

One of the pillars of rural development in francophone Africa, the cotton sector serves as a principal motor of economic development, generating benefits to farmers, rural communities, private traders, cotton companies, and national governments. Grown in rotation with coarse grains under rainfed conditions, the cotton sector in Mali has historically been managed by vertically integrated, state-supported cotton companies. With a guaranteed price and market for seed cotton, access to inputs and equipment on credit, and improved varieties developed by the cotton-supported regional research system, cotton households have traditionally been the most prosperous in rural Mali. Currently 30 percent of Malian households cultivate cotton. Their cotton profits have enabled them to build up their agricultural assets, particularly oxen and plows, making them likewise the nation's most productive cereal producers. Cotton is Mali's number two export and foreign exchange earner (after gold), and it contributes 15 percent of total government revenues and 8 percent of gross domestic product (GDP). Government and farmers alike consider cotton a strategic industry.

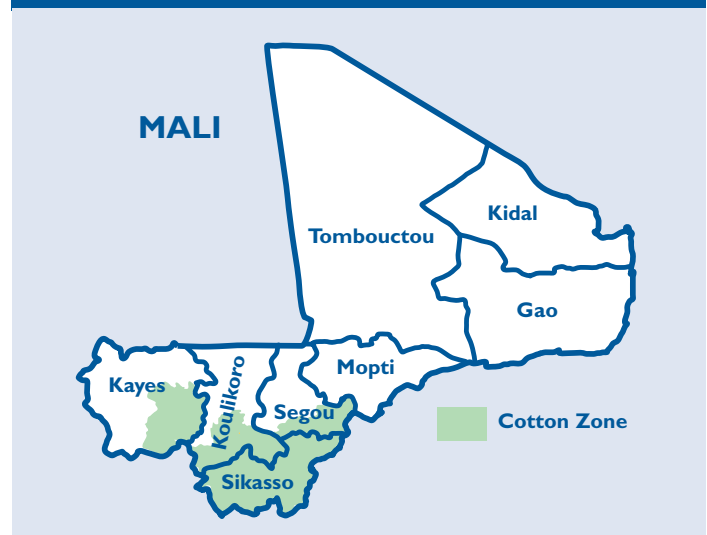
### IMPACT

- **Production.** Cotton production has grown at a compound annual growth rate of more than 9 percent for the past 40 years (Figure 1). Currently, 30 percent of Mali's households grow cotton.

- **Equity.** Most smallholders in Mali's cotton zones (Figure 2) grow cotton. They earn higher incomes and invest more in agriculture than smallholders in other zones. These additional resources enable cotton farmers to produce up to 70 percent more cereals per capita than non-cotton farmers.

- **Sustainability.** The vertically integrated, state-owned

Figure 2—Cotton-producing zones of Mali

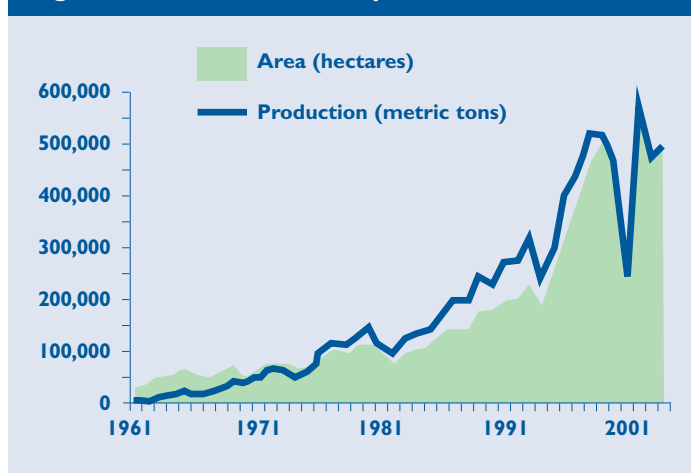


CMDT (Compagnie Malienne pour le Développement des Fibres Textiles) that supports Malian cotton farmers has attempted to stabilize farmer prices and, to some extent, insulate them from world price fluctuations. In recent years the CMDT has provided a recurrent subsidy of about US\$0.025 per pound (6 percent of world price), far lower than the US\$0.235 per pound subsidy received by U.S. cotton farmers. Difficulties encountered in maintaining corporate governance and controlling cost inflation over the past five years have contributed to an erosion of farmers' confidence in the CMDT as well as the overall competitiveness of cotton production in Mali. These problems have contributed to debate over the most effective type of institutional structures needed to achieve sector objectives. Environmentally, questions also have arisen about soil fertility management and possible soil mining in some locations. The growing resistance to pesticides and need for more concentrated, costlier formulations to reverse declining yield trends will need to be balanced with the growing concerns over their negative effects on human health.

### DRIVERS OF CHANGE

- **Vertically integrated support for smallholders.** The CMDT supplies inputs, extension support, and a guaranteed market for smallholder cotton production in Mali. The integrated approach used across the CFA franc zone begins with a regional varietal breeding and agronomic research program that links Mali's Rural Economy Institute in a network of CFA franc zone countries harmonized by France's Centre de coopération internationale en recherche agronomique pour le développement (CIRAD). In addition to supplying inputs (seeds, fertilizer,

Figure 1—Cotton area and production: 1960–2003



and pesticides) on credit and facilitating the acquisition of animal traction equipment, the CMDT uses an extensive network of field agents to closely monitor all phases of production. A monopolist, the CMDT guarantees the purchase of farmers' seed cotton at panterritorial prices (announced before planting) and assures credit reimbursement. It controls collection, ginning, baling, and export.

• **Devaluation.** During the early 1990s, throughout West Africa's CFA franc zone, the guaranteed exchange rate pegged to the French franc led to steady overvaluation of the CFA franc and consequent erosion of farmgate cotton prices. The devaluation of 1994 led to a 40 percent increase in real farmgate prices, a doubling of area planted, and a subsequent twofold rise in seed cotton production over the next five years, returning production to its historic upward trend (Figure 1).

## KEY LESSONS FOR BUILDING FUTURE SUCCESSES

• **Vertical models of smallholder support.** The Malian cotton model exemplifies the common vertical support system for smallholder agriculture, in which a single entity supplies inputs (usually on credit) in return for guaranteed marketing of the output, from which input costs can be deducted. Though historically a public sector model in Mali, private companies elsewhere have adopted the same outgrower systems for cotton and other export crops. Questions about the inefficiency and high cost of Mali's public sector model have led to recent, highly contentious debates about possible privatization of the system in Mali and elsewhere in francophone Africa. The vertical model offers one of the very few available for providing sustainable input credits to smallholders. It addresses the issues of aggregation and organization, thereby helping smallholders gain access to international markets. Yet the model fails in the case of domestic foodcrops, and it depends critically on some form of farmer organization, competition among buyers, or countervailing political power to ensure that farmers get fair treatment from large exporters.

• **Farmer organization.** The rise of the cotton producers' union (Syndicat des Producteurs de Coton et Vivriers, SYCOV) has helped to broker fairer negotiations between farmers and the CMDT, providing small farmers with a collective means of expressing their views. In 1974 the CMDT established Associations Villageoises (AV)—village-based farmer organizations—to deal with farmer complaints of unfair cotton grading and weighing practices. Growing farmer involvement in managing village-level cotton activities (inputs, seed cotton assembly) laid the groundwork for greater farmer participation in the operational management of the sector (such as farmer representatives being signatory to performance contracts with the government and CMDT). These experiences, combined with the opportunities created by the grassroots democracy wave in the early 1990s, contributed to the creation of the farmer's union (SYCOV) in 1991.

• **Farm subsidies in countries of the Organization for Economic Cooperation and Development (OECD).** Heavy

subsidies to cotton farmers in the United States currently depress world prices by about US\$0.11 per pound. If these subsidies were removed and the price increase transmitted to Malian farmers, the typical farm would increase earnings by 30 percent. In this case, trade reform by the OECD would prove more powerful than aid in improving African farmer welfare. But without the additional investment and institutional evolution that lead to improvement in productivity at all stages of the supply chain, Malian cotton will continue to be vulnerable to competitive pressures and world market price fluctuations.

• **Soil fertility management.** Over the past 40 years, two-thirds of Mali's cotton production growth has come from area expansion and the remaining one-third from increasing yield. The past pattern of extensification, in which farmers reduce fallow periods and apply insufficient quantities of organic fertilizers, has contributed to declining soil fertility. As area expansion becomes increasingly infeasible, in Mali as elsewhere in Africa, increasing attention will need to be devoted to maintaining soil fertility.

• **Benefits of regional collaboration.** In both research and marketing, Mali has benefited from collaboration with regional cotton networks that have achieved important scale economies for many small countries in the region. In cotton breeding, Mali's national agricultural research program at the Institut d'Economie Rurale (IER) is linked to a regional network of other West and Central African breeding programs managed by CIRAD that facilitates cross-country exchange of new varieties. In fact, only one of the six major cotton varieties grown in Mali during the past 40 years was originally developed by Mali's national research system. In marketing as well, the CMDT benefits from regional cooperation through its continued close association with Dagrif, formerly known as the Compagnie Française de Développement des Textiles (CFDT), which managed Mali's cotton sector until 1974 and still retains 40 percent ownership in the CMDT. Dagrif not only provides technical expertise for the Malian ginning operations, but also markets the bulk of Mali's cotton through its marketing arm, COPACO. CMDT can thus develop a market identity for Malian cotton while at the same time benefiting from economies of scale that would not otherwise be possible for a single small country. Given obvious spillovers of agroclimatic zones across contiguous African countries, this model of regional collaboration in research and marketing illustrates key benefits that could be applied to many other agricultural commodities—bananas, cassava, maize, beans, and livestock, for example. ■

For further reading see J. Bingen, "Prospects for Development and Democracy in West Africa: Agrarian Politics in Mali," in *Democracy and Development in Mali*, edited by J. Bingen, D. Robinson, and J. M. Staatz (East Lansing, MI, USA: Michigan State University Press, 2000); J. Tefft, "Mali's White Revolution: Smallholder Cotton from 1960 to 2003," Background Paper No. 4 for the conference "Successes in African Agriculture: Building for the Future," Pretoria, South Africa, December 1–3, 2003.

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