

Cotton Dependence in Burkina Faso: Constraints and Opportunities for Balanced Growth

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Burkina Faso experienced more than a decade of robust growth in gross domestic product (GDP) following the devaluation of its currency in 1994. Average growth of 6 percent a year—nearly double the growth of the previous decade—was led largely by the cotton sector, which accounted for about 60 percent of exports. GDP per capita in Burkina Faso rose from \$214 in 1997 to \$260 in 2007 (\$430 in real terms). Reforms in the cotton sector contributed to rapid growth of this sector, but spillover in terms of structural transformation of the economy has been slow, especially because the increase in cotton production was not productivity-based. While reforms that led to management improvement and institutional upgrading in the cotton sector were necessary, they were not sufficient to translate productivity increases in the cotton sector into economic consolidation, structural transformation, and diversification. Instead, the economy's dependence on cotton has exacerbated growth volatility and vulnerability to exogenous shocks. Despite this, Burkina Faso's economic prospects remain positive due to record cotton prices in the world market, a growing level of gold exports, effective government-led growth strategies, and continuing improvement of the business environment.

ECONOMIC GROWTH IN BURKINA FASO

Burkina Faso's average annual GDP growth rate accelerated from an average 3.8 percent in the 1980s to 6 percent during 1994–2008. The agricultural sector, which accounts for

85 percent of Burkina Faso's active labor force, has been the main driving force of growth. Within agriculture, the cotton sector has shown particular dynamism. The cotton boom during the 2000s lifted cotton's share of GDP from around 4 percent in the 1980s to 12 percent in 2008, contributing to higher GDP growth (figure 6.1).

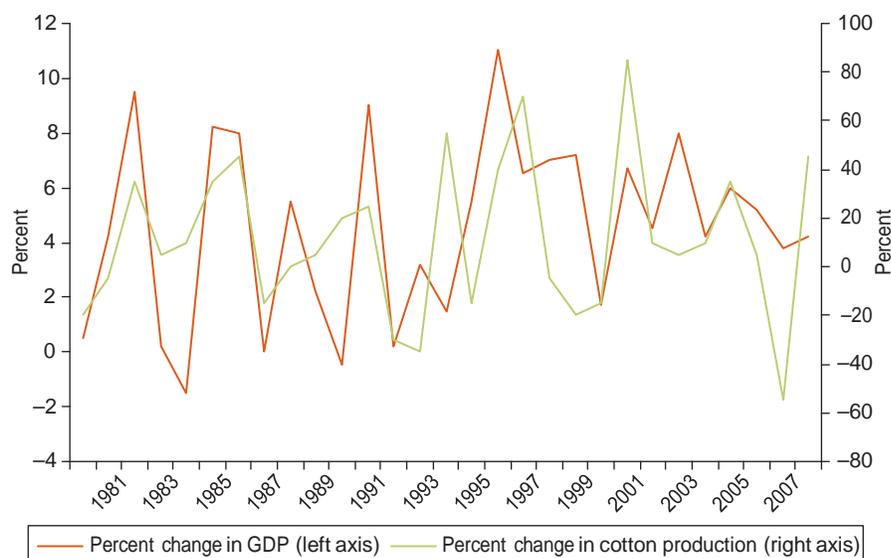
As cotton production in Burkina Faso posted unprecedented growth in the 2000s, the share of cotton earnings in export revenues shot up from less than 40 percent in the 1990s to 85 percent in 2007. At the same time, increased export dependency on cotton has exacerbated vulnerability to exogenous shocks over the past decade, which was characterized by a pattern of falling world cotton prices and rising input prices; a decline in local profitability and farm productivity; and poorly performing cotton firms that lack the ability, information, and resources to adjust to evolving international markets.

Although cotton represents a large proportion of Burkina Faso's exports, its contribution of export earnings to GDP is small (10 percent) and trade openness is limited. Most of the country's growth is from domestic demand.¹ Limited export earnings highlight the unsustainable growth path that Burkina Faso is currently on. Although the country's terms of trade have recovered since the early 2000s, structural deficiencies have led to persistent trade deficits (Savadogo 2009).

EFFECT OF GROWTH ON DEVELOPMENT

Sustained growth has had only a limited effect on poverty reduction in Burkina Faso (World Bank 2009a). Despite

Figure 6.1 Annual Changes in Cotton Production and GDP in Burkina Faso, 1980–2008



Source: World Bank 2010; FAOSTAT, SOFITEX.

sustained annual per capita GDP growth of about 2–3 percent between 1994 and 2003, the national poverty headcount index remained about 45 percent at the end of that period. Granted, estimation of poverty measures has been subject to controversies (including methodological), but no significant effect of growth on poverty reduction has been found at the aggregate level (Lachaud 2005, 2006; Grimm and Gunther 2004). Grimm and Gunther (2004) show that only cotton-producing households increased their expenditures significantly between 1995 and 2003, a finding that attests to the pro-poor growth effect of smallholder cotton production. Several studies find that the impact of Burkina Faso’s GDP growth was mostly neutralized by its population growth, which limited scaled-up investments in infrastructure, education, and health.

Several pieces of research show evidence of poverty reduction in the mid- to late 2000s: the incidence of poverty fell from 46 percent in 2003 to 38.5 percent in 2007; the incidence of poverty in rural areas fell from 52 percent to 44 percent over the same years. There is no evidence, however, that cotton-producing regions had lower incidence of poverty than other rural areas (Grimm and Gunther 2004). The apparent contradiction between pro-poor cotton growth on one hand and the absence of rapid poverty reduction in cotton-producing areas on the other reflects both the effect of political and economic turmoil in Côte d’Ivoire (which reduced remittances to Burkina Faso) and

some amount of poverty convergence across the West African region as a result of the migration of less productive and poorer farmers in cotton regions to more marginal lands (Gray and Kevane 2001). In addition, the increase in cotton production reduced poverty largely among households that were able to increase their per capita agricultural incomes through more productive assets and factors. There was no significant poverty reduction effect as a result of the decline in cereal prices or spillovers into the local economy led by higher domestic demand (Kaminski, Headey, and Bernard 2009).

As global food and fuel price increases took hold in 2007, the purchasing power of households in Burkina Faso declined and the incidence of poverty began to rise again. Cotton households did not escape these negative impacts, and in subsequent years, negative shocks such as flooding have hurt cotton-producing households even more. At the same time, the deceleration in economic growth had a dramatic effect on poverty, alleviation of which requires higher rates of economic growth, mainly in the rural sector (cotton and livestock). Measures of the depth and severity of poverty in Burkina Faso have also increased since 2007.

Although poverty is much higher in rural areas than in urban areas, unemployment in Burkina Faso is largely an urban problem that disproportionately affects women, youth, and highly skilled workers.² The urban unemployment rate fell to 8.6 percent in 2007, down from 13.8 percent in 2003

(16 percent for the labor force ages 15–25, down from 30 percent in 2003). According to the World Bank (2009a), the quality of jobs has not improved, however, and a large proportion of the workforce remains employed in low-paying jobs and jobs that do not provide social benefits. Absorbing young graduates in professional jobs remains a major challenge for the government in the coming years. A new law that promotes more flexibility in the labor market went into effect in 2008, but creation of new jobs has been hampered by the economic slowdown.

Other indicators of social welfare and development have exhibited encouraging signs over the past decade. Education-related infrastructure has been scaled up, with the number of classrooms increasing by 9 percent annually since 2006. Primary school enrollment rates have also risen, reaching 78 percent in 2009. Although regional disparities are significant, gender disparities in enrollment rates have narrowed. These results have been achieved thanks to long-term policy frameworks, substantial increases in public investment in education in the 2000s, and partnerships with the private sector (which has contributed about 15 percent of investment in education infrastructure).

In the health sector, the prevalence of HIV/AIDS has fallen, and progress has been made in containing epidemic and endemic diseases. Both morbidity and mortality rates decreased between the mid-1990s and mid-2000s.

REFORM OF THE COTTON SECTOR

Since the early 1990s Burkina Faso's dependence on cotton has grown as a result of the implementation of institutional reforms, which have brought new land and producers to cotton production (Kaminski and Thomas 2009). Table 6.1 details the chronology of the reforms.

The cotton sector provides income for 15–20 percent of the active labor force of Burkina Faso, supporting 1.5 million–2 million people. It is composed mostly of small farms and smallholders, with a small number of large farms led by rural elite. In 2005 Burkina Faso became the leading West African producer of cotton, ahead of Mali, producing 500,000 to 800,000 tons of seed cotton between 2005 and 2010. In 2006 and 2007, Burkina Faso was the leading cotton producer and exporter among all African countries.

Table 6.1 Chronology of Cotton Reforms in Burkina Faso, 1992–2008

Year(s)	Development
1992–93	Formal commitment made by Société Burkinabé des Fibres et des Textiles (SOFITEX), the national cotton parastatal company, to let producers' representatives participate in reform debate. Contrat-Plan Etat SOFITEX, in which the state committed not to interfere with management of SOFITEX, established a plan to streamline accumulated debts of producers and the parastatal.
1994	Laws pertaining to establishment of farmer groups amended.
1996–99	Free membership introduced in formation of groups of local cotton farmers; the <i>groupements villageois</i> were replaced by market-oriented organizations (<i>groupements de producteurs de coton</i>) at the subvillage level, with implementation of new local governance rules.
1996–2001	National cotton union (<i>Union Nationale des Producteurs du Coton du Burkina</i> , or UNPCB) is established with support of l'Agence Française de Développement, the Burkinabe government, and SOFITEX, based on membership of local groups and their integration into regional unions.
1998	Accord Interprofessionnel signed by SOFITEX, the state, UNPCB, donors, and financial consortium (Caisse Nationale du Crédit Agricole; Banque Internationale pour le Commerce, l'Industrie, et l'Agriculture; Banque Internationale du Burkina), replacing the Contrat-plan and defining the reallocation of responsibilities.
1999	State partially withdraws from the sector through partial privatization of SOFITEX; half of government's share in SOFITEX is transferred to UNPCB.
2000–06	Economic activities—including provision of cereal input credit; management assistance of cotton groups; and participation in quality grading, financial management, and price bargaining—progressively delegated from SOFITEX and the government to UNPCB. The state downsizes support of research and extension services.
2002–06	New players—including private input providers, new regional private cotton monopsonies (SOCOMA, FASOCOTON), and private transport companies—begin operating in the sector.
2004–06	Interprofessional association (AICB) is established with cooperation of cotton farmers, banks, private stakeholders, the government, and research institutes. Association of cotton firms (APROCOB) established to interact with UNPCB.
2006–08	Price-setting mechanism changed to better reflect world price levels; new smoothing fund managed by an independent organization becomes operational in 2008.

Source: Kaminski, Headey, and Bernard 2009.

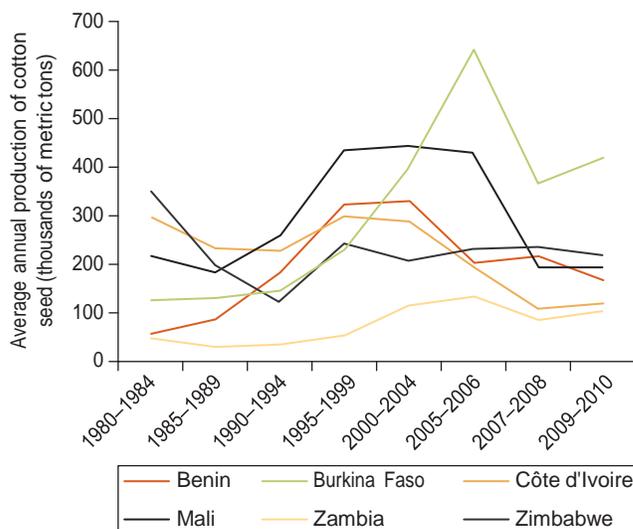
A partial equilibrium analysis based on estimation of counterfactuals suggests that cotton reforms explain two-thirds of the threefold increase in production from 1996 to 2006, which enabled farmers to cultivate more land, raise their incomes, and improve food security (Kaminski, Headey, and Bernard 2009). Figure 6.2 compares average production of seed cotton in Burkina Faso and neighboring West African countries with that in the Southern African countries of Zambia and Zimbabwe, in which conventional privatization and reforms were pursued (table 6.2). As shown in figure 6.2, the volume of cotton production growth in Burkina Faso has been substantially higher than in comparator countries since 2000.

Importantly, increased cotton production in Burkina Faso in recent years was not based on significant productivity increases but rather on accumulation of factors such as land, labor, and inputs. Rising cotton yields also hide the negative dynamic effect resulting from the entry of less able farmers and land in cotton production. Hence, stagnant (even slightly increasing) yields mean that individual performance increased over the last decade. Overall competitiveness of cotton farmers and of the cotton industry increased much more rapidly than in neighboring countries and has been hampered only by low world market prices (which include the depreciating effect of U.S. cotton subsidies) and the appreciation of the euro.

Nevertheless, cotton-led growth faces several challenges. Kaminski, Headey, and Bernard (2009) point out the lack of sustainability of cotton reforms as well as the limitations of the factor-driven Burkinabe economy, especially with regard to the underlying environmental constraints to extensive agricultural growth and the need for the intensification of sustainable agricultural. The cotton sector also faces environmental challenges, including the threat of soil impoverishment and emerging conflicts regarding access to land (Gray and Kevane 2001). These problems notwithstanding, the reform has led to upgraded institutional arrangements between producers and other stakeholders and helped farmers organize in more professional-oriented associations to carry out a growing number of responsibilities (World Bank 2004). All these factors improved the overall management of the sector. The reform has resulted in higher profit-sharing for farmers, better extension services, fairer quality grading, and better access to agricultural inputs with improved credit repayment mechanisms (Kaminski 2007).

The Burkinabe reform model is unique in Sub-Saharan Africa in that it addresses government failures and local realities within the current institutional framework,

Figure 6.2 Seed Cotton Production in Selected Sub-Saharan African Countries, 1980–2010



Source: Kaminski, Headey, and Bernard 2009.

adopting reforms using a cautious, piecemeal approach (Kaminski, Headey, and Bernard 2009). The approach differs substantially from the conventional approaches of other countries, which ignored the specificities of the institutional set-up (Jayne and others 1997). Reinforcing the institutional framework has ensured better market coordination along the value chain and higher levels of contract self-enforcement, the main bottleneck to better performance of cotton industries in the region.³ The reforms in Burkina Faso also countermanded several government interventions and policies that had directly contributed to inefficiency, while reallocation of activities among the new institutions and tightened vertical coordination improved efficiency in the cotton sector.

Burkina Faso's success in creating an efficient cotton value chain stems from the institutional capacity for improved contractual coordination and collective action—something that was achieved through the creation of professional (under free membership principles) cooperatives of cotton growers, which substantially improved cotton marketing and input credit repayment, yielding significant operational cost savings. The improved institutional framework has allowed cotton firms to provide better-quality technical extension services and research in the course of sectoral privatization and ensured coordination of the delivery of public goods, quality control, picking and ginning, and marketing activities. At the same time, access to

Table 6.2 Reforms and Outcomes in Benin and Mali, 1992–2010

Period	Benin		Mali	
	Development	Outcome	Development	Outcome
1992–99	Supervised liberalization of input distribution; progressive establishment of professional and interprofessional associations	Production increased by more than 50 percent	Traditional integrated commodity chain experienced financial troubles and embezzlement	Production increased by more than 50 percent
2000–05	Quasi-competition and dismantlement of parastatal, emergence of several farmers' networks, establishment of financial clearinghouse, disappearance of former professional associations; institutional failures	Slight increase in production; problems in input recovery governance	Producer boycott, opening of reform dialogue; establishment of cotton cooperatives (but limited adoption de facto)	Stagnation, with periodic declines as result of farmers' collective action
2006–10	Move toward a private monopolistic organization with new public regulation and new institutional framework for public-private partnership	Yields and production decreased, stabilizing only recently	Reform process under way, with privatization and convergence toward zoning approach (splitting of parastatal into four private territorial entities linked through newly established interprofessional body)	Production plummeted as a result of delays in and uncertainties surrounding reform; farm profitability declined

Source: Kaminski, Headey, and Bernard 2009.

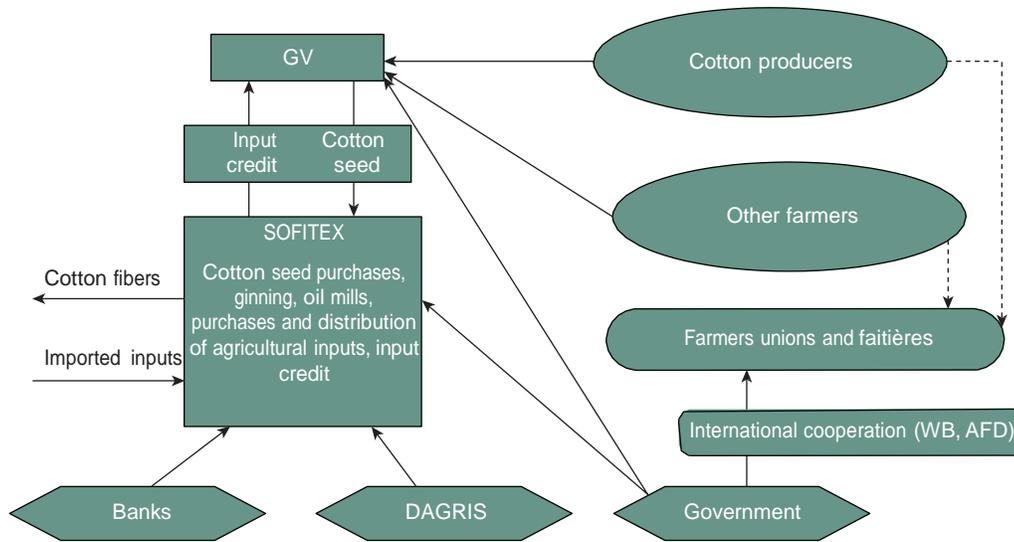
finance and inputs has been eased for smallholder farmers, and transportation services are now provided by the private sector. Figures 6.3 and 6.4 present the main organizational changes.

In the long term, mitigating vulnerability requires that the main stakeholders improve their risk-management strategies and that the government increase the quality of agricultural services provided to farmers (research, extension, and quality grading). There is also a need to invest in human capital in a number of areas. To deal with world market volatility, the new price-determination mechanism—which has suffered from lack of adjustment—has been supplemented by an independently managed smoothing fund. Price and weather risk-management instruments are currently in development. Another risk-mitigation strategy is to moderate U.S. dollar–euro exchange rate volatility (using, for example, the holistic approach proposed by the World Bank 2009a). Input price risk is another substantial risk faced by cotton sector participants. In response, stakeholders are exploring the possibility of establishing an input fund that could lead to as much as 20 percent savings on input procurement costs. Last, stakeholders are working to provide a more adequate set of microfinancial and micro-insurance instruments to farmers to stimulate small-scale farm investment and protect against production risks, including those related to weather. With the sustainable management of smoothing schemes and risk-mitigation

strategies, most of the income vulnerability of cotton could be removed.

Although the Burkinabe cotton story is largely one of removing institutional constraints, further reforms and new policy frameworks are needed. The growth in cotton areas in the early 2000s reflects the lack of alternative (crop) solutions, combined with a strong comparative advantage for cotton growing in a very constrained market environment.⁴ Farmers need a secure access channel to output markets, because marketing is typically too costly for them to do on their own—or they lack the human capital to do so. Because of market failures (incomplete or missing input and rural credit markets), Burkinabe farmers must establish contractual arrangements with downstream stakeholders (processors and traders) to access inputs and credit.⁵ Effective contractual arrangements involve a high degree of market coordination and trust-building relationships. At the same time, Burkina Faso's challenging business environment and poor overall institutional framework discourages entrepreneurs from investing in agrifood or large-scale trade because of unmanageable risks and hidden costs. This lack of investment limits the scope for developing other high-value commodity chains, even where the potential exists. The unsatisfactory outcome is that most tradable agricultural output markets are tied to the cotton sector for accessing inputs and credit, increasing the vulnerability of rural income to changes in the cotton market.

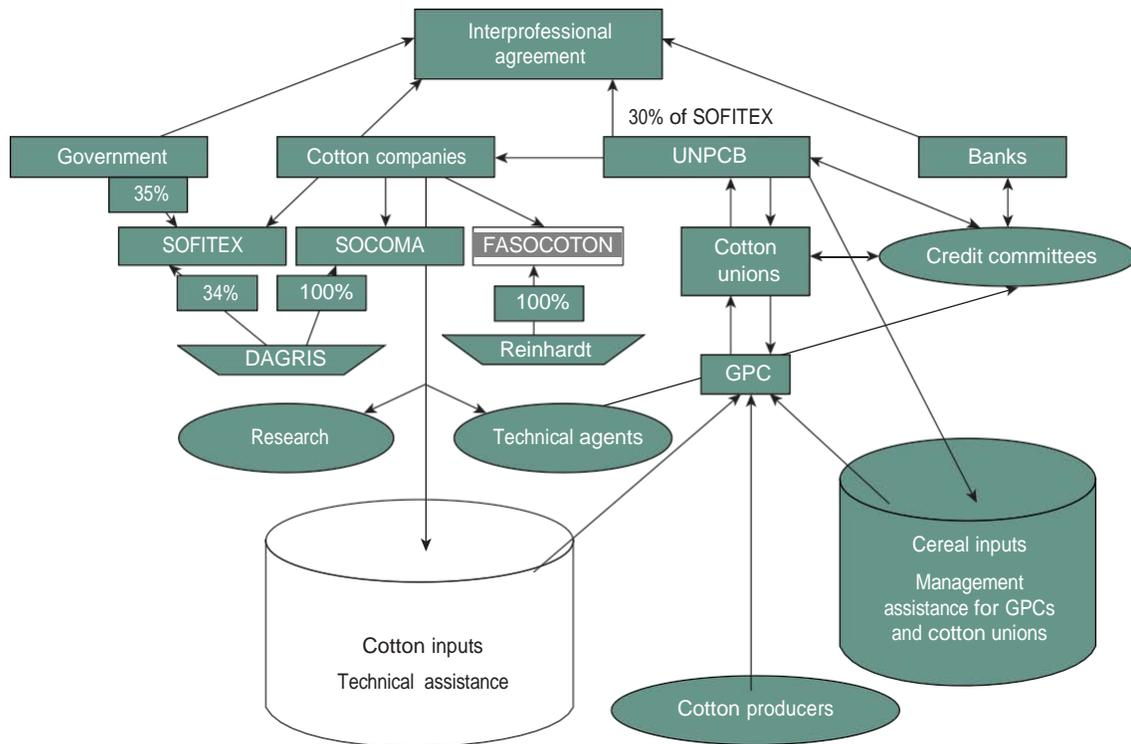
Figure 6.3 Prereform Organizational Model of the Cotton Sector in Burkina Faso



Source: Kaminski 2008.

Note: GV are village groups; AFD is Agence Française de Développement; DAGRIS is Développement des Agro-Industries du Sud (DAGRIS), a French parastatal involved in the agroindustrial sectors of many French-speaking countries.

Figure 6.4 Postreform Organizational Structure of the Cotton Sector in Burkina Faso in 2007



Source: Kaminski 2008.

Note: SOCOMA and FASOCOTON are the regional cotton firms that were granted regional monopolies in the more marginal center and eastern cotton-producing regions. UNPCB is Union Nationale des Producteurs de Coton du Burkina Faso; GPC is Groupement de Producteurs de Coton. DAGRIS is no longer operating in Burkina Faso after its withdrawal from SOFITEX shareholding in 2008. The sector then went through financial restructuring with state recapitalization, which resulted in a substantial reduction of producers' shares in cotton companies' capital (from 30 percent to around 10 percent for SOFITEX).

DRIVERS OF COTTON GROWTH; MARKET AND INSTITUTIONAL ADVANTAGES

Structural characteristics of rural markets partly explain why the Burkinabe economy has remained so dependent on its cotton sector. Historically, the cotton sector has been better supported by institutions, stakeholders, and infrastructure than cereal sectors, which face enormous logistical constraints and high transport costs. The cotton sector in Burkina Faso has benefited from better social organizations of farmers, better public and private institutions, and better infrastructure, ensuring better-functioning markets (Bassett 2001). Infrastructure is funded by cotton revenues through private (local public goods) and public investments. Since the 1980s investments in the cotton sector have also fostered technology adoption, thanks to high-quality research, cooperation between French and local researchers, farmer organizations, and top-down implementation policies.

Technological progress in agricultural sectors is more likely to diffuse when land becomes increasingly scarce (Boserup 1965). Constraints in the farmer environment (liquidity and market failures) hamper the adoption of technology, notably for the poorest households that seek to meet their food-security objective and minimize production risks (Abdoulaye and Lowenberg-DeBoer 2000). Fertilizer use is constrained by lack of experience, access to inputs and capital markets, and learning (Abdoulaye and Sanders 2005).⁶ These problems suggest the need for more extension services, quality control, and research to foster fertilizer use on higher-value crops and efforts to reduce the risk associated with fertilizer use through training and quality standards for lower-value crops. As a result of demographic pressure in and migration into cotton areas, as well as the relatively high value of cotton compared to other crops, cotton has attracted increasing levels of technology, capital, and inputs.

The advantages of growing cotton (rather than other crops) include better access to rural finance and agricultural inputs, thanks to interlinked transactions with powerful agribusinesses (contract farming and other contractual arrangements) and the ability to overcome inherent market failures in the realms of input and rural credit markets. The strong position of these agribusinesses ensures contract self-enforcement (in that it prevents significant room for side-selling). This is not the case in the cereal sector, which is characterized by small traders who lack physical capital.

In Burkina Faso, most reforms in the cotton sector addressed government failures and institutional weaknesses by building the capacity of producers and upgrading institutions

within the commodity chain while the state withdrew from most of its activities. Although most of the other key sectors of the economy—the agricultural input supply chain, energy and other public utilities, and a portion of the financial sector—remained at least partially state controlled until the early 2000s, they have been progressively privatized and liberalized in the years since. All banks are now privately controlled, as are some public utilities and input markets. This completed the privatization and liberalization process that occurred in the trade, transport, and cereals sectors. The evolution of organizational structures in the cotton sector also has created better incentives for farmers and manufacturers and allowed them to benefit from profit-sharing. Apart from these improvements, stakeholders in other agricultural sectors had to incur more economic risks in the course of liberalization (in terms of the profitability of different marketing channels, processing, and retailing activities), although they stand to reap potentially higher financial margins.

Cotton producer organizations have benefited rural civil society and revitalized rural communities in Burkina Faso and neighboring countries (SWAC Secretariat and OECD 2007). Such organizations help farmers establish professional structures and participate as political actors. Governance structure and management capacities are critical to this success, in addition to local social conservatism and other social norms at the village level. As Bernard and others (2008) show, community-oriented organizations are often captured by traditional authorities and local elites; in contrast, when elaborate administrative rules are established, market-oriented organizations are much more democratized and efficient. In the cotton sector, market-based cooperatives of cotton farmers have been established and producers have become significant players in policy making and the public debate. In other rural sectors, by comparison, institutional constraints remain more or less unchanged at the farmer level.

Importantly, cotton provides better risk-management arrangements to producers than do other sectors, especially with regard to price, outlets, and marketing. Cotton producer prices are administratively determined at the beginning of the cropping season and the pricing formula allows for *ristournes* (after-harvest bonus payments) to farmers. In addition, cotton farmers have better access to market information than farmers in other sectors, thanks to their effective organizations and national union, expansion of local infrastructure, and increased use of mobile phones in cotton-producing areas. Better information sharing can also help agribusiness entrepreneurs provide insurance schemes to farmers.

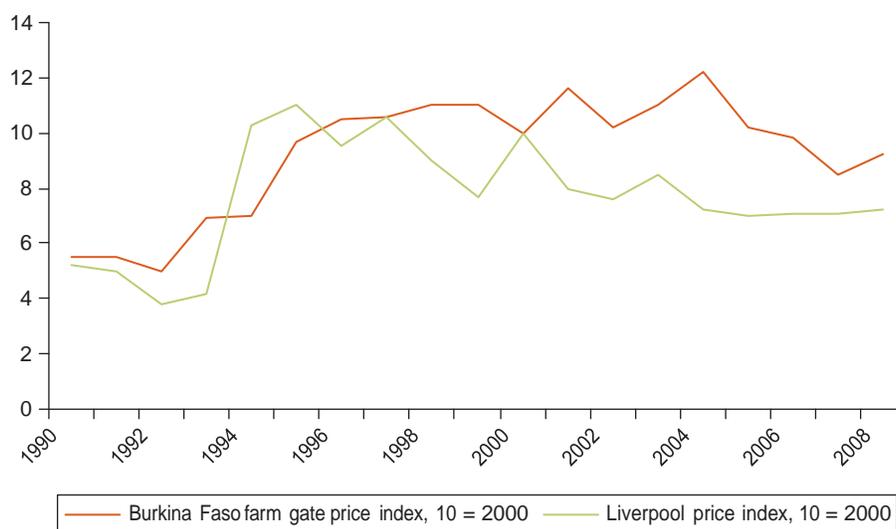
Despite several shortcomings (including the weakness of the farmers' union, corruption, and adjustment lags in the price determination mechanism), the revamped cotton policy framework in Burkina Faso has contributed to an increased concentration of cotton exports and dependency on cotton production at both the national and farm levels. Consensus building was forged by top-down establishment of the cotton union, state authoritarianism, trust-building with foreign partners, and accumulation of social capital at the village level (Kaminski and Bambio 2009). Consensus building followed by institutional innovations built partnerships along the supply chain with the professionalizing of farmers' groups and reinforced their bargaining power. As a result of upgraded institutional and policy frameworks, profit-sharing has evolved in favor of producers, while the management, input procurement and cost recovery, and overall market coordination of the sector has become more efficient, even in the face of the decline in the world price of cotton and the appreciation of the euro against the U.S. dollar. A larger profit share for farmers reinforced production incentives once coordination was improved, contributing to the impressive cotton growth pattern observed in the 2000s (figure 6.5).

Aside from these positive outcomes, the state bailout of SOFITEX and the lack of political sustainability of the cotton policy framework have reduced sectoral efficiency and led to failures in market coordination once the world

price fell in the late 2000s. As a result, smallholders' profitability is threatened and trust in the newly established arrangements and partnerships declined from 2007 to 2009. Indeed, due to a misapplication of the pricing formula in 2006–07, the smoothing fund was depleted and farm gate prices were adjusted downward in 2007–08 once the formula started to be rigorously applied. In addition to growing deficits, SOFITEX had trouble paying farmers and delivering inputs to them on time. Some observers point to management problems in SOFITEX once DAGRIS left the shareholding and the company was recapitalized by the state. But the recent spike in cotton prices, even in the face of higher marketing costs attributable to the political crisis in Côte d'Ivoire, means that financial prospects are optimistic in the mid-run. The expectation of good financial prospects is all the more true since the price-determination mechanism has been in effect (and rigorously applied) over the past five production cycles. Burkinabe farmers' profitability is tightly linked to world prices—with predefined pricing at the beginning of the crop season, they receive roughly 60 percent of the world price of cotton for their crops.

In sum, while growth strategies aimed at economic diversification should be pursued within an adequate policy framework, governance, management, and institutional improvements are still required in the cotton sector if it is to remain a sustainable pillar of the Burkinabe economy.

Figure 6.5 Farm Gate and World Price Indexes of Seed Cotton, 1990–2009



Source: Author, based on monthly data on international prices and exchange rates from data construction from IMF 2010 and Burkina Faso national sources.

Note: The Liverpool cotton price index is the index of world cotton prices. All series were calculated from averages of monthly data covering the period February–January, the production year for Burkina Faso's cotton sector.

COMMODITY DEPENDENCE AND ECONOMIC VULNERABILITY

Over the past decade, GDP growth in West African countries has been derived largely from agriculture (export crops in coastal countries and livestock in landlocked countries) and mining. As many economists, including Hausman, Hwang, and Rodrik (2007), note, export sectors are key to economic growth, as they typically have a cascade of effects on other sectors. However, export earnings cannot compensate for weak internal conditions for sustained growth.

The problematic issue here is commodity dependence. Because of few absolute advantages, poor countries such as Burkina Faso often experience unbalanced growth patterns driven by a restricted number of export commodities traded on very volatile world markets. Furthermore, these commodity markets are characterized by distortive policies and barriers to entry or participation for farmers in developed countries. In addition, production is subject to climatic variability (droughts and floods) and problems of soil fertility. Relying on a few commodities with uncertain profitability leads to economic vulnerability and calls for an in-depth examination of viable economic alternatives.

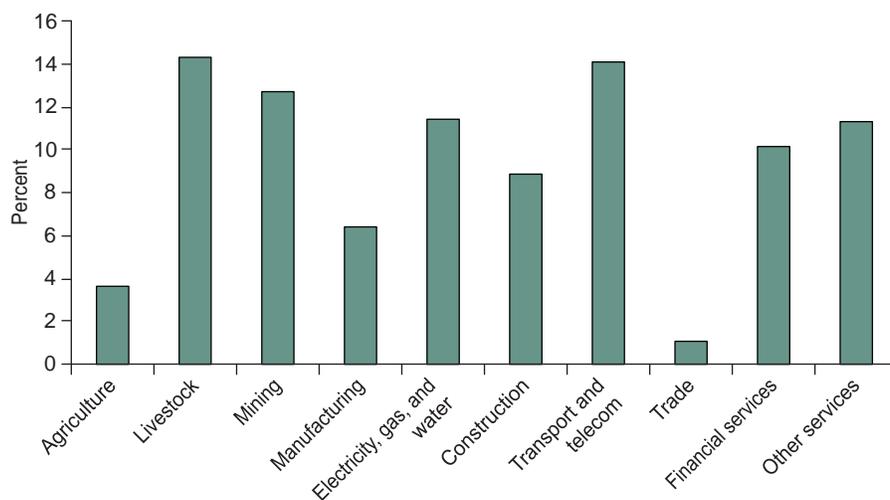
Globally, the outlook for cotton profitability is uncertain because of enduring institutional and governance limitations (despite recent improvements in both areas) and volatile world markets. In addition, cotton sectors sometimes still serve political ends—for example, offering good prices to producers before elections, even if these offers

tend to vanish, and ensuring a minimum amount of agricultural inputs to the noncotton agricultural sectors.

The cotton-led growth of Burkina Faso has been negatively affected by volatile world cotton prices (competing synthetic fibers, cotton subsidies in the United States and Europe) and the appreciation of the euro (World Bank 2009a).⁷ Moreover, increases in production have been driven mainly by increases in factors of production (labor, land, inputs) rather than through increases in total factor productivity. Economic vulnerability from commodity dependence has thus been exacerbated by the nonintensive pattern of growth, which has had a limited effect on overall economic transformation and limited spillovers through domestic demand-led growth. Due to environmental and demographic limitations, this growth path looks to be unsustainable in the long run. In general, the Burkinabe economy is still highly agriculture-oriented with a growing importance of cotton during the late 2000s and increasing importance of the mining sector. Figure 6.6 compares the economic growth of each economic sector over the past decade.

Economic diversification is one of Burkina Faso's national priorities, as stressed in recent official strategic documents. Of particular importance is diversification in the rural sector toward higher-value agricultural exports, such as fruits and vegetables. In the medium term, diversification to manufactured products does not appear necessary for growth. In contrast, increases in the production of higher-value natural-resource-based products are required. Such a shift may raise income levels by developing capacities

Figure 6.6 Real GDP Average Growth, by Economic Sector, 1994–2008



Source: World Bank, CEM Burkina Faso, and IMF 2009.

for manufactured goods together with the capacities of marketing and exporting a diversified basket of primary products. The application of technology to increase cotton profitability should also be encouraged.

Although growth of the cotton sector has been accompanied by some amount of economic diversification, that diversification has not been sufficient to stimulate structural transformation through macroeconomic spillovers. Although cotton provides skills to the other agricultural sectors, the growth of the cotton sector has not brought improvement in labor and land productivity and has not enabled sufficient redistribution of public goods such as education and health. In addition, spillovers of cotton activities to other economic sectors in Burkina Faso are restricted because of the limited industrial nature of cotton growing and its limited size in the rural sector (not more than 20 percent). A natural way to encourage spillovers would be to scale up textile activities. Finally, it is important to recognize that the increase in demand for agricultural inputs from cotton growers themselves has not been met by corresponding increases in local supply. Most agricultural inputs and nonfood goods are produced abroad, limiting transmission of demand increases in the rest of the economy.

Constraints to economic diversification

A number of factors constrain the diversification of Burkina Faso's economy.⁸ Inefficient and incomplete policy reforms, institutions, and investments (in infrastructure, capacity-building, and public goods, for example) are all hindrances to diversification. Yet diversification is clearly a necessity for more sustainable and balanced growth. Macroeconometric studies (Berthelemy 2005) show that diversification indicators positively influence GDP growth rates, notably through increases in total factor productivity.

In general, there is a *U*-shaped relationship between economic concentration in exports (the Herfindahl index) and per capita income (World Bank 2009a). In the low part of the curve (where the relationship is negative) stand low-income countries such as Burkina Faso, characterized by export earnings derived mainly from agriculture (Imbs and Wacziarg 2003). The key role of diversification is to smooth export earnings derived from volatile (agricultural and resources) world markets in developing countries (Massel 1970), which fosters economic structural changes and consolidation. A more sustainable and balanced growth path can be attained by economic diversification and a set of policies and institutions that accompanies the process of

diversification by establishing facilitating conditions. This process involves general policies aimed at building institutions, providing necessary public goods, and loosening economic constraints in areas such as public administration, market imperfections and transaction costs, fiscal and trade policies, and weak governance. Such policies should be combined with sectoral policies according to absolute and comparative identified advantages, emerging champions (World Bank 2009a), and the structural role of key economic sectors (Hirschman 1958). Hence, diversification and specialization may exist side by side because of segmentation of the economy. This is the case for most West African countries, where there is a lack of economic integration between the primary sector (agriculture and mining) and the industrial sector.

The most important challenge for spurring sustainable growth in Burkina Faso lies in increasing total factor productivity, which depends to a large extent on the investment climate. Policies that make it easier to do business, reduce the burden borne by entrepreneurs, and upgrade the institutional framework are worth considering. From an investment climate perspective, Burkina Faso has improved significantly over the past decade, placing it in the midrange of African countries in the World Bank's Doing Business rankings (World Bank 2009b) and other indexes. Yet important bottlenecks remain, such as lack of access to finance and electricity, high tax rates, unfair (on fiscal grounds) practices in the informal sector, corruption, inadequate transportation, lack of access to land, ineffective bureaucracy, lack of technology, inadequate health services, and lack of an educated labor force. These constraints raise labor costs, limiting producers' competitiveness. Large firms in Burkina Faso, however, are roughly as productive as smaller ones (World Bank 2009a), implying that differences in labor productivity are not necessarily a matter of scale efficiency but rather rely on higher capital intensity for larger firms. Indirect and "invisible" costs account for an estimated 8.2 percent of firms' sales in Burkina Faso (table 6.3).

Constraints to technology adoption and diffusion

Promising technologies exist in the rural sector, but low levels of technology adoption and diffusion hamper the process of diversification.⁹ Several underlying constraints are at play. First, diffusion of a new technique or technology requires complementary techniques and inputs, for which extension services and sustainable arrangements to ensure the provision of inputs are needed. Given the market

Table 6.3 Indirect and Invisible Costs as Share of Firms' Sales, Selected Sub-Saharan African Countries (in percent)

Country/year	Indirect costs				Invisible costs				Total indirect and invisible costs
	Transport	Telecommunications	Customs	Losses due to power outages	Cost of manager's time to deal with regulations	Cost of corruption (informal payments to get things done)	Cost of security measures		
Burkina Faso 2006	2.23	0.70	1.63	1.20	0.05	1.48	0.86	8.20	
Benin 2004	—	—	0.48	1.16	0.06	4.27	0.57	6.55	
Mali 2007	1.96	0.86	0.26	1.39	0.05	0.24	0.12	4.60	
Uganda 2006	1.08	0.50	0.52	28.16	0.06	2.18	0.43	32.93	
Zambia 2007	0.61	0.71	0.68	1.79	0.04	0.05	0.93	4.81	

Source: World Bank Enterprise Surveys, 2004–07.

Notes: Estimates are based on at least 15 observations. — = not available.

failures affecting rural credit and agricultural inputs in Burkina Faso, it is understandable that technology diffusion may be constrained.

Apart from institutional and market constraints, technology diffusion and adoption need a clear and consistent policy framework for new marketing strategies, risk-mitigation strategies, or export promotion set-ups to be sustainable and provide the necessary incentives for long-term investment. In the rural sector, Abdoulaye and Sanders (2006) have shown that new marketing strategies (such as the Intsormil project¹⁰) do not ensure sufficient investment incentives if food security policies are inconsistent and do not allow a greater number of farmers to derive more profits during adverse years (removing export quotas, for instance). Technology adoption also relies on comprehensive exchange rate and trade reforms. In the manufacturing and services sectors, policy frameworks are also critical. The needed reforms combined with long-term commitment of the public sector in export promotion and investment strategies should, in turn, facilitate technology diffusion and diversification in higher-value production and exports.

Market constraints: Missing and incomplete markets in the rural sector

Agricultural producers face missing and incomplete markets for their goods. This is especially true for cereal producers. Cereal markets are still characterized by high transaction costs, ineffective institutions, and discriminatory policies, maybe because of their low value to weight ratio and logistical disadvantages (information access, inland freight cost). This notably contrasts with the dynamics of cotton markets. Hence, the transport cost component

of cereal profit margins is significant, meaning variability at producers' gate prices when combined with low market integration. Public investments in market infrastructures have been low, and only some rural cotton producing areas have been unlocked thanks to cotton benefits and the interests of agribusinesses. Not surprisingly, the most integrated cereal markets are the ones located close to the most productive cotton markets, because they benefit from better infrastructures and institutions.

After the liberalization of cereal markets in Burkina Faso, many small-scale traders coexisting with larger private traders have replaced government marketing. However, because of information asymmetries with farmers and the lack of access to reliable information services, traders have a comparative advantage and better information regarding local and central markets, retailers, and processing facilities. Even if this has created competitive emulation, there has been an associated lack of investment in human capital and innovation, few long-term contractual relationships with agribusinesses, and no significant change in access to financial markets. Due to several market failures and institutional weaknesses (contract enforcement), informal traders rely on social networks, rendering competition imperfect (Barrett 1997). In addition, Burkina Faso's network economy—retention of profits among insiders—tends to limit business expansion, as noted by Badiane and others (1997).

Not only do producers face constraints in output markets, which slows down diversification, but they also face constraints with respect to input markets. Hence, the potential for income-enhancing diversification of the rural sector is limited. Input market imperfections result from structural deficiencies such as high transaction costs, liquidity constraints of producers, and asymmetric information.

Lack of well-maintained and high-quality infrastructure also impedes market integration in Burkina Faso, translating into higher market risks borne by producers and traders, together with capacity constraints (risk-management and storage).¹¹ Cost-effective ways to provide infrastructure may use existing infrastructures with the involvement of user communities (mainly for maintenance with own-managed funds). Productivity benefits could be achieved by improving off-road transport and intermediate means of transport with capital-savings techniques for road construction or using labor-based techniques to overcome usual problems related to equipment use and availability in the region. Soft infrastructure, such as information, is also in short supply. Diversification from cotton to other agricultural commodities needs to rely on better market information services and farmer literacy to foster adoption of more profitable crops and techniques.

Institutional constraints

A country's institutional environment is composed of market and nonmarket relationships between different stakeholders. The role of institutions is all the more crucial in Burkina Faso given that markets are subject to structural deficiencies and constraints for participants. Nonmarket institutions define social rules and norms that, in turn, overcome the other market and institutional imperfections. But informal institutions, such as social networks and personal relationships, have been shown to be less efficient than formal ones, and they severely restrict the degree of competition, information, and business expansion.

Supply chains and vertical relationships (regulatory, informal institutions, contract enforcement, information asymmetries). In the formal realm, the institutional structure of many supply chains was deeply reconfigured in the course of structural adjustment plans and sectoral reforms. Vertical relationships now entail more specific arrangements between stakeholders and more coordinated provision of public goods. Stakeholders face more options as marketing channels may be potentially beneficial for them if stakeholders can improve their capacities (information, management, bargaining, storage, infrastructures). However, competition in several sectors can be detrimental because of the persistence of other market failures (Lipsey and Lancaster 1956) and the fact that it can lead to coordination problems regarding the provision of certain public goods,

such as agricultural or industrial innovation and quality grading.

In Burkina Faso organizational structures rely on formal and informal institutions to coordinate the decisions of major players and to regulate the industry. Formal structures include state rules and formal regulations or collective organizations such as producers' associations, partnerships, and farmer unions. The evolution of the regulatory framework in Burkina Faso can be qualified as uneven. Overregulation in several sectors has been quite counterproductive and has notably contributed to restrictive environments, such as in the trade sector. Despite several improvements, there is a persistent lack of confidence in formal institutions, including the legal system. There are no effective institutions dedicated to investment and export promotion, indicating the absence of a long-term strategic vision for economic development and diversification. In contrast, standardization and quality promotion systems are being developed, and business associations are beginning to adopt quality control systems within their marketing systems. Continued improvements in these areas would benefit the whole set of private investors and business expansion.

The institutional environment. Because formal institutions in Burkina Faso face a lack of credibility, many producers and private stakeholders rely on informal institutions, social networks, and personal relationships. However, this poses a problem, since the prevalence of informal institutions weakens the credence of the formal ones.

Informal village norms—such as those for credit, risk, or access to land—also enable local actors to overcome several market constraints. In matters of land access, however, informal norms often entail exclusion of some ethnic groups or difficult access to the fertile or accessible land for some societal groups. Political and ethnic biases in the allocation of land imply allocation inefficiencies. Informal and traditional risk-sharing arrangements provide only imperfect assurance of low effectiveness.

The decentralization of rural development policies in Burkina Faso, together with more participatory approaches, has contributed to a democratization process whereby responsibilities have been gradually transferred from national institutions to newly established local institutions. However, capacity constraints are still very strong.

To improve the business environment, national stakeholders in Burkina Faso have begun exploring various options: public-private partnerships, business associations and interprofessional bodies, information services, and consensus-building institutions. While all of these options

have the potential to improve vertical and contractual relationships within supply and value chains, the experience of building the interprofessional association in the cotton sector was especially encouraging in that it provided a credible institutional framework to the main stakeholders and ensured market coordination while being limited by the predominant position of SOFITEX, which can sometimes impose some decisions on collective management issues (quality grading, input distribution system or regulation, and so on).

Risk management. Along with being a market constraint, risk is an institutional constraint. Inefficiencies in the current institutional arrangements in Burkina Faso require mitigation of business and production risks as well as economic ones. For example, minimizing production risks for all agricultural commodities and livestock requires a better institutional framework. The development of new microinsurance schemes may help farmers facing external shocks to production. Indeed, improved transmission of information about weather conditions would help in the development of weather index microinsurance schemes (as already achieved in Southern Africa), providing farmers with producers' incentives. Another innovative insurance scheme that could be applicable is parametric insurance. Although the development of markets in innovative insurance schemes requires a strong financial framework to be established, enhancing information access through new technologies for information and communication could help spread these schemes.

Political constraints

Constraints to economic diversification also include the ones that come from policy making and that contribute to market and institutional failures. Most of them can be classified as government failures: public governance problems, transparency, democratization, nonbenevolence, corruption, and lack of foresight. Despite substantial improvements in the political environment in Burkina Faso over the past decade, enduring political practices hamper the effectiveness of upgraded policies and the questions of democratization and authoritarianism remain.

Commodity reforms and the political economy of cotton-cereal reforms. Although commodity reforms in many Sub-Saharan African countries have been the subject of criticisms (Akiyama and others 2001), Burkina Faso has been viewed as a positive experience. These suc-

cesses can be attributed to a consistent policy framework in which the state gained credibility with its economic partners, farmers' groups were strengthened, and private arrangements (such as contract farming) were not hindered by second-generation controls. Policy inconsistency remains in the cereal sector, however, in the form of food security policies (lowering agricultural profits of the most efficient farmers), protectionist trade policies (lowering incentives for diversified exports), and restrictions on input markets. Fortunately, these short-lived interventions that were common in the past are increasingly less evident. If needed, they should be decided upon harmoniously at the regional level, one of the purposes of the Comprehensive Africa Agriculture Development Programme (CAADP), an initiative of the New Partnership for Africa's Development (NEPAD) that calls for more harmonized agricultural and trade policies at the regional level in West Africa.

Sufficient agricultural extension services remain a challenge in Burkina Faso. Currently, there is a lack of means, training, and funding for extension services, along with lack of involvement by the state.

Political economy, social contracts, and the urban bias. The political economy of agricultural policies explains the persistence of contradictory policies and incomplete market reforms. Compared to neighboring countries, Burkina Faso stands between the situation of Mali—steady adherence and commitment to market reforms—and that of Benin—de jure reforms and de facto state control with regard to noncotton sectoral policies (the reverse with regard to cotton policies). Private incentives in Burkina Faso have been jeopardized by entrepreneurs' fear of government intervention and by the somewhat volatile political environment. Fewer private sector opportunities create scope for a larger government involvement in markets, which, in turn, fuels this pattern. Therefore, political economy conditions have contributed to constraining agricultural diversification while favoring the cotton sector. These political conditions also apply to the services and industrial sectors in Burkina Faso.

The political environment. Despite several improvements, the political environment in Burkina Faso continues to present constraints in the form of enduring political practices resulting in weak or poor governance, collusion of interests between officials and executives, and lack of political and democratic accountability of political leaders.

CONCLUSION

From an overarching perspective, cotton continues to account for a significant share of exports in Burkina Faso's very concentrated economy. Future global demand for cotton, however, does not appear consistent with an economic strategy in Burkina Faso that relies heavily on cotton exports as a driver for growth, not least because world cotton demand is expected to remain at volatile levels because of imperfect substitution among textile fibers and rising oil prices (oil is used in the production of synthetic fibers). But in the short run, there is a need to maximize cotton revenues and benefit from the historic price swings on the world markets.

A useful approach for Burkina Faso would be to examine other sectors with significant export growth potential, such as gold and livestock. Ramping up exports in these sectors may reduce dependence on cotton incomes. Expanded production and export of other agricultural products (vegetables, fruits, poultry, and rice) and nonprimary commodities may also serve to reduce the economic concentration on cotton.

Even with the potential expansion of other sectors, cotton is likely to continue providing livelihoods for a significant share of Burkina Faso's rural population and to remain important in the national economy. The most urgent concern is to tackle the issue of "sustainable intensification" at the farm gate, together with increasing the cost-effectiveness of cotton farms. Overall, there is a need to consolidate the cotton sector in the course of ongoing reforms and institution building, and to initiate a significant process of economic diversification through the formulation and implementation of growth-enhancing policies aiming to overcome the most relevant constraints. Nonmarket factors, such as the quality and effectiveness of institutions, are also at play, meaning that improvements in the business environment and investment climate would not automatically lead to a scale-up of nontraditional export industries as a prerequisite for structural transformation of the economy.

While policies are moving in the right direction—generalization of GM Bt cotton (genetically modified cotton with *Bacillus thuringiensis* inserted into the seeds) and diffusion of improved agricultural productivity practices (such as irrigation) and soil conservation, improved business environment, implementation of more adequate risk-management instruments and the new accelerated growth strategy, explicit support to growth poles as a means to create faster growth and diversification—removing the

constraints described in this study in Burkina Faso are still of crucial importance. This calls for a policy-led economic transformation induced by structural changes, a consistent policy framework, and institutional innovations. Innovation needs to take place in a range of sectors: agriculture and livestock, mining, trade, tourism, and the food industry.

In the mining sector, the Burkinabe government has recently established a mining law to improve incentives for cost-effectiveness, export promotion, and for informal *orpailleurs*. In the agricultural sector, income-enhancing options exist and are achievable but would not lead to significant changes in the current environment of smallholders and traders, partly because of enduring market imperfections, structural deficiencies, and macroeconomic instabilities. Higher-value production is also of potential interest and has already driven growth and diversification in India and in several countries in Eastern Africa (for example, in horticulture, fruits, and nuts). A strategic set of sequenced actions could be led by officials and local leaders.¹²

Another area in which Burkina Faso has space for reform is trade. Currently, the trade environment in the country is characterized by high tariffs and low market integration. Burkina Faso would also benefit from diversifying its primary products, the production of which is constrained by the scope of development of manufacturing industries (for example, the food industry). Reasons typically invoked for the limited scope of manufacturing in the country include its abundance of land, scarcity of skilled labor, insufficient or poor-quality infrastructure, lack of policy reform, high transaction costs, and mismanaged or uninsured risks (Collier 1998, 2002; Habiyaemye and Ziesemer 2006; Collier and Gunning 1999). A consistent policy framework toward structural transformation should deal with these constraints.

Several of the issues raised in this study are already being addressed by officials and foreign donors in policy formulation and project implementation. Stylized facts, in fact, show that policy makers have been successful in bringing about change in several areas:

- Established priorities: food security, poverty reduction, private investments, and public-private partnerships in infrastructure and human capital.
- Policies for emerging and developing economic sectors
- On-going reforms
- Strategic action plans with donors: special economic zones and planning for employment, competitiveness, and diversification of economic growth poles

- Capacity to improve the institutional framework (for example, the cotton reform) even in the face of external shocks (declining world cotton prices and economic and political crisis in neighboring Côte d'Ivoire)
- Accumulated experience
- Government capacity to react to shocks and resistance to economic turmoil while maintaining the pace of reforms.

The outlook for Burkina Faso—albeit promising—could be made more secure with scaled-up investments in crucial sectors, and deepening market and political reforms. As such, the road is half-traveled. Burkina Faso is still at the stage of establishing policy and institutional frameworks. Governance has mixed records, despite progress in areas such as public investments. Demographic growth is a key challenge but the way government is responding to it, rather than hiding behind cultural values and norms, may be viewed as a success. Creating and using fiscal space in the near future, coping with demographic growth, and pursuing reforms will all be crucial. Key investments in infrastructure (first priority) and in human development (second priority) will be the cornerstone of subsequent development. While progress thus far has been in the right direction, it must be complemented by sector-specific policies in line with structural economic change and better promotion of private investment and exports. Several further improvements in the public administration and the political systems are also expected. Indeed, internal political sustainability of the policymaking and decision processes is a necessary condition for successful policy-led development and reforms (Rodrik 1996).

Finally, in the course of market reforms in Burkina Faso, policy makers should bear in mind that removing market imperfections (with investments in infrastructure to reduce transaction costs) needs to be done very carefully. As Lipsey and Lancaster (1956) note, the persistence of other market failures may have an adverse effect even after imperfections are removed. Timing of market and institutional reforms and infrastructure investment should proceed accordingly.

NOTES

1. Other significant sources of export earnings are livestock and gold.
2. The higher incidence of poverty in rural areas is disputable, because the official poverty line established by the Institut National de la Statistique et de la Démographie (INSD) in 2003 places too much weight on the prices of necessary goods (such as staples and water) relative to the

weights used to construct the urban CPI (Grimm and Gunther 2004).

3. Market coordination is essential to ensure the delivery of crucial public goods (inputs and credit) in an incomplete market environment. More competition broadens the scope for strategic defaulting on input credit and side-selling (selling outside the contractual arrangement to another company) and reduces the incentives to provide public goods, such as research or extension services.

4. This phenomenon explains the rise in the Herfindahl index from 0.2 to 0.6.

5. Cotton inputs are provided by ginning companies, which also directly purchase and gin seed cotton; inputs have been subsidized lately by the government.

6. The use of fertilizer increases with roads and rainfall.

7. Cotton production still ensures most cash earnings for farmers as well as most of their inputs and credit for other crop productions. Cotton earnings also provide funds for increasing capacities of smallholders' unions, agricultural extension services and research. The strong linkages between cotton and other crop productions must be borne in mind while not forgetting agronomic and economic complementarities that are harnessed in a very constrained environment for farmers.

8. *Economic diversification* is defined here as the process of progressive enlargement of the number of goods produced in an economy without a decline in productivity.

9. Promising technologies include integrated livestock-crop farming systems; soil conservation; greening programs; small-irrigation schemes; intercropping and alley cropping; pest management; early cultivars for rain-fed rice, millet, and sorghum; and new generations of maize varieties (Kaminski 2008).

10. They involve the widespread use of inventory credit, agroprocessing of traditional cereals such as millet, producers-processors contracts in the poultry industry, and so on.

11. As noted by Platteau (1996), infrastructural constraints are a major cause of the low long-run supply response of farmers to price incentives, notably for transport and communications. Although tax reforms and infrastructure investment both compete for public funds, their effects are complementary and differently impact producers.

12. The mitigation of agricultural incomes' vulnerability to weather and external shocks is a key strategy through income-enhancing diversification under intensified farming systems for selected products (comparative advantages and market/trade potential), an improved business environment to encourage private sector investment (decreasing transaction, financial, labor, and energy costs), and an improved trade environment (infrastructures, export promotion, market integration, and quality standards).

BIBLIOGRAPHY

- Abdoulaye, T., and J. Lowenberg-DeBoer. 2000. "Intensification of Sahelian Farming Systems: Evidence from Niger." *Agricultural Systems* 64 (2): 67–81.
- Abdoulaye, T., and J. H. Sanders, 2005. "Stages and Determinants of Fertilizer Use in Semiarid African Agriculture: The Niger Experience." *Agricultural Economics* 32: 167–79.
- . 2006. "New Technologies, Marketing Strategies and Public Food Policy for Traditional Food Crops: Millet in Niger." *Agricultural Systems* 90: 279–92.
- African Economic Outlook. n.d. "Burkina Faso." <http://www.africaneconomicoutlook.org/en/countries/west-africa/burkina-faso/>.
- Akiyama, T., J. Baffes, D. Larson, and P. Varangis. 2001. *Commodity Markets Reforms: Lessons of Two Decades*. Washington, DC: World Bank.
- Badiane, O., F. Goletti, M. Kherallah, P. Berry, K. Govindan, P. Gruhn, and M. Mendoza. 1997. *Agricultural Input and Output Marketing Reforms in African Countries: Final Report*. Washington, DC: International Food Policy Research Institute.
- Barrett, C. B. 1997. "Food Marketing Liberalization and Trader Entry: Evidence from Madagascar." *World Development* 25 (5): 763–77.
- Bassett, T. 2001. *The Peasant Cotton Revolution in West Africa, Côte d'Ivoire, 1880–1995*. Cambridge: Cambridge University Press.
- Bernard, T., M-H. Collion, A. de Janvry, P. Rondot, and E. Sadoulet. 2008. "Do Village Organizations Make a Difference in African Rural Development? A Study for Senegal and Burkina Faso." *World Development* 36 (11): 2188–204.
- Berthelemy J-C. 2005. "Commerce international et diversification économique." *Revue d'Economie Politique* 115 (5): 591–611.
- Boserup, E. 1965. *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure*. Chicago: Aldine.
- Boughton, D., and T. Reardon. 1997. "Will Promotion of Coarse Grain Processing Turn the Tide for Traditional Cereals in the Sahel? Recent Empirical Evidence from Mali." *Food Policy* 22: 307–16.
- Collier, P. 1998. "Globalization: Implications for Africa." In *Trade Reform and Regional Integration in Africa*, ed. Z. Iqbal and M. S. Khan. IMF Institute, International Monetary Fund, Washington, DC.
- . 2002. *Primary Commodity Dependence and Africa's Future*. Washington, DC: World Bank.
- Collier, P., and J. W. Gunning. 1999. "Why Has Africa Grown Slowly?" *Journal of Economic Perspectives* 13 (3): 3–22.
- Conley, T. G., and C. R. Udry. 2000. "Learning about a New Technology: Pineapple in Ghana." Yale Economic Growth Center Working Paper 817, New Haven, CT.
- Coulter, J., A. Goodland, A. Tallontire, and R. Stringfellow. 1999. *Marrying Farmer Cooperation and Contract Farming for Agricultural Service Provision in a Liberalizing SSA*. ODI Natural Resources Perspectives, 48, Overseas Development Institute, London.
- Fafchamps, M. 2004. *Market Institutions in Sub-Saharan Africa: Theory and Evidence*. Cambridge, MA: MIT Press.
- Foster, A. D., and M. R. Rosenzweig. 1995. "Learning by Doing and Learning from Others: Human Capital and Technical Change in Agriculture." *Journal of Political Economy* 103 (6): 1176–1209.
- Gray, Leslie C., and Michael Kevane. 2001. "Evolving Tenure Rights and Agricultural Intensification in Southwestern Burkina Faso." *World Development* 29 (4): 573–87.
- Grimm, M., and I. Gunther. 2004. "How to Achieve Poor Growth in a Poor Economy? The Case of Burkina Faso." Working paper, University of Göttingen, Germany.
- Habiyaremye, A., and T. Ziesemer, 2006. "Absorptive Capacity and Export Diversification in Sub-Saharan African Countries." UNU-MERIT Working Paper Series. United Nations University, Maastricht Economic and Social Research and Training Centre on Innovation and Technology, Maastricht, the Netherlands.
- Hausmann, R., J. Hwang, and D. Rodrik. 2007. "What You Export Matters." *Journal of Economic Growth* 12 (1): 1–25.
- Hausmann, R., and B. Klinger. 2006. "Structural Transformation and Patterns of Comparative Advantage in the Product Space." CID Working Paper, Center for International Development, Harvard University, Cambridge, MA.
- Hirschman, A. 1958. *The Strategy of Economic Development*. New Haven, CT: Yale University Press.
- Imbs, J., and R. Wacziarg. 2003. "Stages of Diversification." *American Economic Review* 93 (1): 63–86.
- IMF (International Monetary Fund). 2007. *Burkina Faso. Propositions de réformes fiscales: Simplification, équité et efficacité*. Washington, DC.
- . 2008. *Burkina Faso: Third Review Under the Three-Year Arrangement under the Poverty Reduction and Growth Facility*. Washington, DC.
- . 2009. Burkina Faso: "Third Review under the Three-Year Arrangement under the Poverty Reduction and Growth Facility. Staff Report." Press Release on the Executive Board Discussion. IMF Country Report No. 09/38, Washington, DC (January).
- Jayne, T., and S. Jones. 1997. "Food Marketing and Pricing Policy in Eastern and Southern Africa: A Survey." *World Development* 25: 1505–27.

- Jayne, T., J. D. Shaffer, J. M. Staatz, and T. Reardon. 1997. "Improving the Impact of Market Reform on Agricultural Productivity in Africa: How Institutional Design Makes a Difference." MSU International Development Working Paper 66, Michigan State University, East Lansing, MI.
- Jones, S. 1998. *Liberalised Food Marketing In Developing Countries: Key Policy Problems*. Oxford Policy Management.
- Kaminski, Jonathan. 2007. "Interlinked Agreements and the Institutional Reform in the Cotton Sector of Burkina Faso." Working paper, Atelier de Recherche Quantitative Appliquée au Développement Économique, Toulouse School of Economics, Toulouse, France.
- . 2008. "Cotton-Cereal Systems in West and Central Africa: Opportunities and Constraints for Revenue-Raising Diversification and Marketing Strategies." FAO All-ACP Background Paper, European Union, Rome.
- Kaminski, J., and Y. Bambio. 2009. "The Cotton Puzzle in Burkina Faso: Local Realities versus Official Statements." Paper presented at the annual meeting of the African Studies Association, New Orleans, LA.
- Kaminski, J., D. Headey, and T. Bernard. 2009. "Navigating through Reforms: Cotton in Burkina Faso." In *Millions Fed: Proven Successes in Agricultural Development*. Washington, DC: International Food Policy Research Institute.
- Kaminski, J., and A. Thomas. 2009. "Land Use, Production Growth, and the Institutional Environment of Smallholders: Evidence from Burkinabe Farmers." CAER-LERNA Working Paper, Hebrew University, Jerusalem, and Institut National de la Recherche Agronomique, Toulouse School of Economics, Toulouse France.
- Labaste, Patrick. 2009. Background paper for the Country Economic Memorandum. World Bank, Washington, DC.
- Lachaud, J-P. 2005. "A la recherche de l'insaisissable dynamique de pauvreté au Burkina Faso. Une nouvelle évidence empirique." Document de travail 117, Centre d'Economie du Développement de l'Université Montesquieu Bordeaux IV, Bordeaux, France.
- . 2006. "La croissance pro-pauvres au Burkina Faso. L'éviction partielle de l'axiome d'anonymat en présence de données transversales." Document de travail du département de l'école d'économie du développement, l'Université Montesquieu Bordeaux IV, Bordeaux, France.
- Lipsey, R. G., and K. Lancaster. 1956. "The General Theory of Second Best." *Review of Economic Studies* 24 (1): 11–32.
- Massel, B. F. 1970. "Export Instability and Economic Structure." *American Economic Review* 60 (4): 618–30.
- McMahon, G., and N. J. Ouédraogo. 2009. "Ouagadougou, Burkina Faso." Draft mining chapter for Country Economic Memorandum. World Bank, Washington, DC.
- Moseley, W. G., and L. Gray, eds. 2008. *Hanging by a Thread: Cotton, Globalization, and Poverty in Africa*. Athens, OH: Ohio University Press.
- Newbery, J. 1989. "The Theory of Food Price Stabilization." *Economic Journal* 99: 1065–82.
- Pinkney, T. C. 1993. "Is Market Liberalization Compatible with Food Security? Storage, Trade, Price Policies for Maize in Southern Africa." In *Agricultural Policy Reforms and Regional Market Integration in Malawi, Zambia and Zimbabwe*, ed. A. Valdés and K. Muir-Leresche. Washington, DC: International Food Policy Research Institute.
- Platteau, J-P. 1996. "Physical Infrastructure as a Constraint on Agricultural Growth: The Case of Sub-Saharan Africa." *Oxford Development Studies* 24 (3): 189–219.
- . 2007. "Constraints on African Economic Growth: The Institutional Legacy." Paper presented at the first IERC conference, "The Economic Performance of Civilizations: Roles of Culture, Religion, and the Law," University of Southern California, Los Angeles.
- Reardon, T. 1993. "Cereals Demand in the Sahel and Potential Impacts of Regional Cereals Protection." *World Development* 21 (1): 17–35.
- Reij, C., G. Tappan, and M. Smale, 2009. "Re-Greening the Sahel: Farmer-Led Innovation in Burkina Faso and Niger." In *Millions Fed: Proven Successes in Agricultural Development*. Washington, DC: International Food Policy Research Institute.
- Rodrik, D. 1996. "Understanding Economic Policy Reform." *Journal of Economic Literature* 34 (1): 9–41.
- Savadogo, K. 2009. Le contexte macroéconomique. Background paper for the Burkina Faso Country Economic Memorandum. World Bank, Washington, DC.
- Stringfellow, R., J. Coulter, A. Hussain, T. Lucey, and C. McKone. 1997. "Improving the Access of Smallholders to Agricultural Services in Sub-Saharan Africa." *Small Enterprise Development* 8 (3): 35–41.
- Stringfellow, R., J. Coulter, T. Lucey, C. McKone, and A. Hussain. 1996. *The Provision of Agricultural Services through Self-Help in Sub-Saharan Africa*. Research report R6117CA, Natural Resources Institute, Chatham, United Kingdom.
- SWAC Secretariat, and OECD (Organisation for Economic Co-operation and Development). 2007. "Economic and Social Importance of Cotton Production and Trade in West Africa: Role of Cotton in Regional Development, Trade and Livelihoods." Working Paper, Paris.
- Teravaninthorn, S., and G. Raballand. 2008. *Transport Prices and Costs in Africa. A Review of the International Corridors*. Washington, DC: World Bank.
- Tschirley, D., C. Poulton, and P. Labaste, eds. 2009. *Organization and Performance of Cotton Sectors in Africa*.

- Learning from Reform Experience*. Washington, DC: World Bank.
- World Bank. 2004. "Cotton Cultivation in Burkina Faso: A 30-Year Success Story." Paper presented at the conference "Scaling up Poverty Reduction, a Global Learning Process," Shanghai.
- . 2007a. *Burkina Faso: The Challenge of Export Diversification for a Landlocked Country. Diagnostic Trade Integration Study for the Integrated Framework Program*. Washington, DC.
- . 2007b. *World Development Indicators*. Washington, DC: World Bank.
- . 2008. *World Development Indicators*. Washington, DC: World Bank.
- . 2009a. *Burkina Faso: Country Economic Memorandum. Promoting Growth, Competitiveness and Diversification*. Washington, DC.
- . 2009b. *Doing Business 2009*. Washington, DC: World Bank.
- . 2010. *World Development Indicators*. Washington, DC: World Bank.
- . Various years. *Enterprise Surveys*. Washington, DC.
- Yanggen, D., K. Kelly, T. Reardon, and A. Naseem. 1998. "Incentives for Fertilizer Use in Sub-Saharan Africa: A Review of Empirical Evidence on Fertilizer Response and Profitability." Michigan State University Working Paper 70, East Lansing, MI.