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Cotton Production in Burkina Faso: International Rhetoric versus Local Realities

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VOICES RANGING FROM the editorial page of the *New York Times* to organizations such as Oxfam and the presidents of Burkina Faso and Mali have argued that U.S. cotton subsidies depress world cotton prices and hurt African farmers. These policies deny West African countries their comparative advantage in cotton, which they can produce more cheaply and with lower environmental impacts than farmers in the United States. Some have gone as far as phrasing this as a national security issue; editorials in the *New York Times* and the *Wall Street Journal* have suggested that removing subsidies would have a strong auxiliary benefit by defusing a potential source of "feverish anti-Americanism."[1]

Unlike the United States, where large corporate farmers dominate production, small farmers grow cotton in West Africa. Small changes in cotton prices have significant implications for poverty rates in a region that is consistently ranked as the world's poorest. A study undertaken by International Food Policy Research Institute researchers in Benin indicates that reductions in farm-level prices result in increases in rural poverty (Minot and Daniels 2002). The International Cotton Advisory Committee predicts that if the United States removed subsidies, cotton prices would increase between 6 and 11 cents per pound (ICAC, cited in Baffes 2004).

While debates about international pricing policies and subsidies are extremely important for farmers in West Africa, they are not the only relevant debates regarding cotton production there. Local farmers in Burkina Faso have a distinctly different view of cotton affairs.[2] Instead of concern over international battles over cotton prices, their concerns are decidedly local. For many farmers in Burkina Faso, cotton is the only way to become wealthy. While they would favor increases in world prices, they are troubled by how cotton policy is being implemented in Burkina Faso, particularly about government determinations of cotton prices, high levels of corruption in cotton marketing and transport, high levels of indebtedness and late payments to farmers. Farmers also highlighted the difficulty of fitting cotton—a crop that requires high levels of inputs, both chemical and labor—into a production system where labor is constrained and access to fertile land is declining. Finally, farmers are concerned about pesticide use. Pesticides, while used at nowhere near the levels typical of wealthier countries, affect environmental health in Burkina Faso because of how they are applied.

The Evolution of Cotton Production in Burkina Faso

Despite recent fluctuations in world cotton prices and controversies over agricultural subsidies, cotton production has taken off in West Africa in the past twenty years. The share of world production by four West Africa countries—Burkina Faso, Benin, Côte d'Ivoire and Mali—has increased from 2.4 percent in the early 1980s to 9.4 percent in the period from 2000 to 2003. Burkina alone saw its share of world cotton exports increase from 0.5 percent to 2.3 percent during this same twenty-year period (Baffes 2004).

In Burkina Faso most cotton production occurs in the southwestern part of the country in an area referred to as the *zone cotonnière.* Cotton is extremely important to Burkina Faso, accounting for 40 percent of exports in Burkina Faso and 5 percent of GNP. Since the 1980s, cotton fiber production, area under cotton production, and cotton yield per hectare have all increased. Figure 2.1 shows how total

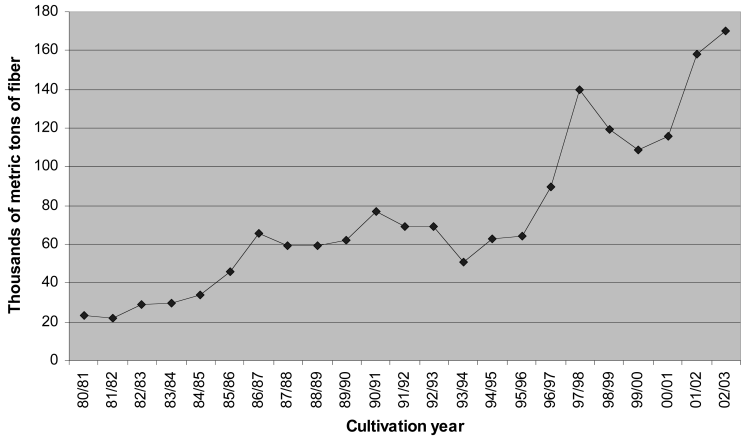

FIG. 2.1. Total cotton fiber production, Burkina Faso. (World Bank, 2003)

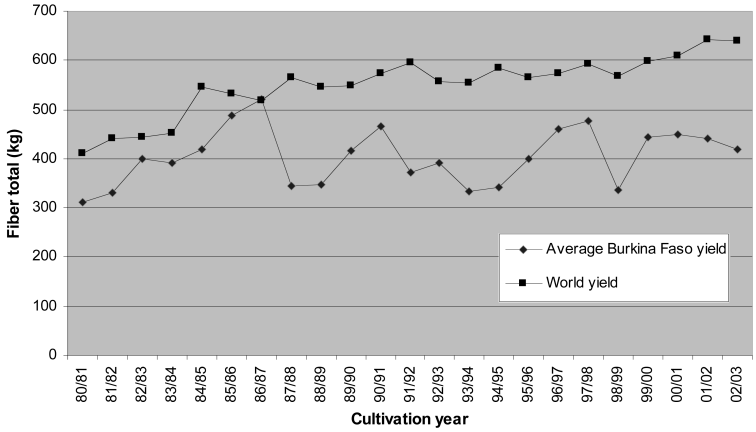

FIG. 2.2. Yield of cotton fiber per hectare. (World Bank, 2003)

cotton fiber production has increased in Burkina Faso, rising from 23,000 metric tons in 1981 to 170,000 tonnes in 2003. However, figure 2.2 demonstrates that yields per hectare have not increased at the same magnitude, increasing by only 35.5 percent during the same period. Thus, most of the increase in Burkina is coming from an expansion of the area under production (fig. 2.3), which increased from 74,000 hectares in 1981 to 406,000 hectares in 2003.

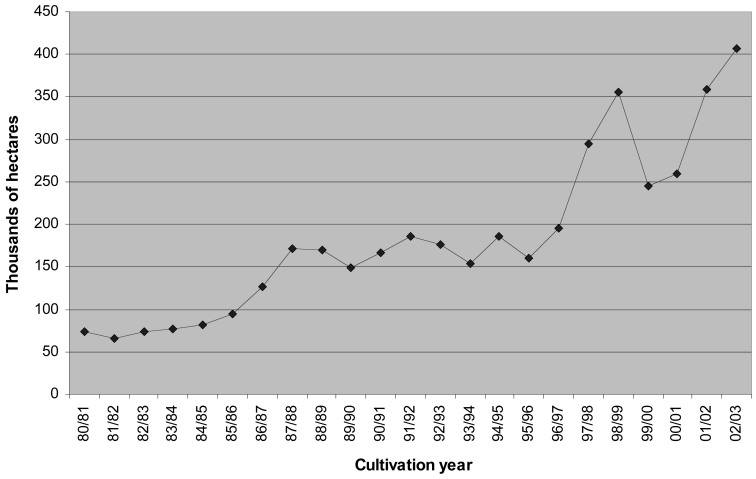

FIG. 2.3. Total area planted in cotton, Burkina Faso. (World Bank, 2003)

This recent growth in cotton production does not reflect the long history of cotton production in Burkina Faso. In the precolonial period, cotton was an important local crop. It was grown on a very small scale, generally by women, who grew cotton in fields alongside "sauce" condiments, such as peppers and okra, and other modern-day cash crops such as tobacco. Production was low and primarily used at home, spun into strips of cotton thread that were then made into clothing and blankets (Capron 1973).

Cotton production increased during the colonial period, when cotton became associated with colonial plans to fuel growing world industrialization with African cotton (Isaacman and Roberts 1995). Isaacman and Roberts argue that African farmers failed to heed the call to grow more cotton and generally did not produce cotton in sufficient quantity or quality, partly because cotton production required large amounts of backbreaking household labor, but also because the colonial powers never provided the inputs or the right price signals to increase production. Bassett (2001) illustrates how the colonial state failed to capture local production in Côte d'Ivoire, where most of the cotton was sold on the more lucrative local market. Colonial powers in Côte d'Ivoire did not use forced labor but instead relied on a host of indirect yet coercive measures, such as taxes and field sur-

veillance, to increase production. Cotton exports would wax and wane in direct relation to the amount of coercion used.

More coercive means of producing cotton were found in other French colonies. In 1924, in colonial Haute-Volta, now Burkina Faso, the area under cotton production was very low. French colonial authorities attempted to increase production by forcing peasants to cultivate cotton in village fields. The policy was a complete failure. Not only was production extremely low, but the policy played an important role in a general subsistence crisis that came to a head in 1930 (Schwartz 1993). Roberts (1995) paints a similar picture of cotton production in colonial Mali.

Cotton production remained minimal during much of the postcolonial period, due partially to associations of forced labor and famine that remained with cotton in many peasant farmers' eyes but also due more fundamentally to the lack of inputs, infrastructure, and sufficiently high prices. This began to change during the 1970s when the French cotton development organization CFDT (Compagnie Française pour le Développement des Fibres Textiles) organized the production, processing, and exportation of cotton. In 1979, the CFDT partnered with the government of Burkina Faso to create Sofitex, which then became the main organization responsible for cotton production. With the creation of Sofitex, resources began to pour into the cotton sector and agricultural extension, financial and marketing services became available. This resulted in a rapid increase in cotton production (Schwartz 1991).

Schwartz (1991) attributes the success of cotton in the late 1980s to the GVs (*groupements villageoises*), grower cooperative associations that linked individual farmers to the different agencies that provide inputs and financing. Through the village GV, a farmer could apply for short-term loans for fertilizer, seeds, and herbicides from a regional CRPA (*centre régional de promotion agro-pastorale*) and for medium-term loans for equipment and oxen for animal traction through the CNCA (Caisse Nationale de Crédit Agricole). The GV also operated *marchés auto-gérés,* village-run marketing cooperatives that manage the weighing and selling of cotton to Sofitex (Tersignel 1992).

Despite the success of the GVs in getting inputs to farmers, by the mid-1990s the GVs were in crisis. Debts accrued as farmers not growing cotton were allowed to borrow inputs on credit, even though cotton production was the main way of getting enough money to pay back the credits at the end of the season. There was also a free-rider problem. Individual farmers would take inputs on credit, sell them in the market and assume the rest of the growers would pay back their loan. This problem was exacerbated by general downturns in the cotton market. In the early 1990s, cotton prices dropped. The situation, for cotton producers, worsened in January 1994, when the French devalued the CFA franc (FCFA) to 50 percent of its previous value. While prices had rebounded by this time, the devaluation meant that inputs became much more expensive. Farmers responded by applying less fertilizers and pesticides to their cotton fields. The reduced use of inputs was complicated by the introduction of a new variety of cotton, a glandless variety, GL7, that many farmers felt was much less resistant to pests and more drought prone. Indeed, the harvest of 1996/97 was badly affected by a caterpillar infestation against which pesticides were largely ineffective.

These production downturns in the 1990s, combined with the poor management of the GVs, led to a problem of widespread indebtedness in the cotton-growing region. The government responded harshly, putting villagers in prison for failure to pay their outstanding cotton debts. Facing these constraints, many farmers complained that they could no longer afford to produce cotton and abandoned cotton production. Because of their widespread indebtedness, the GVs were eventually replaced by GPCs (*groupements des producteurs de coton*) that were based on group lending models that had tighter membership and payback requirements. These smaller groups gave inputs only on credit for cotton production; they also exhibited stronger peer pressures to pay back loans over time (Goreux 2003). GPCs could also choose their members, thus allowing them to exclude farmers who might not farm responsibly. If a farmer were not able to pay back a loan, then the entire group would need to make up the shortfall in order to receive inputs the next year. This system has worked out much better than the GV system, but there is still a problem of

widespread indebtedness. The blow of indebtedness has been somewhat softened as Sofitex has let go of coercive means to force repayment, such as imprisoning people, and allowed indebted GPCs to work out payment plans whereby they could repay debts over a number of years.

One cause for optimism in the cotton sector is the increased role of the Union Nationale des Producteurs de Coton du Burkina (Union of Cotton-Growing Farmers), the union that represents all cotton farmers in Burkina and has acquired a 30 percent share in Sofitex in that country. Farmers now have a seat on the Sofitex board and are instrumental in deciding producer and input prices. This has given rural producers much more power in changing policy. Cotton prices increased in the 2004/5 season, likely to due to the negotiating power of this national union.

Local Farmer Perceptions of Cotton Production

While much of the media and international focus on cotton production in West Africa has been on declining prices and American subsidies, local farmers in Burkina Faso have a different perspective of cotton production. When I first started asking questions about cotton in September 2005, many local farmers were largely unaware of the international debates surrounding cotton production. In February 2005, though, their knowledge of international affairs had increased after the government announced that cotton prices for the 2005/6 season would be reduced from FCFA 210 per kilogram to FCFA 175. This change in prices was directly blamed on declines in the world price. Most farmers, however, were unaware of the role that agricultural subsidies played in price declines. When I explained American policy of supporting farmers through subsidies, many farmers thought it seemed unfair and welcomed any effort to increase the prices they received for their crops. However, their primary concerns were overwhelmingly local. Instead of U.S. subsidies, they were much more focused on issues that they perceived as local, such as how governments set pricing policy on cotton grain and agricultural inputs, indebtedness,

labor shortages, drought, declining access to fertile soil and the effects of pesticide use on human health.

The following discussion comes from research with farmers in three villages, Sara, Dohoun, and Dimikuy, villages in the Province of Tui, the country's largest cotton-producing province. Figure 2.4 is a map of the study area. These three villages are fairly similar in demographic terms: they are evenly split between migrant Mossi farmers and local Bwa farmers. They all grow cotton, although one village, Dohoun, stands out as being much more successful in cotton production than the other two.

COTTON PRICING

While world prices affect how much farmers get for their cotton in Burkina Faso, the government's own pricing is also a large factor. The national governments of West Africa give a much lower share of world market prices to their farmers than do other countries (Bassett 2001). In the mid-1990s Burkina farmers received on average 39 percent of the world market price; they now receive about 51 percent of the world price. The rest goes to operating costs of the cotton companies, subsidies offered to cotton parastatals, and the provision of public services

FIG. 2.4. Map of study area.

(Badiane et al. 2002). While some infrastructure costs are expected, there are also concerns about corruption and misuse of funds, particularly as these cotton companies are state-managed enterprises with no external competition (Baffes 2004). Farmer perception of low prices reflects this lack of competition—they feel they are being short-changed by their own governments.

Since Sofitex has become partially owned by the Union of Cotton-Growing Farmers, prices have increased for local farmers—indeed, the 2004/5 season saw cotton prices increase significantly, with no change in input prices. Interestingly, many local farmers also felt that the union was corrupt and working with government leaders to take advantage of farmers. This, however, is not borne out by prices that have generally risen to their highest recent levels since the partnership between the union and Sofitex. The power of the union is limited, though, as prices for the 2005/6 season have decreased by 17 percent, a decrease the government blames on declining world prices. In any case, this decrease in price means that the margin of error for producing cotton will be reduced and the risk of falling into debt significantly increased.

INDEBTEDNESS

Cotton production in Burkina Faso is full of contradictions. On the one hand it is the only way to make money; any farmer who has become wealthy in the Province of Tui has likely done so because of cotton. On the other hand, it is a risky crop. Farmers carry much of the burden of risk for a crop failure. They take their inputs on credit from Sofitex and then what they owe is subtracted from their cotton payment after harvest. But producing a good harvest is a complicated process. It depends on sufficient labor for plowing, seeding, weeding, judicious and timely application of fertilizer and pesticides, and early harvest. It also depends on the correct amount of rainfall; either too much or too little can reduce cotton yields. If any one of these elements is missing, debt can occur as a farmer can have borrowed inputs on credit and be unable to pay them back.

It is not surprising, therefore, that one of the largest problems facing cotton farmers is debt. Of the eighty-two farm households I

interviewed, thirty-seven have been indebted during one point in the last five years. In the village of Sara, where debt is a very serious problem, seventeen of the twenty-three farmers who are currently growing cotton had experienced debt in the past five years. Many farmers in the sample are no longer growing cotton at all, either because they had been indebted or were afraid of becoming indebted. Indebtedness means that it is very difficult to get inputs on credit, reducing both the chance that the farmer will grow cotton and his ability to pay back debts. One farmer in Dimikuy explained that he has not grown cotton in the last five years because he had been indebted and did not have the oxen or the financial means to grow cotton or pay back his debts. It is not uncommon for farmers to sell their productive assets such as oxen to pay back their debts. This creates a cycle of debt whereby farmers in debt lose the productive assets that will get them out of debt.

Debt can be at both the individual level and the level of the GPC. Individuals can be indebted, but in order for the GPC to remain solvent it must pay back the debts of its members. Many GPCs have folded under the weight of collective debt. In the village of Sara, only six out of fourteen GPCs remained functioning in 2004. The indebted GPCs had not received inputs from Sofitex since 1999 but were allocated half the inputs needed on credit this past season, in the hopes that they could start paying off their debts. The payment period has been spread out over three years, but many indebted farmers are simply growing cotton to pay off debts and will not see any profit.

How GPCs decide to repay their debt is a matter of internal decision making. Most GPCs share the debt of their indebted members among the group as a whole and then try to collect the money—only sometimes successfully—at some later point. One particularly successful GPC in Dohoun had a much more severe internal rule; they collected the debts of farmers by taking the proceeds of the cotton harvest from their closest relative. One farmer in this situation stated that he was "not cultivating cotton this year because my cotton money is still serving to pay the debt of my little brother." Another GPC in Sara collected the productive assets—oxen, plows, and bicycles—of their indebted group members.

Reasons for an entire GPC falling into debt vary. Some GPCs are indebted because of the actions of individual farmers, who either sell their inputs on the market to gain cash or for some other reason are not able to harvest enough cotton to pay off their loans. In these cases, the GPC can generally survive, as other members will pay off the indebted member's debt. However, a general natural disaster can put an entire GPC into debt. For example, 1999 stood out as the year when most of the GPCs in the village of Sara became indebted, because of flooding and an infestation of white flies. Many farmers told me that the insecticides they used were largely ineffective against white flies that year. One farmer who is the secretary of the Union of Cotton-Growing Farmers at the provincial level confirmed these concerns, explaining that it was the fault of the insecticide manufacturer, who omitted a key ingredient in the production of a third, generally effective insecticide used against white flies. Whatever the reason, debt remains an extremely serious concern for growers in Burkina.

CORRUPTION, TRANSPORTATION, AND LATE PAYMENTS

Another very large concern of farmers was corruption in either getting their cotton transported or graded. In informal interviews, eleven farmers mentioned that they needed to give the driver of the cotton truck a bribe to pick up cotton early. Corruption is a very sensitive topic to ask farmers directly about, but many farmers listed it as one of their top three concerns about cotton production. Interviews with officials from the Farmers' Union also yielded many discussions of the corruption of truck drivers. As the head of one village's farmers' union put it, "Sofitex [including its truckers] is rotten."

There are several reasons why farmers are concerned about getting cotton transported on time. Paramount among them is the reduction of cotton quality. Many things can reduce the quality of a cotton crop that sits in open air. A late rain can rot the fibers. Debris can make its way into cotton that is sitting on the ground, reducing quality. Animals can trample cotton, introducing debris. The water content of cotton fiber diminishes as cotton sits in the sun, leading to weight reduction and, as payments are given on weight, less money. In fact,

much of the village of Dohoun's cotton was downgraded last year because water was put in it to boost weight. Farmers explained that they did this because the cotton had been sitting in the sun for a long time, losing weight in the process.

Also, the earlier cotton is transported, the earlier a farmer will get paid. All these things mean that farmers are very concerned about when their cotton is picked up. This has led to a system of bribery; basically, to ensure that cotton is shipped earlier, a farmer must bribe a driver with a sack of maize. Farmers also complained that they needed to bribe the people who grade cotton in order to make sure that their cotton was rated first quality.

Approximately two-thirds of the farmers mentioned the lateness of cotton payments as a major concern. Many explained that they would have their cotton weighed and graded in December but would not get paid until April or in many cases May. This delay in payment is a real problem for farmers, who must sell their grain if they do not have their cotton payments. One farmer complained that he sold his maize because he had not received his cotton money; when it came time to repurchase maize, the price had gone up significantly. One of the poorest farmers in the village of Dimikuy, who had not received his cotton money until fairly late last year, explained how "cotton cultivation is tiring and there is not much benefit because you will sell your cotton to be able to buy things but you can wait months before receiving money and you will be obliged to sell your cereal crops." This year, late payments have proven to be very difficult for poor farmers who have sold their maize crop in anticipation of their cotton payments. A drought and the resulting shortage of maize has led to maize prices going from FCFA 5,000 per sack after the 2004 harvest to FCFA 15,000 per sack at the beginning of the 2005 planting season. This has put poorer farmers, who have sold their cereal crops while waiting for their cotton payments, in a tenuous position in terms of household food security.

INPUTS: ANIMAL TRACTION, LABOR, AND CHEMICALS

Almost two-thirds of farmers interviewed mentioned animal traction, household labor, and chemical inputs as major constraints to suc-

cessful cotton production. Farmers explained the difficult nature of cotton production. Farmers without oxen are severely limited in their ability to cultivate cotton early enough. Farmers also need to apply inputs at the right moment to insure good production. Cotton requires fertilizer during its vegetative growth cycle and insecticides at crucial moments such as seed setting and fiber development. Lack of labor or resources during these stages can seriously lower yields. It is not uncommon to put a significant amount of labor and money into cotton and then have a poor yield due to either resource constraints or natural disaster. Because so many farmers are experiencing indebtedness, many cannot get inputs on credit. Therefore farmers are putting much less than the recommended dose of either fertilizer or insecticides on crops. This lack of sufficient inputs is probably the reason that yields in Burkina Faso are generally lower than the world average, as illustrated in figure 2.2.

In the 2004/5 season, the rain came early but then stopped. Many farmers had to replant their cotton due to insufficient rains at planting. Furthermore, there was a slight drought at flowering time. Farmers stressed how important getting cotton in the ground early was to have a good crop. In the village of Dohoun, where many farmers either own or hire tractors, they were able to take advantage of early rains because they had plowed their fields before the rains even started, something that oxen-drawn plows cannot do. This was particularly beneficial during the 2004/5 season because after the first rains came in May, there was a short drought, which meant that farmers without access to tractors did not get their cotton in the ground until early June. Farmers without oxen did not get their cotton planted until late June, which turned out to be disastrous for them because the rains ended early, resulting in very low yields. A Sara farmer said this about the risks of late cotton cultivation: you have to cultivate early because when cotton is planted late, the yields are low and can cause you to be indebted. Late planting also means that the crop can be destroyed by fire or animals. One of the most difficult periods is the harvest. Cotton matures later than other crops, and the harvest is labor intensive. Those who can afford to do so will hire extra labor to insure an early harvest. Weeding can be quite labor intensive as well. If a farmer does

not have the right equipment, then the job will not be done in time, resulting in loss of yield.

ACCESS TO FERTILE LAND

In all three villages, farmers have become increasingly concerned that quality land is no longer available. This region is an area of high demographic pressure. Population in southwestern Burkina Faso has increased rapidly due to migration of Mossi farmers from their drought-stricken homeland. Initially, Mossi migrants were greeted with open arms by local Bwa farmers and were given land to cultivate in return for ritual gifts of grain and poultry. Today, many young Bwa complain that their ancestors gave away their heritage for a chicken or kola nuts. The result is that most farmers, particularly migrants but also local farmers, have little access to fallow land or land of good quality (Gray and Kevane 2001). It is not uncommon to find farmers who have been cultivating the same field for thirty or forty years and cannot leave the field fallow because they have nowhere else to cultivate. Farmers who own livestock are able to improve their land with manure applications, but poorer farmers complain that they have few means to improve their soil and that this affects the yields of crops such as cotton (Gray 2005).

The land situation is acute in the village of Sara, which has almost no land left that is uncultivated (Gray 1999). Many Mossi migrants have since left the village because of a lack of good land. The effect of land quality on yield is apparent in this village where not only are new lands not available but the soil in cultivated fields is poor. Most of the soil is sandy, which farmers believe to be the worst type of soil for cotton. Lack of fertile land is tied to debt. As noted earlier, the village of Sara has particular problems with debt while the village of Dohoun—generally acknowledged to have some of the most fertile land in the region—has generally experienced low levels of debt.

PESTICIDE USE

Kutting (2003) highlights the ironic situation in West Africa, where poverty is actually good for the environment. Cotton in Burkina Faso is produced with far fewer inputs than in the developed world, where

large amounts of agrochemicals are used to produce cotton. Researchers, therefore, have tended to laud West African cotton production as much more environmentally friendly. There are no huge problems with pesticide drift, though studies of the effects of pesticides on nonhuman health are few. Kutting argues that farmers are "too poor to pollute."

Despite this lower pesticide use, insecticides are damaging to the health of farmers who apply them. Farmers highlighted insecticide use as a risk. The application method has a significant effect on human health. Farmers apply pesticides using small backpack sprayers that frequently leak pesticides. Some farmers are aware of the side effects of pesticides; for example, farmers in the village of Sara, who tend to be better educated than other farmers, do wear masks. But this is not sufficient to completely protect people, who are advised to wear not only masks but also gloves, boots, and goggles, and to cover their entire bodies. In the heat of the tropical sun, it is not surprising that few follow that advice.

Of the cotton-growing farm families I interviewed, forty-four (about 55 percent) experienced negative health effects after pesticide application. Few farmers wore the recommended protective gear; approximately 40 percent wore masks but nothing else. Some farmers were not aware of the dangers of pesticide application, others felt that it was too hot to wear the appropriate gear, and others further argued that the gear cost too much money.

This is particularly worrisome, as many of the pesticides used on cotton production are quite toxic, particularly the endosulfans and organophosphates, which are both used extensively. These main insecticides are nerve toxins and carcinogens. In the past agricultural season, many farmers reported short-term negative effects after pesticide application (see table 2.1). The most frequent symptom is headache, followed by flulike symptoms, but there were also some more worrying symptoms, such as paralysis. The nurse in Sara, a village of about fifteen hundred people, reported four cases of acute pesticide poisoning in the last year.

Cotton production in Burkina Faso is problematic at both the global and local scales. At the global scale, the agricultural subsidies

Table 2.1. Effects of pesticide application

Symptoms	*Farmers (N = 71)*
Never ill	27
Headache	23
Flulike symptoms	9
Skin problems	6
Vomiting	3
Paralysis	2
Eye problems	1

of wealthy countries such as the United States push down cotton prices, squeezing the profit margin of farmers. The most recent declines in world prices have led to declines in cotton prices in the coming agricultural season, a situation that will surely increase the debt load carried by farmers.

At the local scale, though, even if subsidies were removed and cotton prices increased, cotton production would still be problematic for resource-poor farmers. The ability to produce cotton without incurring debt varies widely with farmers' wealth. Most farmers concurred with this, indicating that poor farmers cannot effectively cultivate cotton. Particularly important is access to oxen and a plow, which allows a farmer to plow, seed, and weed early. As one farmer in the village of Sara put it, "cotton is for people who are at ease financially; the poor can't cultivate early enough, especially if you don't have oxen."

One of the problems for farmers is that they bear much of the risk of crop failure; there are no mechanisms such as crop insurance that might protect them from the outcomes of a poor agricultural season or a natural disaster. And cotton appears to be particularly risky for the farmers of Burkina Faso; reduced yields due to unforeseen events are not uncommon. Thus, the farmers in Burkina Faso are doubly disadvantaged, both from the effects of cotton production by the wealthiest countries of the world, and by the fact that there are few safety nets to protect them when production does turn bad.

Notes

1. "The Long Reach of King Cotton," *New York Times,* August 5, 2003; "Hanging by a Thread," *Wall Street Journal,* June 26 2002.

2. The research I conducted in Burkina Faso was part of a larger project looking at farmer perceptions and practices surrounding cotton production that I undertook with eighty-two heads of farm households in September 2004 and February 2005, but also reflects a broader field research project that began in 1995. This research was made possible with funding from the National Science Foundation.

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