

Introduction

Cotton, Globalization, and Poverty in Africa

William G. Moseley and Leslie C. Gray

Cotton is the mother of poverty.

—Allen Isaacman

It is clear that the cotton sector has contributed to alleviating poverty. The expansion of the cotton sector is not harming the production of food crops, quite the contrary.

—Government of Burkina Faso

GM cotton is, in truth, at best irrelevant to poverty in the area, and at worst is lowering wages and job prospects for agricultural laborers, who are some of the most impoverished people in South Africa.

—Aaron de Grassi

Coton est le clé du développement. [Cotton is the key to development.]

—Drissa Keita, general director, Malian Cotton Company

Africa's greatest value to Europe at the beginning of the imperialist era was as a source of raw materials such as palm products, groundnuts, cotton, and rubber. . . . The need for those materials arose out of Europe's expanded economic capacity . . . [and] . . . one of the important factors in that process was the unequal trade with Africa.

—Walter Rodney

Cotton is our ticket into the world market. Its production is crucial to economic development in West and Central Africa, as well as to the livelihoods of millions of people there. . . . This vital economic sector in our countries is seriously threatened by agricultural subsidies granted by rich countries to their cotton producers.

—*Malian president Amadou Toumani Touré
and Burkina president Blaise Compaoré*

Cotton production here will have to shrink eventually because the soil is being exhausted.

—*Orou Guere, secretary of a local farmer's cooperative in Benin*

COTTON IS CURRENTLY THE SUBJECT of a number of debates concerning sub-Saharan Africa (SSA),¹ where the crop is simultaneously depicted as an agent of development, poverty, wealth, change, trade disputes, and environmental destruction. These cotton discourses reflect national, regional, and international discussions pertaining to various subtexts in the globalization debate, namely privatization, structural adjustment, food security, biotechnology, agricultural subsidies, poverty alleviation, and sustainable development.

The idea that cotton is controversial may come as a surprise to some readers. In fact, cotton probably does not strike most people as a topic that could keep one captivated for an entire book. Cotton does not have the gastronomic allure of, say, coffee, chocolate, or tea, which attract loving aficionados. But cotton, like any cash crop, is not just a lowly plant in the ground. In Africa the history of why cotton is grown in which locales, by whom, in what quantity, and with which techniques involves international politics, colonial power, environmental factors, and, in many instances, coercion. Cotton is grown by people and families who take risks to grow it (in terms of money borrowed, impacts the crop may have on the land, and pesticide exposure in the fields) and who depend on the income it generates. For many farmers it is the route to wealth; for others it keeps them poor.

Cotton links farmers to the international economy. African farmers sell their cotton to private companies and parastatals whose stakeholders² depend on the sale of the crop and who may have instituted a number of policies and programs to guarantee the continued production of this crop and the flow of money into their coffers. Multilateral banks have an interest in the crop if it means that their loans to African governments are repaid on schedule. African cotton is sold on international markets at a price largely related to the actions of the global powers (e.g., whether China will be exporting or importing cotton in a given year and the level of American subsidies to its cotton farmers) and to the whims of international consumers (e.g., whether they prefer cotton or synthetics). So cotton is not just a crop, it is a commodity rooted in African soil, with consequences for local livelihoods, that is situated in an international web of economic transfers reflecting historical and contemporary power structures.

For better or for worse, Africa is connected to the global marketplace. These links are fairly transparent and long standing, as the continent is highly dependent on the export of two groups of commodities: energy and mineral resources on the one hand, and cash crops on the other. Africa's energy and mineral resources tend to be controlled by state companies or private corporations (Maponga and Maxwell 2001) and, as such, the income generated by the extraction and export of these assets is often captured by these entities. While these industries employ labor, workers in these sectors account for a very small proportion of the African labor force. In contrast, cash crop production (which also engages the state and private corporations) involves a much higher proportion of that workforce. Seventy-five percent of the female labor force, and 62 percent of the male labor force, in SSA is involved in agriculture (USAID 2004). Nearly all of Africa's approximately six million commercial farmworkers, and a very large proportion of its 140 million smallholders (USAID 2004) have some involvement with cash crop production. Commodity crops are a major strand linking Africa's farmworkers and small farmers with global markets. Furthermore, agriculture, in any context, is a major means by which humans transform the landscape. Therefore, a study of cash crop production in the African context provides one

with significant insights into the processes of globalization, poverty dynamics, and land management.

Cotton can be seen as one important thread of the globalization process in Africa. Through a set of linked case studies, we can comprehend the nested dynamics of the crop in the soil, in local African communities, in national political economies, and in international circuits of power and commerce. Thus, the overarching conceptual framework of the volume is that of the commodity chain.

The commodity chain approach follows a product from one point to the next, examining the dynamics at each level and between levels. Commodity chain studies may also involve an analysis of price formation at different stages in the production and delivery process. Particular attention is given to the impact of political economy, history, and power relations on the geography, input-output structure, and governance of the commodity chain (Hartwick 1998; Gereffi and Korzeniewicz 1994; Bair 2005). There is also a related and growing literature on alternative consumption, for example, on fair trade and organic production (Bryant and Goodman 2004). Global commodity chain analysis bears some resemblance to the *filière* approach. The main difference is that the *filière* approach has generally been restricted to national scale and the emphasis has been on restructuring production systems, and supporting institutions, in the name of development (Raikes, Jensen, and Ponte 2000).

This volume employs a modified commodity chain approach, focusing on the social, economic, and environmental dimensions of cotton production in Africa, and the links between this production and the global market. Individual chapters may examine one or multiple levels in the commodity chain and employ different theoretical approaches, from ethnography, to agroecology, to political ecology, to classic economic analysis. We want to acknowledge, however, that while the commodity chain is an important part of cotton dynamics, it is not the only force at work in African cotton. There are new and interesting developments outside the commodity chain that work for change. Networks of African farmers are linking up with international activists and nongovernmental organizations (NGOs) to change how cotton is grown, working to reduce pesticide use, limit genetically

modified organisms, and affect international pricing policies, particularly the subsidies that the developed world gives to their farmers. This is a new and dynamic form of globalization that has direct implications for the livelihoods and well-being of Africa's cotton farmers. We finally note that this book also seeks to update the story of cotton in Africa. While previous texts have provided a historical overview of the development of cotton production Africa—most notably Isaacman and Roberts's *Cotton, Colonialism, and Social History in Sub-Saharan Africa* (1995)—this volume offers an analysis of the situation in the postcolonial period.

African Cotton Production Systems in Global and Historical Context

Cotton was first cultivated in South Asia and South America. Cotton fragments found in the Indus Valley date to 3000 BC. The two species used in South Asia were *Gossypium herbaceum* and *G. arboreum*. *G. herbaceum* originated in Africa. Trade in cotton fabrics between Asia and Europe was established during the time of Alexander the Great. In the 1600s, Europeans discovered that cotton plants were also being grown in the Americas. These New World cotton cultivars were superior for mechanized cloth production because of their longer fibers. New World cotton varieties were introduced into Africa in the 1800s, eventually displacing local varieties.

The textile industry was one of the first manufacturing activities to become organized globally, with mechanized production in Europe using cotton from the various colonies. As others have described (e.g., Isaacman and Roberts 1995), textile manufacturing initially became industrialized in late-eighteenth-century England. A series of technical innovations and the development of factory-style production approaches (which quickly spread from England to continental Europe) created a mass market for cotton textiles by driving down their price. These changes fueled an ever-increasing demand for cotton lint. The British were the first to develop cotton production in their colonies,

most notably the United States, India, and Egypt (with the United States quickly becoming the largest producer).

A significant shock occurred between 1861 and 1865, when the American Civil War and a Northern blockade of exports from the South, greatly reduced supplies of raw cotton to European textile manufacturers. As raw cotton prices climbed, many European mills were forced to close and lay off workers. This lack of employment led to what has been called the Cotton Famine. This difficult social situation, and the concerns of industrialists, put pressure on European governments to develop new sources of cotton. Increasingly, sub-Saharan Africa was seen as a supplier of cotton for European mills.

As Porter (1995) notes, “In the global drama of cotton production, African colonies were mainly bit players.” In the late 1920s, African cotton production accounted for only 1 percent of global production. This proportion climbed slowly to 2.6 percent from 1934 to 1938 and 4.1 percent in 1959. As table 0.1 indicates, African cotton producers now account for nearly 16 percent of global cotton exports. In terms of export revenues, cotton is now the second-most-important cash crop in Africa after cacao. The growing prominence of African cotton is arguably related to a combination of state-led approaches (most evident in francophone West Africa) and export promotion policies pushed by the World Bank and the International Monetary Fund (IMF).

As the data in tables 0.2 and 0.3 suggest, export-oriented cotton production is most developed in francophone West Africa, where four of the top five producers are found (Mali, Côte d’Ivoire, Benin, and Burkina Faso). The growth of production in these areas may be attributed to the seriousness of the French colonial effort, the level of state control in the cotton sector, and, to some extent, a lack of other export alternatives for Mali, Benin, and Burkina Faso. In most of these countries, cotton production is managed by a partially government-owned parastatal that has monopoly control over the provision of credit, the sale of inputs, and the purchase of farmer output (Bingen 2004). In East and southern Africa, cotton production is organized differently as private companies are authorized by a government board or agency to manage their own cotton production, collection, processing and export (Bingen 2004).

Table o.1 Export value of SSA agricultural commodities, 1999–2003

<i>Commodity</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>5-yr. avg.</i>	<i>% of world exports</i>
Cacao	\$2,186,792	\$1,569,003	\$1,761,311	\$2,721,587	\$3,130,812	\$2,273,901	70.8
Cotton	\$1,113,017	\$968,226	\$999,956	\$959,169	\$1,182,449	\$1,044,563	15.6
Tobacco	\$967,701	\$1,100,229	\$1,148,009	\$873,613	\$1,001,909	\$1,018,292	4.8
Coffee	\$1,374,735	\$1,107,091	\$596,297	\$515,011	\$600,716	\$838,770	12.2
Tea	\$600,444	\$648,081	\$623,331	\$284,669	\$595,930	\$550,491	20.1
Sugarcane	\$103	\$42	\$485	\$293	\$273	\$239	6.1

Source: FAO 2005.

Table o.2 Production of cotton lint in SSA, 1998–2005
(thousands of tonnes)

<i>Country</i>	<i>1998/99</i>	<i>1999/2000</i>	<i>2000/1</i>	<i>2001/2</i>	<i>2002/3</i>	<i>2003/4</i>	<i>2004/5</i>	<i>7-yr. avg.</i>
Mali	217	197	102	240	200	217	228	200.1
Côte d'Ivoire	157	173	125	173	162	165	168	160.4
Benin	123	152	141	172	137	149	159	147.6
Burkina Faso	119	109	116	158	144	146	149	134.4
Zimbabwe	115	138	135	75	132	132	132	122.7
Cameroon	79	79	95	102	83	95	97	90.0
Chad	64	74	58	68	60	70	72	66.6
Togo	78	56	49	70	64	71	74	66.0
Nigeria	65	50	55	60	55	63	63	58.7
Tanzania	35	42	45	63	67	67	67	55.1
Zambia	36	30	24	35	43	47	50	37.9
South Africa	53	30	36	18	21	24	27	29.9
Mozambique	36	12	24	25	21	22	23	23.3
Uganda	15	22	19	20	22	22	22	20.3
Ethiopia	16	16	18	20	20	20	20	18.6
Guinea	16	11	11	14	11	12	—	12.5
Senegal	5	6	9	15	13	19	19	12.3
Cent. Afr. Rep.	17	9	10	14	10	10	10	11.4
Ghana	15	14	14	6	7	10	10	10.9
Madagascar	16	14	11	11	5	8	9	10.6
Kenya	4	4	4	5	5	5	5	4.6
Congo, DR	3	3	3	3	3	3	3	3.0
Niger	2	1	1	1	1	1	1	1.1
Angola	0	0	0	0	1	1	1	0.4
Total	1,286	1,242	1,105	1,368	1,287	1,379	1,409	1,298.4

Source: International Cotton Council.

Table 0.3 Area in cotton production in SSA, 1998–2005
(thousands of hectares)

<i>Country</i>	<i>1998/99</i>	<i>1999/2000</i>	<i>2000/1</i>	<i>2001/2</i>	<i>2002/3</i>	<i>2003/4</i>	<i>2004/5</i>	<i>7-yr. avg.</i>
Mali	504	482	228	532	468	500	525	462.7
Zimbabwe	330	369	389	363	400	400	400	378.7
Benin	394	372	337	384	323	350	375	362.1
Tanzania	250	182	430	392	400	400	400	350.6
Nigeria	300	280	350	375	338	338	338	331.3
Burkina Faso	355	245	275	356	338	345	352	323.7
Chad	298	300	240	312	281	286	292	287.0
Côte d'Ivoire	271	291	248	283	280	286	291	278.6
Mozambique	333	148	235	222	200	210	221	224.1
Uganda	250	202	202	200	200	200	200	207.7
Cameroon	173	172	199	210	200	204	208	195.1
Togo	159	154	135	165	160	163	166	157.4
Zambia	150	150	125	114	150	158	165	144.6
Ethiopia	80	80	100	113	113	113	113	101.7
South Africa	137	85	73	44	51	58	67	73.6
Kenya	30	50	50	50	50	50	50	47.1
Cent. Afr. Rep.	55	47	39	48	35	35	36	42.1
Senegal	48	18	22	32	36	45	46	35.3
Ghana	45	40	35	22	30	30	30	33.1
Guinea	33	27	21	30	27	28	-	27.7
Madagascar	34	35	29	28	14	20	22	26.0
Congo, DR	10	10	10	10	11	11	11	10.4
Niger	5	3	2	3	3	3	3	3.1
Angola	1	1	1	1	2	2	3	1.6
Total	4,245	3,743	3,775	4,289	4,110	4,235	4,314	

Source: International Cotton Council.

COTTON PRODUCTION TODAY

Today, cotton is cultivated in more than one hundred countries worldwide on approximately 2.5 percent of all arable land. This makes it one of the world's most significant crops in terms of surface area, after food grains and soybeans. The total area globally devoted to cotton has fluctuated, yet has shown no tendency to permanently rise since the 1950s (as climbing global production has been more closely related to improving yields). While cotton is grown in thirty-seven different African countries, five of those countries (Mali, Côte d'Ivoire, Benin, Burkina Faso, and Zimbabwe) account for nearly 60 percent of sub-Saharan Africa's production. Three other countries are notable: South Africa, because it has the most experience with genetically engineered cotton; Uganda and Tanzania, because they account for 92.8 percent of Africa's organic cotton production. In contrast to the rest of the world, the area devoted to cotton production in Africa has been rising. See figure 0.1 for the current spatial distribution of cotton production in Africa.

A group of former French colonies in West and Central Africa (WCA)³ have increased production almost fivefold from the early 1980s to 2002, from two hundred thousand metric tons to almost one million tonnes. Together this group constitutes the seventh-largest producer of cotton in the world after China, the United States, India, Pakistan, Uzbekistan, and the European Union. With about 15 percent of global exports, the WCA countries are the second-largest exporter after the United States (USAID 2004).

Africa's major commodity crop exports are cotton, cocoa, coffee, and tea (USAID 2004). While Africa's share of world agricultural trade fell by 50 percent from 1980 to 2000, its share of cotton trade rose by 30 percent (FAO 2002). Over this period, production grew three times more rapidly in SSA than the world average (Goreux and Macrae 2002). In contrast to other parts of the world, cotton is a predominantly smallholder crop in SSA, with over two million rural households (or roughly fifteen million people) (Brottem 2005) depending on it as their main source of cash income (Tschirley, Poulton, and Boughton, this volume). To put this in context, SSA has 140 million smallholders who occupy 90 percent of the agricultural land.

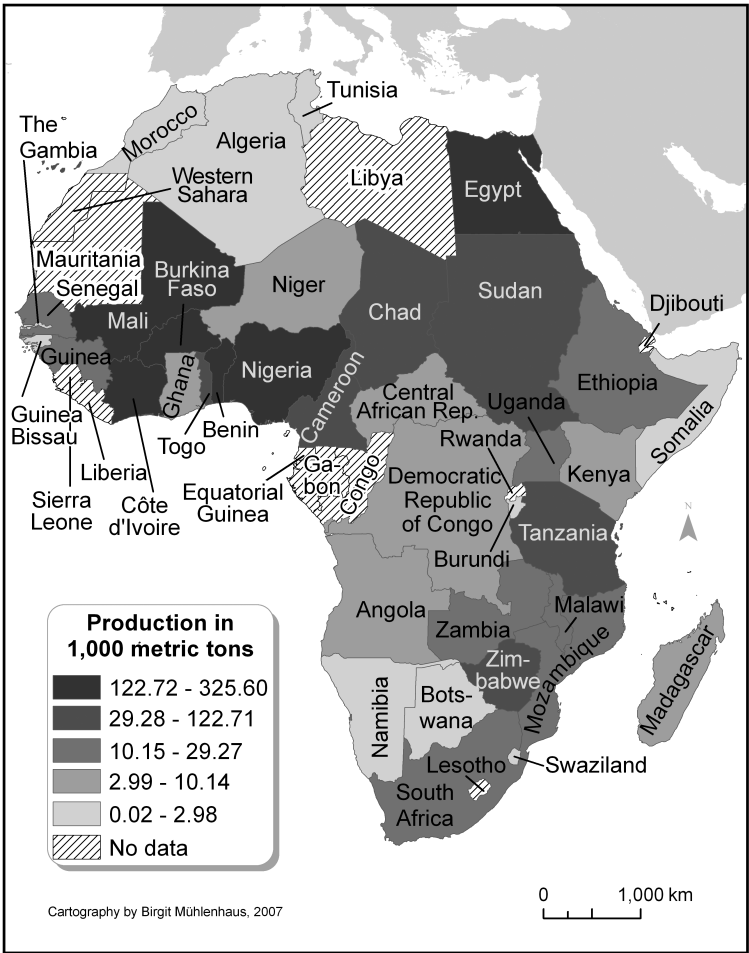


FIG. 0.1. Average cotton lint production in sub-Saharan Africa, 2000–2005. (Based on data from FAOSTAT 2006, the FAO’s online database, at <http://faostat.fao.org>. Data is a five-year average.)

While Africa accounts for only about 15 percent of global cotton exports, its contribution to global markets has been climbing over the years, and the crop is of critical importance to many African countries (UNCTAD 2005). Most African cotton is exported in its raw form; only 5 to 10 percent is locally made into end products. Cotton is one of the most important cash crops in West Africa, where it contributes

to more than half of the income for roughly two million smallholders who cultivate an average of one hectare of land (Martin et al. 2005). African cotton is of superior quality because it is hand picked (as opposed to machine picked) (UNCTAD 2005). West African cotton is of particularly high quality, having a longer fiber length than other cotton types that are characterized in the same category (Bassett 2005).

In sum, Africa, the least developed of the world's major regions, is now increasingly engaged in the production of cotton for the global market. The debates about the pros and cons of this trend continue to intensify.

Cotton, Poverty, and Rural Livelihoods in Africa

Cotton production in much of the developed world is input intensive and mechanized. Cotton cultivation in the United States, for example, applies large amounts of irrigation, fertilizer, pesticides, and defoliants, and uses highly mechanized means such as airplanes, tractors, and mechanical harvesters. In the developed world, human hands rarely touch cotton fiber. In Africa, cotton production is extremely low input. Most cotton is rain fed, uses few inputs and requires high levels of human labor to guide ox-drawn plows, seeders, and weeders (or perform many of these activities with a hoe) and to harvest cotton.

COTTON LIVELIHOODS

Because cotton tends to be a smallholder crop in Africa, it is different in terms of labor relations from other cash crops in Africa that are grown on larger farms or plantations. Given the quicker return on investment, annual crops such as cotton and tobacco tend to be more appropriate for small farms than tree crops such as rubber and oil palm, which are more likely to be grown on plantations. Tea, cacao, and coffee are well suited to both. The average wealth of African cotton farmers is less than that of those who focus on other cash crops (USAID 2004).

While women historically grew cotton in small gardens in many areas of West Africa, the crop is now largely grown by male-headed households and by young men (Moseley 1993; Bassett 2001). This tran-

sition, from a crop that is grown by men and women to one that is almost exclusively grown by men, relates to the change during the colonial era from cotton being grown for local cloth production to its cultivation as a cash crop (Isaacman and Roberts 1995). Colonial authorities, and postcolonial African governments, targeted men over women for extension services. Agricultural credit, needed to purchase inputs for export-oriented cotton production, was also largely inaccessible to women. Even though cotton is now a “male” crop, male heads of households use both family and hired labor to harvest cotton by hand. Women and girls work harvesting cotton on the household farm.

Besides cotton’s shift from a “female” crop to a “male” crop, there is another significant change in the gendered division of labor of cotton production. Throughout West Africa, during the cotton harvest period, gangs of women hire themselves out as labor during the harvest period. Women are often preferred for harvesting cotton (as are children) because their smaller fingers can harvest cotton bolls faster and with less damage. This new labor system has several significant implications for the household. First, women are removing themselves from family work to work as laborers and in some cases even charging their own husbands for work on household fields. Second, women have access to significant income, which has implications for the household as a whole.

Some have argued that, because cotton is essentially a smallholder crop in Africa, increased production will have a significant impact on poverty (USAID 2004). West African governments also suggest that cotton production is really the only strategy they have for moving up the economic ladder (e.g., Touré and Compaoré 2003). Minot and Daniels (2005), though, demonstrate that whether cotton alleviates poverty is highly dependent on world prices. When world cotton prices declined by 40 percent during 2001/2, rural poverty in cotton-growing regions of Benin increased by 8 percent. This illustrates how linked issues of poverty and cotton in Africa are to international pricing policies. However, Siaens and Wodon (in this volume) contend that farmers were buffered from world price decreases because of currency devaluation, cotton reforms that resulted in higher producer prices, and overall production increases.

Others have documented an increasing debt problem for many smallhold cotton producers. Gray (in this volume) discusses how over 50 percent of farmers in her sample were indebted. Lacy (in this volume) notes that there is an increasing divide in many villages in southern Mali between poor indebted farmers and wealthier farmers. This has led to the breakup of village-level cooperative structures in many instances. Given normal rainfall variation in most cotton-growing areas, and the relatively high levels of inputs (and associated credit) required to grow cotton, it may be that cotton generates wealth only for those able to operate at a certain scale.

A key question is, why, if farmers have such difficulty with cotton production, do they continue to grow it? Koenig (in this volume) gives some insight to this in her chapter, where she describes how cotton systems provide a whole set of infrastructures that complement farmers' other activities. Through cotton, farmers have gained access to agricultural credit, equipment, fertilizer, as well as broader infrastructural improvements such as roads, telephones, schools, and health centers. Thus cotton, while not always lucrative by itself, needs to be viewed as part of a larger political economic system.

As cotton's ability to generate wealth for its custodians is ultimately tied up in the productivity of the land, any discussion of cotton, poverty, and wealth generation must also touch on the impact of this crop on the environment.

COTTON AND THE ENVIRONMENT

Cotton is grown primarily in tropical and subtropical climates. It is a crop that is threatened by excessive cold or heat (although resistance to these extremes varies from species to species). Excessive moisture or dryness at certain junctures in the growing season may also affect cotton quality and yields. The cotton plant has remarkable nutrient and moisture uptake; it can quickly exhaust the soil in the absence of sound management practices (including fertilizers, organic inputs, and crop rotation). The root systems of cotton plants are particularly well developed and penetrate deeply into the soil (often double the above-ground height of the plant). Seeds need warm temperatures and moisture during the germination phase (one to four weeks). Flower-

ing starts one and a half to two months after planting. After flowering, the inner part of the bloom develops into a fruit, or boll. The bolls burst open at maturity, revealing cotton fibers (UNCTAD 2005).

Improved varieties of cotton are vulnerable to a number of insect pests, particularly foliage feeders and bollworms, and are frequently grown with regular pesticide applications. For example, Oerke and Dehne (2004) estimate that African cotton producers are at risk of losing 85 percent of their cotton crop to pests and diseases, but sacrifice only about 50 percent because of pesticide use. Cotton accounts for more pesticide use than any other crop, about 10 percent of global pesticide consumption when measured by weight of active ingredients (International Cotton Council, pers. comm., 2004).

Globalization critics often talk about a “race to the bottom,” in which companies leave the global North in search of places that have lower environmental and labor standards. As such, one might assume that environmentally problematic crops such as cotton would quickly be outsourced to the developing world. One of the ironies of cotton in West Africa is that it generally does not follow that model; while cotton production in Africa uses pesticides and other inputs, the overall amount of inputs used pales in comparison to what is used in the global North. Indeed, Kutting (2003) argues that compared to other regions, farmers in Africa are “too poor to pollute.”

Being too poor to pollute does not mean that cotton holds no environmental hazards. Cotton is at the center of debates about land degradation, pesticide use, and biotechnology in Africa. In terms of land issues, cotton cultivation is intersecting with population growth and land scarcity to create increasingly anthropogenic landscapes (Gray 1999). At the heart of the debate is whether cotton production is increasing or decreasing soil quality. In this volume, Moseley argues that cotton production in Mali has increased use of animal traction and chemical inputs by wealthier farmers. This has combined with the high nutrient demands of cotton and the abandonment of beneficial practices such as intercropping and minimum tillage to reduce soil fertility.

Another serious hazard of cotton production is the use of pesticides. Throughout the developing world, where farmers use pesticides on

cotton, deaths and illnesses have been reported (Mancini et al. 2005; Ton, Tovignan, and Vodouhê 2000). Although pesticides are applied at fairly low rates, the way they are applied and their toxicity endanger human health. Furthermore, there is little education about the negative effects of pesticides. Pesticides used on cotton in Africa include chemicals from the organochlorine and organophosphate classes, both of which are extremely toxic. Endosulfan organochlorine pesticides were introduced in 1999 in francophone West Africa after cotton bollworms were found to be resistant to pyrethroids. Endosulfans are highly toxic neurotoxins and are banned in many countries. A government agency in Benin estimated that thirty-seven deaths occurred due to pesticide poisoning in one province during the 1999 season (Ton, Tovignan, and Vodouhê 2000).

Illnesses from pesticides occur in several ways. Before applying pesticides, farmers must generally mix chemicals with water, leading to direct skin contact. Then farmers apply these pesticides using backpack sprayers that frequently leak. Most farmers do not have access to protective gear during application; few farmers wear the recommended respirators, goggles, gloves, boots, or long sleeves in the hot tropical sun. This puts farmers at risk of either inhaling or coming into skin or eye contact with pesticides. Another risk of pesticide poisoning exists after application. When used in the developed world, there are strict rules about entering fields after pesticide application. In Africa, no signs are put out to warn those who might enter a field that it has just been treated.

Pesticides are frequently used for crops for which they have not been approved. Studies in Senegal, Ghana, and Benin have demonstrated that significant numbers of farmers used cotton pesticides on other crops, around the household for pest control, to preserve postharvest grain crops, and that they reuse pesticide containers for other purposes (Ton, Tovignan, and Vodouhê 2000; Williamson 2003). Part of the shifting of pesticides to other uses results from the large black market in cotton pesticides; many farmers obtain pesticides on credit and sell them either because they are cash constrained or because they have used their entire stock of pesticides. This means that anyone with enough cash can go to the marketplace and buy whatever

pesticide they would like, even if they do not use it on cotton. In Ghana, for example, many farmers use cotton pesticides on food crops such as cowpea (Williamson 2003). The inappropriate use of pesticides is quite serious in the case of endosulfans, which are persistent and do not easily wash off with water. Because of concerns about pesticide use, there are efforts to introduce organic cotton into sub-Saharan Africa. Dowd, in this volume, addresses this issue, illustrating how one of the main motivations for the introduction of organic cotton is the reduction in pesticide-related illnesses.

One of the newer cotton technologies that will be introduced in many African countries in the coming years is genetically modified (GM) cotton (also referred to as genetically engineered or biotech cotton in common parlance). Already in use in South Africa, several countries in West Africa are undertaking field trials of GM cotton. The main type of GM cotton used in Africa is Bt cotton. The genetic modification in this variety comes from *Bacillus thuringiensis*, a soil bacterium that is toxic to insects of the bollworm family (Qaim and Zilberman 2003). Because the Bt gene produces toxins in the cotton plant that affect such insects, insecticide spraying is potentially reduced.

This new technology holds both promises and perils and has been quite controversial in some arenas. The promise lies in the potential ability of GM cotton to reduce insecticide use, thus reducing costs to farmers in the form of pesticides and labor, increasing yields and also reducing exposure to toxic pesticides. In South Africa, the only African country where GM cotton is widely in use at this point, both insect infestation and pesticide poisoning have been reduced and early studies indicated increased profits for farmers (Bennett et al. 2003; Thirtle et al. 2003).

The big environmental question concerns resistance. It is extremely likely that bollworm insects will eventually develop a decreased susceptibility to the toxin in Bt cotton (Tabashnik et al. 2003). The most common way of preventing resistance is to implement refuge strategies, where farmers dedicate a portion of their farmland to growing non-Bt cotton. Refuges work on the theory that in any given population, there are individuals that are not resistant to a given toxin. By having a refuge, nonresistant insects can survive to reproduce, eventually

diluting the resistance of the population. One large question is whether African farmers have the institutional support to adopt the sorts of practices that will delay resistance.

Another big question about GM cotton is whether it can reduce poverty levels in sub-Saharan Africa. Gouse, Shankar, and Thirtle's chapter (in this volume) seems to indicate that the early promise of GM cotton due to reduced pesticide use and cost savings has been diminished somewhat by problems in institutional structures in South Africa and by the effects of different climatic conditions. A long-term perspective on the effects of GM cotton is therefore important.

Bingen (this volume) is likewise skeptical of GM cotton use in sub-Saharan Africa. He points to concerns of West African farmers about proprietary control, where after the introduction of GM cotton, farmers will be required to purchase seed at a higher price. In particular, farmers in West Africa seem concerned that they must agree not to save seed for replanting or give seed to anyone else. Bingen points to questions about the undemocratic nature of technology transfer, where farmers have little say in their future livelihoods. He asserts that decisions about what technology will be adopted and ultimately used are externally driven, particularly by large corporations and the U.S. government. He notes that it is interesting that farmers have become greatly involved in global politics, yet seem unable to have a voice in domestic political decisions. These decisions are essentially undemocratic and leave the small farmer completely out of the decision-making process about something that will affect them for years to come.

Globalization Debates and African Cotton Production

There is a considerable literature devoted to understanding the phenomenon of globalization and Africa's relationship with that process (e.g., Carmody 2002; Logan 2002; Cheru 2002; Reed 2003; Mbaku and Saxena 2004). In its most general sense, globalization refers to the increasingly international nature of the world economy (or the interconnectedness of national economies), as well as the growing global flow of ideas and culture. There are at least three debates in the

globalization literature that relate to (or are informed by) studies of African cotton production in a global context. First, to what degree is Africa involved in the globalization process? Second, what is the nature of global trading regimes and Africa's relationship with them? Third, to what extent do African governments and farmers passively accept unequal treatment or use the tools of globalization—international media and networks of NGOs, for example—to try to mobilize against the negative forces of globalization.

GLOBALIZATION AND AFRICA

To what degree is Africa involved in the globalization process? Many view Africa as operating at the margins of globalization (Grant and Agnew 1996; Cook and Kirkpatrick 1997). In other words, Africa is an increasingly minor player in terms of its share of global trade and investment. In the case of agricultural products for example (which traditionally have been considered the continent's strong suit), Africa's share of global trade fell by 50 percent between 1980 and 2000 (FAO 2002). Africa's declining share of world trade (as a marker of globalization) may be interpreted in a number of ways.

The orthodox economic interpretation of this situation is that African producers have a comparative advantage in the area of commodity crop production. While African farmers should be leading the globe as producers for some crops, interventionist policies and government inefficiency has led to the decline of African economies, a point made in the oft-cited Berg report (World Bank 1981). African states have historically used agriculture as a way to extract revenue for government operations and to subsidize urban dwellers. World Bank and IMF structural adjustment programs (which advocate a smaller role for government, export orientation, and currency devaluation) have been major policy instruments aimed at reboosting Africa's position as a commodity crop producer. One of the pillars of structural adjustment has been to increase commodity prices for agricultural producers, which, in theory, should increase commodity production and bring in the financial resources necessary for poverty alleviation and the strategic investments needed to advance African economies. In sum, proponents of this perspective argue that Africa is operating

at the margins of the global economy because of internal inefficiencies. They further assert that African economies will benefit from international trade if they can reduce such inefficiencies and more vigorously engage international markets as commodity producers. In addition to internal inefficiencies, supporters of this perspective also often acknowledge that subsidized production in countries of the global North has led to an unfair situation in the global trading arena.

An alternate interpretation is that Africa is neither excluded from, nor a minor player in, the globalization process. Rather, Africa is playing the *integral* role of the peripheral commodity producer. Peripheral in this instance does not imply an area outside the globalization process but rather a zone from which resources are being extracted (Frank 1979; Wallerstein 1979). In other words, Africa is not a minor or marginal player in the globalization process, it has just been dealt the role of commodity producer. The globalization of markets for agricultural commodities thus constructs a new terrain of uneven development at the global scale (FitzSimmons 1997). The reality is that Africa's level of commodity production has not declined in most cases. However, its share of global production has decreased in some instances as other areas in the global South have increased production (e.g., this is the case for coffee, where Vietnam has recently become a large producer) (USAID 2004). More significant than production changes have been noticeable and consistent declines in terms of trade for commodity crops (Africa is receiving less for the products it exports and paying more for its imports).

It has been estimated that declining terms of trade cost non-oil-exporting African countries 119 percent of their combined GDPs between 1970 and 1997 (FAO 2002). More specific to the case of African cotton, Oxfam (2002) determined that for the six African countries that depend on cotton for more than 20 percent of their total revenues (Benin, Burkina Faso, Central African Republic, Chad, Mali, and Togo), they increased export volumes by 40 percent during the 1990s, yet saw their export revenues decline by 4 percent during the same period. As such, Africa's declining export revenues are most closely related to declining prices for its products, even though (in many instances) it is producing more of such commodities. Therefore, it seems

reasonable to conclude that Africa is not outside the globalization process (because material flows of goods are increasing) but is simply at the wrong end (because less and less money is flowing in for the increasing flow of agricultural commodities going out). Indeed some critics of globalization contend that it “searches out differences—in living standards, in the defensive strength of political institutions, in the resilient and resistant practices of people in place—to achieve the old mercantile goal of buying cheap and selling dear” (FitzSimmons 1997, 160). One of the discussions heard in African cotton-producing countries is that unless African economies can find some way to add value to cotton production, through industrialization, they will remain in the role of peripheral primary commodity producer.

TRADE AND AFRICA

What is the nature of global trading regimes and Africa’s relationship with these? The 1990s were a particularly notable period for globalization (Gallagher 2001). In the early to mid- 1990s, a new round of negotiations under the General Agreements on Tariffs and Trade (GATT) created the World Trade Organization (WTO). The main mission of the WTO was to create the conditions for free trade and mediate trade disputes among different countries. At the regional level, new trade agreements were initiated in different parts of the world, including Africa.

Critics noted that these agreements tended to focus on areas where the industrialized world had a comparative advantage, leaving agriculture, the main economic export activity of Africa, alone. At the same time, African governments came under pressure from international financial institutions (IFIs) to initiate structural adjustment programs (SAPs). These SAPs played a key role in opening up African economies to global markets (Roy 1997; Bracking 1999), particularly as they pressured producing countries to liberalize their domestic marketing and price policies. What came to be known as the Washington Consensus aimed to increase agricultural production through increased prices for agricultural producers and reduced state intervention in agricultural markets (Daviron and Gibbon 2002). The irony of course is that while developing countries have liberalized their agricultural production to meet the demands of donor governments,

and become more efficient producers because of these domestic policy changes, agricultural production in developed countries was and still is heavily subsidized. As such, agriculture, in addition to intellectual property rights, remains one of the last frontiers for free-trade negotiations. Reducing agricultural subsidies for North American and European farmers has been particularly challenging. For more than a century in Europe, and for a shorter time span in the United States, the persistence of agricultural subsidies has been explained in terms of the relative power of farmers in these countries. Some have seen that as a paradox (or agrarian question), as the influence of farmers was growing just as their economic power was waning (Kautsky 1988; Koning 1994).

Since the mid-1990s, global cotton prices have declined by 50 percent. Part of this can be blamed on international trends away from cotton toward synthetic materials, and by increased cotton production in China. However, much of the blame can also be put squarely at the feet of subsidies given by the wealthy countries of the world (particularly the United States) to their agricultural producers (Baffes 2004). This latter view has been effectively communicated in the international arena by a series of influential reports, editorials, and the vocal role that West African leaders have taken against subsidies.

One of the most influential and effective campaigns against cotton subsidies has come from Oxfam as part of its Make Trade Fair campaign. Oxfam has highlighted the injustice of cotton subsidies given to American farmers in several provocative reports (2002, 2004). They blame the plummet in world prices directly on the increase of cotton production in the United States (Oxfam 2004). Blaming declining world prices solely on the U.S. subsidies is somewhat simplistic as both China and the European Union also subsidize their cotton producers, yet it is clear the magnitude of U.S. subsidies has led to increased cotton exports. Goreux (2005) reports that in 2003/4 the United States exported 75 percent of its cotton production, compared with only 37 percent four years earlier.

Increased exports have largely resulted from changes made in the 1990s and reaffirmed in the 2002 U.S. farm bill, making cotton more profitable than other competing crops such as soybeans or corn (Ba-

diane et al. 2002). Current U.S. farm policy guarantees farmers a minimum price above market prices. Above that farmers in the United States are then given a payment that brings them to a target price. As a result, American cotton farmers have received up to 73 percent above world market price (Oxfam 2002). This is in stark contrast to African farmers, who receive no subsidies and receive well below the world market price. These subsidies result in the United States spending between US\$3 and \$4 billion each year supporting cotton farmers. Without subsidies, cotton production would not be profitable in the United States. The World Bank estimates that removing subsidies would generate an extra \$250 million per year in added revenues for cotton farmers in West Africa (Minot and Daniels 2005). However, removing subsidies may not be the magic bullet in increasing incomes of cotton farmers that many are proposing. Bassett (in this volume) sees a short-term benefit to increased cotton prices but points out that these additional revenues may be captured by others in the commodity chain. West African farmers have historically received a low proportion of world cotton prices; there is no reason to believe that this will change if world prices increase. Bassett argues that in order for farmers to benefit from increased world prices, they must increase their share of the world market price at the national scale. Furthermore, others make the point (e.g., Moseley in this volume) that these added revenues would be temporary as others farmers will increase production as global prices rise.

As such, the global trading regime has often been portrayed as unfair to African producers in at least two ways. The first and more radical critique is that Africa will always be at a disadvantage if it continues to focus on undifferentiated commodity production. The second perspective suggests that trade in commodities makes sense but that it is not working well for African producers because all countries do not play by the same rules.

One response to the more radical critique is the suggestion that Africa would be best served by disengaging from the globalization process. Advocates of the disengagement position (e.g., Bond 2002) argue that involvement with the global economy has only hurt Africa and that the global trade flows are not free but structured in a way

that benefits the North. They assert that the continent is better served by a move toward self-sufficiency and regional trade. Such an approach might also entail a return to import substitution, an idea that some are beginning to look at again anew (e.g., Bruton 1998). While this argument may be appealing, whether or not disengagement is actually happening, and whether or not this is a real option, is another story. As mentioned above, while African revenues from agricultural trade (in dollar terms) are declining, the quantity of goods it is producing for international markets is increasing. Moreover, there is ample evidence to suggest that most rural economies in Africa are becoming increasingly monetized, a trend that points toward the increasing integration (not disengagement) of African producers in the global market.

GLOBALIZATION, AGRICULTURAL TRADE, AND AFRICAN AGENCY

Globalization is often portrayed as a hegemonic process, one where African farmers and governments are negatively affected by globalized processes. What is becoming clear with cotton, however, is that African farmers and governments do not passively accept unequal treatment and are quite adept in using the tools of globalization to try to mobilize against the negative forces of this process.

West African political leaders have been outspoken about the injustice of cotton-pricing policies in the United States and the negative effects that they have on poor West African farmers. In a *New York Times* editorial, the presidents of Mali and Burkina Faso put the production practices of small farmers in West Africa and large farmers in the United States in stark contrast (Touré and Compaoré 2003). Smallhold family farmers in West Africa can produce high-quality cotton for a 50 percent lower cost than can large corporate farmers in the United States, where farms generate little employment and have large environmental impacts. The two presidents further highlighted the injustice of the policy by claiming that most of the subsidies go to the wealthiest farmers. Indeed, the top 10 percent of farmers receive 79 percent of cotton subsidies, while the top 1 percent of farmers in the United States receive 25 percent of the subsidies (Oxfam 2004).

The presidents of Mali and Burkina Faso illustrated how cotton policies of the wealthy countries reveal the basic inequities in the world-trade system, where free-trade rules are generally applied to products of interest to the wealthy countries but not to products where the poorest countries have a comparative advantage.

Four West African countries—Benin, Mali, Burkina Faso, and Chad—demanded recourse from the WTO, presenting a proposal in 2003 that asked for an elimination of cotton subsidies and for compensation for exporters of cotton as part of the Doha round of trade negotiations (WTO 2003). The unwillingness of the developed world to make concessions on this issue led to the collapse of the trade negotiations in Cancun in 2004. Cotton subsidies were one of the issues cited by the world's developing countries as illustrating the basic inequities of agricultural policies of the developed and developing worlds. Indeed the public relations campaign mounted by the West African countries has been remarkably effective. The plight of West Africa peasant farmers has been highlighted in forums ranging from a series of editorials in the *New York Times* entitled “Harvesting Poverty” to public appearances by members of the farmers’ unions in Cancun. These public pleas, however, left farm policy in the United States fundamentally unchanged.

What eventually changed farm policy in the United States was a decision by the World Trade Organization against U.S. cotton subsidies. Leading to that decision was a suit, brought by Brazil, that challenged the “peace clause,” an agreement granted to the developed countries in the Uruguay round of negotiations. The peace clause basically allowed countries to give their farmers agricultural subsidies as long as they did not exceed 1992 levels. Brazil argued that the current cotton subsidies granted by the most recent U.S. farm bill exceeded the cap and constituted an illegal payment. The WTO ruled in favor of Brazil, and in March 2005 the WTO ruled against an appeal by the United States. If the United States did not reform its agricultural policies that give large subsidies to cotton farmers, it is likely that Brazil would retaliate with sanctions. At this time, it is unclear what type of agricultural reform will emerge as cotton farmers, particularly those from Southern states, such as Texas and Mississippi, wield a great deal

of political power. Research by Ledermann (2005) suggests that, while the U.S. may comply with the letter of international trade law, the repackaging of subsidies may lead to little or no decline in government support for U.S. farmers.

One way to think of global cotton is as a vertically integrated set of farmers, national private-public partnerships, or marketing boards and international corporations that process and market cotton. While global forces are clearly an important part of the cotton story in West Africa, they are only part of the story. As the activism of West African cotton farmers suggests, we need to have a more nuanced view of globalization to counter the idea of globalization as a hegemonic force that is unaffected by local actors; instead we must show that globalization is uneven and contested (Whatmore and Thorne 1997). In African cotton struggles, networks of farmers and international NGOs are an equally important part of this story. Bassett (2001) largely represents the peasant cotton revolution in Côte d'Ivoire as a success due to the agency of local producers who made demands on state actors to raise cotton prices. When prices were too low, farmers responded by protest and withdrawal from the cotton market, using their market power to create new alliances with state actors.

Somewhat ironically, farmers' unions may have more power when the state is overly dependent on a commodity they produce. This is arguably the case in Mali and Burkina Faso. Alternatively, the over-dependence of the treasury on commodity crop revenues could conceivably also lead to state-sponsored violence or coercion to ensure continued production. This was the case in some colonies during the colonial era, although such a strategy was never that effective as it resulted in farmers' diverting their production to the black market as well as a generalized subsistence crisis (Isaacman 1996; Bassett 2001).

At this time, producer groups in countries such as Burkina Faso and Mali are asserting their power. Unions of cotton growers are using their influence to determine local price policy by bargaining with national governments and international policymakers. Thus, West African farmers are going global. Mirroring the fair trade movement in other commodities such as coffee, West African cotton producers are utilizing alternative networks to create new markets for cotton

production. For example, while members of West African farmers' unions are attending WTO meetings to change policy, they are also attending international meetings of organic farmers, marketers, and textile makers seeking to move away from chemical-intensive cotton production toward organic production. These efforts work side-by-side with their more conventional efforts to change the pricing policies of developed countries. These alternative networks have emerged from groups of NGOs, such as Oxfam, which has pushed its Make Trade Fair campaign for cotton, among other commodities. Dowd, in his chapter, illustrates how European NGOs are organizing organic cotton cooperatives in East and West Africa. Very interestingly, organic cotton production has been easier to establish in areas where the state is less active in the promotion of conventional cotton production, making East Africa more favorable for this type of production than West Africa.

Notes

The epigraphs to this chapter are drawn from Isaacman 1996; Government of Burkina Faso, "Strategic Framework for the Development of the Cotton Sector in Burkina Faso" (Ouagadougou, 2004); Aaron de Grassi, "Genetically Modified Crops and Sustainable Poverty Alleviation in Sub-Saharan Africa: An Assessment of Current Evidence," Working Paper, Accra: Third World Network—Africa, 2003; Drissa Keita, "La filière cotonnière est le clé du développement du Mali," interview, *Jeune Afrique économie*, June 1–14, 1998; Walter S. Rodney, *How Europe Underdeveloped Africa* (Washington, DC: Howard University Press, 1982); Touré and Compaoré 2003.

1. Hereafter we will refer to sub-Saharan Africa simply as Africa.
2. African and non-African governments, civil servants, local business people, and multinational corporations.
3. These countries are often discussed as a group because they have a similar history and organization of cotton production. They also participate in the global cotton market as a group. The vast majority of production in this group hails from four West African countries: Benin, Burkina Faso, Côte d'Ivoire, and Mali.

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