLEMS FACED BY THE COTTON SUB-SECTOR AND POSSIBLE SOLUTIONS

In recent years the SWAC Secretariat has, through meetings, special events and field visits, maintained ongoing consultations with a wide range of regional actors on the priority issues facing the cotton sub-sector in West Africa. This has included governments, regional organisations, NGOs, private sector, producers, etc.) Notwithstanding some competing interests and differing perspectives, there is a high degree of consensus among regional actors on the key stakes regarding the issues facing the cotton sub-sector in West Africa and wider implications for agricultural development. Key points emerging from these consultations merit careful consideration in the development of regional and international initiatives to address the difficulties faced by the African cotton sub-sector in the years to come.

i It is urgent to *find a solution to low prices and price volatility* in order to avoid long term damage to the West African cotton sub-sector. Many producers and traders in the region argue that the West African cotton sub-sector could be irreparably damaged or destroyed in the next 15 to 20 years if fundamental trade and price problems are not addressed. The risks related to prices are compounded by the phenomenon of upstream integration by international cotton traders observed by Michel Fok. According to his analysis, cotton transactions are becoming mainly intra-firm exchanges which can generate deals on prices that hold potential risks for cotton producer countries. Although the problems faced by the cotton sub-sector could be seen as symptomatic of underlying structural problems in the development of African agriculture in the context of integration with the international economy that can only be resolved over time, cotton remains a special case due to its importance to the Sahel and the continued existence of a national support infrastructure in some countries.

To reiterate, from 1997 onward, there was a structural collapse in the price of cotton by approximately 39% between 1997 and 2002 to a rate estimated at below production cost; it bottomed out at 35 cents/pound in 2000, although it has risen to over 50 cents/pound in following years. This has had a major impact on mainly poor producers' incomes and has become a crisis for countries dependent on export revenue. Many argue that this is directly due to the effects of international overproduction directly resulting from production and export subsidies in the North. The level of support to agriculture as a whole in the North is enormous; international subsidies for the cotton sub-sector have been estimated at some \$6 billion per year (Agriculture et Développement Rural, Vol. 11 No.2, 2004). US subsidies to its 25000 cotton farmers have been estimated at \$2-3 billion on average per year since 2000 (\$3.7 billion in 2003). European cotton producers in Greece and Spain have annually received some \$0.7 billion. Table 5 below gives an indication of the scale of production and export subsidies in the major cotton producing countries. ICAC estimated that for sub-Saharan producers as a whole, losses in income linked to subsidies to cotton production on other continents were estimated at \$920 million in 2001/2002 and \$230 million in 2002/2003. The impact on West African countries with a high dependency on cotton, such as Benin, Burkina Faso, Chad and Mali was substantial. It is not surprising that these are the four proponent countries of the cotton initiative at the WTO. (see Townsend, 2004)

Over-production and supply to international markets due to these incentives in the North should directly reduce international prices for cotton to the detriment of West African exporters. To address this, key cotton producer countries in West Africa proposed the elimination of these subsidies over the medium-term and compensation for the losses related to price falls they argue are directly due to subsidies in the short-term. Initially, the amount of compensation demanded by Benin, Burkina Faso, Mali and Chad in 2003 was some \$250 million per year to cover losses due to what they claimed to be the direct price-reducing effect of subsidies. In January 2005 at a conference on cotton in Mali, the West African states reiterated the demand for compensation of \$400 million. While a politically charged issue facing strong resistance from countries providing subsidies, there is clearly a need for international trade negotiations at the WTO under the Doha Development Round and the EU Economic Partnership Agreements to address these complex problems directly and fairly. This question will not be explored in greater detail here as a number of more refined and detailed analyses have been undertaken elsewhere (see e.g. Goreux and Shepherd).

Table 5: Production and export subsidies to the cotton sub-sector in the US, China and EU

A. PRODUCTION SUBSIDIES

	Direct production subsidies (millions USD)		Production (thousands of tonnes)		Production subsidies (cents/kg)	
	2001/02	2002/03	2001/02	2002/03	2001/02	2002/03
US	3001	1996	4420	3747	67,9	53,3
EU	979	757	542	475	180,6	159,4
China	1196	750	5324	4916	22,5	15,3
All countries	5844	3800	21475	19295	-	-

Source: ICAC, 2004 et REPA, 2004 (Cotons d'Afrique face aux Subventions mondiales)

B. EXPORT SUBSIDIES

	Export subsidies (millions USD)		Exports (thousands of tonnes)		Export subsidies (cents/kg)	
	2001/02	2002/03	2001/02	2002/03	2001/02	2002/03
US	100	182	2395	2591	4,2	7,0
EU	-	-	361	334	-	-
China	21	50	81	172	25,9	29,1
All countries	-	-	6477	6600	-	-

Source: ICAC, 2004 et REPA, 2004 (Cotons d'Afrique face aux Subventions mondiales)

ii *Public awareness of the importance of policy coherence in wealthier nations in order to support development and poverty reduction efforts* needs to be raised. Better understanding of the actual impacts of different national and international trade and agricultural policies on Africa at the regional, national and disaggregated levels could provide evidence to support targeted action to address these. The OECD, a number of development agencies, research institutions and NGOs are working on the development of effective methods to analyse policy impacts. These could be applied in field studies in cotton zones.

iii As noted in regional meetings of private sector operators in the cotton sub-sector under the aegis of the Association Cotonnière Africaine (ACA), specific actions are necessary to *enhance the quality, efficiency and competitiveness of West African cotton* on international markets (in terms of cost of inputs and labour, yields, price, etc.).

iv *Opportunities for rural diversification* need to be explored over time and related upstream and downstream infrastructure developed. However, diversification will not solve the current price crisis. However, instant solutions and ready-made alternatives for producers in the rural Sahel are few and far between; options currently available are unlikely to be sufficient, particularly in the Sahel. Time will be required to develop viable economic alternatives. During this period there is a case for continued support to this sector. Excessively rapid reform in West Africa could seriously harm poor producers and destabilise national finances in a number of countries most dependent on cotton.

v *Targeted protection and support for strategic agricultural commodities or sub-sectors such as cotton and use of WTO provisions allowing special treatment* may need to be considered to support the development of West African agriculture and identify areas of comparative advantage in a highly competitive international market. This is necessary given that the international economy is not a level playing field. Agricultural support measures and increased investment may be needed for some time as has been the case in Europe, the US and many Asian countries. However, it is unclear how the costs of such measures can be covered by cash poor African governments. Fostering *regional* markets and processing capacities may be a way forward. Regional organisations such as ECOWAS may have a key role to play in terms of fostering targeted agricultural support measures that go along with international and inter-regional trade agreements.

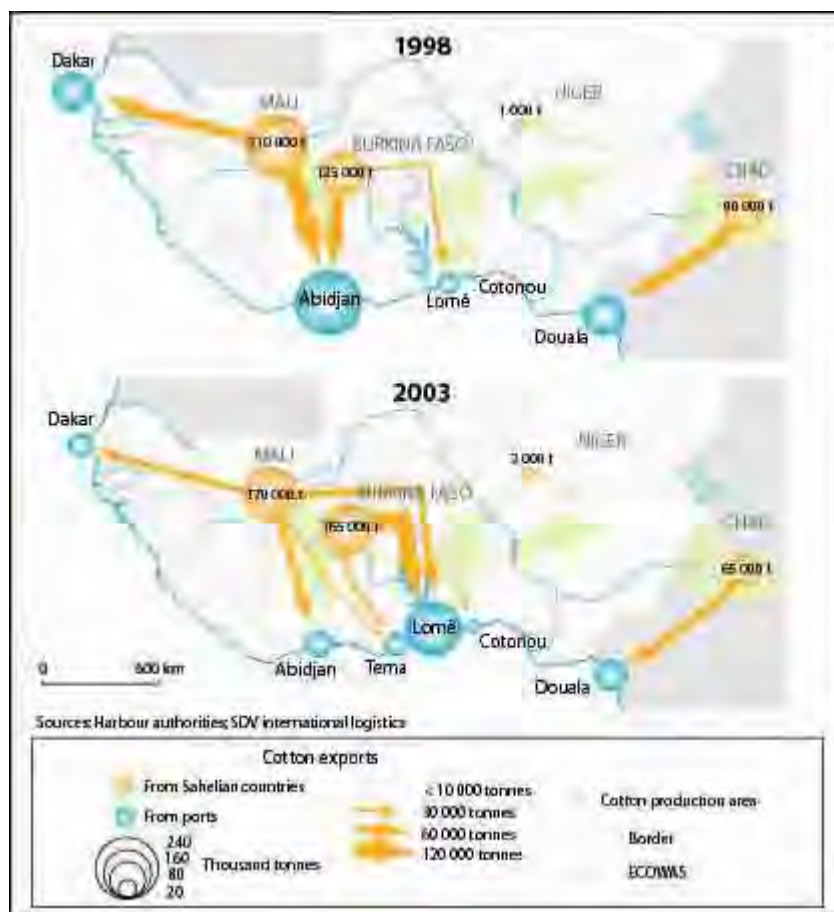
vi *Developing processing capacity in the region* to allow for increased value added to cotton fibre, grain and oil products is a key recommendation of the WAEMU. However, it is unclear who will finance such initiatives, particularly given the economies of scale commanded by other players in the international system. Most West African textiles would not be able to match the price / quality ratio of Chinese or other Asian textiles for a very long time, especially now that the textile trade quota system has been removed. Hence in an open market, West African textiles may not find sufficient markets over the short- and medium-term. Some therefore argue that West Africa has no international comparative advantage in textile production and consider the proposal to develop regional processing capacity and the textile industry as unrealistic. One option so as to be competitive in textiles might be to subsidise the prices of lint sold to domestic mills, but this would be at the expense of prices to growers (pers. comm. Estur). Another option might be the targeted protection of a nascent textile industry as discussed earlier. However, this would be difficult given the regional and international political context and relatively open borders in West Africa.

vii *There is much scepticism in West Africa about the emphasis some international development agencies place on the need to diversify agricultural production, to deepen liberalisation and implement more reforms* in African agriculture. This has been proposed in order to resolve specific problems facing the cotton sub-sector, and also, more broadly, to make African agriculture more productive, efficient and capable of competing in international markets. Indeed, some regional actors ask what new reforms are possible after extensive liberalisation since the 1980s and argue for *more* agricultural support - not removal

of what is left of the cotton support system. Diversification can provide important economic opportunities, as has been demonstrated by some emerging economies in Asia (e.g. Vietnam). However, diversification must be sound and based on real market opportunities; it must not simply promote an exit from cotton and entry into equally vulnerable agricultural commodities. Furthermore, in order to avoid the ‘fallacy of composition’ problem, where too many actors are encouraged to diversify into the same products hence causing a glut on regional and international markets and possible collapse in commodity price, countries need to develop differentiated strategies appropriate to the specific conditions of their economic and environmental context.

viii *Since 2002 the crisis and conflict in Côte d’Ivoire has had a profound impact on the regional economy and trade of neighbouring countries.* Data is emerging to show that the transport and trade routes from landlocked cotton-producing countries to the coastal ports has changed dramatically. Prior to the conflict, Abidjan was the main export port of Sahelian cotton in West Africa. Now, it seems that the routes have changed and most cotton exported from Mali and Burkina Faso is routed through, first, Lomé (Togo), second, Tema (Ghana), and in smaller amounts, via Cotonou (Benin) and Dakar (Senegal). The medium- and long-term economic and social impacts of this re-routing of the cotton trade merit further analysis. Should regional actors consider establishing a protected regional corridor for cotton marketing to protect the interests of the Sahelian cotton producing countries?

Figure 23: Cotton export corridors from Sahelian countries following the start of the Ivorian conflict (based on data from 2003)



(ix) Finally, regional actors continue to highlight the importance of addressing the trade-related aspects of the cotton crisis at the same time as addressing aspects related to the development of agriculture as a whole and the cotton sub-sector, in particular. They continue to underline the need to resolve the thorny issue of the downward impact of northern subsidies on international cotton prices and consider compensatory measures for the losses suffered. While this issue is highly political, and relates to the trade rather than strictly development aspects of cotton as defined by the WTO, it will be critical to find concrete solutions to these problems over the medium-term in order to create a more level playing field for African cotton producers in the international economy.

There are a wide range of proposals to address the development aspects of African cotton and support the development of the cotton sub-sector currently on the table. These include: first, restoring trust between the key non-governmental, private sector and governmental actors in the cotton sub-sector in West Africa and between these actors and the international community; continuing efforts to coordinate the sub-sector, while accepting the different roles of the multiple actors involved; establishing a regional support fund and regional processing capacity; promoting diversification opportunities, particularly into activities that can attract significant value-added from agricultural production; establishing risk management or insurance schemes to help producers address price volatility and seasonality; the establishment of mechanisms to monitor the impact of subsidies; or trade capacity building initiatives.

VI. TEN STRATEGIC QUESTIONS FOR AFRICAN COTTON SUB-SECTOR SUPPORT INITIATIVES TO ADDRESS

Vulnerability of family agriculture to international price shocks

- (i) Family agriculture in Africa appears to be far more vulnerable to price falls on international markets than in other countries, including in Europe and the US. This is linked to interconnections between cotton production and other economic sectors, inadequate policy reform, and the need to maintain diverse livelihood strategies at the household level in order to maintain income levels. How are farmers adapting their strategies to cope with the fall of the world price of cotton? Is there a case for national investment in and support for the regional textile industry for a given period until it can effectively compete with imported products? This merits a regional debate to establish a response that fits with the interests of the diverse actors in the African cotton sub-sector.

Appropriate macro-economic policies to promote economic and sectoral development

- (ii) As cotton is a commodity produced in a key productive sector of African economies, agriculture, are multilateral aid activities or Poverty Reduction Strategies the most appropriate instruments to address the difficulties faced by the cotton sub-sector in West Africa? Or, as this should be a productive economic sub-sector, is it not more appropriate to promote economic development programmes to develop the sub-sector and develop strategies to encourage investment, both public and private?

Agricultural innovation in the cotton sub-sector

- (iii) What is the role of biotechnology in cotton sub-sector development and how should its introduction be regulated at the regional and national levels? What investments in soil fertility and improvement (Soil and Water Conservation etc) are necessary to obtain positive benefits from cotton production over the medium- and long-term?

Agricultural diversification

- (iv) How might agricultural and non-agricultural diversification provide another route other than cotton to adding value in agriculture for small farmers and what types are feasible, particularly in the Sahelian Zone? What concrete initiatives are necessary to support diversification? Who will invest funding for inputs, processing, marketing and transport links? How will producers be able to carry out these activities?
- (v) What types of non-agricultural diversification opportunities are available to Sahelian and West African farmers? Will they really provide a sustainable alternative route to gaining cash income and adding value? Where will the infrastructure come from? Who will invest? How will farmers be able to undertake these activities? What will the State and external partners do to support and create such opportunities?
- (vi) What conditions are required to attract local and foreign investment to support cotton sector development and diversification?

Developing processing capacity: building the regional textile industry

- (vii) The WAEMU proposal on developing regional processing capacity provides an example of what might be done at the regional level. Given past efforts with mixed results, how might support for a new regional textile processing strategy really foster a profitable and competitive textile industry in West Africa, given the existence of economies of scale of other powerful players in the international economy?
- (viii) How will West African producers be able to compete in the international textile market with established low cost textile producers in other regions as international policy regimes change, e.g. the end of textile quotas with the Multi Fibre Agreement (MFA) in early 2005 or the new ACP/EU Economic Partnership Agreements in 2008? How can the relatively successful existing regional traditional textile manufacturing industry be enhanced? (e.g.; Kente and Faso Fani cloth)? Who will invest in processing?

Roles of regional organisations

- (ix) What other strategic roles could the regional organisations such as the WAEMU and ECOWAS play, for example in the areas of: including cotton in the regional agricultural policy; addressing cotton in the Economic Partnership Agreements being negotiated with the EU and in establishing monitoring and regulatory activities on biotechnology? Furthermore, how can the challenges related to cotton be addressed in the regional agricultural policy being developed by ECOWAS (ECOWAP)?

Deepening understanding of the impacts of international and domestic trade and agriculture policies

- (x) What is the nature of domestic and international trade and agriculture policy impacts on African agriculture? What key adaptations of these policies will generate real gains for West African farmers? Will removal of subsidies really produce expected gains? More detailed evidence would be useful on which policies cause harm and to whom. Can we model the impacts of policy change on African farmers or other regions? Proposals to develop a policy impact monitoring mechanism are important here, as will be continued work on impact measurement by a range of international institutions.

Building a transparent mutually beneficial international trade system that addresses the needs of vulnerable West African farmers

- (xi) In principle, both powerful and more vulnerable players in the international economy stand to gain from a functioning, transparent, rules-based trade system. How can options be developed where positive sum games can emerge? How can institutional aspects of negotiation processes be adapted to take account of constraints felt by poorer nations? (e.g.; continued trade capacity building, transparency, etc.)?

VII. CONCLUSIONS

This review shows that cotton continues to have a critical role in producer livelihoods, agricultural development processes, national economic development, maintaining foreign exchange revenues for a large number of West African countries and in the contribution of access to services and poverty reduction. Further field level analysis would be useful to determine the evolving place of cotton in producer livelihood strategies and poverty reduction in the context of price pressures, volatile international markets and privatisation, and to identify the concrete diversification opportunities emerging.

Resolving the cotton crisis that emerged on the international scene with the collapse of the Cancun trade talks in 2003 has now been recognised by all players in the international community as critical so as to avoid the collapse of international trade negotiations undertaken in the context of the Doha “Development Round”. A number of international initiatives have been developed to address both the trade and development dimensions of African cotton since 2004 (e.g. the EC-Africa cotton partnership, the WTO and DAC cotton events in Africa and Paris). Bilateral initiatives and fact-finding missions have also been undertaken by high level policy makers (e.g. West African officials visited the US in mid-2004 and a US mission toured West Africa in early 2005 (see Hussein and Hitimana 2005).

In this context, this paper aims to contribute to mutual understanding of the key stakes, strategic questions and options for appropriate action. It provides impartial data and analysis on the importance of cotton in West Africa, its evolving place in the economy and livelihoods, the challenges facing the sub-sector and action that needs to be taken over the medium- and long-term to avoid the sub-sector’s collapse and related impacts. In order to find a lasting solution to the difficulties faced by the cotton sub-sector and resolve the competing interests of Northern and Southern producers, it is essential to continue to create opportunities for dialogue between different categories of actors in order to identify the most appropriate trade and development related interventions. This dialogue needs to be nurtured with information on the key trends and challenges in West African agriculture and cotton production. It is hoped that this paper contributes to this process.

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