CAPITALISM, CULTURE, AND COTTON: NEW AGRICULTURAL TECHNOLOGIES IN BURKINA FASO

by

JESSIE K. LUNA

B.A., University of Southern California, 2006
M.A., Graduate Institute of International and Development Studies (Geneva, Switzerland), 2012

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written by Jessie K. Luna
has been approved for the Department of Sociology

_________________________________________________________
Dr. Jill Harrison

_________________________________________________________
Dr. Liam Downey

_________________________________________________________
Dr. Lori Hunter

_________________________________________________________
Dr. Emily Yeh

_________________________________________________________
Dr. Mara Goldman

Date________________

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How is it that there are still black Africans laboring in cotton fields in a system that produces benefits for white capitalists yet regularly puts farmers into debt and harm’s way? In 2016, farmers in the West African country of Burkina Faso produced nearly 700,000 tons of cotton for international markets, and spent well over US$100 million on agricultural technologies in the process. Yet a majority of farmers make very little money, often fall into debt, and expose themselves and their communities to chemical pollution. This dissertation seeks to explain why farmers are taking part in this system. More specifically: Why are small-scale Burkinabè cotton farmers adopting new agricultural technologies that deepen their integration into the precarity of capitalist markets and contribute to rising social and environmental inequalities? To answer this, I conducted eight months of participant observation and 125 interviews with farmers and cotton sector actors.

My answer draws on Bourdieu’s cultural sociology, theories of “racialized modernity,” and environmental inequality research to explain and evaluate the dynamics of agrarian capitalism in Burkina Faso. I find that many actors in Burkina Faso are enthusiastic about purchased agricultural technologies (including genetically modified seeds, pesticides, fertilizers, and tractors). I show how a combination of reinforcing political-economic and cultural forces compels Burkinabè farmers to embrace these technologies. First, the global economic system constrains farmer choice, leaving farmers few options other than to try to increase their production of poorly remunerated cash crops. Yet farmers also take part in the distinction politics of Burkina Faso’s postcolonial cultural field, seeking to acquire the symbolic and material status
of Western, “white” modernity. As people seek to maintain or improve their own status, they justify passing on exploitation and pressure to increase production to other actors, they embrace “modern” technologies, and their families become increasingly individualized and thus reliant on technology rather than family labor. The novel contribution of this dissertation is to argue that aspirations for status within a racialized and unequal global culture have facilitated the expansion of capitalist agriculture in Burkina Faso, and thus – ironically – the deepening of both environmental and economic inequalities.
This thesis is dedicated to the *kori senekelaw* (cotton farmers) of Burkina Faso and Mali.
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CONTENTS

CHAPTER 1: INTRODUCTION ........................................................................................................... 1
Background: colonialism and cotton in Burkina Faso ................................................................. 4
Agriculture and capitalism in Africa ............................................................................................ 12
New agricultural technologies and capitalism in Burkina Faso .............................................. 16
Cultural politics in a postcolonial context ................................................................................. 19
An overview of this dissertation ............................................................................................... 25

CHAPTER 2: METHODS AND SITE DESCRIPTION ..................................................................... 29
Data collection and analysis ....................................................................................................... 29
SOFITEX and other institutional actors ..................................................................................... 34
Resistance movements ............................................................................................................. 35
Rural fieldwork .......................................................................................................................... 37
Description of rural field site .................................................................................................... 40

CHAPTER 3: THE CHAIN OF EXPLOITATION: INTERSECTIONAL INEQUALITIES,
CAPITAL ACCUMULATION, AND RESISTANCE ................................................................ 44
What remains of agrarian questions? ......................................................................................... 46
Social differentiation and intersectional inequalities ............................................................... 48
Methodology and field methods ............................................................................................... 50
Studying chains ........................................................................................................................ 50
Field methods .......................................................................................................................... 52
Case background: the Burkina Faso cotton sector .................................................................. 53
Findings: the chain of exploitation ........................................................................................... 55
SOFITEX management ................................................................. 57
Extension agents: ATCs ............................................................... 59
Rural male farmers ................................................................. 62
Rural women ........................................................................ 69
Conclusion ........................................................................ 71

CHAPTER 4: GETTING OUT OF THE DIRT: RACIALIZED MODERNITY AND ENVIRONMENTAL INEQUALITY ................................. 75

Environmental Inequality ......................................................... 77
The color of African modernity and racialized cultural fields ...................... 79
Case, methods, and positionality ........................................ 82
Burkina’s cultural field: the status of whiteness and modernity ................... 87
The status of “Frenchness” ............................................................. 89
The whiteness of wealth .............................................................. 89
Getting out of the dirt: whiteness, cleanliness, and progress ..................... 91
Blackness, physical labor, and status ....................................... 92
Status, whiteness, and agricultural technologies .................................. 94
Science, technology, and “evolution” .......................................... 94
New agricultural technologies and status ..................................... 96
Legitimizing inequality and unsustainable agriculture .......................... 99
Health concerns are for white people ........................................ 99
Barriers to sustainable farming ................................................. 102
Conclusion ........................................................................ 103
CHAPTER 5: “PESTICIDES ARE OUR CHILDREN NOW”: CHANGING LABOR
DYNAMICS AND FEEDBACK LOOPS IN AGRICULTURAL TECHNOLOGY ADOPTION

Agricultural technology adoption and Sub-Saharan African agriculture .................................................. 109
Methods and Field Site .......................................................................................................................... 115
Agricultural technologies: a solution to increasing production with declining labor .................. 117
Economic pressures ............................................................................................................................. 117
Increasing cotton production with fewer people ............................................................................... 118
Unpacking labor shortages .................................................................................................................. 122
Cultural change: individualism, money, and aspirations for modernity ........................................ 122
Families splitting .................................................................................................................................. 125
Young men and women refusing to work ......................................................................................... 127
Putting children in school ................................................................................................................ 128
Conclusion ............................................................................................................................................ 131

CHAPTER 6: CONCLUSION .................................................................................................................... 136
Limitations and suggestions for future research ............................................................................... 137
Aspirations for modernity .................................................................................................................... 140
Racial inequality in the world-system ............................................................................................... 144
Coercion and consent ........................................................................................................................ 147
Whither resistance? ............................................................................................................................ 149
Concluding remarks .......................................................................................................................... 153

REFERENCES ......................................................................................................................................... 155

APPENDIX A: COTTON COSTS AND PROFITS .................................................................................... 179
TABLES

Table 1: Capital/fixed costs for a small to mid-size farm (3-6 hectare) ............................................. 185
Table 2: Yearly input costs and labor days per hectare (2016).............................................................. 185
Table 3: Estimated average yearly incomes from cotton (2016).......................................................... 187
Table 4: Average return to labor (2016) .................................................................................................. 187
FIGURES

Figure 1: Herbicides for sale ............................................................................................................. 83
Figure 2: Farmers spraying pesticides .............................................................................................. 83
Figure 3: Family exposure to pesticides ............................................................................................ 84
Figure 4: Pesticides and water supplies ............................................................................................ 84
Figure 5: Discourses of modernity and progress ........................................................................... 87
Figure 6: Yearning for whiteness .................................................................................................... 90
Figure 7: Debt, increasing acreage, labor shortages, and technology adoption ....................... 122
Figure 8: Changing labor dynamics and feedback loops in technology adoption ...................... 132
Figure 9: Images of modernity ........................................................................................................ 139
Figure 10: Dreams of wealth ............................................................................................................ 139
CHAPTER 1

INTRODUCTION

“If it weren’t for all the work we do, all the farming and labor we do, where would any of their profit come from? We are the ones sweating in the fields under the hot sun. But all of that profit, from the fields all the way to the trucks and the factory, each step along the way, people are making profit, except for us.”
- Cotton farmer

“We in Burkina, we export our sweat, that’s what we export…The cotton we sell? It’s our soil and our sweat, those are the main ingredients. The same with all of it. What are we left with? Tired soil and tired bodies.”
- Cotton farmer

In West Africa, cotton is called “white gold.” These puffs of white fiber constitute West Africa’s leading agricultural export, and are often claimed to be a motor of economic development and a pro-poor success story for West African farmers (Gray and Moseley 2008). In 2016, farmers in Burkina Faso grew 683,000 tons of white gold, making Burkina Faso Africa’s leading exporter of cotton (Gongo 2017). Ninety eight percent of this cotton was shipped out of Africa, purchased by agribusinesses to turn into textiles for global consumers (Sylla 2017).

In growing this cotton, Burkinabè farmers in the southwest (SOFITEX) region purchased and applied well over US$110 million of agricultural inputs on credit and tens of millions more with cash.¹ Not only did these purchases help support the profits of international banks and rapidly consolidating global agribusinesses like Dow/DuPont and Bayer/Monsanto, but pesticides have significant impacts on farmers’ health (Ouedraogo et al. 2008; Ouédraogo et al. 2009; Toe et al. 2013). Male farmers and their families face exposure during application, and fertilizers and pesticides run off farmers’ fields into nearby streams, affecting local ecosystems

¹ See Appendix A for a detailed discussion of cotton costs and profits, including farmer expenditures, incomes, and debt.
and the water that farm families drink and bathe with (Gray and Moseley 2008; Tapsoba and Bonzi-Coulibaly 2006; Toe et al. 2013). The continuous cycle of cash-crop cotton has also played a role in degrading soil fertility in the region (Moseley 2005) – an example of ecologically unequal exchange in which farmers export their ecological resources and undermine the long-term viability of their soil (Clark and Foster 2009; Rice 2007b). Furthermore, herbicides have even changed families’ diets as they have eliminated women’s ability to intercrop vegetables with their field crops.

In addition to these impacts on health and ecosystem, it is hard to overstate the degree to which many farmers feel overworked and underpaid for growing cotton, particularly mid- to small-scale farmers, who struggle to make ends meet and not fall into debt. As the quotes above illustrate, rural men and women work long, exhausting days in the hot sun, pouring their sweat and money into growing the white gold that will ultimately get shipped across the ocean. After farming their “tired soils with tired bodies,” and exposing themselves and their communities to chemical pollution, large numbers of farmers will owe money to the cotton company. And yet, most farmers will do it again next year.

This is a puzzle. How is it that in 2016, there are still black Africans laboring in cotton fields, in a system that produces benefits for white capitalists yet regularly puts farmers into debt and harm’s way? “Still,” because this dynamic looks surprisingly similar to slave-based plantation agriculture in the 1800s, and to colonial systems of forced cotton production in the early 20th century (Beckert 2015; Isaacman and Roberts 1995). This is not a conventional view of West African cotton sectors. Economic analyses have often focused on figuring out how to improve livelihood outcomes for farmers by changing technologies, markets, or policies (Baffes 2011; Baquedano, Sanders, and Vitale 2010; Kaminski 2011; Kaminski, Headey, and Bernard
2011, 2009; Vitale et al. 2007; Vitale, Ouattarra, and Vognan 2011), while others have cast a more critical eye on the ongoing production of poverty and inequality (Bassett 2008; Dowd-Uribe 2014b, 2014a; Gray 2005; Gray and Dowd-Uribe 2013; Gray, Dowd-Uribe, and Kaminski 2018; Gray and Moseley 2008; Moseley 2008). While recognizing the merits and contributions of both bodies of research, this dissertation draws on the more critical scholarship, and takes as a starting premise the fundamental global inequality of West African farmers’ participation in input-intensive cotton production.

The puzzle is that, despite this inequality, unlike under slavery or colonialism, Burkinabè farmers today are not being forced to grow cotton, nor are they forced to purchase manufactured agricultural technologies. They appear to be willingly engaging in this system. I see this as part of a question about how and why capitalism is extending its reach into the Burkinabè countryside. In particular, this dissertation helps explain why farmers are taking part in a system that produces and maintains their marginal position in the global economy. More specifically, this dissertation asks: Why are mid- to small-scale Burkinabè cotton farmers adopting new agricultural technologies that deepen their integration into the precarity of capitalist markets and contribute to rising social and environmental inequalities?

In this introductory chapter, I review other scholarship on this topic and discuss my approach to answering this question. First, I provide a background of cotton production in Burkina Faso in order to flesh out the empirical puzzle I have described above. Next, I zoom out to examine the dominant scholarly approaches to the relationship between capitalism and agriculture. I review mainstream development scholarship and political economy, and each of these literatures’ corresponding approaches to technology adoption. I identify the limitations of these approaches for answering my puzzle, and then turn to literature on “cultural politics” and
agriculture, which I contend offers a useful approach for making sense of farmer behavior in Burkina Faso. I discuss how I draw together a Bourdieusian cultural framework with the theory of *racialized modernity* in order to understand farmers’ behavior in relationship to global racial inequalities. I conclude the introduction with a road map of this dissertation.

**Background: colonialism and cotton in Burkina Faso**

The history of cotton in West Africa reflects shifting systems of extracting resources and profits from the periphery of the world-system, from direct coercion to the “coercion of free markets” (Isaacman and Roberts 1995). During the colonial era in West Africa, from the early 1800s until 1960, France sought, by various means, to extract cotton to supply its textile mills (Roberts 1995). For much of this time, cash crop cotton production resulted from direct coercion.

As early as 1895, the French colonial administration imposed a head tax in Burkina (then Haut-Sénégal-Niger) – backed by colonial policy that “the colonies, with their own resources, must cover all the expenses incurred by the metropolis in the colonial territory” (Suret-Canale 1964:432). By the early 1900s, these taxes were demanded in French currency, under the justification that part of France’s civilizing mission was to bring Africans into the capitalist economy. The tax rate increased steadily in the following three decades, and produced violence and extortion as well as mass migration flows as people sought to either escape taxes or sell their labor to earn French francs (Cordell, Gregory, and Piché 1996). Head taxes also played a significant role in pushing farmers into cash crop production, including cotton. Additionally, in 1924, the colonial administration imposed a policy of obligatory cotton production, forcing peasants to grow cotton for extremely low prices. These policies failed to produce much cotton, but they contributed to a widespread subsistence crisis (Gray 2008). These policies also existed alongside various other forced labor schemes that extracted raw labor out of Burkinabè’s bodies,
for infrastructure projects in West Africa as well as forced military conscription in both World Wars (Cordell, Gregory, and Piché 1996; Isaacman and Roberts 1995).

After WWII, France again tried to boost cotton exports, although via less (directly) coercive means. In 1951 France formed the French government-owned Compagnie Française pour le Développement des Fibres et Textiles (CFDT), which operated throughout West Africa. CFDT colluded with gins to eliminate local varieties of cotton and establish monopolies over cotton manufacturing and marketing in the colonies (Dowd-Uribe 2014a), and targeted male farmers for cotton extension efforts (Gray and Moseley 2008). Still, cotton production remained low (Gray 2008), and to a large degree oriented towards benefitting merchants rather than farmers. Ouédraogo’s comments in 1976, for example, exemplify the theme of “farmer as proletarian” (Lewontin 2000):

The producer always loses. […] The system functions as if he were a factory worker, as if he sold his labor and not his product. This is because he does not control his means of production: he is advised to use this variety of cotton, that fertilizer, this or that agricultural input, for which he will pay in kind (quoted in Cordell, Gregory, and Piché 1996: 177).

Following Burkina Faso’s independence in 1960, CFDT eventually ceded control to the Burkinabè state-owned company SOFITEX in 1979, although French-owned CFDT retained a 44% share in SOFITEX. SOFITEX continued CFDT’s efforts to vertically integrate the cotton “filière,” supplying extension services, inputs, and credit to farmers before the season, and then purchasing, transporting, ginning, and marketing the cotton. This integrated system for supplying inputs and credit – combined with ongoing pressures to increase cash incomes and the gradual fading from memory of the forced cotton production era – are credited with booming cotton production

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2 At the time Société Voltaïque des Fibres Textiles, which become Société Burkinabè des Fibres Textiles, “SOFITEX,” when the country’s name changed in 1984.
between the 1970s and 1990s (Dowd-Uribe 2014a; Gray 2008). Male farmers formed “Village Groups” (GVs) to take out loans from SOFITEX for inputs, including fertilizer, oxen, and insecticides. GVs played a major role in village infrastructure projects throughout this period, building schools and water pumps. The GV system also helped many farmers obtain oxen and shift to animal traction agriculture. However, debts began to accrue (partially due to a free rider problem), leading to a crisis in the mid-1990s. This crisis was exacerbated by other problems in the cotton sector: low cotton prices, the 1994 devaluation of the CFA franc by 50% (part of World Bank and IMF-led structural adjustment initiatives) that made inputs more costly for farmers, and a pest/pesticide crisis in 1996, in which pests developed resistance to insecticides. Some indebted farmers were jailed, many farmers began to leave cotton production, and farmers began protesting and organizing to demand better prices and higher quality inputs (Gray 2008; Dowd-Uribe 2014b).

In this context, the Burkinabè cotton sector underwent a series of “liberalization” reforms under pressure from the Bretton Woods Institutions. Many of these reforms have differentially benefited larger farmers, eroding the few gains that cotton production had brought to rural communities (Gray et al. 2018). In 1996, GVs were restructured into smaller groups usually based on kinship, called “GPCs” (Groupements des Producteurs du Coton), with stricter rules and stronger peer pressure for debt repayment. Although the creation of GPCs was intended to improve debt repayment, debt remains a significant problem (and causes some farmers to sell their productive assets or to exit cotton production) (Gray 2008; Gray and Dowd-Uribe 2013; Gray et al. 2018; Appendix A). Furthermore, Gray et al. (2018) find that GPCs have ceased investing in village infrastructure projects, and Dowd-Uribe (2014b) has argued that the creation of GPCs also served to splinter emerging producer movements.
Producer movements were also co-opted by the creation of a farmer’s union, the UNPCB (l’Union nationale des producteurs de coton du Burkina), in 1998. The Burkinabè state was able to claim to the Bretton Woods Institutions that it was empowering producers, particularly by giving UNPCB a 30% share of SOFITEX (Dowd-Uribe 2014b). Yet despite early optimism, the UNPCB was formed with heavy involvement (and co-optation) from SOFITEX and elite national actors. Further, the UNPCB has not led to higher prices for farmers (compared to other countries without producer unions), and studies (including my own data) show that farmers essentially see SOFITEX and the union as “the same” – with the union just one more way to extract fees from them. Furthermore, the UNPCB’s share of SOFITEX was reduced to only 5% in 2012, further underlining claims of producer empowerment (Dowd-Uribe 2014b; Gray et al. 2018).

The third liberalization reform was the partial privatization of SOFITEX in 2004. SOFITEX split off the central and eastern regions, creating two private cotton companies (SOCOMA and Faso Coton) that operate small regional monopolies parallel to SOFITEX. However, SOFITEX still controls 80% of Burkinabè cotton in the southwestern half of the country, and each company retains a vertically integrated monopsony within its geographical region (Dowd-Uribe 2014b). This partial liberalization preceded a second crisis in the cotton sector in 2006, as world cotton prices again plummeted and producers scaled back, and even boycotted cotton production. Prices rebounded in 2011, and cotton production has again expanded (Dowd-Uribe 2014a). Nonetheless, farmers’ incomes remain small and precarious. Farmers carry all of the risks of growing cotton: of pest invasions, drought, flooding, and fire. Inconsistent rainfall, particularly “drought pockets” and a shorter-than-usual rainy season, have
been serious issues in recent years, significantly affecting harvests in both 2016 and 2017 (Bassolé 2018).

As of 2016, roughly one third all GPCs in the SOFITEX region had outstanding debts. Of active cotton farmers in non-indebted groups, 18% fell into debt in 2015, and another 12% of farmers did not receive their full cotton income because their revenue went to pay other farmers’ debt (Appendix A). While the small number of wealthier, larger-scale farmers do make money from growing cotton, mid-size and smaller-scale farmers (less than five hectares) are much more likely to fall into debt. In a study of 30 cotton growing groups, Gray, Dowd-Uribe, and Kaminski (2018) find that while small and mid-size farms make up roughly 80% of farmers, “more than 47% of small cotton farmers and 41% of medium cotton farmers have incurred debt during the 2004–2010 period, compared to 7.9% of large farmers and only 2.8% of very large farmers.”

Even the farmers who make money earn very little. The “average” SOFITEX farmer, growing three hectares of cotton with oxen, might earn around US$160 for an entire season of work, only slightly more than US$1 per day of family labor (see Appendix A).

In this context, Burkina introduced genetically modified “Bt” cotton through a partnership with Monsanto. Bt cotton expresses the bacterium Bacillus thuringiensis, which is toxic to many Lepidoptera pests including the cotton bollworm, Helicoverpa armigera. Bt cotton appealed to Burkina as a solution to the pest crisis and pesticide resistance, to increasing yields and production, and as an opportunity to fund the severely underfunded state agricultural research sector (Dowd-Uribe 2014a). After several years of field trials and the development of a Burkinabè variety of Bt cotton, Bt cotton was introduced on a limited scale in 2008 (sold through the cotton companies), and was quickly adopted by a majority of farmers – reaching 72% in 2014 (AICB 2015). Although Monsanto-funded research trials promised yield gains of 30% (and
the seed price was set accordingly), and early research promised higher yields and profits (Vitale et al. 2008; Vitale, Vognan, et al. 2011), the cotton industry later reported that Bt cotton gave an average yield gain of only 13% between 2008 and 2014, and as low as 5% in 2012 (AICB 2015). Work by Gray and Dowd-UrIBE indicates that factors such as ongoing debt (exacerbated in some cases by high seed costs and poor germination), late payments from the cotton company, and corruption played a role in rising inequalities between poor and wealthy farmers and even the abandonment of Bt cotton production by some farmers (Dowd-UrIBE 2014a; Gray and Dowd-UrIBE 2013).

Bt cotton also brought difficulties to the cotton sector as a whole. As early as 2006, studies by INERA (the state research center) had indicated that the Bt varieties (crossed from a short-fiber American variety) had a shorter fiber length than Burkina’s conventional varieties. In 2011 SOFITEX asked Monsanto to fix the problem, but they did not (AICB 2015). SOFITEX also observed a decline in fiber strength and a lower ginning yield with the Bt varieties. In 2011, Monsanto paid SOFITEX 1.2 billion FCFA to compensate for these problems. Burkina’s international sales had relied on the desirability (and price premium) of its long fiber cotton, and by 2015, the cotton sector estimated monetary losses of 48 billion FCFA (roughly US$86 million) due to the Bt cotton’s short fiber length, and sought reparations from Monsanto. In early 2016, SOFITEX and UNPCB decided not to renew their contract with Monsanto, and stopped growing Bt cotton. In 2017, Monsanto agreed to forfeit a share (11.3 billion FCFA) of their seed royalties (Bavier 2017) – less than a quarter of the money demanded.

While the story of Bt cotton has garnered a great deal of international attention, it is best understood within the broader historical pattern of cotton production in West Africa, where despite technological change, Burkinabè actors – in particular mid- to small-scale farmers –
struggle to make significant material gains. Part of the central issue is that both the Burkinabè government and Burkinabè cotton growers have limited choices beyond raw commodity production for export (Bassett 2008). The Burkinabè state faces ongoing pressure to increase economic growth and production in order repay international debt and continue to obtain financing from the International Monetary Fund, the World Bank, the European Union, and other donors (Downey 2015; Harrison 2004; interviews with Burkina’s Dept. of Finance). Yet the Burkinabè state has few sources of income or economic growth. Although cotton’s share of export earnings has fallen to roughly 15% with the rising importance of gold exports (International Monetary Fund 2017), cotton still plays a significant role in the national economy, and IMF assessments of economic growth and debt sustainability thus center their reports on economic forecasts for gold and cotton (International Monetary Fund 2016).

However, exporting raw materials is a difficult path to wealth. Even as African countries export greater quantities of raw materials, they have seen declining revenues due to poor terms of trade (Gray and Moseley 2008; Raikes and Gibbon 2008; Wallach and Woodall 2004). Most of the value in cotton accrues to actors higher up the commodity chain (Bassett 2008), and while Burkina used to produce textiles domestically at the Faso Fani factory in Koudougou, Burkina closed the factory in 2001 as part of World Bank and IMF-imposed privatization efforts (Zongo 2014). Furthermore, despite pressure on African countries to reduce subsidies to their own growers, U.S. cotton subsidies have driven down global cotton prices – a point that has been the subject of heated protest from West African leaders during international trade talks (Heinisch 2006) and much academic debate (Baffes 2011; Baquedano et al. 2010; Gray and Moseley 2008; Watkins 2002). In sum, cotton production in Burkina Faso has shifted over the last century from forced production to voluntary participation in the market. Current participation has been
strongly shaped by neoliberal policies and ongoing structural inequalities in the global world-system.

This brief history of cotton in Burkina helps describe the historical and structural context shaping farmers’ decisions to grow cotton and to adopt agricultural technologies. While farmers have directly protested and exited production when prices have gone too low, we are still left with the puzzle of why so many of them continue, and why they go into debt purchasing technologies. To some extent, the obvious answer is that it “makes sense” for farmers given the options they have. This is particularly true for larger-scale farmers, who do stand to make a profit from growing cotton (due to greater investments, economies of scale, and preferential treatment from SOFITEX) (Gray and Dowd-Uribe 2013). It is less obvious why smaller-scale, more frequently indebted farmers continue to do so. Previous research has shed light on some aspects of this question. Farmers grow cotton because it is one of the few options available for making money (given limited and unstable commodity markets), and they adopt technologies because those technologies help them increase production. Their soils are degraded, they have few resources for producing organic compost, and there is little land left to practice shifting agriculture (see Gray 2005; Chapter 2). This situation presses farmers to obtain synthetic fertilizers to sustain their food production, and the cotton company is the only way to obtain fertilizers on credit. Thus, one important answer to the puzzle is that many farmers grow cotton because it is their best strategy for obtaining fertilizer for their cereal (food) crops (Dowd-Uribe 2014a; Gray 2005; Koenig 2008).

However, this explanation does not fully explain why chronically indebted farmers are adopting new agricultural technologies (such as herbicides and Bt cotton) as enthusiastically as they are, and it assumes, rather than explains, why farmers want to increase production and
income even at great risk. This dissertation dives deeper into trying to understand how and why it now “makes sense” for farmers to voluntarily take part in a system that reproduces their marginal position in the global economy. My question, then, is not merely about the Burkinabè cotton sector. It is part of a much broader conversation about how capitalism transforms agricultural systems, and who does (or doesn’t) benefit from these transformations.

**Agriculture and capitalism in Africa**

There is a long and varied tradition of research on the intersection of capitalism and agriculture in Africa, part of which falls under the rubric of economic development (a close synonym to capitalist expansion) (Hart 2001; Wainwright 2008). From an aerial view, there are two broad camps interested in this intersection: mainstream development scholars who think the “problem” with Africa is not enough capitalism, and critical political economists who think the problem is capitalism. The problem, of course, being the perpetual “crisis” of African poverty or underdevelopment, depending on the view (Berry 1984; Bryceson 2002; Watts 1989).

Mainstream development literature rooted in modernization theory has tended to view Africa as insufficiently integrated into capitalist markets or Africans as insufficiently integrated into capitalist mindsets. The specifics of these insufficiencies have changed, but the overall narrative has remained the same: Africans are poor because of a lack of capitalism. In the 1970s, and still to some extent today, development economists viewed Africans as insufficiently rational. They lacked the proper “culture” of entrepreneurship and initiative, and were hampered by traditional mentalities, communal social networks, and cultures of patronage. The problem of how to insert capitalism into Africa, then, became a question of turning Africans into *homo economicus* – rational maximizers (Bauer 1976; Rostow 1990).
However, as arguments emerged that peasant farmers – in Africa and elsewhere – are indeed rational actors (Bates 1981; Popkin 1979), the explanation for insufficient capitalism shifted to one of improper markets and structural problems with governance. This view played out in the Structural Adjustment Programs carried out by the World Bank and the International Monetary Fund in the 1980s and 1990s (Downey 2015; Harrison 2004). By the late 1990s, however, with collapsing faith in the Washington consensus, the market fix was replaced by the institutional fix: good governance, civil society, and social capital (or “capitalism with a human face”) (Hart 2002, Bebbington 1999). The new explanation for the failure of capitalism thus maintained a focus on “getting the prices right,” with the addition of “getting the institutions right.” The idea was that with the right prices and institutions in place, rational maximizing farmers would help African capitalism finally “take off” (Collier 2008; Easterly 2006; Sachs 2006; Williamson 1993).

However, this set of explanations for African poverty remains unsatisfying. At an empirical level, decades of programs, projects, policies, and structural adjustments based on these theories have done little to change sub-Saharan Africa’s marginalized position in the global economy; despite recent growth, in 2016, sub-Saharan African economies represented only 2% of global GDP (World Bank 2016). In other words, even with economic growth, their slice of the global pie remains miniscule. Furthermore, growth is unevenly shared within countries. In the case of Burkina Faso, Kaminski (2011:2) finds that:

Despite sustained annual per capita GDP growth of about 2-3 percent between 1994 and 2003, the national poverty headcount index remained about 45 percent at the end of that period. […] No significant effect of growth on poverty reduction has been found at the aggregate level.

Critical political economists and world-systems theorists argue that this continued marginality is because capitalism is an unequal system by definition, and that Africa’s integration into the
global economy is part of a system of unequal exchange that tends to produce poverty and inequality (Amin 1973; Rodney 1972; Wallerstein 2004). Others have argued that the basic development vision of “development for all” is a myth – that it is structurally impossible to eliminate exploitation and poverty within a capitalist system, and ecologically impossible to sustain unlimited economic growth and consumerism for the global population (Rist 2002; Wackernagel and Rees 1996; York, Rosa, and Dietz 2003). Thus, at a fundamental level, the debate between mainstream development scholars and critical political economists is a debate about the nature of capitalism itself, and whether global inequalities between and within nations are caused by capitalism or can be solved by capitalism.

My research and the research of many others (Bassett 2008; Dowd-Uribe 2014a; Gray 2005; Gray and Dowd-Uribe 2013; Gray et al. 2018; Gray and Moseley 2008) has found that Burkinabè cotton farmers’ integration into the global capitalist economy has produced wealth for many actors, but comparatively little for cotton farmers themselves, particularly the smallest-scale farmers (Gray et al. 2018). As such, my research builds on the long tradition of research that has taken a critical approach to the intersection of capitalism and agriculture: scholarship on the “agrarian question” and the political economy of agrarian change. Dating back to Marx, Engels, Lenin, and Kautsky, this research tradition asks similar questions to mainstream development scholars: how and why does capitalism transform agriculture, and what are the obstacles to this process (Akram-Lodhi and Kay 2009, 2010a; Banaji 1980; Bernstein 1996; Goodman and Watts 1997)? Political economists, however, have been more concerned about class differentiation, exploitation, and resistance (Bernstein 2010). Furthermore, in addition to examining obstacles to capitalist development, critical scholars have argued that African farmers have long been integrated into capitalism.
One historical argument is that Africans have been integral to the emergence of the modern world-system, providing labor, resources, and a steady flow of agricultural exports— including cotton—since the first “Scramble for Africa” in the late 1800s (Beckert 2015; Berry 1993; Cordell et al. 1996; Isaacman and Roberts 1995). One theory of this integration is that capitalist modes of production “articulate” with non-capitalist or domestic modes, creating interacting “spheres” of production (Cordell et al. 1996; Meillassoux 1981). Some have argued that this co-existence works to benefit capital: Barrington Moore (1966) has argued that it is more profitable for capitalism to extract rent from agriculture than to invest in it directly. Chayanovian peasants who self-exploit, for example, may enable capital to extract a surplus without having to absorb the costs, because the persistence of subsistence production lowers the cost to capital of the reproduction of labor (Wallerstein 2004). Another thesis is that African and other small-scale farmers are fully capitalist, although in forms that are not always recognizable as such. Bernstein (2004), for example, argues that African farmers are “petty commodity producers”—occupying the paradoxical position of both capitalist and laborer at the same time. They own their means of production and they engage in self-exploitation. Recent research on contract production echoes this dual positionality, in which farmers may retain “ownership” over some means of production while losing control over many choices and methods of production (Freidberg 2004; Glover and Kusterer 1990; Lewontin 2000; Little and Watts 1994; Oya 2012). Finally, a significant body of anthropological and historical scholarship has examined the emergence of indigenous African capitalists and consequent processes of rural differentiation (Austin 2005; Berry 1985; Guyer 1997; Hill 1997; Iliffe 2015; Oya 2007; Wooten 2005).

This varied literature has thus identified numerous processes through which rural farmers come to enter capitalist relations (with important recognition of geographical variation across
Africa). In colonial times, this was often via direct coercion, taxation, and violence (Burawoy and Von Holdt 2012a; Fanon 1963; Isaacman and Roberts 1995). Political-economists have also identified structural pressures emerging from capitalism that drive commodification and widening inequalities, such as land enclosures (Akram-Lodhi 2007; Araghi 2000), debt (Gerber 2014), the “reproductive squeeze” on households (Bernstein 2010), neoliberal trade policy (Bryceson 2002; Gonzalez 2004; Moseley, Carney, and Becker 2010), or the rise of buyer-dominated commodity chains (Daviron and Gibbon 2002; McMichael 2013). Yet another mechanism for deepening relations of capitalism and commodification is the expanded use of purchased agricultural technologies. I turn now to this mechanism, discussing how political economists and mainstream development scholars have approached the question of technology adoption, and then discussing the limitations of these approaches.

**New agricultural technologies and capitalism in Burkina Faso**

Rural sociologists have treated agricultural technology adoption as a process of “appropriationism,” whereby inputs or practices that used to be provided by farmers themselves are appropriated by off-farm actors, manufactured, and sold to farmers (Goodman, Sorj, and Wilkinson 1987; Kloppenburg 2004; Magdoff, Foster, and Buttel 2000). This process draws farmers into commodification. Since most farmers purchase technologies on credit, they are compelled to sell their crops in order to repay debt. Credit also pushes borrowers into a logic of market discipline – of calculating profits and intensifying production in order to repay loans (Gerber 2014).

Just like the “agrarian question” more broadly, there is an extended literature on agricultural technology adoption, which is similarly divided between critics and proponents of capitalist development. Agricultural technology, in fact, figures centrally in debates about
African livelihoods and the expansion of capitalism (Eicher, Maredia, and Sithole-Niang 2006; Feder and Savastano 2017; Moseley, Schnurr, and Bezner Kerr 2015; Paarlberg 2008; Scoones and Thompson 2011). Proponents tend to see technologies as tools for helping farmers overcome low production and poverty, and focus on identifying obstacles to adoption (i.e. Feder and Savastano 2017; Paarlberg 2008). In contrast, critical perspectives on capitalist development tend to see technologies (particularly genetically modified crops) as a wedge of inequality – often benefitting agri-business interests more than farmers (Glover 2010b; Kuyek 2002; Magdoff et al. 2000; McAfee 2008), or benefitting larger, wealthier farmers more than smaller farmers (Gray and Dowd-Uribe 2013; Scoones 2002; Witt, Patel, and Schnurr 2006). Thus, long-standing debates over technology adoption closely mirror the debates outlined above regarding capitalism.

Following the wave of “adoption-diffusion” research in rural sociology, in the 1970s most technology adoption research shifted to the discipline of economics (Ruttan 1996). Economists tend to employ rational actor models, assuming an autonomous, profit-maximizing decision-maker who weighs risks, costs, and benefits before making a decision (Feder, Just, and Zilberman 1985). This literature has documented an enormous range of factors shaping farmers’ decision-making, including characteristics of the farmer, the institutional environment, or the technology itself; farmers’ knowledge, perception and attitudes; and the role of social networks (Feder and Savastano 2017; Meijer et al. 2015). In general, this literature tends to argue that, given a free market and the right “institutions” (such as credit and infrastructure), farmers will rationally choose technologies that provide them with an economic benefit. In contrast to this view of farmers as free and rational actors, critical political economists have focused on how farmers – and the technologies they adopt – are always embedded in social systems of power (Carr 2008a; Gray and Dowd-Uribe 2013; Robbins 2004; Scoones and Thompson 1994; Tansey
In the case of genetically modified seeds, for example, many scholars have expressed concern about the role of corporate power in shaping economic choices as well as discourses (Glover 2010b, 2010a; Kloppenburg 2004; Middendorf et al. 2000; Stone 2004).

Thus, from the standpoint of economics, if farmers are adopting technologies, it must be because it “benefits” them. From the standpoint of political economists, if farmers are adopting technologies it is possible that they are compelled to do so because of political or economic pressures. However, technology adoption in Burkina Faso does not appear to neatly match either of these explanations. In contrast to a rational-actor explanation, technology adoption does not appear beneficial to all Burkinabè cotton farmers. Although technologies do appear to benefit larger-scale farmers, smaller-scale cotton farmers are often unable to repay their debts (thus making negative money), or make extremely small amounts of money because of the cost of inputs (Gray 2008; Gray and Dowd-Uribe 2013; also see Appendix A). Tractors, for example, make little economic sense for the majority of Burkinabè farmers, and many farmers have had their tractors dispossessed due to an inability to repay loans. Furthermore, farmers expose themselves to significant debt, health consequences, and ecological degradation as a result of their agrichemical use.

Some political economy and populist literature would explain this adoption as resulting from pressure from corporations. However, it appears that Burkinabè farmers are freely choosing to adopt new technologies. While some inputs (fertilizers and insecticides) are required by the cotton company, herbicides and genetically modified seeds have been optional. Up to 70% of cotton farmers opted for genetically modified cotton seeds (AICB 2015), and herbicide sales have been increasing throughout Burkina Faso (Ouedraogo et al. 2011). Farmers also purchase substantial amounts of fertilizer for their corn. It thus appears that rational choice and political
economy frameworks for understanding farmer technology adoption are perhaps incomplete. Similar limitations have been identified by a broad literature that has questioned whether mainstream development economics or Marxist political economy can fully explain agrarian capitalism (Berry 1993, 1984; Freidberg 2004; Gidwani 2008). These scholars have argued that while neoclassical economics tends to ignore power, both economics and political economy have historically ignored the role of culture in shaping peoples’ behavior. I thus follow a long line of scholars who have sought to expand beyond economic explanations (whether neoclassical or Marxist) by turning to culture and systems of meaning-making to help explain farmer behavior in the context of agrarian capitalism.

**Cultural politics in a postcolonial context**

Numerous scholars have studied the role of culture in African capitalism and agriculture. One portion of this scholarship argues that “peasant cultures” can block capitalist expansion, often drawing on Scott’s (1976) concept of peasants’ risk-averse “moral economies” or Chayanov’s concept of a distinctive peasant mode of production (Thorner, Kerblay, and Smith 1966). A notable version of this in Africa is Hydén’s (1980) argument that African peasants are enmeshed in an “economy of affection” – social relations of family, ethnicity, and patronage – that prevents the rise of a fully capitalist economy. Yet, the argument that African cultures are the obstacle to capitalist development reproduces the modernist narrative that “the root problem of Africa remains its African-ness” (Bernstein 2004:122). In other words, while it is problematic to assume that farmers (anywhere) are “homo economicus,” (Watts 2009) it is equally problematic to assume African farmers are uniquely weighed down by “culture” and irrationality (also see Andreasson 2005; Njoh 2006; Piot 1999).
Sara Berry’s (1984, 1993, 1985) work offers a more textured approach to treating culture in relation to processes of commodification. She argues that African cultural institutions were never as stable or as static as assumed by outsiders (by both colonizers and later analysts such as Marxists). Instead, she argues that African institutions are fluid, dynamic, and ambiguous, and that people navigate these institutions via networks, social prestige, and patron relationships. Berry argues (contra Hydén, but also contra neo-classical economists and Marxists) that customary social relations do not necessarily prevent the commodification of peasant farming; instead, it is the interplay and conflict of culture, power, economy, and material resources that help explain patterns of commodification. She contends that farmers may engage in seemingly “uneconomical” activities in order to maximize social ties and networks (which secure access to resources and diversify risk), rather than seeking short-term material gains. Yet simultaneously, she argues that in the collision between colonial and “traditional” jural systems, inequality emerged as certain people used their social prestige or access to the state to negotiate better (economic) outcomes. A central insight from Berry’s work is that culture is not fixed, nor is it separate from questions of power or economics.

In considering the intersection of culture and capitalism in agrarian change, it is also worth pointing out some key insights from literature outside of Africa. Scholars working in the interdisciplinary literature on “cultural politics,” for example, have (like Berry) treated culture not as a stagnant set of rules but as sets of meanings that are dynamic, contested, power-laden, and continually negotiated (Freidberg 2004; Gidwani 2008; Moore 1999; Rankin 2004; Yeh 2013). Many scholars have expanded our understanding of farmer behavior by drawing on this broad understanding of culture. In India and Tibet, Gidwani (2008) and Yeh (2013), respectively, explain farmers’ seemingly uneconomical decisions as resulting from embodied practices that
are based in logics of social distinction related to work and labor. Yeh’s chapter, “The micropolitics of marginalization” interrogates why Tibetans rent their land to Han immigrants to profitably grow greenhouse vegetables, thus reproducing their own economic marginalization. Part of her answer is that Tibetans have embodied labor preferences; they see greenhouse work as dirty (and low-status), and vegetables as feminine. In India, Gidwani explains Patel farmers’ aversion to manual labor (despite needing income) and use of uneconomical labor contracts as shaped by a “logic of social calculation,” in which they seek distinction and caste identity by displaying an avoidance of manual labor.

In the extended literature on U.S. and European farmers, scholars – many of them drawing on Bourdieu, like Yeh and Gidwani – have revealed that farmer decision-making is often related to cultural ideas of what constitutes a “good farmer,” and farmers’ aspirations for culturally valued symbols (Burton 2004; McGuire, Morton, and Cast 2013; Saunders 2016; Sutherland and Darnhofer 2012). In particular, this literature has examined gender roles and masculinity (Campbell, Bell, and Finney 2006; Peter et al. 2000; Saugeres 2002) and culturally dominant ideas about productivist (high input, high-output) agriculture. This literature has also sought to explain why farmers do or do not adopt more environmentally-friendly agriculture, often noting the cultural barriers to this shift (Bell 2004; Burton, Kuczera, and Schwarz 2008; Saunders 2016; Sutherland et al. 2012). In sum, literature on the cultural dimensions of agriculture contends that farmers’ decisions to use or avoid agricultural technologies – and thus their participation in processes of capitalism – are often shaped by cultural meanings and contestations over those meanings.

Despite this increased attention to the role of culture in agriculture and capitalism, much of it has remained disconnected from efforts to understand the racialization of the world.
capitalist system. Global inequalities of contemporary capitalism continue to cleave along racial lines – just as they did under imperialism and colonialism (Wallerstein 1989; Winant 2001). This racial disparity is part of the broad puzzle motivating this dissertation: why it is that black Africans are still farming cotton in a system that produces greater benefits for white capitalists? One approach – not undertaken in this dissertation – would explore the historical processes and policies that contributed to this outcome (see Winant 2001; Zimmerman 2010). My interest in this dissertation is to explain why Burkinabè engage in this system today. Certainly, historically shaped systems that now limit farmers’ options are a significant part of this answer. However, a growing body of research also points to the role of a global culture of racialized modernity in explaining how racial disparities continue to be reproduced, and why people may paradoxically engage in behaviors that ultimately marginalize themselves (economically, ecologically, or symbolically).

This literature has documented how “pigmentocracies” throughout the world continue to place people of darker skin lower on the socio-economic ladder (Weinstein 2015; Glenn 2009; Bobo 2015; Telles 2014; Blay 2011; Winant 2001). In explaining the historical and present-day persistence of racially-based social cleavages, scholars have argued that the capitalist world-system and modernity are inherently racial projects (Bobo 2015; Itzigsohn and Brown 2015; Winant 2001). Where capitalism requires an “other” to exploit, modernity requires an “other” to define itself against: the traditional, backward savage (Hall 1996; Reed and Adams 2011; Winant 2001). In a global system that has equated “whiteness” with status, wealth, and civilization, it is not surprising to see people around the world denigrating dark skin (as well as non-white cultures and ways of being or thinking), and even the persistence of “internalized racism” that
animated the works of both W.E.B. Du Bois and Franz Fanon – classic scholars of race and colonialism.

Despite this growing body of scholarship on racialized modernity, and the obvious racial question regarding Africa’s marginalized position in the global economy, postcolonial scholars have tended to ignore African desires for whiteness and Westernness, most likely out of well-intended efforts to avoid re-producing colonial tropes and racist narratives (Ferguson 2006). Still, anthropologists have begun documenting and puzzling over this – trying to make sense of the rapid growth of skin bleaching in African cities (Blay 2010; Hunter 2011), rising rejection of African tradition and religions (Ferguson 2006; Piot 2010), and a turn toward material and cultural imports associated with Western modernity (Burke 1996; Ferguson 2006; James 2014; Mojola 2014). Piot contends that since the end of the cold war:

Today, a diffuse and fragmented sovereignty is replacing authoritarian political culture; tradition is set aside and cultural mixing looked down upon; Africanity is rejected and Euro-modernity embraced. Postcolonial theory’s focus on hybrid culture […] stops short in analyzing this new –post-postcolonial—terrain (Piot 2010:16).

Ferguson’s work has also sought to theorize the contemporary manifestations of African aspirations for Westernness and whiteness, while paying careful attention to previous work on the question of “mimicry” and its many minefields (Bhabha 1984; Magubane 1971; Wilson 1941).

Ferguson (2006) makes two important points. First, he argues that with the failure of nationalist visions, development projects, and Africa’s ongoing economic decline, African conceptions of modernity have “decomposed” from a time-based vision where modernity is coming in the future, to a view of modernity as a rank in a global hierarchy and a naturalized and fixed status – one that white people have. Thus, Africa’s continued economic exclusion may be creating new forms (or intensifying pre-existing structures) of beliefs in naturalized racial
difference, and furthering the rejection of what Piot calls “Africanity.” Second, Ferguson argues that “mimicry” of Westernness and whiteness can be read not as appropriation and parody, or as complex hybridity (as previous anthropological literatures claimed), but as an actual reaching across worlds: a claim to global membership. Importantly, Ferguson argues that this is not just a claim that African cultures are as global and modern as any other (Piot 1999). Indeed they are. Instead, this is a claim made by Africans who are well aware of their comparatively difficult socio-economic conditions and their material and symbolic marginalization. In making claims to modernity and whiteness, they are saying, “We too, want to be full members of the modern global economy. We too want decent houses and healthcare and schools and cars.” Thus, desires for whiteness and modernity reflect a practical response to the racialization of wealth and opportunity in the global world-system. This is similar to Blay (2011, 2010) and Hunter’s (2011) arguments that skin-bleaching is a strategy to buy racial capital.

Paralleling Ferguson’s emphasis on hierarchy, and similar to other scholars of culture and agriculture (Burton 2004; Gidwani 2008; Sutherland et al. 2012; Yeh 2013), I draw on Bourdieu’s (1984, 1990) cultural sociology to understand “racialized modernity” as an embodied and hierarchical system of social status and power. Bourdieu views people as acting within a social arena – a field – in which certain forms of capital are valued and sought after. This includes economic capital (material wealth), social capital (networks and social ties), or cultural capital (status attributes associated with knowledge, behavior, or skills) (Bourdieu 1986). Each individual has a specific set of practices and tastes – a habitus – which is an embodied form of socialization that shapes how a person attempts to increase their capital and/or to transform the field itself. A Bourdieusian frame emphasizes how peoples’ practical actions are oriented within a cultural system of status. Individuals with various portfolios of “capital” work to maintain or
improve their status through (often unconscious) embodied performances or boundary work against other social groups (Lamont and Fournier 1992; Lamont and Molnár 2002).

Using this framing, I find that Burkinabè actors inhabit a field where higher-status positions are associated with modernity, whiteness, wealth, urbanness, Western education, and certain forms of embodiment (namely avoiding manual labor). I treat peoples’ actions and identity work as situated within this context. Certainly, people do make rational choices based on weighing risks and benefits. Certainly, their lives are shaped by a broader political economy. Yet they also seek to attain other forms of capital. Many scholars have tended to focus on social capital (such as kinship networks and patron-client relations) in the African context (i.e. Berry 1993). In this dissertation, I focus on how aspirations for cultural capital – in this case, forms of status associated with modernity – play a role in shaping farmers’ behaviors and decisions.

An overview of this dissertation

In sum, this dissertation seeks to help explain racialized inequalities in the global world-system. It does so by addressing literature on the agrarian question (the expansion of capitalism in agriculture), with specific attention to the sub-question of why farmers purchase new agricultural technologies. I contribute to these literatures by drawing on insights from cultural sociology and scholarship on “racialized modernity.” I show how political-economic forces of capitalism are reinforced and facilitated by peoples’ aspirations for the status of modernity, and I argue that these efforts ultimately, and paradoxically, play a role in producing and justifying inequality. After a description of my data and methods (Chapter 2), Chapters 3 to 5 explicate different components of the puzzle driving this dissertation: Why Burkinabè farmers appear to be actively taking part in their own economic and ecological marginalization. Each chapter was written as a stand-alone journal article, so they address specific questions and include their own
literature reviews and methods sections. However, in the conclusion, I tie the chapters together and discuss some of the broader theoretical contributions of my findings as a whole.

Chapter 3 takes a broader view of the cotton commodity chain within Burkina Faso, examining how political-economic pressures to increase cotton production cascade down through a chain of actors, from SOFITEX employees to extension agents to male farmers to women. I examine how actors simultaneously resist their own exploitation, while passing economic pressures (and exploitation) on to less-powerful actors. I show that people justify exploiting others through discourses about intersectional inequalities – overlapping axes of social difference including class, gender, rural/urban status, and education level. In particular, higher-status identity attributes are those closely associated with modernity, such as urbanees, wealth, and Western-education. At each level of the “chain,” actors justify their actions to pass on exploitation by drawing on discourses of difference and discounting claims made by less “modern” and less powerful people; those who are rural, poor, uneducated, or female. While this chapter does not directly address the question of technology adoption, it lays a broader framework for understanding the intersection of political-economic pressures and actors’ status-laden identity claims, and how these claims help to justify and thus facilitate both expanded cotton production and economic exploitation. These claims of difference also fragment resistance efforts. Although I found widespread recognition of exploitation, and some degree of resistance, I also found that peoples’ efforts to claim and maintain their own status positions can undermine their recognition of – and response to – their shared exploitation in the global hierarchy.

In the next two chapters I turn my attention specifically to technology adoption. Chapter 4 examines technology adoption as directly shaped by farmers’ aspirations for the status associated with whiteness and modernity, and their desires to avoid the low status of manual
labor and traditional methods of farming. I address the environmental inequality of rising pesticide use, where poor Burkinabè farmers are disparately exposed to the toxic burden of capitalist cotton production. In this chapter I also describe Burkina’s racialized cultural field, in which modernity, wealth, and scientific technology are coded as “white” and high status, while poverty, backwardness, and physical labor are coded as “black” and low status. I argue that many actors embrace technologies, including pesticides, in part to achieve status in this field, and that this paradoxically increases rural peoples’ exposure to chemicals, creates barriers to sustainable agriculture, and devalues black African bodies. My findings not only provide an alternative explanation for technology adoption, they also demonstrate a hitherto unidentified mechanism through which structures of racism translate into environmental inequalities: through aspirations for status within a racialized culture.

In Chapter 5, I again turn to the intersection of cultural and economic factors, to examine how farmers’ “choices” to adopt technology are less agentic than they appear, and how aspirations for modernity affect technology adoption not directly (as explored in Chapter 4), but indirectly via the processes of cultural change that they produce. In this chapter, I untangle one of the proximate causes of technology adoption: labor shortages. I show how labor shortages have been caused by “circular and cumulative” (Myrdal 1957) processes – both economic pressures to increase production as well as cultural changes related to increasing individualism and aspirations for wealth and modernity. These cultural changes include families splitting apart to farm, parents putting kids in school, and young people and women refusing to work “for free.” With fewer people to work in the fields and greater monetary demands, farmers opt for labor-saving technologies such as herbicides and genetically modified (Bt) cotton. These technologies, of course, cost money, creating further demands to increase production, which further
exacerbates labor shortages. This chapter thus shows how economic and cultural forces can combine – in cyclical and compounding ways – to drive and even accelerate technology adoption and debt.

In each of these chapters, I explore how Burkinabè negotiate identities within a changing cultural field, often seeking the cultural status and material benefits that they associate with modernity. The current cultural construction of “modernity,” as I describe in Chapter 4, is one of Westernness, which includes characteristics of individualism, whiteness, urban-ness, and Western education. In Chapter 3, I show how peoples’ identity claims (related to education, urban status, wealth, and masculinity) facilitate and legitimize the extraction of surplus value in the cotton sector, and prevent widespread resistance. In Chapter 4, I argue that aspirations for the status of Western, white modernity are a direct driver of technology adoption. In Chapter 5, I show that cultural changes associated with aspirations for modernity contribute to creating a labor shortage, which in turn drives technology adoption. In each of these cases, I argue that cultural aims shape peoples’ behavior. My goal is not, however, to replace an economic argument with a cultural one. Throughout my analyses, I show that economic pressures are ever-present, from the pressures transmitted from the state to the cotton company, to rising tensions within families over debt and the need to increase incomes. My conclusion is that cultural aspirations for modernity interact with and reinforce economic processes, and that as farmers dive deeper into relations of capitalist production, they reproduce their own marginalized position in the global hierarchy.
CHAPTER 2
METHODS AND SITE DESCRIPTION

This dissertation seeks to understand peoples’ behaviors and choices as situated within both structural constraints and meaning-making practices. It thus seeks to bridge an understanding of the “micro” level of peoples’ lived experiences with a broader understanding of the “macro” structures that shape peoples’ lives (Adler, Adler, and Fontana 1987). To do so, I undertook a critical, or global ethnographic approach (Burawoy 2000; Hart 2004), closely related to Burawoy’s (1998) concept of the extended case method. The extended case method bridges participant observations with an attention to the macro determinants of peoples’ everyday lives. Burawoy argues that the method puts data in conversation with theory, reveals forces of domination and resistance, and provides “the most appropriate way of using participant observation to (re)construct theories of advanced capitalism” (1991:271).

A critical ethnography approach also enjoins us to steer clear of either an “impact model” in which the global bears down monolithically on the local, or a path-dependent reading of history in which the present is wholly determined by the past (Hart 2004). Instead, in order to understand uneven processes of globalization and capitalism, we must examine how processes play out in specific ways in specific places. Otherwise, argues Goldman, “We lose all sense of why people offer their consent without force, and why they do not” (2005:25). Thus, critical ethnography offers a tool for studying the messy processes through which the world is made (Hart 2004).

Data collection and analysis
I spent eight months conducting fieldwork in Burkina Faso, from February to September, and then November to December 2016. This time period enabled me to be present for most of the major stages of the 2016 - 2017 cotton “campaign” (planting through harvest). I should also note that I initially intended to focus on farmers’ use and understandings of Bt cotton. Not long after I arrived in Burkina Faso, however, the cotton industry decided to stop growing Bt cotton, and I had to rethink my research questions. This led me to consider Bt cotton as one technology among many in a broader landscape of agricultural and social change, and I came to focus more attention on pesticides, which have not received the same international attention as GM crops.

Fieldwork was conducted in French and Dioula, both languages that I spoke nearly fluently before fieldwork began (I spoke Bambara, a close relative to Dioula, after serving in the Peace Corps in Mali). French is Burkina Faso’s national language, and I conducted most interviews with scientists, SOFITEX, and government employees in French. However, French is not widely spoken by farmers or rural residents. Dioula is the lingua franca of southwestern Burkina Faso, and was spoken in my rural field site, and during meetings between SOFITEX and farmers. Nearly all of my interviews and participant observation with rural men and women were conducted in Dioula. Understanding Dioula also enabled me to observe and engage in a large range of interactions and conversations that would have otherwise been inaccessible. In the text of this dissertation, I use italics to denote French and Dioula words. Dioula/Bambara is not a historically written language, although it is now written using the International Alphabet. In this text, I have written Dioula words phonetically using English letters.

During my research, I hired two research assistants, both sociology Masters degree students at the University of Ouagadougou with extensive previous research experience. Both research assistants (one male, one female) were Mossi ethnicity, but spoke fluent Dioula. My
male research assistant accompanied me for my participant observation with SOFITEX, and for a significant early portion of my rural fieldwork, particularly to help me get established. My female research assistant accompanied me for some anti-GMO rallies and a short stint of rural fieldwork. Both of my research assistants were invaluable as a second pair of eyes during participant observation work (we would debrief at the end of every day, comparing notes and observations). Further, both of them were urban residents, and that status was often a source of contention and conversation that helped reveal cultural dynamics between rural and urban people.

During my fieldwork, I employed qualitative sociological methods (Becker 1996; Emerson 2001), including:

1) Eight months of participant observation, including five months in a rural farming community, one month with SOFITEX employees, and attendance at numerous conferences, events, and rallies.

2) 125 semi-structured interviews with: rural cotton farming men (43) and women (24 total; individual interviews with 14 women and small group interviews with 10 women), SOFITEX employees (15), government employees and research scientists (7), agri-business employees and salespeople (5), UNPCB employees (3), non-governmental organization employees and activists (10), organic cotton farmers (13), and organic cotton sector employees (5).

Participant observation involves the methodological observation and careful recording of the activities, behaviors, conversations, and interactions of people in their everyday lives and natural settings (Emerson, Fretz, and Shaw 2011). It is particularly valuable for uncovering unspoken meanings, the taken-for-granted, and the sense-making that occurs within an everyday setting.
Participant observation also offers possibilities for discovering new themes that are not pre-existing in the literature and might not emerge in interviews alone. It also offers an avenue for experiencing the same physical experiences as research participants (in the case of farming: heat, exhaustion, as well as the technical nuances and difficulties of specific farming activities) (Ellingson 2006) – and thus to better understand social practice (Bourdieu 1990). Participant observation can also at times reveal discrepancies between “what people say” and “what people do,” offering an opportunity for further reflection on peoples’ behavior and narratives (Jerolmack and Khan 2014).

Interviews offer equally rich but different kinds of data, including practical information and historical perspectives. They offer individuals the chance to express and reflect on their personal experiences in a more extended way, and (if tape recorded, as mine were) enable the researcher to more accurately capture and reproduce peoples’ exact words. I conducted interviews using Rubin and Rubin’s (2011) “conversational partnership” model, which emphasizes an open-ended conversation format where the interviewee is seen as a conversational partner and not as a yes/no survey respondent. My interviews ranged from one to three hours and were tape-recorded and then transcribed by my Burkinabè research assistants and a handful of sociology students in Ouagadougou.

I used the software NVivo to organize my data, and began writing “memos” early on during my fieldwork, in order to begin identifying themes and to deepen those themes during the data collection process (Lofland et al. 2006). For example, stories about families splitting emerged as an early theme, and I began asking people further questions in order to better understand that process. I also expanded my interviews in order to understand certain structural (macro) factors that appeared in peoples’ stories – such as how Structural Adjustment Programs
had affected school costs in Burkina, and whether schooling was obligatory. When ideas about race emerged as a theme, I began to ask people more questions about their views of progress and the West, and paid attention to racialized themes during my participant observation.

Upon returning from the field, I listened to my interviews while re-reading my transcripts in order to re-live the interview experience. Furthermore, all of my Dioula interviews were transcribed in French, and I wanted to hear what people said in Dioula, particularly because many Dioula expressions can be translated differently from their literal meaning, which can be quite rich. Credit/debt, for example is one word: “jurru,” which also means cord or rope. To be in debt - “jurru be an kan na” – is to have a cord around one’s neck. The expression commonly used for development or progress – “ka ba nogo la” literally means “to get out of the dirt.” I thus added some Dioula expressions back in to my transcripts in order to capture this linguistic nuance.

During this process I inductively coded my interview transcripts and field notes for themes (Lofland et al. 2006). These codes helped me organize the data and think about the relationships between themes. As new themes emerged, I also went back to previous interviews and field notes. Much of the resulting findings and arguments presented in this dissertation emerged through this iterative and inductive analysis – yet always in conversation with my existing knowledge and other literature. This iterative process of analysis, conducted both during and after my fieldwork, is where I engaged in the “extended case method” (Burawoy 1998, 2000), moving back and forth between emergent findings and existing theory, trying to put “micro” understandings into conversation with my knowledge of “macro” structures.

I now turn to the three primary groups of people that I observed and interviewed during my fieldwork, and then conclude this section with a more detailed description of the rural field
site where I conducted my fieldwork. Reflection on my positionality during my fieldwork is included in my empirical chapters.

SOFITEX and other institutional actors

In order to understand the broader context of cotton farming and technology adoption in Burkina, I spent time with and interviewed actors throughout the cotton sector of Burkina, including governmental officials at the top of the cotton sector, Monsanto employees, pesticide salesmen, cotton union (UNPCB) employees, state research scientists at the universities and the research center INERA (*Institut de l'Environnement et de Recherches Agricoles*), and the parastatal cotton company SOFITEX. Although SOFITEX is one of three cotton companies operating in Burkina Faso following the partial “liberalization” of the cotton sector in 2004 (Dowd-Uribe 2014b), SOFITEX still manages the southwestern half of the country, which produces 80% of Burkina’s cotton.

In addition to interviews, I also conducted participant observation at public and state-held events (such as meetings on the “biosecurity” of GM crops) and a multi-day private conference for the West African cotton sector (the annual conference held by the *Programme Régional de Production Intégrée du Coton en Afrique*, PR-PICA). I also spent a month following along SOFITEX employees – ranging from the highest level managers based out of Bobo-Dioulasso all the way to field extension agents (ATCs). I had met several SOFITEX employees at the PR-PICA conference, and explained my research and asked if I could accompany them in their work. After obtaining permission to do research with SOFITEX from the top of the organization, I joined the Houndé region SOFITEX team during their annual “Forums,” during which they drive out in small teams to regional towns and villages to hold meetings with farmers and discuss the upcoming farming season. These meetings are also a chance for farmers to voice their concerns
to SOFITEX. Each meeting lasted a few hours, and between 50 and 100 farmers attended each meeting. I was also able to meet and chat informally with many farmers after the meetings, as many farmers noticed that I could understand Dioula and were curious what a “white lady” was doing at their cotton forums. I attended ten of these meetings in the Houndé region with my male research assistant. We took careful notes during the meetings, and debriefed and shared notes and observations at the end of each day regarding dynamics such as car conversations (sometimes the car rides were several hours with a small crew of SOFITEX employees – complete with washed out roads and flat tires) and lunch conversations and interactions (lunches were hosted by the local farming groups and there were sometimes tense dynamics between SOFITEX employees and farmers).

During the Forums, I met several high-level managers from Bobo-Dioulasso, and was able to use these contacts to set up interviews in Bobo-Dioulasso (I obtained internal SOFITEX statistics, as presented in Appendix A, from these contacts). I also met and conversed with employees of the major banks financing Burkinabè cotton, and truck drivers and transportation employees. Following this period of time, during my fieldwork in Kongolekan and Dougoumato, I visited Houndé periodically and conducted interviews and some further fieldwork, including visiting SOFITEX’s local research farm for a day and visiting the cotton ginning factory.

**Resistance movements**

A second goal of my research was to observe and understand why some actors in Burkina have resisted new technologies and/or capitalist expansion in the agricultural sector. To this end, I attended anti-GMO events, including a multi-day “caravan” passing through the Houndé region, and a multi-day anti-GMO event in the capital, Ouagadougou. I met many activists and interviewed them separately, and also conducted interviews with people working for related
organizations, including FENOP (*Fédération Nationale des Organisations Paysannes*), INADES (*Institut Africain pour le Développement Economique et Social*), Terre à Vie, and SYNTAP (*Syndicat National des Travailleurs de l'Agro-Pastoral*). I also conducted several interviews with people involved in an anti-imperialist movement called *Organisation Démocratique de la Jeunesse du Burkina Faso* (ODJ) – the Democratic Youth Organization of Burkina Faso. I interviewed the movement leaders in Ouagadougou as well as people working in the Houndé region. ODJ has been very active in critiquing SOFITEX and the organization of cotton production in Burkina, urging farmers to get out of cotton and demanding better conditions of production (Bassolé 2018).

I also spent some time studying the organic cotton sector, and interviewed representatives from Helvetas (the Swiss NGO that helped set up organic cotton), RECOLTE (a program connected with the American NGO Catholic Relief Services) and three employees of the cotton farmers’ union, UNPCB, who work specifically in the organic cotton sector. Following these connections, my male research assistant and I spent two weeks in the Banfora region in the southern part of Burkina Faso, centered in the small town of Tiefora, one of the earliest sites of organic cotton production. This portion of my fieldwork was quite difficult. The UNPCB employees and their contacts very clearly wanted to manage who I talked with and what I saw. We initially interviewed several very “pro” organic farmers that were chosen by the UNPCB representative. My research assistant and I chalked up the situation to: 1) concerns over losing organic certification, and 2) concerns over the “Victoria’s Secret” scandal from 2011, when a Bloomberg reporter wrote that Burkinabè organic and fair trade cotton was grown using child labor – a report that nearly crashed Burkina’s fledgling organic sector. Following this, my research assistant and I drove around on his motorcycle in the surrounding areas and randomly
stopped in peoples’ fields to try to expand our interview base. This was useful in that we were able to meet ex-organic farmers – those who had adopted but left for a range of reasons. In all, we interviewed 13 organic and ex-organic cotton farmers (a mix of men and women), asking them about their reasons for adopting organic (and for leaving organic), the difficulties with organic, and other questions similar to the questions I asked of all farmers (see Appendix B).

A lot of the data I collected in these portions of my research are not explicitly used in this dissertation. However, these data are not absent, as they inform my broader conclusions about the relative lack of resistance present in Burkina. I feel more confident in this argument given that I explicitly sought to find resistance, and found relatively little.

**Rural fieldwork**

The bulk of my fieldwork sought to observe both adopters and resisters of new agricultural technologies. Although I had originally planned for two communities, during fieldwork I decided to focus on two adjacent towns that contained a wide range of farm sizes, wealth, and technology adoption all in one area. Focusing on one site had the advantage of enabling me to gain greater trust in the community and added ethnographic depth. I found the site through a group of four “activist” farmers I met at several events organized to protest genetically modified cotton. These farmers often stood up at these events to talk about the negative consequences of Bt cotton. After introducing myself and my research to these farmers, they invited me to visit their community: two bordering towns of Bwa farmers in the Houndé region, Kongolekan and Dougoumato 1. I visited each community with my male research assistant, and we met with groups of twenty to thirty male farmers and a handful of women. Since these meetings were organized by the anti-GM activists, we were very cautious to frame ourselves as unaffiliated with the activists, and merely interested in studying cotton farming. In
the meetings, we asked farmers about the community and farming, and discovered that most farmers were actually enthusiastic about GM crops. A handful of farmers had also recently purchased tractors. This indicated that the site would likely reveal a range of attitudes toward technology adoption, and would also feature some socio-economic diversity. We asked if we could come live in the community to carry out the study, and the farmers seemed enthusiastic to have their voices heard.

We visited the community again and the activist farmers helped us find a house to rent from a larger-scale cotton farmer in Kongolekan. We visited the chief of each town, presenting gifts of kola nuts and describing the study. Both chiefs welcomed us to the community. I moved in just before planting began in May. One difficulty at this stage was that the activists – who had hosted French people before – were interested in promoting their association with me, and making sure that I heard mainly their side of the story. My research assistant understood this situation and tactfully spoke with various people to make our situation clear. Separately, we set up meetings with each GPC (seven total), where we introduced our objectives and interests to the farmers on our own terms. We spelled out that we were students, and that we were there to speak with everyone in the community. We met with the leaders of the five GPCs in Kongolekan and two GPCs in Dougoumato, and took down phone numbers and contact info for the board members of each group. These men became our first round of interviews. As time went on, our concern about the activists faded, as they and the community came to understand and appreciate that we were simply what we said we were: students.

After interviewing most of the more powerful and economically successful farmers in the community, which is often a social necessity in Burkina Faso to work from the “top” down, I worked on diversifying my interviews. I sometimes met people randomly while walking around
the community or fields, and sat down for conversations and set up interviews this way. This produced a large diversity of farmers (by size of farm, age, wealth level, and religion), as well as innumerable long conversations outside of an interview context. After several months, I turned to a few farmers who I had gotten to know quite well and asked them to help me get in contact with poorer and more indebted farmers. Through this, I learned that some of the poorest farmers were embarrassed to speak with me, thinking that I would compare them (unfavorably) with the more successful farmers I had already interviewed. I thus put forth a substantial effort to communicate my desire to hear about the smaller farmers’ hardships, and was eventually able to interview a large number of these farmers.

My male research assistant was present for about two thirds of my rural fieldwork. He brought his motorcycle, which we used for transportation, and we often conducted interviews early in the morning and accompanied farmers to their fields for the day (this enabled us to follow the farmer often quite long distances so we could find his fields). When I was alone, I rode my bicycle and often rode with young men or women (who don’t have motorcycles), or rode out to fields on my own as I learned the landscape. My female research assistant was present for only ten days of rural fieldwork due to constraints in her schedule. Her presence, however, was valuable, particularly in seeing residents’ reactions to her. Furthermore, she helped provide perspective on gender relations in the community and alternative views of various family dynamics I had been observing.

Several of my interviews with women were small group interviews, not necessarily for methodological but for practical reasons. In local culture, some men may want their wives to ask permission to participate in activities like an interview. Because I had framed my research as studying “cotton,” which is perceived as a men’s crop, I felt unsure of how to ask men if I could
interview their wives, or how to find women to speak with outside of these marital connections. I thus started by conducting “conversations” with small groups of women until I was able to meet more women and then set up more individual interviews with women.

Finally, I conducted extended participant observation with dozens of men and women in their daily lives and on their farms, taking detailed field notes each day. This included doing all sorts of field work and field tasks – both cotton and non-cotton – such as field clearing, planting crops, using a cow plow, weeding, harvesting, tying and weighing cotton, and loading cotton into trucks. I also engaged in everyday social activities: hanging out at local “hang-out” spots, going to market and sitting with people in the market, going to church, attending traditional festivals and events, taking part in funeral activities, meandering around town and helping people with household tasks and chores, and drinking tea in small groups. I engaged in many long conversations on topics such as corruption, gold mining, U.S. politics, life in America, marriage, homosexuality, religion, alcohol, gender roles, climate change, colonialism, and sorcery. I list these topics and activities in order to emphasize how my participation in social life and my conversations outside of interviews helped provide me with broader insights into peoples’ lives – both the structural pressures they face as well as contestations over cultural politics, meaning, and identity.

**Description of rural field site**

Kongolekan and Dougoumato 1 are two towns separated by about one kilometer, both situated along the major road that connects the capital Ouagadougou with the regional city Bobo-Dioulasso. They are part of the Koumbia Department, in the Tuy Province, in the Hauts-Bassins region. In the SOFITEK organizational system, they are part of the Houndé region. Further, they are part of a series of small towns (including Dougoumato 2 and 3 and Makonyedougou) that,
according to local lore, all descended from one town that was once behind the hill that rises behind Kongolekan. The residents of this town were apparently forced down to the roadside via force by the French colonizers sometime around 1920.

Kongolekan has a population of roughly 2500 people, and the roadside population of Dougoumato 1 is roughly 1500 (these are local leaders’ guesses based on the 2006 census). The majority ethnic group is Bwa, although some village families were apparently Dioula and then settled in the area many years ago and are now considered Bwa. There are clusters of Fulani families living on the outskirts of both towns, engaged in cattle herding and farming, and a large settlement of Mossi farmers a few kilometers outside of Dougoumato 1 (that I did not end up engaging with). Residents in the main towns are split primarily between Christianity and those who practice traditional Bwa beliefs – which includes worshipping (and asking for assistance, via sacrifices and offerings, from) various intermediaries between man and nature, and following specific rules of behavioral conduct in particular places, split between the village, farming areas, and various sacred places. However, Christianity is on the rise in the community, with several new churches constructed in the last ten years, and more people converting.

Land tenure in the area, as in most of Burkina, is still informal (Gray and Kevane 2001). As in many parts of Africa, access to land is still achieved through people (Berry 1993). In Kongolekan and Dougoumato, land is not sold, and farmers do not possess land titles. The land is considered to be controlled by the older families who were in the area first, and they give other farmers the right to farm their land. (There are some areas which are considered sacred and are not farmed). Farmers farming on “borrowed” land are generally confident that they will continue to have the right to use their land, but they cannot sell their land or transfer it to a different family. In general, the only way farmers can lose the right to farm their land is by committing a
serious moral taboo (such as a murder) that would upset the balance of spirits. A few farmers also report paying very small (token) payments to the land “owners” each year, such as a small sack of corn.

Most farmers have several parcels of land in different locations. This is due to a complex history of land distribution, families splitting, and expanding farming operations. The early families controlled the best spots of land close to the villages, and farms have expanded away from the village over the years, driven by Mossi and Fula immigrants, population growth, expanding farm size, and national forest enclosures (see below). Furthermore, as families split apart – either sons from fathers or brothers from brothers – they are faced with the decision of how to split land. Although it would make transportation easier if each brother received a different parcel of land, the varied quality of land means that many families split each parcel up into smaller pieces for each brother. Farmers then must travel to their different parcels, often distances of ten to twenty kilometers, and make careful decisions about when and how to transfer or deliver farm equipment (such as oxen, plows, carts, and inputs like fertilizer or seeds) between their different parcels. This is often a significant cost to farmers.

There is also a history of state enclosures of land in the area. According to residents of Kongolekan, in 1994 the Burkinabé Department of Water and Forests (Eaux et Fôrets) enclosed the Forest of the Mou, 34,000 hectares of land to the southeast of Kongolekan. Many families in Kongolekan and the nearby town Koumbia depended on this land for their system of shifting agriculture. In this system, they farmed a given parcel for three to six years, or until production declined, and then moved to a new (or fallowed) field. They would clear the field and use the leaf litter for fertilizer. This system helped to keep weeds down and maintain soil productivity.
However, this system, already declining due to population and farm-size pressures on land availability, essentially ended when the Mou was enclosed. The Mou was classified as a protected area (“fôret classée”), banning all agriculture, hunting, and wood collection. The state forcibly removed farmers by burning farmers’ fields, structures, and even their harvested corn and millet that was stored in granaries. According to all farmers who spoke about this, the state gave no compensation or land to these farmers. Some of the families had fields in other areas that they returned to, while other farmers lost all of their access to farmland. A few of these latter farmers out-migrated, but others asked for access to new fields from the village’s land “owning” families. However, the land they received was often far from town and often of low quality with less-desirable sandy soils. According to farmers, the forest enclosure thus “ruined” some families. It played an important role in the tightening of land availability, the increasing distance and splitting apart of farmers’ fields, and the impoverishment of certain families.
CHAPTER 3

THE CHAIN OF EXPLOITATION: INTERSECTIONAL INEQUALITIES, CAPITAL ACCUMULATION, AND RESISTANCE

It was late afternoon, and I was picking cotton with Rosalie in a remote cotton field. Rosalie was complaining about women’s lack of power. She said, ‘We get married, and then our husband decides everything. My husband hasn’t come to the fields in two days. Do I know where he is? No. He just leaves us women here to work for free.’ She sighed, moving her bag of cotton down the row. Her face glowed gold in the slanting sunlight. ‘The men oppress us. They don’t listen to us. If I was young again, I would not marry a farmer’ (Excerpt from Fieldnotes).

I attended a meeting between male cotton farmers and their extension agent, sitting in the deep shade of mango trees. One older farmer got up to talk. He said, ‘Since we’ve been growing cotton, we’ve seen nothing but suffering…We have to sell our cows to pay off our credit. Debts are growing every year. Your prices go up every year… It is like the cotton company is drinking our blood’ (Excerpt from Fieldnotes).

This chapter addresses the agrarian question, or the classic Marxist concern for how capitalism is “taking hold of agriculture” (Banaji 1980). Prior scholarship on the “accumulation” problematic of the agrarian question (of how capital extracts surplus value from agriculture) has focused on political-economic mechanisms of exploitation such as state taxation, price policies, labor commodification, and outright dispossession (Akram-Lodhi and Kay 2009; Bernstein 2010). However, fewer scholars have explored the cultural and subjective components of how and why actors participate in processes of exploitation. This chapter addresses this gap through a case study of cotton production in Burkina Faso, West Africa’s leading cotton producer. Specifically, this chapter examines how people draw distinctions based on intersectional inequalities in ways that justify and facilitate the extraction of surplus value from agriculture. This chapter examines these distinction politics in a wider lens than the following chapters,

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3 This article is currently under revision (Revise and Resubmit) at The Journal of Peasant Studies
looking at actors across the cotton sector, not just farmers. This broader lens helps reveal how political-economic forces travel through the commodity chain to shape farmers’ lives (and limit their choices). It also shows how these forces are shaped by culture. As actors throughout the commodity chain seek to maintain their economic and social position, they draw on cultural discourses about status (closely associated with notions of modernity) in order to justify exploiting others.

Burkinabè cotton offers a case of surplus value extraction in agriculture, with the Burkinabè state, international banks, agri-businesses, and textile companies making profits from the 600,000-plus tons of cotton produced by rural farmers each year (Bassett 2008). In a classic Marxist definition, when profits are made off the labor of others, exploitation exists (Bernstein 2010). Yet this is not a simple story of “capitalists exploiting peasants,” nor is my interest here in “calculating the total surplus value of a chain and tracing the distribution of that surplus between the various links,” (Bair 2005:158) as a world-systems-oriented commodity chain approach might do. Instead, I focus on a chain of actors who at each stage feel exploited, yet are accused by others of exploitation. Given these interpretations, and the fact that the poorly paid labor of these actors produces profits for actors higher up the chain, I treat these relationships as a “chain of exploitation.”

Drawing on Blaikie and Brookfield’s (1987) concept of “chains of explanation,” I describe the “chain of exploitation” from cotton company managers to extension agents to male farmers to rural women. At each level, actors face political-economic pressures, such as debt and pressure to increase cotton production. In order to maintain their own social positions, actors often pass this squeeze on to others. The flow of this squeeze channels through (and exacerbates) social inequalities based on intersecting categories such as class, rural/urban status, education
level, and gender. An intersectional lens emphasizes that relations of exploitation between
“fragmenting classes” (Bernstein 2010) are not solely determined by class or gender, but by
numerous and overlapping social attributes that determine power relations between actors (Cho,
Crenshaw, and McCall 2013; Collins and Bilge 2016). My argument in this chapter is that actors
draw on discourses about these social attributes to justify or even render invisible their own role
in processes of exploitation. My findings also indicate that intersectional inequalities have
consequences for the politics of resistance in that they fragment resistance efforts and possibly
prevent unified resistance to exploitation.

What remains of agrarian questions?

Since the late 1800s, scholars have wrestled with the agrarian question, probing
agriculture’s relationship with capitalism. This literature has focused on three primary questions:
1) How is agriculture implicated in capital accumulation? 2) How is agricultural production
transformed by capitalism? and, 3) How do these processes of change intersect with the politics

However, recent literature has debated the continued relevance of these questions. Some scholars
proclaim the “death of the peasantry” (Hobsbawm 1994; Kearney 1996), while Bernstein (2006)
argues that the agrarian question of capital is dead – that global capital no longer depends on
agriculture to accumulate surplus value.

I am sympathetic to Bernstein’s argument, particularly his view that processes of global
capitalism have increasingly marginalized rural populations. Nonetheless, as others have argued,
agrarian questions of capital remain relevant, particularly given the emergence of what
McMichael (2005) calls the “corporate food regime,” driven by neoliberalism, agribusiness
consolidation, and global commodity chains (Akram-Lodhi and Kay 2009; Goodman and Watts
Agriculture continues to produce surplus value for capital, particularly via buyer-driven commodity chains (Akram-Lodhi and Kay 2009; Daviron and Gibbon 2002; McMichael 2005). Many of these chains are organized around “contract” production, where farmers (as petty commodity producers) are not necessarily dispossessed of their means of production, nor directly working for a wage, yet they increasingly resemble “labor” (Little and Watts 1994; Oya 2012). There are thus important – and ongoing – agrarian questions regarding changing configurations of accumulation, production, and politics.

In the “accumulation” problematic of how capital extracts surplus value from agriculture, scholars have proposed a range of mechanisms. Early work by Marx, Lenin, and Kautsky identified the commodification of labor in producing surplus value (Akram-Lodhi and Kay 2009). Labor can be commodified when people lose their land – a process that Marx termed “primitive accumulation,” that Harvey (2003) references in his concept of “accumulation by dispossession,” and Araghi (2000) refers to as “the great global enclosure.” Lenin, Bernstein, and others have argued that wage labor can also emerge through gradual processes of rural class fragmentation. In either case, once people work for a wage, their surplus labor can then be exploited for profits.

Another mechanism for extracting surplus value from rural farmers is through usurious debt/credit arrangements or various forms of rent-seeking tenancy relations (Gerber 2014). Extra-economic coercions can also extract surplus – such as states requiring forced labor or taxing rural populations to fund urban incomes and state-led development efforts (Bates 1981; Mamdani 1987; Preobrazhensky 1965). Finally, prices can extract surplus value, as Preobrazhensky (1965) discussed in his case for primitive socialist accumulation – where the state sets agricultural prices high enough to encourage farming, but low enough to capture
surplus value. World-systems theorists also emphasize the role of prices in capital accumulation, particularly via unequal exchange between “core” and “periphery” states, declining terms of trade between agricultural and non-agricultural goods (Gibbon and Ponte 2005; Wallerstein 2004), or when core states subsidize agricultural sectors and drive down prices for periphery farmers (Gray and Moseley 2008).

Social differentiation and intersectional inequalities

Securing surplus value often entails multiple mechanisms, and – particularly in contract farming and commodity chains – a long chain of actors who participate in translating production pressures onto less powerful actors. In other words, accumulation hinges on social relationships of exploitation between groups. The specifics of these relations have preoccupied scholars of agrarian change for decades, including in the African context (e.g. Bernstein 2004; Berry 1993; Carney and Watts 1990; O’Laughlin 2016). Yet scholars continue to call for a better understanding of how the “internal dynamics of social differentiation” (Oya 2012) contribute to, hinder, or shape processes of capital accumulation, rural transformation, and resistance (O’Laughlin 2016).

One debate about social differentiation centers on the very categories of “capital” and “peasant.” Here again, Bernstein (2006) has been a key figure, critiquing the anachronistic category of peasant, and arguing instead for “fragmenting classes of labor.” A huge literature has pushed back against peasant essentialism over the years, demonstrating the deep divisions within “peasant” communities (Agarwal 2014; Bernstein 2014; Bernstein and Byres 2001; Brass 2000; Watts 2009). Furthermore, O’Laughlin urges scholars to examine differences beyond those “within the peasantry” (2016:406). Many actors (not just petty commodity producers) may
occupy contradictory positions between capital and labor, simultaneously exploited and exploiting (Bernstein 2010; Mamdani 1987).

In parallel, feminist scholars opened up the “black box” of the household, pointing out deep gender divides in rural communities (Agarwal 1994; Carney and Watts 1990; Hart 1992; Razavi 2009). In some cases, women’s resistance has even undermined capital accumulation (Carney 1988; Mackintosh 1989). Many scholars have also paid attention to intersections of class and gender (Carr 2008b; Nightingale 2011; Park, White, and Julia 2015), and recognize the importance of other axes of difference (Bernstein 2010; Rocheleau, Thomas-Slayter, and Wangari 1996). Mollett (2017), however, contends that these intersections remain under-theorized.

To this end, this paper draws more explicitly on the concept of “intersectionality” – that is, material and symbolic inequalities that are formed along multiple axes of difference (Collins and Bilge 2016; Crenshaw 1991) such as race, ethnicity, nation, class, gender, age, or sexuality. Intersectionality emphasizes that social position or power is contingent on overlapping social attributes, or interwoven axes of power (Cho et al. 2013). With this focus on power relations, an intersectional perspective can inform analyses of “relations of exploitation that characterise the organisation of capitalist production in a globalised world” (de los Reyes 2017:17). A key insight of intersectionality is that attributes can change meaning when in different combinations (i.e. rural versus urban masculinity). Further, many attributes are not static, but must be performed or embodied – like the concept of “doing gender” (West and Zimmerman 1987) or performing class (Bourdieu 1984). This idea of performative difference has been engaged by some agrarian scholars analyzing how practices of social distinction shape production decisions (Gidwani 2008; Li 2014), and will be further explored in Chapter 4 of this dissertation.
However, few scholars have explicitly examined how people draw on or contest these axes of social difference in making sense of their own participation in processes of exploitation. This question is particularly relevant for global commodity chains, which depend on a long chain of actors translating production pressures onto less powerful actors. Certainly, peoples’ participation often results from coercion or a lack of choice. However, a lack of choice does not reveal how people justify and/or resist their participation in an exploitative system. In this chapter, I use an intersectional lens to make sense of the complex discourses of difference I heard within the Burkinabè cotton sector. Actors in a wide range of social positions protest what they view as their own exploitation, while simultaneously engaging in behavior that others perceive to be exploitative. I show that they justify passing on production pressures to less-powerful people by drawing on discourses about intersectional social differences. In this chapter, I examine intersections of class, rural/urban status, education level, and gender. I find that between men, the attributes of wealth, urbanness, and Western education (in contrast to poverty, rurality, and illiteracy or “traditional”-mindedness) are often drawn upon to justify exploitation and inequality. These attributes are, not coincidentally, associated with Western modernity (see Chapter 4). Thus, as men seek to maintain or improve their own social positions by staking out status claims of Western modernity (based on intersectional attributes), they play a role in maintaining the extraction of surplus value from the Burkinabè cotton sector.

**Methodology and field methods**

**Studying chains**

One famous method for studying “chains” of relationships comes from political ecology. Blaikie and Brookfield (1987) introduced the concept of “chains of explanation,” a method for making progressively broader explanatory arguments that draws together multiple spatial and
historical scales of analysis. They sought to understand land degradation by looking at how various relationships of power shape farm manager decision-making. My approach draws on this method by paying attention to how power relations between actors in different settings connect together in a chain of exploitative relationships.

In studying a “chain of exploitation,” I also draw on commodity chain research, although my method does not match most commodity chain approaches. Bair (2005) distinguishes between the early roots of commodity chain research in world-systems theory and two contemporary offshoots: Global Commodity Chains, and the more business-oriented Global Value Chains (Gereffi, Humphrey, and Sturgeon 2005). These latter frameworks tend to focus on inter-firm networks, governance structures, and national and supra-national scales of analysis. My own approach focuses specifically on how one end of a commodity chain “touches down” (Challies 2008), and how people make sense of and justify their behavior within this chain. Despite this different focus, I aim to contribute to world-system theory’s interest in “how commodity chains structure and reproduce a stratified and hierarchical world-system” (Bair 2005, 156).

Yet in aligning with world-systems theory, I do not dismiss the many important critiques that have been made of the “hierarchical chain” approach. Many of these critiques reflect post-structural pushback against political economy more broadly. Broadly speaking, models of hierarchical chains have been critiqued for being overly structural, totalizing, linear, reproducing modernist epistemologies, and failing to allow for fluidity, agency, and multiplicity (Hughes and Reimer 2004; Whatmore and Thorne 1997). Nonetheless, I describe a “chain of exploitation” because it fits with what emerged inductively from my data – a profoundly hierarchical world. That said, my focus on intersectionality should signal to readers that I see multiple axes of power
and complex linkages operating within and between the primary hierarchies that I depict.

Field methods

This case study is based on eight months of ethnographic fieldwork in Burkina Faso, conducted during the 2016 agricultural season. I draw on extensive field notes and 125 interviews conducted with a diverse range of actors, including: government officials, cotton company (SOFITEX) employees at all levels, research scientists, agribusiness employees, cotton union employees, farmers of varying levels of wealth and farm size, and rural women of varying age and status. Interviews were semi-formal, and conducted in either French or Dioula, both languages that I spoke fluently before fieldwork began.

I also spent one month doing participant observation with SOFITEX, riding along in their pick-up trucks to rural meetings with farmers in the Houndé region. I observed extensive informal conversations between SOFITEX employees as we ate meals together and fixed flat tires on the side of the road. I later followed along with individual SOFITEX extension agents during the farming season. I also spent five months in the neighboring farming towns of Kongolekan and Dougoumato in the Houndé region (roughly 4,000 residents, mostly Bwa ethnicity). This site featured large numbers of cotton farmers, a diverse range of farm size and equipment levels, rapid social differentiation, extensive and recent uptake of agricultural technologies, and widespread concerns about cotton debt. About half of my fieldwork and interviews were done with the accompaniment of Burkinabè research assistants, and data were coded inductively.

Like all ethnographic fieldwork, my data were shaped by my social position. As a woman, I could gain access to women’s stories and perspectives. Being a woman also helped opened the door for me at SOFITEX, where I was possibly perceived as less threatening than a
man. Being American, rather than French, may have also reduced the cultural baggage actors ascribed to me. However, my status as an educated white woman meant that rural people often assumed I was wealthy and potentially powerful – and therefore able to bring in a development “projet.” This may have resulted in exaggerated stories of hardship. Nonetheless, given my language fluency in Dioula, the thoughtful input from my research assistants, and my extended time in my research sites, I believe I obtained a relatively accurate insight into peoples’ interpretations of their social world, albeit one shaped by my own interests. Finally, although this paper describes behaviors of exploitation and at times harsh discourses of difference, I have great respect and understanding for the many people I came to know in the Burkinabè cotton sector. They have limited and difficult choices, and they navigate those choices as best they can, often with kindness and humor.

**Case background: the Burkina Faso cotton sector**

West African cotton has long been a source for capital accumulation, dating back to colonial-era efforts to force cotton production (Cordell et al. 1996; Isaacman and Roberts 1995). Although colonial cotton schemes were often contested, cotton production was still achieved via taxation and state force (Isaacman and Roberts 1995). Even after colonialism, European countries continued to profit from African cotton. In Burkina Faso, after the establishment of a state-run cotton company (SOFITEX) in 1979, the French Company for the Development of Textiles retained at least a 1/3 share until 2004. At this time, the sector “liberalized” under pressure from the World Bank, and SOFITEX split into three cotton companies (Dowd-Urbe 2014a). After recapitalizing in 2012, the Burkinabè state now holds a 90% share in SOFITEX,\(^4\) which itself controls 80% of Burkina’s cotton production (Dowd-Urbe 2014b).

\(^4\) According to the second highest official in SOFITEX (in 2016), the state now holds 89.6%, and
SOFITEX production remains vertically organized and monopsonistic within the southwest region, supplying inputs and credit to cotton grower groups (GPCs), and then purchasing, transporting, and ginning the harvested cotton. SOFITEX exports 98% of the cotton fiber (Sylla 2017). This is a lot of cotton: Burkina is currently West Africa’s top cotton producer, producing 683,000 tons of cotton in the 2016-2017 season. This constitutes Burkina’s leading agricultural export (198 billion FCFA in 2016), and the state’s most important source of foreign currency after gold (International Monetary Fund 2017).

In addition to helping finance the Burkinabè state, surplus value from the cotton sector flows to international finance and agribusiness (Bassett 2008). According to my interviews with SOFITEX and data provided by SOFITEX’s Direction des Intrants et du Crédit Agricole, agribusinesses such as Cargill, Louis Dreyfus Commodities, and Reinhart purchase the majority of Burkina’s raw cotton fiber (215,500 tons in 2015), while other companies purchase the seed grain to make oil (45,900 tons in 2015) and livestock feed. All of these companies operate to make profits for their shareholders. Additionally, the Italian company United Transport Africa transports a large portion of cotton from farms to ginning facilities, and then to the ports. In 2016, SOFITEX purchased around (US) $300 million in credit, and $2.5 million in insurance. In 2014, SOFITEX farmers took out a total of 63.8 billion FCFA (US$110 million) worth of agricultural inputs on credit, including fertilizer, insecticides, herbicides, and pesticide sprayers. Farmers also purchase large amounts of products outside of SOFITEX, particularly herbicides, so this number does not include all of their purchases. The number was certainly higher in 2016, given that farmers expanded production significantly (from 565,000 tons in 2014 to 683,000 tons in 2016).

4.85% is held by FBDES, the Burkinabè Fund for Economic and Social Development (itself funded by the state).
Cotton sales and input purchases both produce profits – surplus value produced by the labor of Burkinabè men and women and their soil.\(^5\) Certainly, at each layer of the chain people work and create added value, but value accumulates as one moves up the chain – with no increase in expended labor. Women earn next to nothing despite working extremely long hours, most male cotton farmers make very little (see Appendix A), extension agents make marginally more, and SOFITEX managers do relatively well (as evidenced by their houses and their cars)\(^6\). Investors and shareholders at the top of the chain (in banks, agribusinesses, and textile manufacturers) gain the most relative to their expended labor. Surplus value is mainly extracted through prices, which are set by the Burkinabè state, but shaped by the global cotton market and U.S. cotton subsidies (Gray and Moseley 2008). However, surplus extraction requires that people participate in the chain. This paper focuses on how people near the bottom participate in the chain, and how they justify their role in passing on exploitation.

**Findings: the chain of exploitation**

In this section, I flesh out four links in the chain of exploitation: 1) SOFITEX management, 2) SOFITEX extension agents (ATCs), 3) rural male farmers, and 4) rural women. At the top, SOFITEX management is tasked by the state (itself pressured to repay debts) to increase cotton production. With this starting point, for the first three groups, I show how people transfer economic pressures to less powerful actors, and how they discursively justify this transfer through narratives about social difference. For the latter three groups, I also demonstrate

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\(^5\) Although I do not discuss it here, the chain of exploitation extends to ecological systems.

\(^6\) Further evidence of this is that a long-time actor in the West African cotton sector told me that external groups like USAID have been trying to organize regional conferences, but they can’t convince cotton company employees to attend because no matter how nice the hotel or the perks, they just don’t give enough money to match the kind of luxury these guys want and are used to. ‘They aren’t interested in a meager per diem, even if we pay all their costs and the hotel and everything, and they always fly first class.’

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how they protest or resist their perceived exploitation. By resistance, I broadly mean efforts to materially or discursively struggle against their exploitation.

In this paper, I focus on intersections of class, education, rural/urban status, and gender. “Education,” meaning formal schooling and the ability to speak French, often signifies other “Western” attributes – being modern and civilized in contrast to traditional, backward, and savage. It often, though not always, overlaps with urban status, and carries with it connotations of race that I will explore in Chapter 4. It is important to note that the social attributes I found to be most relevant represent a particular moment in history in Burkina, and – like most power arrangements – are fluid and changing (Berry 1993). They also reflect the region where I did my fieldwork (Houndé). Despite the presence of many Mossi migrants, Bwa culture is thought to be less hierarchical than Mossi culture, though the Mossi cultural influence throughout Burkina is quite strong (Cordell et al. 1996).

Furthermore, the categories I discuss here are a selective representation, but those that I found to be most relevant. There are many more exploitative relationships based on intersectional difference that I do not elaborate here. In particular: age, migrant status, ethnicity, and religion. Younger men often feel exploited by their fathers, uncles, or older brothers, and many resist by migrating for work in the Ivory Coast or Burkina’s burgeoning gold mines. Migrant farm workers of varying ethnicities are also present in small numbers, often working for extremely low pay. I heard Bwa farmers justify this situation using tropes of ethnic difference. Additionally, actors draw on religious differences to explain why some farmers are poor and “backward” – such as framing Christian farmers as “more evolved.” I also omit Burkina’s cotton growers’ union, the UNPCB. Most farmers I interviewed feel that the union represents
exploitation from wealthier farmers. These examples should illustrate that this paper presents a
selective slice of a complex world of intersectional differences.

**SOFITEX management**

SOFITEX managers are under pressure to increase cotton production, increase yields, and make sure farmers pay back their debt. Many SOFITEX managers explained to me that the state dictates many aspects of SOFITEX policy, and that their job is just to “figure out how to increase cotton production.” According to my interviews, managers are awarded promotions and job security for achieving increases in cotton production. To do this, they set production quotas for specific regions, and pressure those lower in the hierarchy of management: zone chiefs, sub-zone cotton coordinators, and then extension agents (ATCs). The primary job requirement for each layer of management is to meet production goals and ensure that farmers repay their debts.

SOFITEX managers justify this hierarchy by appealing to narratives of natural difference and “everyone having their role.” One high-level manager told me in an interview, “There are different types of men. Some are leaders, some are intellectuals, others are workers…. And it is important that each man know his place.” At a tense meeting with farmers (during the annual “Forums” at the beginning of the farm season), several farmers stood up and began telling SOFITEX that they were being exploited, that inputs were too expensive and the cotton price was too low. They began to point at the SOFITEX cars (including several new SUVs) as evidence of their exploitation. In response, a top manager from Bobo-Dioulasso (a very wealthy man) scolded the farmers for criticizing SOFITEX’s fancy cars, telling them,

> I have gone to school and achieved a high level of schooling… Those who work in offices, God put them there… Each of us has our own role, and we should focus on our own place and doing our job well… We in offices have difficulties that you don’t understand… Be happy with your own position and stop desiring what other people have.
This SOFITEX manager appealed to both his “high level of schooling” and “God’s” natural order to justify his position on the top of the economic hierarchy. Another SOFITEX manager told me in a conversation:

He said he had attained a high level of respect because of his education and his job as a technical expert. He said he even (made less money than some wealthy farmers)… but they treated him as if he was higher - they looked up to him, they respected him because of his technical stature.

Education is thus an important status marker that SOFITEX managers draw on to justify their status, and their unequal share of the wealth produced by cotton production.

Many SOFITEX mid-level managers – urban men with cars who wear loafers and juggle multiple smart phones – also farm cotton, often drawing on family and female labor (like “peasant” farmers). Some of these men have even struggled with debt, as evidenced by a defunct SOFITEX-employee GPC. Nonetheless, SOFITEX managers still frame “peasant” farmers as somehow different, and struggling with debt not because of structural factors but because of their own laziness, peasant mentalities, and backwardness – qualities that imply rurality and a lack of education. Observe the following lunch with SOFITEX employees at a rural restaurant following a meeting with farmers:

A major theme of the meal was making fun of villagers and farmers. They mocked the restaurant – for not having enough chairs, for having broken chairs, for not having cold beer… One guy said, “What is this, did they come out of the forest, or what?” Another said, “Oh villagers,” and made the tsk noise that indicates disapproval. They even made fun of the construction of the building…They went back over questions that farmers had asked. One man said, “Peasants don’t know anything.” Another, “They are illiterate, what can you expect?” They talked about how they did not know how to spray pesticides properly. One guy said, “They go out, naked, no shirt, shorts, bare feet.”

SOFITEX employees – urban, well-educated, relatively wealthy men – often talk disparagingly towards farmers and blame farmers’ difficulties on their comportment. In other words, they appear to justify the inequalities between them and farmers by drawing on discourses that
emphasize intersectional differences. They frame peasants as rural, illiterate, and savage, and even as causing their own poverty.

Some SOFITEX managers appeal to similar intersectional differences to justify the pressure they put on SOFITEX extension agents: “ATCs” in French – (Technical Cotton Agents). In meetings, SOFITEX managers reprimand ATCs if they do not follow the proper hierarchical order of speaking, and loudly answer their phones while ATCs are talking, demonstrating a lack of respect. Some SOFITEX managers frame ATCs as closer to farmers – as lazy, rural, and less educated. They complain about ATCs and deny that ATCs are overworked. One mid-level manager explained, “It’s not a question of means, or of needing more ATCs. It’s that they don’t have the willingness. They aren’t doing a good job.” This discourse echoes the general SOFITEX attitude toward “peasant” farmers.

Extension agents: ATCs

ATCs are mostly middle-aged men with high school diplomas, from mixed rural and urban backgrounds. They are stationed in rural communities where they serve as the direct link between SOFITEX and farmers. One ATC is usually tasked with several villages, making up several hundred to a thousand cotton farmers. Like SOFITEX managers, their primary job requirement is to meet the production quota they are assigned, and to ensure farmer debt repayment. Some ATCs told me that meeting the quota is sometimes impossible: they cannot control farmers, nor many of the factors that shape farmer decisions. Additionally, ATCs must monitor farmers’ fields and collect enormous quantities of statistics, tasks they admit they cannot fulfill. Yet if the ATCs fail to meet quotas or supply the requested statistics, they face “sanctions” – a transfer to a less desirable region or being passed over for a promotion.

ATC resistance
The ATCs I observed grumble constantly about the difficulty of their jobs and the fact that they are poorly paid and poorly respected by what they literally call the “hierarchy” (the higher-up managers) at SOFITEX. ATCs feel that their jobs are essential for SOFITEX and yet they are not rewarded. Said one ATC: “People think everyone at SOFITEX makes a lot of money. But it’s not true. For everyone below (the higher-level managers), it’s misery. They are well paid. The rest of aren’t.” ATCs argue that SOFITEX managers pressure them to remain in their rural posts at all times, whereas SOFITEX managers receive per diems for occasional excursions (“missions”) to rural sites. One ATC explained that employees “in all other departments at SOFITEX receive promotions, but not extension agents.” He said: “Sometimes when you go to the offices, those in the offices can look at you as if you are a peasant. As if it's not you who are the central player in the team. That's the problem.” He felt that SOFITEX managers justified their poor treatment of ATCs by associating them with the lower status of “rural peasant.”

ATCs engage in various forms of resistance. For years, they have been organizing to negotiate better working conditions from SOFITEX, including clandestine meetings with regional ATCs to work on a strategy. They have even gone on strike, removing their phone SIM cards for ten days in 2015, during a critical time of the year when SOFITEX needed to get information from the ATCs. Nonetheless, the strikes and organizing have achieved very little, and many ATCs feel discouraged. On a cultural level, ATCs also seek to distance themselves from being associated with rural peasants. They embody performances of urbanness and education, often dressing in an urban style, wearing clothing like jeans and loafers or tracksuits, and listening to music on their smartphones with white (“Apple”) headphones. They sometimes
use technical language in meetings with farmers, and speak in French whenever they can, which emphasizes their educational differences.

**ATCs pass pressure on to farmers**

Facing intense pressure from SOFITEX to increase production, ATCs press farmers to increase production. Primarily, they do this by selecting higher-producing, larger-scale, less indebted farmers to focus their attention on. They give these farmers on-time access to inputs and field visits, and early pick-ups of harvested cotton. In contrast, they deliberately restrict inputs for poorer, smaller-scale, or indebted farmers. They also delay delivery of inputs until they verify that farmers have planted (and sometimes fail to visit farmers’ fields entirely). Part of this preference is a direct order from SOFITEX managers. As one top SOFITEX manager described to me:

> I identify those who do 80% of my production, and I give them 80% of my time and my resources. If I improve my strategy with them, my total production increases. But the others, I don’t ignore them, but I only give them the minimum. When passing, I say, hello, how are things going? Keep up the good work, and then I continue. But the other (the high-producer), he’s my VIP client.

The ATCs follow this approach. Although “giving the minimum” may sound benign, it often translates to major delays and causes significant difficulties for poorer farmers. In rain-fed farming, delays make all the difference, and can easily cause a farmer to fall into debt. Observe the following tense exchange between a (poorer) farmer and an ATC in the beginning of the farming season:

> The farmer was yelling… saying that the proper time to put the inputs in had already passed, and later SOFITEX would tell them that it was their fault and their bad farming practices that caused them to have low yields, but in reality it was SOFITEX’s fault for not giving them their inputs on time. The ATC just shrugged and didn’t respond.

As this farmer (in my view, correctly) points out, ATCs justify their behavior by framing less-successful farmers as “bad farmers” – as lazy, poorly organized, or dishonest. The ATCs argue
that indebted farmers sell their inputs or put cotton fertilizer into their corn. Some ATCs also, like SOFITEX managers, blame farmer debt and low productivity on “traditional culture,” and the “mentality” of peasants, drawing a divide between their own Western education and the uneducated peasants.

**Rural male farmers**

Most cotton farmers are rural men\(^7\) organized in groups of cotton producers called GPCs. Cotton is one of the only routes for making money and obtaining inputs such as fertilizer, yet the line between profit and debt is thin (Gray et al. 2018). Somewhere between 22% and 39% of all SOFITEX GPCs are in “external” debt – meaning that the group’s total credit outweighs their revenue (See Appendix A). A vast majority of GPCs also struggle with “internal” debt, where some farmers within the GPC fall into debt, and other farmers’ profits (involuntarily) go towards paying that debt (Gray 2008; Gray and Dowd-UrIBE 2013). There is thus strong pressure on farmers to increase production to pay back credit, cover other farmers’ debts, and – hopefully – to make a sliver of income.

**Farmer resistance**

Many farmers contest the inequalities they see between themselves and SOFITEX employees, whether managers or ATCs. They accuse ATCs of corruption and indifference. Smaller-scale farmers in particular feel ignored by ATCs, and feel that their production is jeopardized by the preferential treatment that ATCs give to larger-scale farmers. While the poorest farmers express this vociferously, most mid- to small-scale farmers feel exploited in this system. They feel they work extremely hard, for very little – if any – return on their labor. I will

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\(^7\) West African cotton sectors have been organized as a ‘male’ activity since colonial administrators first organized cotton as a cash crop activity (Gray and Moseley 2008).
emphasize the frequency and strength of this sentiment with several examples. One very poor farmer told me:

All the profit and advantage goes to SOFITEX. Don’t you see them, with their fat cars? And here we are with nothing, we don’t even have nice bicycles. We suffer here, and we work hard at farming for them. And if they make money, they don’t even give us a little, and we are left with debt.

Another farmer portrayed SOFITEX as “tying” them into the chain as manual labor – the Dioula word “juru” means both debt and rope:

He said, ‘they oppress us farmers.’ I asked if he sees cotton farming as contract work or as ‘farming’... He said, ‘We’re not cotton farmers. We are SOFITEX’s labor... They have a juru in our noses’ – gesturing with his hand to indicate that they are like cows – with a ring through the nose and a rope.

This farmer referenced both the contractual ties of debt and the degraded position of a draft ox to indicate his view of SOFITEX’s exploitation of farmers. Another farmer contested wealth inequality and SOFITEX’s justifying narratives:

I am 40 years old, and I have nothing. And I grow cotton every year! But can a person start working for SOFITEX and work for a single year without getting a motorcycle? Does that happen? No! ...(But the wealthy SOFITEX employees) sit down each year to tell us that we haven’t worked well, we didn’t follow the proper protocols, that’s why we don’t have any profits. But it’s false!

These complaints also animate social gatherings. In a late-night tea session with a small group of farmer friends, a young man complained: “SOFITEX, they always say ‘peasants, they aren’t worth the effort,’ but it’s like a person riding a horse who says, ‘this horse is worth nothing.’ Yet you are on the horse! Where would you be without the horse!?" The other farmers laughed, and continued their litany of complaints.

Many farmers also resist their portrayal as backward, illiterate, or uninformed. They tell stories about how ATCs’ ‘office knowledge’ (their Western education) backfires when they actually have to farm. They tell jokes about ATCs: the French pronunciation of ATC “ah – tay –
say” sounds identical to the Dioula expression, “*A te se*” which means, “He doesn’t have the ability.” Many farmers joke, “ATC, *a te se.*” These running complaints and stories act as subtle forms of resistance (in James Scott’s sense of “hidden transcripts”), although my impression was that most farmers felt – and largely are – powerless in relation to SOFITEX and extension agents.

Some farmers have, however, engaged in more active resistance. This is particularly true historically – such as the widespread protests during the 1996 pesticide crisis, and in 2011 when some regions boycotted cotton and even burned cotton fields (Dowd-Uribe 2014b). Farmers have also protested the union (UNPCB) – which is widely seen as corrupt. Dowd-Uribe (2014a) argues that much of the force of emergent cotton producer movements in the 1990s and 2000s was blunted by the co-optation of the UNPCB and the splintering of village cotton groups into the GPC system. In my fieldwork, apart from some very small groups engaged in anti-GMO protests, I primarily observed what might be considered “everyday” forms of resistance (Scott 2008), although these acts are small, fragmented, and rarely produce structural change. Many farmers refuse to attend meetings, some buy inputs outside of SOFITEX, and some do indeed divert or sell inputs and lie to ATCs about their production. Some farmers have left cotton production, and a few have joined groups that seek to change SOFITEX policy. However, my argument is that farmer resistance efforts are limited by their own splintering along lines of social difference.

*Economic pressures create fissures between farmers*

SOFITEX’s efforts to ensure debt repayment and to increase cotton production press down unevenly on different types of farmers, and contribute to substantial inter-farmer conflict. As noted above, ATCs preferentially help higher-producing farmers. Additionally, SOFITEX’s
system to guarantee debt repayment differentially squeezes farmers. Cotton farmers are responsible for the debt of all farmers in their GPC – no one gets paid until all debts are covered. This weight of debt exacerbates intra- and inter-family tensions. All farmers struggle to make a modicum of income, and farmers often have to cover the debts of their brothers or cousins. This economic pressure can split families and lead to fights between brothers. At one extreme, I heard stories of knife fights, drunken brawls, and theft; more common were stories of social stigma and shame, brothers splitting up their farms, and out-migration. Some farmers are quite aware that they bear the social consequences of SOFITEX’s policy to ensure debt repayment: “SOFITEX has figured out a way that they don’t lose…And they leave us in the village to fight with each other. They don’t give a damn. Even if we are going to kill each other they won’t step in.”

In particular, less-indebted farmers and more-indebted farmers within the village are increasingly at odds with each other. Some GPCs have officially split into two, often based on “more successful” (often mechanized, larger-scale) groups of farmers splitting away from “less-successful” farmers. This could be because smaller-scale, poorer farmers are more often indebted (Gray and Dowd-UrIBE 2013; Gray et al. 2018), and wealthier farmers do not want to have to cover this debt. Yet farmers can justify these splits in other terms: one farmer (who was in the poorer half of a split GPC) explained:

It was as if some of the farmers had evolved, and the other farmers had not evolved. There are some farmers who can fill a container, and others (cannot). And the farmers who can fill containers, they were insulting the other farmers, saying they were not working as hard, that they were not as evolved and were left behind.

This conflict led to the GPC officially splitting into two. What is notable here is the discourse of difference that wealthier rural residents used to justify rising inequalities in the village. Just like SOFITEX managers and ATCs, they employed narratives of “being more evolved,” which
Western education is an important status that intersects with a farmer’s wealth. Uneducated farmers face social stigma as well as the potential for economic exploitation.

Observe the following incident from a GPC’s fertilizer distribution day:

A young man, probably 25… He said he wanted help writing down his inputs into his notebook, so that he had a record… The group secretary (who had been speaking to me in French) looked at the notebook, and scoffed. He opened it up, and said, ‘This isn’t for writing in. This is a technical book, for planning your production…’ He berated the farmer for being stupid. He turned the pages and read off sentences in slow French, as if to show off that he could read. …The farmer was clearly embarrassed… he walked off and stood nearby, like a dog with his tail between his legs. (The secretary did not help him write down his inputs.)

This incident also indicates how education, like urbanness, is a performative status. It can be achieved through speaking French and displaying (often technical) knowledge. It can also be an axis of economic differentiation: farmers who cannot write to keep track of their costs are not only made fun of, they are at a serious disadvantage regarding corruption or cheating at various levels of the cotton chain. As one farmer put it, “When SOFITEX or the Union comes, they can say whatever they want, they can lie, because they know the papers (meaning they can read), and we do not.” At the GPC level, I observed uneducated farmers pressing thumbprints to contracts they had not read. Additionally, farmers who cannot read rarely serve in GPC leadership groups, positions that can be a source of power and potential advantage. Western education – and its performance – thus acts as an additional wedge between farmers, though other forms of status (primarily wealth) can outweigh a lack of education.

Wealthier farmers can profit from poorer farmers in various ways: they illicitly purchase poor farmers’ fertilizer for lower than market costs when poor farmers must sell inputs to meet basic needs (also see Gray and Dowd-Uribe 2013); they charge high rates for using their tractors
to till fields and shuck corn; and they benefit from poorer farmers’ labor at crucial times in the agricultural season in exchange for lending farm implements or food (which also delays poor farmers’ farm operations). Finally, GPCs organize “work groups” where all farmers must help load all other farmers’ cotton into the transport containers. This arrangement disproportionately benefits larger-scale cotton farmers, who receive far more “free” labor than they give (a similar arrangement is reported in Mamdani 1987).

Farmers transfer pressure to women

The intense economic pressure for male farmers to increase their production and repay their debts also results in the exploitation of female labor. Cotton is a labor-intensive crop (particularly at harvest), and men control most household labor. Among Bwa farmers, women labor on the household fields (they do not have separate fields), and men control the harvest and resulting income. Most men and women told me that women do more fieldwork since the expansion of cash crop cotton. Further, as cotton fields get bigger, many men seek multiple wives as a source of labor. In many ways, female unpaid labor produces the majority of surplus value in Burkinabè cotton. Women and many men told me (and I observed) that women do the majority of field labor. Men ask their wives to live on-site in the fields during the farming season, while many men commute on their motorcycles, sometimes showing up in the fields after morning coffee with male friends and perhaps a round of horse betting.

Most male farmers view this system as perfectly natural, because a woman’s role is perceived to be “there to serve her husband,” “to follow her husband,” and to “do what her husband says.” Men take women’s labor for granted to such an extent that in many interviews, when I inquired about labor, some men didn’t count women until I specifically asked:

Me: Who are all the people who work in your fields?
Respondent: With me?
Me: With you. Who do you farm with?
R: Well, it’s me, me alone.
Me: (Pause)… Any musow (women/wives)?
R. And women.
Me: One woman?
R: Two women. So me and two women.

Men can spend hours complaining about how “SOFITEX exploits us,” but whenever I suggested, “Well, but don’t you also benefit from your wives’ work?” they rarely saw the comparison I was making, or they justified it as somehow necessary. Observe the following defense of gender roles in the interaction I had with male farmers drinking beer after the fertilizer distribution event I referenced above:

The men were complaining about their hard work. I jokingly said, ‘but, you have it easy – your wives are working and you are drinking beer.’ One farmer agreed, he said it was true. They asked me if I thought multiple wives were good. I said, well, no, because of my culture, I like only one wife, one husband. They said, here, they like four or five. They said, we have to for the fieldwork. How else will we plant all of our hectares?

The men justified the system as necessary – as if the economic pressures they face (to increase acreage) justify women’s unending labor. On a rare occasion, a man admitted, “Yes, women have it worse off, but what can we do? We are so poor to begin with. We’re exploited. What choice do we have?” More commonly, men launched into narratives about “a woman’s place.” This is similar to the SOFITEX manager justifying his car ownership by appealing to the narrative that “everyone has his place.”

Gender is one area in which many Burkinabè men strongly reject Western ideals, saying that Western men have given women too much power. They feel that some Burkinabè women are now demanding more rights because they are exposed to Western norms. In fact, many men complain that there are more “rebel women” than before – and blame it on women getting “greedy” or no longer understanding the proper role of a woman. In a sense, men are aware that
women’s powerless position in society can shift with changing intersectional identities – and that an “educated” woman is not the same as an uneducated one.

**Rural women**

During the farming season, women work almost every day, planting, weeding, applying fertilizer, and then harvesting for months on end. At the end of the year, a woman’s husband gives her anywhere from two to six sacks of corn to feed her and her children for the year, and a variable amount of money. Some women receive up to the equivalent of US$90 (for nearly eight months of labor), but most seem to receive much less than that, and still others receive nothing.

Yet, as Rosalie’s comments in the introduction illustrate, many women aren’t happy about this, and they feel exploited. They want a larger share of the family income. Some women told me that “women here are treated as little more than draft oxen,” echoing the male farmer’s belief that SOFITEX has a “rope through their noses” as if they were oxen. One young woman said she was unlikely to ever marry because she had a job, and no man would want her if she didn’t provide field labor. Yet despite women’s frustrations, they have few options. Some explain that if they leave, their husband will keep the children and treat them poorly – so they stay “for their kids.” Others explain that they simply have no other livelihood options, particularly given that women’s access to land in Burkina is mediated through relationships with men (Kevane and Gray 1999).

**Womens’ resistance**

Many women stay with their husbands, but engage in subtle forms of resistance. The growing congregations at Christian churches (Johnson et al. 2013) are mostly women, and some women told me they became Christian “to have a day of rest” once a week, and because Christianity promotes monogamy and choice in marriage. I interpret this as a strategy of
resistance. Some women engage in activities to ensure they receive a greater share of farm output: they secretly “steal” corn during the harvest. They say they can easily take sacks of corn because “their husbands are never there anyway,” and they store the corn with a friend or maternal family member. They then draw on this corn for food (and occasionally to sell) when their “official” allocation of corn runs out.

A smaller number of women engage in more active protest. Men refer to these troublesome women as “muruti musow” – rebel women, or protesting women. Some refuse to work until their husbands pay them, some do contract field labor for other farmers, saying that contract work – even if poorly paid – is still superior to being an “unpaid wife.” Some widows and women have left their husbands to farm on a rocky hillside, the only land that men allow them to farm. They eke out a living with very few inputs and only their own labor. Some of these women told me they are so poor that it is barely worth it. Nonetheless, a few have banded together for labor pools, and a small number of these women, mostly widows who also sell alcohol or engage in commerce, have managed to become moderately wealthy by village standards.

In terms of intersectional differences between women, one important axis – as noted by men – appears to be education level. One self-identified “rebel woman” told me: “Women are protesting. We aren’t agreeing anymore.” I asked why the change, and she said, “Education. Education has opened our eyes. We are ‘awake’ now. Before, we were in the dark, but now we see the light. We are evolved.” So like SOFITEX managers, ATCs, and farmers, some women draw on the status of Western education (and its troubling associations with “evolution”) to explain differences between women. While these new viewpoints may empower some women to
engage in resistance, it also frames other, uneducated (or non-protesting) women as implicitly “still in the dark” and un-evolved, sowing seeds of differentiation between women.

Conclusion

This chapter has examined how economic pressures channel through a chain of exploitation, where actors are pressured to increase cotton production, and then pass that squeeze on to less-powerful actors. SOFITEX managers enforce policies to ensure farmer debt repayment and pressure ATCs to increase cotton production; ATCs push farmers to increase production by helping the largest farmers; wealthier farmers increase production by splitting away from poorer farmers and benefitting from poorer farmers’ needs for cash and farm equipment; and all farmers increase production by relying on the labor of their wives.

How do intersectional differences matter in this chain? First, economic pressures appear to be channeled along lines of social difference – with urban, educated, wealthy men at the top. In fact, economic pressures may even exacerbate these inequalities, as in the case of fragmenting farmers. With actors splintering along myriad lines of difference, there is no easy boundary between exploiting capitalists and exploited peasants. By focusing on intersectionality, I show the importance of multiple and intersecting axes of difference – not just class and gender, but also attributes like education and rural/urban status – in the social fragmentations that accompany exploitation. Second, I show how people employ discourses about intersectional differences to justify reproducing exploitation. Many actors resist being exploited to some extent. Nonetheless, they justify their own behavior (transferring pressure to produce more cotton) by framing people “below” them in the chain as different, based on a range of attributes. I thus argue that intersectional inequalities help facilitate the extraction of surplus value because they help enable actors’ participation. Exploitation requires ideologies of legitimation. Beliefs about
why some human beings are more valuable than others can secure consent – not necessarily to being exploited, but to engaging in exploitation – which is necessary for securing surplus extraction in a long chain of actors.

In addition to beliefs about social differences, men frequently employ discourses about hard work and laziness – claiming that other men deserve their social inferiority because of an inability to work hard. The repetition of these discourses in different contexts exposes their constructed character: SOFITEX bureaucrats think ATCs are lazy, ATCs think farmers are lazy, and large farmers think their indebted neighbors are lazy. While there are undoubtedly some lazy people, these discourses reveal another thread in how actors justify exploitation. As one (non-cotton) farmer told me,

We have this lie that poor people are poor because they are lazy. SOFITEX uses this a lot. They come and say that if a farmer falls into debt, it is only because he is lazy and doesn’t work hard enough. And people have come to believe it. They blame each other. They don’t see how they are being oppressed.

As other scholars have shown, these narratives – which echo historical and racialized narratives of colonialism and contemporary discourses of meritocracy and neoliberalism – often justify the spread of capitalism and disguise the inequalities it produces (Harvey 2005; Navarro 2007).

Finally, this chapter sheds light on the “politics” dimension of the agrarian question. Although I found small levels of resistance at nearly every level of the chain I explored in this paper, resistance was nearly always targeted at a proximate link. I found extension agents struggling against SOFITEX managers; male farmers struggling against SOFITEX, extension agents, and each other; and women struggling against men. This makes sense on a practical level, but raises the question of broader solidarity. As one older ex-cotton farmer said,

Farmers no longer have a common voice…Things have changed, and new times demand more and more money, and each person… (seeks his own projects). This makes me sad,
because when people are united, they can fight a big battle. But when we are dispersed, we can’t achieve much anymore.

Certainly some actors are aware of broader systems of exploitation, as the two previous quotes demonstrate. Yet some have a myopic vision, blaming the actors directly above them rather than broader forces of oppression. Most actors presented in this paper are, to varying degrees, exploited by global capital extraction, yet their divided and intersectional social positions prevent them from seeing this shared ground. This presents a sobering counterpoint to populist and even neo-Polanyian visions of a widespread “peasant” revolt against capitalism (Agarwal 2014; see also Bernstein 2014), and complements Dowd-Uribe’s (2014a; 2014b) insightful work on how liberalization reforms blunted emerging producer movements. Nonetheless, the range and depth of resistance I depicted in this chapter indicates that there is still fertile ground for broader resistance – yet this will require a synthetic effort: attention to both social divisions and shared experiences of exploitation.

This chapter provided a broad picture of the Burkinabé cotton sector, showing how economic exploitation is passed from more powerful to less powerful actors. In terms of answering the puzzle of this dissertation, this chapter has shown how actors participate in processes of economic exploitation because they are each struggling to maintain (or slightly improve) their own tenuous economic and social positions. In order to do this, they pass exploitation on to other actors, and they justify doing so by drawing on discourses about social difference. Men who are urban, wealthy, and/or Western educated justify their social position in contrast to rural, poor, and/or non-Western educated men. Nearly all men, including the poorest farmers, justify exploiting the labor of women. In the following chapter, I theorize Burkina Faso’s cultural field, showing how the valuation of urbanness, wealth, and Western education corresponds with broader cultural aspirations for Western modernity. I demonstrate the racialized
dimensions of these aspirations, and use this framing to interrogate technology adoption in the face of rising environmental inequalities.
Despite the common impression that African farmers are “too poor to pollute” (Kütting 2003), in the last few decades West African farmers have been rapidly adopting new agricultural technologies, including chemical pesticides. Burkina Faso – West Africa’s leading cotton producer – provides an interesting case to examine why African farmers are increasingly adopting (and thus exposed to) toxic chemicals, despite their economic marginalization in the global economy. Hundreds of thousands of cotton farmers and their families face chronic pesticide exposure and occasional acute pesticide poisoning (Ouedraogo et al. 2008; Toe et al. 2013), while their communities are exposed to pesticide drift and high levels of pesticide run-off in drinking water (Tapsoba and Bonzi-Coulibaly 2006). In addition to facing these health and environmental risks, Burkinabè cotton farmers occupy a position of global economic marginalization. They are frequently heavily indebted (Gray and Dowd-Uribe 2013), and although some larger farmers make money, the majority of farmers and their families struggle to simply get by. In contrast, actors employed higher up the cotton commodity chain benefit substantially from cotton production – including cotton company employees, state actors, agribusinesses, banks, textile manufacturers, and end consumers of cotton products. This disjuncture constitutes an environmental inequality: poor black Africans are disparately exposed

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8 This chapter (minus Figures 1-4) has been published in the journal Environmental Sociology (2017). The Version of Record is on Taylor & Francis Online at: https://www.tandfonline.com/doi/full/10.1080/23251042.2017.1396657
to the toxic burden of capitalist production, while benefits disproportionately accrue to wealthier white people (Downey 2005). Why is this happening?

Research on environmental inequalities has animated environmental sociology for decades, examining how and why some groups of people – particularly people of color – are disproportionately exposed to environmental toxins (Bullard 2008; Downey 2005; Mohai, Pellow, and Roberts 2009; Pellow 2000). Within this field, scholars have examined race as a demographic variable, intentionally discriminatory behavior, institutional racism, or anti-racist counter-movements such as the environmental justice movement (Harrison 2017; Mascarenhas 2012; Pellow 2007; Pulido 1996). A smaller literature has explored the discursive and cultural dimensions of race in relation to environmental inequalities (Higgins 1994; Mele 2016; Mills 2001; Pulido 2000; Zimring 2016). This chapter demonstrates an additional mechanism through which racism can produce inequalities, and one that has scarcely been addressed: that racist cultural ideologies can influence marginalized people themselves to act in ways that produce and justify environmental inequalities.

Drawing on eight months of ethnographic fieldwork and 125 interviews in Burkina Faso, I demonstrate that many Burkinabè cotton farmers are eagerly embracing new agricultural technologies like fertilizer, herbicides, genetically modified seeds, and tractors. Their pesticide use in particular exposes themselves and their families to large quantities of (often unregulated) chemical products. To help explain why this happens, I employ Bourdieu’s concept of a cultural field, which posits a social arena in which specific types of “capital” signify status, and actors vie to improve their status by seeking capital and through (often unconscious) embodied performances (Bourdieu and Wacquant 1992). I show that Burkina’s dominant cultural field is one in which modernity, wealth, and scientific technology are coded as “white” and high-status,
while poverty, backwardness, and physical labor are coded as “black” and low-status. I argue that many actors embrace technologies in part to achieve status in this field, and that this paradoxically increases rural peoples’ exposure to chemicals, creates barriers to sustainable agriculture, and devalues black African bodies. My findings demonstrate a hitherto unidentified mechanism through which structures of racism translate into environmental inequalities: through aspirations for status within a racialized culture.

**Environmental Inequality**

Early research on environmental inequality sought to document the existence of inequalities. Quantitative studies developed techniques for mapping exposure to pollution and toxins, and despite animated debates, there is now extensive evidence for uneven exposure to environmental harms along lines of race, class, and other axes of social difference (i.e. Brown 1995; Ringquist 2005; Crowder and Downey 2010). A second major strand of literature has focused more explicitly on “environmental justice” movements that contest unequal exposures and harm (Bullard 2008; Cole and Foster 2001; Harrison 2011; Mohai et al. 2009; Pellow 2004, 2007).

With environmental inequalities well documented, scholars began to call for a better understanding of the mechanisms behind environmental inequality (Pellow 2000; Pulido 2000). One explanation is simply economic: that both industry and poorer people gravitate towards cheaper rent. Crowder and Downey (2010) for example, find that some (though not all) of the racial disparities in exposure to neighborhood pollution can be attributed to socio-economic position. Other authors emphasize disparities in political power – when businesses locate facilities in communities less likely to protest (Cole and Foster 2001; Saha and Mohai 2005). Scholars examining international environmental inequalities emphasize the economic processes
of capitalism (such as the quest for lower wages or avoiding environmental regulation) and the historical dynamics of the world-system (Clark and Foster 2009; Rice 2007a).

One of the biggest questions, however, concerns the role of race and racism. Some scholars have defined racism as malicious intent – intentionally discriminatory behavior (Been 1994; Hamilton 1995). Others have focused on the dynamics of institutional and structural racism – focusing less on explicit intent than an outcome. Pulido (2000) and Taylor (2014) demonstrate how historical processes of city planning and housing decisions – such as zoning laws, state-sanctioned red-lining, and residential segregation – produce unequal racial outcomes. Kurtz (2009) also draws attention to state-produced racism by focusing on the “racial state” and its legal constructions of (and efforts to manage) racial categories and populations. Mascarenhas (2012) shows how political-economic structures that tend to be viewed as neutral and ‘colorblind’ – in his case, neoliberal reforms in Canada – can produce racialized effects for First Nation peoples. Pellow (2000, 2004) also draws attention to how race operates through societal power structures, arguing that environmental inequalities are formed when groups vie for various resources or outcomes, and less powerful stakeholders lose out.

Many scholars have called for greater attention to how the cultural and ideological dimensions of racism shape environmental inequalities (Mele 2016; Pulido 1996). Pulido has distinguished between “white privilege” (2000) and “white supremacy” (2015). White privilege refers to how individual decisions by whites – seeking to create better lives for themselves and their families – reproduce racial inequality, despite a lack of explicit discriminatory intent. By contrast, white supremacy refers to the continued existence of more intentionally discriminatory behavior. Other scholars have focused on how notions of race have long been intertwined with notions of purity and pollution (Moore, Kosek, and Pandian 2003; Higgins 1994; Pellow 2004;
Ideas of racial “purity” and fears of social pollution have facilitated the segregation of space and the production of environmental inequalities. In contrast to “clean and white” bodies, bodies defined as darker colored have long been framed as dirty (Zimring 2016), “appropriately polluted” (Higgins 1994), or simply out of place in “pristine” environments (Hickcox 2017; Park and Pellow 2011). These cultural associations help explain how certain groups of people have come to be exposed to waste and toxic materials, and how this exposure has been framed as “natural” (Moore et al. 2003).

Despite the diversity of mechanisms identified in the literature, most research specifies or implies that it is only racism from whites (whether intentional or institutionalized) that produces environmental inequalities. There is certainly some nuance here; Pellow’s (2004) study of waste management in Chicago complicates the “perpetrator-victim” framework and argues that community leaders and environmentalists also played a role in producing environmental injustice. Yet I will show what few other scholars have addressed: that racist cultural beliefs may shape the beliefs and actions of marginalized people themselves to produce environmental inequalities. This chapter demonstrates how Burkinabè cotton farmers operate within a racialized cultural field, and that by seeking status within this field, they can produce and justify their own exposure to chemical toxins. This parallels Pulido’s (200) argument about white privilege, showing how racist culture shapes the behavior of both privileged and marginalized people. In this case, individual decisions by black Burkinabès – seeking to create better lives for themselves and their families within a racist culture – reproduce racial inequality despite a lack of intent to do so.

**The color of African modernity and racialized cultural fields**

In explaining how racist ideologies produce environmental inequalities in Burkina Faso, I
draw on insights from wider literatures on race and modernity – what some scholars have termed “racialized modernity” (Bobo 2015; Itzigsohn and Brown 2015). Numerous scholars have documented global racial hierarchies, wherein whiteness symbolizes economic domination, modernity, and status (Weinstein 2015; Glenn 2009; Bobo 2015; Telles 2014; Blay 2011; Winant 2001). Research on race in non-settler Africa has tended to focus on inter-ethnic differences. Recent scholarship, however, has turned attention to African desires for whiteness – as evidenced by the troubling growth of skin bleaching (Glenn 2008; Hunter 2011), rising rejection of African tradition, and a turn toward “Western” material and cultural imports associated with modernity (Burke 1996; Ferguson 2006; Mojola 2014; Piot 2010).

Why these rising desires for modernity and whiteness? An adequate answer to this question – not attempted here – would draw on rich literatures on racial formation and internalized racism (Du Bois 1903; Fanon 1952; Gilroy 1993; Omi and Winant 2014; Winkler 2012). Some of this literature connects internalized racism with economic inequality. Fanon (1952:xv) argued that, “The inferiority complex can be ascribed to a double process: First, economic. Then, internalization or rather epidermalization of this inferiority,” while Du Bois (1903:8) wrote that economically marginalized African Americans found themselves “measuring one’s soul by the tape of a world that looks on in amused contempt and pity.” Bobo (2015:225) argues that racialized modernity is characterized by “the fusing of capitalism, colonialism, and ethnoracial distinction and hierarchy.” In looking at contemporary Africa, Ferguson (2006) points out that scholars have tended to ignore African desires for whiteness/Westernness, often in well-meaning efforts to avoid re-producing colonial tropes. He argues that many Africans desire Westernness and whiteness not as mimicry or as parody (a common theme of earlier anthropological work), but as a reaching across economic worlds: a claim to global membership,
material wealth, and a higher rank and status. Similarly, studies of skin bleaching and Western cosmetics in Africa emphasize how these products enable (mostly women) to purchase the status and “racial capital” of modernity, urbanity, and Westernness (Blay 2010; Glenn 2008; Hunter 2011; Mojola 2014). In these understandings, desires for whiteness and modernity reflect a practical response to the racialization of our global world-system (Winant 2001).

I draw on Bourdieu’s (1984, 1990) cultural sociology to situate racialized modernity within the Burkinabè context. Rather than simply framing these racial beliefs as narratives, discourses, or ideologies,9 I want to emphasize that “racialized modernity” characterizes a hierarchical system of social status and power. A Bourdieusian frame points our attention to how actors’ practical actions are oriented within a cultural system of status. I use it here to examine how actors, who possess portfolios of different “capitals” within a social arena, vie to maintain or improve their status through (often unconscious) embodied performances. However, I employ Bourdieu’s concepts loosely, recognizing the limits of the field concept (which tends to connote autonomous or bounded arenas – which I do not imply here), and the blurriness of transnational influences on culture and discourse (Hilgers and Mangez 2015; Savage and Silva 2013). I thus refer to a loose “Burkinabè cultural field,” a social arena with recognizable sets of dominant and dominated positions, and in which specific forms of capital are widely valued (though contested by some). Using this framing, I find that Burkinabè actors inhabit a field where higher-status positions are associated with modernity, whiteness, wealth, and certain forms of embodiment. Non-purchased, traditional agricultural methods and inputs (such as composting and hoeing) are widely viewed as “black,” backward, dirty, and low-status, while new – scientific and purchased

9 One could also usefully examine these racial beliefs as discourse – through a Foucauldian lens or in comparison to gendered discourse – where discourse shapes subject positions and the very realm of the ‘possible.’
– technologies appear to offer the status of whiteness, wealth, and modernity. However, by adopting some of these technologies, particularly pesticides, farmers expose themselves and their families to large quantities of unregulated chemicals and ignore or justify their exposure to pollution.

**Case, methods, and positionality**

I examine environmental inequality in the context of agriculture in Burkina Faso. Cotton is the primary cash crop in Burkina, as in many West African countries, and tends to drive input-intensive agriculture as well as social and ecological change in the region (Gray and Dowd-Uribe 2013; Gray and Moseley 2008). Burkinabè cotton farmers – male “household heads” and their families\(^\text{10}\) – have been rapidly adopting “Green Revolution” technologies including fertilizer, pesticides, and mechanization, and from 2008-2015, genetically modified crops (Bt cotton). In this context, pesticide exposure and pesticide poisoning is a persistent issue for cotton farmers (Ouedraogo et al. 2008; Toe et al. 2013). Many chemicals are illegally imported and unregulated; in Toe et al.’s (2013) survey of 650 farmers, 70% of pesticides they encountered were unapproved for use in Burkina Faso by the state. They also found – in line with my own and others’ observations – that most farmers cannot read labels and take very few precautions while spraying. Furthermore, in 2006, studies showed high pesticide presence in water supplies in the cotton zone (Tapsoba and Bonzi-Coulibaly 2006). In 2016, most actors I spoke with, particularly pesticide salesmen, reported a significant rise in herbicide use in the last ten years. One extension agent told me that he found “the level of herbicide use to be frightening.” I thus view this

\(^{10}\) Cotton farming in Burkina, as in most West African countries, is predominantly organized as a male activity (see Gray and Moseley 2008). Gender is an important dynamic in this space, but one I do not interrogate here. This chapter is primarily focused on men’s decisions.
situation as a case of environmental inequality: farmers and their communities are disproportionately exposed to the risks of cotton production, while gleaning few of the benefits.

Figure 1: Herbicides for sale. Herbicides for sale in the market in Kongolekan, June 2016. Herbicide salesmen were ubiquitous in Bobo-Dioulasso and Houndé regional markets, and also sold out of many farmers’ homes.

Figure 2: Farmers spraying pesticides. Farmers mixing and spraying insecticides on a windy day. These farmers are mixing two insecticides at double-strength due to a pest outbreak.
Figure 3: Family exposure to pesticides. A young woman and her daughter take a break during spray operations. Farm families are exposed to pesticides during and after application, as they continue to work in and near sprayed fields. The empty can contained chlorpyrifos, which negatively affects brain development in children (Rauh et al. 2012).

Figure 4: Pesticides and water supplies. A woman fills up a bowl of drinking water from their water basin. During the farming season, families often live on their farms in small dwellings. This family’s living area is surrounded by cotton fields, and their water is collected from a nearby stream.
This research was conducted in Burkina Faso over the course of eight months in 2016. All research was conducted in French and Dioula, languages that I speak fluently (after Peace Corps work in the region). French is spoken by educated bureaucrats and scientists, while Dioula is a widely spoken lingua franca in Burkina’s southwestern cotton-growing regions. With part-time accompaniment from research assistants (who helped me conduct interviews and interpret my observations), I conducted extensive participant observation and a total of 125 semi-structured interviews. This included 15 interviews with cotton company (SOFITEX) employees, 9 interviews with leaders of anti-GMO and sustainable agriculture activist groups, 3 interviews with Monsanto employees, and 5 interviews with state-employed agricultural scientists. Through contacts with government-level cotton sector employees, I attended regional conferences dealing with cotton pest management and biosecurity. I also attended publicly advertised events related to sustainable agriculture or genetically modified cotton. My aim was to see how technologies were interpreted, promoted, and/or resisted by various groups that work with farmers.

My rural fieldwork sought to observe both adopters and resisters of new agricultural technologies. I found my field site through a group of “activist” farmers I met at a forum against genetically modified crops. These farmers invited me to visit their community of two bordering villages of Bwa farmers in the Houndé region (around 4,000 residents). In meetings with groups of farmers in each village, I discovered that most farmers were enthusiastically adopting new technologies. After introducing my research objectives and meeting with the cotton growers’ groups and the village chiefs, I rented a house, and between June and December 2016, interviewed 43 male cotton farmers and 24 farming women (chosen for a wide range of economic and social attributes). I also conducted extended participant observation with dozens of men and women in their daily lives and on their farms, taking detailed field notes each day.
Additionally, I spent a month following along cotton company employees in the region, and had informal encounters with hundreds of additional farmers during this time. Near the end of my fieldwork, I interviewed 15 organic cotton farmers in the Banfora region in the south.

The content of this chapter emerged inductively from field research and iterative data analysis. Most of the data presented are from field notes, not interviews, since informal encounters were often more revealing of social dynamics than interviews. Further, race was not a topic I intended to study. It first emerged when I began discussing my positionality with my research assistants (Burkinabè masters students in sociology) – about how being “the white lady” shaped peoples’ behavior toward me. This is an intersectional identity; while being a woman helped me gain access to intimate conversations with women, being a white woman meant that women still held me slightly at a distance and expected that I was unable or unwilling to do physical labor. Men were also respectful toward me; my status as a white “researcher” meant they viewed me as knowledgeable, wealthy, and socially powerful. They often asked me for farming advice (in this case, my race and education appeared to outweigh my gender – most Burkinabè men would be unlikely to ask for farming advice from a black Burkinabè woman). My white skin was the most salient aspect of my identity – and dramatically shaped all of my research encounters. It provoked countless conversations and reactions that helped me understand how people viewed whiteness – and blackness. It is often in encounters of difference that relational constructs (black/white, rich/poor) are made visible (Lamont and Fournier 1992; Moore et al. 2003). I treat peoples’ encounters with my body as one source of ethnographic data. Of course, the centering of my own body as the prompt for racial analysis is not without problems: we are left to wonder about the salience and role of racial categories when a white
body is not present. This is a shortcoming of my data, and one that I hope can be explored by future researchers with different positionalities than my own.

**Burkina’s cultural field: the status of whiteness and modernity**

My argument unfolds in three sections. In this first section, I depict Burkina’s broader cultural field, in which modernity, Westernness, whiteness, and wealth are bundled together and operate as markers of status, in contrast to the lower status of tradition, backwardness, poverty, blackness, dirtiness, and physical labor. In the second section of my findings, I illustrate how agricultural technologies intersect with this cultural field – and demonstrate that famers adopt new technologies *in part* as a way to obtain status within this cultural field. In the final section, I argue that not only does this process expose farmers and their communities to more toxins, but the racism of this cultural field also works to mute health and environmental concerns that might urge farmers and cotton company workers to reduce or mitigate exposure.

**Figure 5: Discourses of modernity and progress.** “Modern laundry,” “The fish shop of progress,” and “Modern jewelry.” Shops in the regional city of Bobo-Dioulasso display the ubiquitous discourses of modernity and progress.

In Burkina, modernity and progress are deeply linked to whiteness and Westernness – partially due to colonial legacy, and partially produced by contemporary Burkinabès’ awareness (via television and social media) of their economic marginalization in the global economy. A telling indicator of this equation of whiteness with modernity comes from my Burkinabè
research assistants, who transcribed my Dioula interviews directly into French. In several instances, they simply translated the Dioula word “tubabu” (which means “white/French person”) as “modern.”¹¹ For them, white people are literally synonymous with modernity. This interpretation is not restricted to elites or educated city folk. In rural towns as well as cities, I heard men and women refer to themselves or other Africans pejoratively, often using French words even in conversations in Dioula: “we are not civilisé,” (civilized) “we are not evolué” (evolved). Another common expression was the French term eveillé (awake), or the Dioula nyeyelele (eyes open), to refer to people with a modern outlook – such as people who had completed French schooling or had rejected traditional religion.

My impression was that most people tend to see progress and modernity as an attribute of white Western people, and one that is generally desirable. This is not without nuance, however. In this and in the following sections, I do not wish to portray a totalizing cultural field without variation and resistance. Many people have mixed or negative feelings about the social changes they associate with modernity and capitalism, including: increased individualism, less respect for elders and tradition, and a belief that social solidarity, families, and communities are unraveling (as discussed in Chapter 5). Some male cotton farmers are critical of the legacy of white colonial exploitation – and see this exploitation continuing in forced currency devaluations and gold extraction by foreign companies. Further, a subset of cotton farmers who still practice traditional religion resist Western science; as one man told me, “you white people, from your world of science, you just can’t understand” the world of powerful African spirits and magic. I tended to find that older people and non-Christians were more likely to resist the cultural narratives I

¹¹ For example: The interviewee said in Dioula: “Diante a machine soro, tubabu tu,” which translates word-for-word as “Diante got a machine, the white person kind.” My Burkinabè transcriptionist simply wrote in French: “Diante a eu une machine moderne” – “Diante got a modern machine.”
present in this chapter. There are also gendered differences regarding whiteness and beauty, and many other differences along intersections of gender, class, location, and ethnicity that I do not discuss here, or that I have not discerned. My point here is that the status markers I describe in this chapter are not universally recognized, but they are nonetheless dominant.

*The status of “Frenchness”*

“The whole system of respect here is based on how close you are to being French.”

- *Cotton company employee*

In Doulou, the word “tubabu” generally refers to a white Westerner, while “tubabu-language” means French, which makes sense given Burkina’s colonial history. The government and schools are structured in the French system and televisions play French TV. However, Burkina’s French literacy rate is low (around 30%), and many rural people do not speak French. In this setting, just as Fanon (1952) argued, “Frenchness” is often leveraged in social interactions to display status. For example, on a more expensive bus company that assigns seats, I often witnessed educated passengers shaming other (often rural) passengers who could not read their tickets, speaking in French with widespread laughter and head shaking. The status of speaking French seems linked to urban status and wealth. Most rural people refer to employed or salaried positions (which they equate with wealth, and desire for their children) as “tubabu jobs.” (See Chapter 5). People also view French and Western products as higher quality – “original” products as opposed to locally produced or knock-off products.

*The whiteness of wealth*

Westernness and whiteness operate as status symbols to a large degree because they are associated with wealth and economic success. As a white American woman in Burkina Faso, people often called out to me, “Waari tigi!” – the money holder (rich person). A friend explained
this behavior to me: “It is like seeing a celebrity. They only see white people on television. And of course they think you are rich, I mean, aren’t all white people rich?” This was a common conversation. Farmers frequently told me that, “even the poorest white people are wealthier than the richest black people in Burkina.”

Many Burkinabè women desire lighter skin and Caucasian physical attributes, which seem linked to a desire for wealth, modernity, and urbanity. Women regularly asked me to cut off my hair (a light brown ponytail) to make a wig to have “beautiful hair.” They said, “We don’t like our hair. We want hair like yours – tubabu hair.” Many urban women also use skin-lightening creams. When I asked why, several women said lighter skin can attract a “wealthy” husband. My interviews with male farmers also confirmed that many men desire light-skinned wives as a sign of wealth and status. As Blay (2011) has argued, getting closer to “whiteness” may thus be a strategy for obtaining social and economic capital.

![Figure 6: Yearning for whiteness. Skin lightening creams for sale in a market, and a rural woman making a straight-haired wig to “have beautiful hair” for Christmas. These photos illustrate the common (often female) “yearning for whiteness.”](image)

12 It is estimated that 25-75% of women in West Africa use skin lightening creams! Given reports of toxic ingredients, this is another arena in which internalized racial narratives produce environmental and health inequalities (Blay 2011).
Getting out of the dirt: whiteness, cleanliness, and progress

In Burkina, the Dioula expression for development or progress – “ka bo nogo la” – translates literally as “getting out of the dirt.” This expression makes palpable sense. Development means getting out of the fields, out of a world of dust and soil and limited access to water and modern sanitation. Yet this coding of development as cleanliness is also subtly raced – and ties black skin and poverty to dirtiness.

The Dioula word for “white” (gwe) is also the word for cleanliness and purity. However, this isn’t just a case of linguistic homonyms. People often made statements associating white skin with cleanliness. For example, one woman told me that she thought “white women didn’t get periods. That only black women did. You are just so clean, I can’t imagine such a dirty thing happening to a white woman.” Another example highlights the association of cleanliness and whiteness with urban living. I was sitting with Marianne, an un-married woman in her late twenties who has spent time in the city, and struggles to be a “modern” woman in a rural village. She began discussing my female research assistant, “Oh, Aissata has such beautiful skin!” Aissata was a lighter-skinned young woman from the capital, who had complained to me that the “village water” was ruining her skin by making it “dark and blotchy.”

“What was nice about Aissata’s skin?” I asked Marianne.

“It wasn’t like our skin. She had such beautiful skin. Some would ask what products she puts on it, but I know it’s just from being in the city. It’s city skin. Not like here in the village.” I asked, “What about it was beautiful? The color?”

“Yes, it’s so light. Not like ours. Ours is so dark. But if she was here, her skin would change to be like ours.”

“Why is yours different?”
Marianne replied, “It’s dark because we work in the dirt. We are so close to the dirt all the time, and we don’t shower as often.” She pointed to my arm, “Don’t you see how you’ve gotten darker here? Your skin is changing too because you go out to work in the fields. But if we were to go live in the city for awhile, we would become more like tubabus.” Intriguingly, my own tubabu status was apparently threatened by working in the dirt! When I discussed this later with my male research assistant, I told him that people in the cities are probably lighter-skinned because they get less sun. He disagreed, saying no, it’s also the clean water, food, and modern amenities. Light skin thus signifies the social status of the ability to “get out of the dirt” – to escape the exhausting labor of farm work and the difficulties of village life.

**Blackness, physical labor, and status**

Finally, Burkina’s cultural field ties together blackness, poverty, and dirt with physical labor. The low status of physical labor has roots in Burkina’s colonial history, and strongly shapes contemporary enthusiasm for labor-saving agricultural technologies. In the late 1800s, colonial France designated Burkina Faso (then Upper Volta) as West Africa’s “labor reservoir.” France then imposed various forms of forced labor: each village supplied laborers for infrastructure development; tens of thousands of people were conscripted for military service; and hundreds of thousands were forcibly sent across francophone West Africa for agricultural and infrastructural labor (Cordell et al. 1996). Villages were also forced to pay hut and head taxes, and to provide a given quantity of crops such as cotton. This colonial model of exploitation seems to run just beneath the surface of contemporary Burkinabè attitudes towards physical labor. In a very tangible sense, the ability to avoid physical labor (and exploit the labor of others’ bodies) signifies status and power.
Part of the current aversion to physical labor is also physical, and part of peoples’ practical logics for getting by (Bourdieu and Wacquant 1992). Bodies are not simply social canvasses; rural people experience genuine bodily fatigue – long days bent over in sweltering heat, carrying heavy loads on their heads or strapped to bicycles, and sometimes with hungry (or pregnant) bellies. Their workloads can feel interminable. My argument here is that attitudes towards bodily labor as low-status layer onto practical desires to reduce drudgery. This layering is highly visible in attitudes toward transportation. Many urban Burkinabè men explained to me that they cannot ride bicycles even if they wanted to, or else their friends would ask: “What happened? Are you poor? Did your motorcycle break down? Are you out of gas?” One man explained to me, “Once you reach a certain status in life, there are things you just can’t do.” Only poor people walk or bike.

Attitudes about physical labor are also raced. For example, many people were perplexed that I didn’t ride a motorcycle or drive a car, and that I chose to come help them with their farm work. To most farmers, wealthy/white people simply do not do physical labor. Many people expressed views of white bodies and skin as weaker and more fragile than black bodies and skin – either inherently, or because we sit inside all the time (a view that seems influenced by television programming – which rarely portrays white bodies working). In contrast, black bodies are often framed as dirty – and even black – because of physical labor. I once overheard a rural woman who used skin-bleaching creams say: “If I lived in the city I would look like (the white lady), but we are out here bent over in the fields, and our skin is ruined.” Like Marianne in the example above, she was tying her skin color to working in the fields – and the physical labor it entailed. In another example, I was sitting with my lighter-skinned research assistant Aissata at a local hang-out/breakfast bar. A man said to her,
You see your skin? It is you people in the capital who eat everything. You eat off of our backs. You see our skin? How dark and burned it is? We are the ones suffering. You have beautiful skin because you are eating well in the capital, you are resting.

This man views his darker skin as a sign of his physical suffering – the result of bodily labor, and a mark of poverty and exploitation. He ties physical labor to the low status of poverty and blackness. It is also worth noting, however, this man’s “double consciousness” – his insightful and scathing structural critique of a world-system that places black laboring bodies at the bottom of a chain of exploitation.

**Status, whiteness, and agricultural technologies**

*Science, technology, and “evolution”*

This section shows how new agricultural technologies fit into this cultural field in which whiteness, Westernness, and wealth are associated with each other and positively valued. I contend that science and agricultural technologies are, in part, embraced because of their associations with modernity, whiteness, Westernness, and wealth. These associations echo Williams’ (2017:13) argument that in the early 20th century United States, “notions of ‘development’ and ‘competition’ in agriculture were tied to plantationist racial conceptions.” In Burkina, agricultural technologies are adopted for a wide range of reasons, but *one* reason – the one I explore here – is that they offer an avenue for achieving symbolic status in the cultural field I have depicted above. They can help reduce physical labor, display wealth, and demonstrate “technical” know-how associated with Westernness.

Cotton company officials frequently use the French word “technicité,” which describes a person’s technical knowledge or ability, in order to separate the good and “modern” farmers from the backwards and “traditional” farmers. For example, at one conference I attended in a fancy hotel, I chatted with a mid-level cotton company employee in his fifties:
He told me education is the key to progress, and to going from poor to rich… He said the educated farmers had a ‘Cartesian,’ rational view of the world… If you bring innovation to these farmers, they will understand and adopt it. Traditional-minded farmers aren’t able to understand.

I asked him to clarify. He pointed out the window... He said, I used to live down there, when I was going to university… And now here I am, looking down on the city. ‘Can you imagine the emotional impact for me? To be here now, in this beautiful hotel, on the 7th floor?’

He said he had attained a high level of respect because of his education and his job as a technical expert. People looked up to him because of his technical knowledge…He added, ‘This is because I am seen as closer to being French… the whole system of respect here is based on how close you are to being French.’ He said this not critically, but in a matter-of-fact way.

This abridged excerpt illustrates his assessment of “modern” farmers as those embracing Western thinking and Western technology. He comments on his rise up the hierarchy – quite literally to the seventh floor of a fancy hotel – as based on technical knowledge and moving closer to Frenchness.

Back in the conference room, two white French women were presenting a new line of insecticides from a global agri-chemical company. The first slide had the title “Evolution is in progress” typed across the well-known picture of evolution from a black ape to a white human. The spoken message: these chemical products are the height of modernity and technical prowess. The unspoken message: by purchasing these products, you will move closer to the right side of this picture – the modern, evolved, white man. These messages resonate with and re-produce the narrative of “evolution” that I found in local discourses. Many scientists I interviewed (at the state research institute, the cotton company, and Monsanto) talked about the inevitable march of science and evolution. One told me, “We have to find a path for biotechnology in Africa. If we don’t, we are forever left behind. White people farm with satellites, and here we are farming with hoes.” Another said, “We cannot stay at the rudimentary stage, we must evolve with science. We
do not want to be behind the evolution of new technologies.” Technology is thus viewed as helping Africa “catch up” with the West and improve its ranking in the world – both economically and symbolically. This attitude is also present among farmers. Many farmers talked about their desire for “tubabu technologies” they had seen on TV, and often asked me if I could give them things like tractors. They frequently called white people farming “more evolved,” particularly in terms of our technology, and they wanted access to those technologies.

*New agricultural technologies and status*

There is an enormous range of economic, political, social, and physical reasons why farmers are adopting new agricultural technologies. Principal among these are labor shortages (resulting from putting children in school, families splitting, declining mutual aid, and widespread labor migration - particularly of young men) combined with pressures and desires to increase acreage/production (resulting from debt, low commodity prices, declining soil fertility, local land tenure policies, and aspirations for the status and improved economic wealth that can come with a larger farm). These components are explored in greater detail in Chapter 5. My argument in this chapter focuses on how farmers adopt new agricultural technologies and justify or ignore their negative impacts *in part* because of Burkina’s racialized cultural field. Modern agricultural technologies can help farmers reduce their physical labor and increase farm size, but they also provide a path to social status that is associated with whiteness, Westernness, wealth, and modernity. I documented this for farmers’ adoptions of pesticides, fertilizers, tractors, and genetically modified seeds, but here I focus primarily on pesticides, given their clear role in producing environmental inequality.
Herbicide use is expanding rapidly in Burkina, replacing hand weeding with short-handled hoes. In the Houndé region, farmers use large quantities of herbicides. They spray their crop fields before, during, and after planting (with broad-spectrum and then selective herbicides), and they spray around their houses. When I talked to people about herbicides, the conversation almost always centered on the fact that “no one wants to hoe anymore.” Many people refer to “traditional” farming, or hoeing, as “farming with your back,” and they gleefully proclaim that they no longer “farm with their backs like their parents did,” in large part thanks to herbicides. And herbicides do indeed reduce physical labor and hoeing for farmers, many of whom are facing labor shortages in increasingly individualized farming operations.

However, herbicide use also appears to be shaped by social pressures. Given that physical labor is associated with the low status of dirtiness, poverty, and blackness, it only makes sense that hand hoeing also carries these low status connotations. One young man told me that people would rather let their fields get taken over by weeds than hand hoe. He said he had gone into debt to buy herbicides for his corn field. “You will get made fun of,” he said, “you will be insulted if you hand weed.” Similarly, when I asked an older woman in an interview what would happen if a farmer didn’t spray, she responded (with a puzzled look):

You would be humiliating yourself if you didn't spray … people will think you are belittling yourself - they will wonder why you aren't able to spray… Everyone else is able to spray, why aren't you able to spray too? Aren't you a man?

This woman references the shame of hand hoeing, and further reveals how wealth and reduced physical labor are associated with manhood. Because of this, farmers go to great lengths to

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13 This includes glyphosate, diuron, atrazine, nicosulfuron, 2,4-D, terbutryn, metolachlor, paraquat, and others. Most of the herbicides I found in the market and laying in farmers fields were manufactured in China, with some manufactured in the Ivory Coast and Ghana. Many were illegally present in the country, and according to regulators I spoke with, unregulated and undocumented.
obtain herbicides – begging, borrowing, and selling off other inputs (obtained on credit) from the cotton company, including fertilizer and insecticides. In other words, herbicides are not just about reducing physical drudgery. They are also about achieving status and avoiding the social shaming (being seen as poor, traditional, and dirty) that comes with physical labor and hand weeding. This woman’s reference to “manhood” is also significant, but a point I cannot fully elaborate here. Modernity, wealth, and technology are also tied to performances of masculinity. Just as a racialized cultural field contributes to technology adoption and environmental inequality, gendered cultural fields and ideologies may operate in similar – and overlapping – ways.

Another agricultural technology that saves labor is synthetic fertilizer. Like herbicide, fertilizer is a prized input for Burkinabè farmers. Purchased synthetic fertilizers such as urea and NPK are called “tubabu nogo” in Dioula – literally “white people dirt.” In contrast, compost (decomposed organic matter) is called “farafin nogo,” literally “black skin dirt.” When I inquired about these terms, many people explained that farafin nogo is made by hand, whereas tubabu nogo is manufactured. Thus, manufacturing is coded white, while hand labor is yet again coded black. Nearly every farmer I talked to viewed tubabu nogo as absolutely essential for farming, especially given degraded soil and the time and input intensity of compost. The organic farmers that I interviewed explained that making compost was one of the major difficulties of organic agriculture, while ex-organic farmers explained that avoiding this labor (and getting access to herbicides and fertilizers) was one of the main reasons they returned to conventional farming. Many farmers want “white people” dirt, not the “black skin” dirt that carries with it connotations of physical labor and poverty.
Legitimizing inequality and unsustainable agriculture

New agricultural technologies often bring with them health and environmental impacts that are unequally absorbed by rural farming bodies (e.g. Harrison 2011). My argument in this chapter is that increased exposure to environmental and health harm appears to be facilitated and legitimized by the status politics that associate “white people technologies” with wealth, progress, and modernity. Farmers and cotton sector employees see poor, rural, black bodies/lives as less valuable and as inherently or already polluted (dirty). I argue in this section that these beliefs mute health and environmental concerns that might urge farmers and cotton company workers to reduce or mitigate exposure. This cultural field also works against sustainable agricultural practices, which many people associate with the low status of poor, backward, black Africans.

Health concerns are for white people

The cultural field I have depicted in this chapter works to downplay health concerns about pesticides. Many, though not all, cotton company employees recognize health concerns, but portray farmers as backward, illiterate, and unable or unwilling to take the proper precautions. Because of this, they take few steps to reduce farmers’ exposure. One cotton company employee told me,

Pesticides are an enormous problem. If you ask a farmer, he can tell you everything (about properly applying pesticides), but he doesn’t do it. Because for him, he doesn’t believe what you are saying, because he doesn’t see the direct effect of the pesticide… even though he is in the middle of killing himself over the long term… It’s a question of mentality. Even those who’ve been to school are in this dynamic.

This common belief about farmers’ backward “mentalities” – rooted in the broader cultural field that assigns low status to rural peasants (also see Chapter 3) – dampens efforts by the cotton company to help farmers reduce their exposure to toxic chemicals.
However, many farmers do seem to ignore the consequences of pesticide use and input-intensive agriculture. Most men recognize short-term effects of insecticides (“cold-like symptoms”), but do not emphasize long-term effects, and many desire stronger products that would more efficiently kill pests. In my observations, few farmers wore protective clothing or followed proper precautions, and some families washed and reused pesticide bottles for other purposes (also see Toe et al. 2013). Most farmers seem to see herbicides as safe. When I asked people about the pros and cons of herbicides, people would quickly state the positives (namely: reduced labor). When I prodded about disadvantages, they would add, “yes, the cost,” but rarely mentioned any health or ecological concerns. A small number of (often better-educated) rural men and women did express concerns to me about pesticides and their long-term health effects. They are a minority, however. This is partially due to a lack of education and misinformation by industry. In some cases it is willful ignorance – people know, but they ignore it because they don’t have other options (one woman told me this explicitly).

For some people, though, “technical” products are seen as good simply because they come from the West – and are therefore “high quality” and designed by “smarter” people. One young man who sprayed pesticides frequently for his dad told me that pesticides are carefully designed by smart tubabu (white) scientists to kill weeds or insects, not humans. Another farmer explained to me that pesticides come from white people, and if white people use them, he wants to use them too. These farmers are unaware that tubabu farmers do not spray pesticides in flip-flops and shorts, with hand-pump backpacks and a wind blowing the pesticide across their bodies, nor do tubabu farmers drink agricultural run-off. But because these farmers associate pesticides with the rational, scientific technologies of “smart white people,” they deem them to be safe, or at least safe enough.
Other farmers recognize the health risks of pesticides, but they think that their bodies – since they are black and dirty/polluted – are “used to it” and not as affected as more fragile white bodies. During my fieldwork, I engaged in nearly every type of field labor, but no one offered to let me spray or handle pesticides.14 Once, when I went to help an older woman and her daughter plant corn, they were planting blue fungicide-coated seed. The women stubbornly refused my help, saying, “You don’t want to get this stuff on your hands. You aren’t used to it like we are.” Later, I saw the older woman cooking dinner outside her home with blue-stained hands. In a similar vein, in my discussions about organic agriculture (agriculture that uses no chemical inputs), many Burkinabès told me that white people want organic because white peoples’ bodies are more sensitive to toxins than black people. As one man said, “Even a conventional cotton t-shirt (grown with pesticides) could cause a white person’s skin to break out in rash.” Again, this belief – related to broader cultural beliefs about “clean white bodies” and “dirty black bodies” – frames black bodies as uniquely capable of withstanding exposure to chemical pesticides.

This same logic applies to attitudes about water. People seemed to expect that “since I was white,” I would not drink their water. However, my Burkinabè research assistants were often practically forced to drink unfiltered local water (including murky stream water next to a sprayed cotton field), often with a gesture and a statement along the lines of, “Come on, you are black-skinned like we are.” A few village residents who were concerned about pesticide exposure told me they felt judged if they refused to drink local stream water. Said one woman, “If I refuse to drink, people will ask me, ‘What, you think you’re a tubabu (white person)’?” Although this coding of black bodies as capable of withstanding dirt and pollution may be expressed with pride

14 I also didn’t volunteer. In fact, I was worried about my exposure to pesticides during my fieldwork, which reflects my privileged position – my upper-middle class, white American education, my healthism, the luxury of being concerned about invisible, long term health impacts.
and strength, it also minimizes concern about rising levels of chemical contamination, and can prevent people from reducing their exposure.

**Barriers to sustainable farming**

In a context of rising health risks, ecological degradation, and farmer indebtedness, organic or agro-ecological farming\textsuperscript{15} methods might seem like attractive alternatives. However, because of the association of manual labor with backwardness, blackness, and poverty, many forms of sustainable agriculture face significant cultural barriers. By “sustainable agriculture,” I broadly mean agricultural methods and inputs that are ecologically and economically viable over the longer-run: they maintain soil fertility across a landscape, they maintain the health of humans and other species, and they don’t put farmers into untenable debt (see Harwood 1990; Pretty 1995). However, these methods are frequently very labor-intensive, such as hand-hoeing weeds rather than using chemical herbicides or making compost – “black people dirt” – rather than relying on synthetic fertilizers. Because of this labor intensity, many forms of sustainable agriculture are hard to do at a larger scale, which goes against the status and economic pressures to have a large farm.

Because of this, organic and agro-ecological farming are hard to do physically, but also *culturally*. One part-organic farmer told me he felt stigmatized:

The other farmers just don’t get it. They ask me what I’m doing and why I’m wasting my time… they sometimes pass my fields and say oh, I have so many weeds in my fields. I’m lazy, I can’t keep up, I can’t manage all my fields.

Like many other organic farmers, he felt that he was poorly viewed and lumped together with the low-status of poor farmers, women, and more generally with an image of backwardness and

\textsuperscript{15} Organic agriculture in West Africa focuses on keeping out synthetic inputs; agro-ecology (as promoted in conferences that I attended) focuses more broadly on “sustainability,” including methods like composting and inter-cropping.
African tradition: “the way our parents used to do things.” One woman told me that she had considered going organic, but was concerned that others would think she was lazy (if the weeds got out of hand) or poor for not using herbicides.

Organic and agro-ecological farming also experience cultural resistance in the United States, where farmer identities are (similarly) rooted in performances of rural, “macho” manhood linked to the industrial ideal, machinery, large-scale farming, and chemically intensive agriculture (Bell 2004). However, African farmers are also dealing with structures of race and colonial history. Opting out of the industrial ideal carries additional baggage, just as the call to “get your hands dirty” can resonate differently for white and black Americans (Guthman 2011). Organic and agro-ecological farming rely on “farafin nogo” (black skin dirt) for soil fertility, and they tend to be lower yielding, smaller-scale, and more labor-intensive than “modern” farming. Yet, as one ex-organic farmer told me,

You’ve come to Africa, you’ve seen it here. Where you come from you have tools for working, you have machines that plant and cultivate, that do everything. Here in Africa we don’t have that, and we have to do everything by hand. That’s the problem with the work of organic cotton.

This farmer explicitly framed his complaint in relation to his conception of white people farming, saying that he did not want to be a poor African farmer restricted to hand labor – which is not only tiring, logistically difficult, and increasingly expensive (to hire labor), but also, as I have argued, associated with the low status of poverty, black skin, and dirt. Like many farmers, he wants better material conditions and social status. In this context, agricultural technologies – even ones with negative health and environmental impacts – are a route to achieving that.

Conclusion

In this chapter, I have argued that new agricultural technologies have been widely adopted in Burkina Faso in part because they offer Burkinabè a higher-status, modern,
technical, *whiter* identity. I argued that the cultural field that contributes to technology adoption also helps produce and justify environmental inequalities. The dominant framing of black bodies as “dirty,” poor, polluted, and associated with manual labor can legitimize the further pollution of rural black bodies with chemicals, and produce barriers to various types of sustainable agriculture. This chapter thus contributes to environmental inequality research by specifying a form of racism to which other scholars have paid insufficient attention. This isn’t a case of “racist” companies moving factories into marginalized communities, nor is it a clear case of institutional or structural racism. This is a case where a racialized cultural field actually influences people of color to marginalize themselves – in environmental terms – because of their efforts to attain the economic and symbolic status of white modernity, and because of the way they see their own black bodies. Without discounting the continued significance of structural forces and implicit or explicit racism from whites, my findings augment our understanding of how racial ideologies can produce and justify environmental inequalities.

This chapter also contributes to environmental sociology’s expanding focus on inequalities across the production cycle and in postcolonial contexts. Environmental sociologists have been at the forefront of documenting and investigating global environmental inequalities (Ciplet, Roberts, and Khan 2015; Clark and Foster 2009; Faber 2008; Rice 2007a). However, few have used a postcolonial cultural lens to examine how desires for “racialized modernity” may also contribute to producing and justifying global environmental inequalities. I do not propose that desires for whiteness are merely cultural – or that they represent a simplified submission to colonial domination. Like Fanon (1952), Du Bois (1903), Ferguson (2006), Blay (2011), Glenn (2008), and Kurtz (2009), I see these desires as responding to – and intertwined with – processes of capitalism that perpetuate and deepen global economic and political
inequalities. Desires for whiteness and modernity are, in other words, legitimate desires for material advancement, a better quality of life, and respect. Many Burkinabès are astutely aware of global inequalities and global hierarchies – and they are doing their best to better their lives within this system.

Nonetheless, my findings point to the troubling persistence – and power – of deeply rooted structures of culture and race. My research reveals that many, though certainly not all, Burkinabè men and women come to see their own bodies, knowledge, and practices as less valuable – even as “backward.” I am concerned that the desire for whiteness and modernity – however agentic it is for local actors seeking to improve their lives (Piot 2010) – still reproduces a hierarchical world divided by race and class, where those on top deserve greater access to wealth, health, and a clean environment. In contrast to racist decision-making by whites or discriminatory housing policies, working to end this form of racism will require different approaches that address deeper systems of cultural meaning and status, as well as the persistent structural inequalities of the world-system (Winant 2001).

Finally, as noted at the beginning of my findings, there are some actors in Burkina who are seeking to redefine and contest the cultural field that I described here, which I will explore in further work. Many of my Burkinabè friends and respondents recognize the racist elements of contemporary Burkinabè culture – they have what Du Bois termed the gift of “second sight”— of being able to see, and criticize, the veil of their double consciousness (Itzigsohn and Brown 2015). Despite the difficulties of this position, many different groups are seeking to challenge the legitimacy of current structures of symbolic capital and domination. In regard to chemical exposure, a small number of rural men and women are trying to reduce their use of pesticides (particularly on consumption crops), and many activist movements are promoting alternatives to
chemically intensive, high-debt agriculture (including the Syndicat National des Travailleurs de l'Agro-Pastoral and the Citizen's Collective for Agro-Ecology). I do not want to suggest, however, that it is solely farmers’ responsibility to reduce their exposure. Although farmers do purchase many chemical products in the market, the cotton company and the state bear responsibility for many of the products, and for the basic conditions of cotton production that farmers face (conditions which, although glanced over in this chapter, also contribute to pesticide use). Some groups, like the Organisation Démocratique de la Jeunesse en Burkina Faso (ODJ), are indeed targeting the state to improve conditions for cotton farmers. They are also targeting ongoing imperial domination and international institutions such as the World Bank. Finally, there are individuals and groups pushing back against white beauty ideals, rejecting skin bleaching and wigs, and reaffirming the value of African bodies, tradition, and culture. These slivers of cultural resistance, despite their current marginality, help remind us that fields are always contested and in flux – and it is these struggles and the malleability of culture that leave us hopeful.

This chapter has explicitly examined the way in which “racialized modernity” and aspirations for status within a global hierarchy directly contribute to technology adoption in Burkina Faso. In terms of answering the puzzle of this dissertation, this chapter demonstrates how farmers’ aspirations for status can, paradoxically, reproduce their own marginalization. Although they seek symbolic and material status in adopting new technologies, they inadvertently produce negative environmental and health outcomes. However, this chapter has only partially explained farmers’ technology adoption. In the following chapter, I further explore the drivers of technology adoption, particularly the issue of changing labor dynamics. I show how changing labor dynamics result from the intersection of economic forces (as discussed in Chapter 3) and the cultural field depicted in this chapter.
CHAPTER 5

“PESTICIDES ARE OUR CHILDREN NOW”: CHANGING LABOR DYNAMICS AND FEEDBACK LOOPS IN AGRICULTURAL TECHNOLOGY ADOPTION

There is a vast literature exploring why farmers adopt new agricultural technologies. The majority of research is based in quantitative economics and focuses on farmer decision-making and the factors that shape technology adoption, such as characteristics of the farmer, the technology, the external environment, and even the influence of social networks (Feder et al. 1985; Meijer et al. 2015; Rogers 2010). Other economists focus on the macro scale, arguing that the relative abundance or scarcity of different “factors” of production, such as land or labor, may drive technology adoption. Another body of research, rooted in rural sociology (and reflected in Chapter 4), has focused on the cultural factors shaping farmers’ decisions, including aspirations for status, performances of masculinity, or ideas of what it means to be a “good farmer” (Bell 2004; Burton 2004; Peter et al. 2000; Saugeres 2002; Saunders 2016; Sutherland and Darnhofer 2012). Each of these literatures has made enormous strides in explaining why farmers do or do not adopt new agricultural technologies. However, few scholars have explored how economic decisions, factor scarcities, and cultural aspirations intersect within processes of agrarian change to drive technology adoption. My contribution in this chapter is to show how these intersections produce dynamics that are more than the sum of their parts.

This chapter offers a bridge between these literatures by examining a case of technology adoption in a situation of changing labor dynamics: the cotton sector of Burkina Faso, where farmers have been rapidly adopting pesticides, fertilizers, genetically modified seeds (Bt cotton), and mechanization. I focus on the southwestern cotton zone of Burkina, where many farmers

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grow a mix of cotton and corn as their primary crops. Cotton production has been Burkina’s primary agricultural export for decades, and only recently surpassed by gold as Burkina’s leading source of export revenue (Kaminski et al. 2011). Following forced production for France during the colonial era, cotton production was organized by a state marketing board (SOFITEX) in the late 1970s. Burkina partially “liberalized” the cotton sector in 2004 under pressure from the Bretton Woods institutions, yet SOFITEX retained control over the southwest region, which produces 80% of the country’s cotton (Dowd-Uribe 2014b).

Agricultural technology adoption in the southwest has been facilitated by SOFITEX’s efforts in agricultural extension, marketing, and credit services. Beginning in the 1980s, SOFITEX introduced and financed animal traction and plows (Gray and Kevane 2001), and obtained external credit and donor support to offer farmers inputs like pesticides and fertilizers. According to my interviews with farmers, SOFITEX extension agents, and pesticide salesmen, herbicide use in particular has risen substantially in the last 10-15 years, with a corresponding rise in herbicide sales through non-formal channels. A pesticide salesperson in the regional city of Houndé, for example, told me that in 2003 there were only three people selling pesticides, and demand was low. During the 2016 rainy season, the Houndé markets were crowded with pesticide stalls, and dozens of farmers in my rural field site were selling herbicides out of their houses. A SOFITEX extension agent told me that farmers were using what he considered to be “frightening” levels of herbicides. The second – more visible – technology adoption in Burkina Faso has been genetically modified “Bt” cotton that reduces the need for insecticide sprays. Farmers began growing Bt cotton in 2008, and up to 70% of cotton farmers had adopted Bt cotton before the state ended production in 2016 due to a short fiber length and declining export receipts (Dowd-Uribe and Schnurr 2016).
Drawing on eight months of ethnographic data and 63 in-depth interviews with men and women farmers, I show that Burkinabè cotton farmers’ choices to adopt new technologies – particularly herbicides and Bt cotton – are shaped by the intersection of two compounding processes: economic pressures to increase income, and cultural changes associated with aspirations for modernity. Both of these processes feed into each other in a cyclical process - resulting in labor shortages (a factor scarcity) and driving technology adoption. Specifically, I show that labor dynamics are changing as a result of a rising culture of individualism and aspirations for wealth and modernity: many cotton farmers have put their children in school, young men are migrating away for better jobs, and extended-family farming operations are splintering into smaller farming units. In response, farmers are purchasing agricultural inputs that require less labor (such as herbicides and Bt cotton). However, these expenditures increase debt, which further drives farmers to increase income via cash-crop (cotton) production. Increased production, in turn, further exacerbates farmers’ labor shortages – compounding the original problem. I thus argue that farmers’ choices have produced what Gunnar Myrdal (1957) calls a cycle of “circular and cumulative causation,” wherein changes in one realm lead to other changes, creating feedback loops that drive further change. Specifically, I show how simultaneously paying attention to both economic and cultural drivers of technology adoption reveals that their interaction can be more than the sum of their parts.

**Agricultural technology adoption and Sub-Saharan African agriculture**

The literature on technology adoption in agriculture has a long and diverse history. Already in a 1985 review of “adoption of agricultural innovations in developing countries,” the literature was considered “overwhelming” (Feder et al. 1985). It is also worth noting a diversity of starting assumptions regarding the nature of technology adoption in agriculture. Some
political economists view purchased agricultural technologies as “appropriation” (Goodman et al. 1987; Kloppenburg 2004; Magdoff et al. 2000), and thus indicative of deepening relations of capitalist exploitation, whereas more mainstream development scholars start from the assumption that agricultural technology is desirable and necessary for increasing productivity and reducing rural poverty (i.e. Feder and Savastano 2017; Paarlberg 2008). Those who actively study technology adoption tend to fall into this latter camp, starting from the assumption that technology adoption makes obvious sense, and what is left to explain is: Why aren’t farmers adopting new technologies and how do we get them to?

This question animated the wave of adoption and diffusion research in rural sociology from the 1940s to the 1970s, which was connected with U.S. Land Grant Universities and their efforts to improve technology diffusion. Researchers used survey work to identify characteristics of innovators and adopters, including socio-psychological variables and communication channels that influenced diffusion (Ruttan 1996). Ryan and Gross’s (1943) seminal work on hybrid corn adoption in Iowa, for example, identified the importance of social networks and trust in technology diffusion.

As adoption-diffusion research waned in rural sociology in the 1970s, it took off in economics. Like the modernist focus of early rural sociology, agricultural and development economics tend to focus on technology as improving production outcomes and thus (if properly priced) contributing to poverty reduction (Ruttan 1996). The economic literature on technology adoption generally assumes an autonomous, rational decision-maker who seeks to maximize utility – assumed as profit (Feder et al. 1985). Most studies use survey data and quantitative models to determine combinations of “extrinsic” variables (characteristics of the farmer, the external environment, or the technology itself) and “intrinsic” variables (knowledge, perception
and attitudes) that influence technology adoption (Feder and Savastano 2017; Meijer et al. 2015; Rogers 2010). In the case of technology adoption in Burkina Faso, economic studies have focused on variables such as technology profitability (Ayuk 1997), socio-economic characteristics (Somda et al. 2002), constraints on liquidity, access to credit, or off-farm income (Bensch, Grimm, and Peters 2015; Savadogo, Reardon, and Pietola 1998), risk perception and/or risk aversion (Roncoli, Ingram, and Kirshen 2001), farmer perceptions of the technology (Adesina and Baidu-Forson 1995), and even intra-household bargaining processes (Haider, Smale, and Theriault 2017).

A second body of economic research on technological change in agriculture zooms out from the individual decision-maker, to focus instead on broader characteristics of a geographic region. This literature includes “factor scarcity” models (Boserup 1965; Hayami and Ruttan 1970), and the related theory of “induced innovation,” which has engaged in comparative studies to argue that farmers innovate (or adopt new, modern technologies) when they are faced with a change in the cost or availability of a major factor of production, such as land or labor (Binswanger and Ruttan 1978; Goldman 1993). Much of this literature has focused on “land-saving” technologies (often in the context of discussions of population pressure), with some attention to the role of “labor saving” technologies, which are conceptualized in relation to wage labor rates (Acemoglu 2010; Goldman 1993). Economic models have thus identified many important components for explaining technology adoption, both at the level of the individual decision-making farmer and in terms of broader factor endowments or scarcities.

However, in recent years, sociologists and geographers have revived their interest in the cultural dimensions of farmer behavior. This as a third major body of research on farmer decision-making and technology adoption. In an extended literature on U.S., European,
Australian and New Zealand farmers, rural sociologists have revealed that farmer decision-making is often related to cultural ideas of what constitutes a “good farmer,” and farmers’ unconscious identity work. This literature has drawn on Bourdieu’s concepts of habitus and cultural capital to argue that farmer behavior is shaped by embodied performances (habitus), and their aspirations for cultural capital (culturally valued symbols or objects that confer status or prestige) (Burton et al. 2008; Carolan 2005; McGuire et al. 2013; Saunders 2016; Sutherland and Darnhofer 2012). Research has also shown how farmers enact their masculinity through technology adoption (Campbell et al. 2006; Peter et al. 2000; Saugeres 2002), often in relationship to culturally dominant ideas about productivist (input-intensive) agriculture (Burton 2004). In other geographic settings, such as India and Tibet, scholars have shown that farmers may adopt – or avoid – technologies or practices in efforts to perform or embody racial or ethnic status (Gidwani 2008; Yeh 2013). In Burkina Faso, as explored in Chapter 4, technology adoption is partially shaped by farmers’ aspirations for the status of Western (white) modernity.

In sum, these contributions contend that farmers’ decisions to use agricultural technologies are shaped by farmers’ efforts to perform identities or achieve status within specific cultural settings.

Despite this large literature on farmer behavior and technology adoption, there has been relatively little attention paid to the interactions between these various drivers of farmer behavior (Goldman 1993), particularly between the economic and cultural components. This is perhaps understandable, given disciplinary divisions as well as the multiplication of complexity this requires. Yet these interactions are likely important. We cannot assume that economic and cultural components simply “add” together. Instead, we must interrogate how they fit together, and how they may influence each other. Yet seeking to understand interaction requires attention to the unfolding of time – as inter-actions imply actions and reactions. In order to understand the
interaction of economic, cultural, and “factor scarcity” drivers of technology adoption, I situate technology adoption within a process of agrarian change. I do so not to add yet another layer of complexity to my task, but because paying attention to change helps reveal how elements interact and influence each other over time. Furthermore, we can benefit from a pre-existing and voluminous literature on African agrarian change. This literature, which is rooted in ethnographic fieldwork and close attention to historical processes and contested relationships of power, has already identified key elements of changing labor dynamics in West African agriculture. These forces of change have often been overlooked in literatures that focus more explicitly on understanding technology adoption at a given point in time.

Anthropologists and Africanists have long grappled with the relationships between processes of capitalism, farmer behavior, changing cultural norms, and shifting labor dynamics in Africa (Austin 2005; Berry 1993; Guyer et al. 1988; Hill 1997). One consistent theme is that sub-Saharan African agriculture, particularly West Africa, has historically faced a shortage of labor rather than a shortage of land (Berry 1993; Bryceson 2002; Guyer 1997; Hill 1997). Mid-to large-scale farming has thus depended on mobilizing and controlling labor at very low costs (Iliffe 1983, Guyer 1997, Oya 2007). Historically, this often meant a male household head procuring labor from combinations of wives, offspring, extended family and mutual-aid workgroups. “Family” labor has thus been a critical component for many areas of African agriculture, despite rising instances and forms of wage or contract labor across the continent (Berry 1993; Cordell et al. 1996; Ponte 2000).

In other words, this literature reveals that labor “factor scarcity” in Africa is not just about wage rates, but about social relationships and changing relations of power. Access to family labor requires controlling that labor, which has always been subject to power
contestations – what Berry (1993:137) terms the “micropolitics of labor mobilization and control.” These micropolitics have tended to rely on “culturally constructed understandings of authority and obligation” (Berry 1993: 138), wherein the household head occupies (and has to earn) a position of seniority, and in return provides junior household members with social and material goods. Labor control could also be achieved by excluding certain socially-defined groups from access to resources (contingent on their labor) and/or through patron-client relationships (Berry 1993, 1985; Toulmin and Guèye 2003).

Labor access and control, then, often rely on cultural understandings and social relationships – which are subject to constant negotiation, contestation, and change. In one vein, scholars have debated the “collapse of the African family farm,” or the extent to which farming operations are become increasingly individualized as a result of intergenerational conflicts, rising opportunities for employment, strategies to diversify income, migration, and economic pressures (Becker 1990; Bernstein 2004; Berry 1993; Toulmin and Guèye 2003; Watts 2009).

Individualized farming operations – previously observed in West African cotton farming areas (Gray and Kevane 2001; Moseley 2005) – reduce farmers’ access to labor from extended family members. Additionally, in many areas farmers are experiencing difficulties mobilizing labor within the “nuclear” family. In South Africa, Hull (2014) finds a declining sense of social obligation among children to do farm labor for their parents – related in part to the individualization of livelihoods and the decline in marriage. Oya’s (2007) analysis of capitalist farmers in Senegal finds that many elder male farmers are facing labor constraints due to young people migrating in search of better work. Investing in children’s education has also changed labor dynamics in many parts of Africa, as farmers seek upward mobility for their children and/or hope to benefit from future remittances (Berry 1985; Oya 2007). Yet, given widespread
unemployment and the lack of jobs available for educated children, there is a certain irony in farm labor shortages existing alongside an educated urban labor surplus (Araghi 2009; Calvès and Schoumaker 2004; Davis 2007; Hull 2014). Scholarship on African agrarian change has thus revealed ongoing processes of change that have shaped farmers’ ability to mobilize and control familial labor. This literature has not, however, directly engaged with questions of technology adoption.

My contention is that by paying attention to these broader processes of change, we can examine how economic and cultural factors may interact in shaping farmers’ adoption of agricultural technologies. In this study of Burkinabè cotton farmers, I examine how economic pressures and cultural aspirations have each contributed to reducing farmers’ ability to mobilize enough labor on their farms (their “factor scarcity”). Labor scarcity in turn helps to drive technology adoption. By examining these drivers together, I show how they produce a cyclical and compounding process that is more than the sum of its parts. This, in turn, helps explain the rising incidence of technology adoption in the cotton sector of Burkina Faso.

**Methods and Field Site**

This chapter draws on eight months of qualitative research conducted in Burkina Faso during the 2016 agricultural season. In the broader project, I conducted a total of 125 interviews with cotton sector actors, including research scientists and government employees. Most data for this chapter, however, come from five months of fieldwork conducted in two neighboring farming communities: Kongolekan and Dougoumato, in the Koumbia province of the Houndé region. Kongolekan and Dougoumato are predominantly Bwa ethnic group, and have a combined population of roughly 4,000 people. Farms in this area range between two and fifty hectares, with most farms in the range of three to ten hectares. Most farmers concentrate on cotton and
corn, and grow “small crops” on the side (such as beans and peanuts). The majority of farmers use animal traction, and a dozen or so now own tractors. Some farmers, however, have lost their oxen, primarily due to debt.17

To identify farmers’ motivations for adopting new technologies, in this chapter I draw on 43 semi-structured interviews with male farmers and 24 interviews with farming women, representing a wide range of ages and socio-economic attributes. I asked open-ended questions about the changes they had seen in the community during their lives, and more specific questions about farm change, technologies, difficulties they faced, and aspirations for the future (See Appendix B). These interviews were conducted in Dioula (the local trade language, which I speak nearly fluently), with part-time research assistance from two Burkinabè Masters-degree students from the University of Ouagadougou. I also spent five months conducting participant observation fieldwork, going to farmers’ fields, farming, drinking tea and millet beer, and staying up late at night chatting under the stars. I participated in various community events, met and conversed with all kinds of people, and recorded these activities in detailed daily fieldnotes (Emerson et al. 2011). In the process, I was able to understand peoples’ concerns and their views on their changing social world in a way that a pre-determined set of survey questions could not have achieved. Finally, my research assistants transcribed my recorded interviews and I re-listened to the tapes while reading the transcripts. I coded my interviews and fieldnotes for themes in an iterative process (Lofland et al. 2006). The argument presented in this chapter emerged inductively from this process.

17 Additionally, households do not subdivide their fields into “household” and “individual” (or women’s) fields as is the case in some parts of Burkina Faso (Haider, Smale, and Theriault 2017) and other areas in West Africa. Thus, household “bargaining” and allocation of resources or technologies between fields was not a major factor in technology adoption (or labor dynamics) in this case.
In this chapter, I show how agricultural technology adoption in the southwestern cotton zone of Burkina is shaped by an interconnected and compounding set of cultural and political-economic forces. My aim—rather than proving statistical significance or the specific weight of given variables—is to bring the strength of ethnographic methods, which can “describe a system of relationships, to show how things hang together in a web of mutual influence” (Becker 1996), to explaining the process of technology adoption. Of course, describing a cyclical process presents the conundrum of where to begin. Given the explanatory aim of this chapter (technology adoption), I will begin by describing farmers’ proximate explanations for adopting agricultural technologies, and then work backwards in explaining the social dynamics driving those proximate conditions.

**Agricultural technologies: a solution to increasing production with declining labor**

In explaining technology adoption, farmers talk frequently about their desires to increase their farm size and income, coupled with the challenge of labor shortages. In this section, I discuss the underlying economic drivers of the cycle of increasing farm size, technology adoption, and debt. The economic dynamics discussed in this section are relatively well understood, and align with much of the economic literature on technology adoption. However, I emphasize how these dynamics produce a compounding cycle of technology adoption. I then put this cycle in conversation with cultural changes in the following section of the chapter.

**Economic pressures**

Farmers face economic pressures that originate in both the global political economy as well as local processes of “micro-capitalism” (Bernstein 2011; Davis 2007; Li 2014; Watts 2009). Essentially, farmers’ expenses have been rising, creating greater pressures to increase their incomes. Many farmers told me that farming input costs have gone up over time, while their
yields have stagnated and the price they receive for their crops remains insufficient. Many farmers (particularly smaller-scale farmers) told me stories similar to this one:

One year, I sat down to evaluate my expenses, and… I realized that I wouldn’t even be able to pay a worker 75 CFA a day (around 15¢ US) … So it's like we work for free. Even if you had a good yield, if you really look at your costs, your yields, there's not profit in it. The sweat that you spent, you didn't get a profit (Man in early 30s).

This struggle to make money is borne out by a recent study by Gray, Dowd-Uribe, and Kaminski, which found that Burkinabè farmers growing less than 5 hectares of cotton are at a high risk of falling in debt, with “more than 47% of small cotton farmers and 41% of medium cotton farmers (having) incurred debt during the 2004–2010 period” (2018). In this context, farmers have difficulty paying for school fees, medical bills, transportation, clothing, funerals and marriages, as well as their (partially cultural) desire for modern goods such as motorcycles, metal roofs, solar panels, TVs and cable TV subscriptions, cell phones, and cell phone credit (which costs nearly US$0.25/minute). Farmers thus find themselves in what Bernstein (2010) calls a “simple reproduction squeeze” – with costs rising faster than their incomes.

This squeeze is partially a result of global political economic forces – what Watts (2009) refers to as the “crashing waves of neoliberalism”: U.S. subsidies have driven down global cotton prices, despite a recent bump (Heinisch 2006; Watkins 2002), the IMF and France imposed a devaluation of the CFA franc in 1994 that effectively raised the price of imported goods (Noble 1994), and Structural Adjustment Programs forced African nations to remove or reduce subsidies on education, health, and agricultural inputs (Bryceson 2002). These neoliberal policies have thus reduced incomes and increased costs for Burkinabè farmers.

*Increasing cotton production with fewer people*

In the face of monetary demands and desires and the low prices received for farm output, many farmers see their best bet for making revenue as increasing cotton production – which,
because of the state-organized cotton sector, has a guaranteed price and provides access to inputs like fertilizer. Furthermore, if farmers grow more than three hectares of cotton, they qualify to get additional fertilizer for their corn on credit from SOFITEX, which provides an additional incentive to increase acreage. Many farmers have tried other options, including soy, but say that price volatility and lack of access to inputs become problematic. Furthermore, options for wage employment or off-farm income are scarce, though many farmers do engage in petty trading.

Wealthier farmers operate grinding mills, transportation services, and the few who own tractors engage in field tilling and corn shucking for other farmers (for a substantial profit). Mid- to small-scale farmers have fewer income options, and so they often try to increase acreage, mainly by increasing cotton output, if they have access to land.18 For example, one woman explained:

J: In your opinion, why are men enlarging their fields?
R: It’s to increase their revenue. They want to increase their revenue to go forward. You see now, when you have a lot of children in school, if you don't have big yields you can't pay their fees…

Like many others, this woman ties “big yields” to larger fields, and to the need to meet revenue demands. However, increasing field size requires more labor, which is increasingly hard to come by. Farmers describe a decline in family labor due to families splitting and putting children in school. The following interaction with a middle-aged male farmer in his fields illustrates a common theme in my data:

18 Up until quite recently, access to land did not appear to be a constraint for most farmers in my field site – although the “older” families controlling the land have had more ability to expand production than those families who must ask permission for land (which is a source of rising inequalities between farmers). Yet, with the combination of increasing farm size, nearby forest conservation enclosures, rising numbers of Mossi migrant farmers, population growth, and families splitting up into more units, most farmers told me that land has become a limited resource. Thus, the strategy of increasing farm size to increase production may shift in coming years. Nonetheless, technologies appear necessary for farmers to maintain increased farm sizes in combination with declining soil fertility.
I asked how much cotton they grew. He said not much, it was less than last year. I asked how much. He said only 5 hectares. I said, that’s still a fair amount. He said they couldn’t do more – it was just him and his wife now, and his boys were in high school now and weren’t around to work for all of the farming season … “We’re just trying to do our best.” He said, “If our kids weren’t in school, we could farm more.”

Furthermore, even farmers who want to hire labor to replace family workers have difficulty doing so. Nearly all farmers explained that mutual-aid work groups (ligili) between families had largely disappeared, with the remaining groups (women and a church youth group) working “only for money” and only at certain times of the year. In terms of hiring contract or wage laborers, a middle-aged male farmer who was relatively wealthy told me: “Sometimes you can find hired labor, but the last two years it has been difficult, there isn’t anyone to hire. There aren’t people because everyone in the village is farming.” Others, particularly smaller-scale and poor farmers, point out that the problem is not necessarily that there are no people available, but that many farmers lack both people and the money to hire people:

> When you farm alone (split up) there are difficulties… If you have enough money, you can hire people to work for you, because there are a lot of people around… But when you don’t have the money, it’s very difficult. Because you don’t have the people. You don’t have the people (Man in mid-30s).

Thus, agricultural technologies emerge as a critical tool for increasing farm production in the face of these labor shortages. Herbicides in particular are often explained as an absolute necessity for maintaining or increasing production while “not having the people.” The farmer above who discussed his children being in school told me that “pesticides are our children now,” explaining that herbicides had replaced his children’s weeding labor.

Similarly, when I asked farmers about why they had adopted Bt cotton, they talked primarily about their desire to reduce the labor of spraying insecticides. Larger farmers said Bt cotton had enabled them to increase their field size because of the reduced labor requirements (also see Dowd-Uribe 2014a; Vitale and Greenplate 2014), whereas smaller farmers talked about
Bt cotton as simply helping them maintain their production. The following was a common theme in my data:

J: Why do you grow GM cotton (Bt)?
R: Because I’m farming alone, it is just me and my cows. With regular cotton it is exhausting. The GM cotton is less work, so you can rest a little bit, you don’t have to spray (insecticides) a lot. For example, you can spray the GM cotton only twice. That’s why I chose to grow GM (Man in early 30s).

Purchased agricultural technologies thus help farmers maintain or increase their farm size despite rising labor shortages, which is an observation that I heard from many members of the community:

You see how the fields are growing? It’s not because of the strength of people. It’s the products (fertilizers and herbicides), which help people by reducing their manual tasks. This allows us to increase our field size. Because with these products, you can believe that you can do that work. The number of people you would have needed (trails off)... So, for this reason, fields are much bigger (Middle aged woman).

When you see the fields of one person, you have the impression that it must be a huge number of people farming those fields, but no, it’s just one person. Because now, when the weeds come up, we have products (meaning herbicides). … And we have oxen and tractors. There are many things now, which is why the fields are getting bigger and bigger (Older woman).

The irony of agricultural inputs, however, is that they cost money, which further reinforces the financial pressures on farmers to increase their income. Most farmers purchase inputs (herbicides, fertilizer, and previously Bt cotton seeds) on credit – both formal and informal – which must be repaid with interest later in the year. This credit then creates a cyclical pressure to increase production in order to increase incomes. As one older man insightfully put it:

It’s debt that pushes farmers to increase their hectares. We think ‘the only way I can pay back my credit is if I increase my production.’ But that’s not true! We just end up more indebted, continually running to try to pay our debt back! And we increase our acres and we tire ourselves out.

And so the economic treadmill turns (Figure 7). In the face of monetary demands, farmers seek to increase production, and they do so by trying to increase the size of their farming operations.
The increased size of farming operations exacerbates existing labor shortages, which further drives technology adoption and increases debt. The increasing debt, in turn, keeps the cycle going.

Figure 7: Debt, increasing acreage, labor shortages, and technology adoption

Unpacking labor shortages

The story I have told so far, focusing on economic drivers, is only a partial explanation of technology adoption in relation to labor shortages. I now turn to further unpacking the question of why farmers are experiencing labor shortages, particularly the cultural components of changing labor dynamics in Burkina. In this section, I explore three drivers: farm families splitting up, parents putting children in school, and the decline of adult children and women’s labor.

Cultural change: individualism, money, and aspirations for modernity

These shifts in labor all relate to an underlying cultural shift away from hierarchical communalism toward individualism, and greater aspirations for Western modernity and material wealth. I want to be careful not to essentialize a static, “traditional” African social fabric being ripped apart by outside forces. Numerous scholars have cautioned against a straightforward
reading of “global” capitalism bearing down upon a romanticized “local” community (Berry 1993; Guyer 1997; Hart 2004; Piot 1999). Nonetheless, with this caveat in mind, I did hear stories of a splintering social fabric over and over again from my research participants, male and female, young and old:

Today we no longer respect each other [...] Before, what an elder man said, people respected it. Before, we all ate out of the same bowl [...] But today there are many people, they don’t love each other, and everyone is standing by himself, compared to before when we ate out of one bowl. Peoples’ ideas are different, and we no longer respect the elder men. The world has changed (Middle aged male).

We used to all be together in the same field [...] But today it’s, we say that the world is ruined, but really the world isn’t ruined, it’s humans who are ruined [...] My husband says he will farm by himself, and the next man says he will farm by himself, and the next. And if he gets a good yield, he will put it in his house, and who is there to tell him not to sell it? [and thus leave the family hungry]. Before, we were united. We held each other. But today we are no longer united. We don’t even like each other anymore. Even if you were to die, that would please your neighbor (Middle-aged female).

In hearing people discuss cultural change, I heard a story quite similar to Tania Li’s (2014) characterization of the emergence of capitalism in the Luaje highlands in Indonesia; rather than capitalism and individualism being “foisted” upon people from the outside, localized processes of change have actually driven the emergence of an individualized culture and capitalist relations. My goal here is to discuss these cultural changes in order to contextualize farmers’ “choices” regarding technology adoption, and to show how they create a cycle that feeds into the economic cycle I described above.

Most people describe a recent and major shift in how people think about themselves and each other – which they describe as “people evolving,” and “now having their eyes open.” Both of these expressions are tied to conceptions of modernity and the West, and to the idea of individualism. People explained to me that their previous system of hierarchical communalism
has been largely replaced by a (more egalitarian) system of individualism. There was a common theme in how people talked about this shift:

The changes that have come concern how people get along. When I was a kid, what I have seen, everyone in a family shared the same field and we worked together. At the harvest we built a granary where we stored our harvest. We ate from this until the end of the season. But a time came when… it’s like people’s minds (way of thinking) changed to a certain model, where people changed and each person now only thinks of (his/her) individual interest. This is what is at the base of all the divisions in the families. Everyone seeks their own. To me, this is because the ideology of young people is not the same as before… Before if an old person made a decision, if it was good or bad, it stayed. But today, young people can challenge the decisions of the older people. This has destabilized families, because now each person thinks that (his/her) decision is the best (Man in late 20s).

This farmer’s description of young people challenging authority was a major theme in my data. People explained the shift as a new way of thinking about people as “autonomous,” rather than as embedded in social relations of mutual dependence. This autonomy then results in challenging authority and hierarchy (based on either age or gender) and even shirking traditional social responsibilities towards others (such as caring for the vulnerable, the needy, or elders). Although most people see this shift negatively, many also expressed ambivalence: they are nostalgic for the solidarity of the past, but also enjoying the newfound autonomy and possibilities for wealth in the new ‘individualistic’ era. Others are enjoying the ability to push back against previously rigid and hierarchical cultural structures (such as those depicted in Chapter 3).

Many people link the shift in attitude towards individualism with the arrival of money. As one older woman said, “It’s as if money has become the all-important, and we don't know each other anymore.” I heard numerous iterations of the following:

Young people today prioritize their own ideas. It's like, now, people sit separately, and they only care about themselves. That's how I see it. … And it’s money that brought this change... In the 80s, people didn’t have money. We would sit around and we didn’t have any money. But I preferred this time to today, even though today we have more money

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19 The Dioula third-person pronoun, “a/ale” is gender neutral.
than before… Before we got along better, and people understood each other and worked together, which doesn’t happen anymore (Middle-aged man).

Part of the change brought by money is that previously, only the household head had access to money – and people were thus, in a sense, obligated to be unified in order to have access to resources through these relationships (also see Berry 1993). With the arrival of more markets and opportunities for buying and selling goods, as well as opportunities for cash employment, more people have access to making money on their own (even if it is in very small amounts). Thus, access to market-based opportunities dovetails with changing attitudes toward traditional social structures. I will now delineate the ways in which these cultural changes have created labor shortages.

*Families splitting*

In the previous generation, large extended families farmed together under the head of a patriarch. The oldest man controlled the food and the money and distributed it to family members as he saw fit. This worked well in some families and not as well in others. Many people (especially women) describe stark inequalities in this hierarchical system – where women and younger men had little power, and few or no options for making money on their own. There was also little room for questioning the opinion or decisions of older men. These inequalities became more apparent to people (and viewed as problematic) as wealth increased, and as new ideas arrived about individualism. As many people explain it, over time people became frustrated with this system of hierarchy and communal sharing. Furthermore, disputes between men became more common, centering on how to spend money (both on and off the farm), and on who deserved or didn’t deserve a share of that money based on how hard they had worked. As one older man put it:
For example, every day, I am in the field, and you are in the village doing something else, drinking alcohol while I am exhausting myself. When the day arrives to distribute money, you will have the same share as me. Is that good?

In response to these kinds of disputes (which I heard from many farmers), people increasingly sought to earn their own money and control their own decisions about how to use it.

Families thus began to split apart to farm separately: sons from fathers, brothers from brothers. When splitting, the families often carve up their plots of land so that each brother or son has an equal share, and then each man can – to some extent – make his own decisions and control his own money. This autonomy is undermined by the debt repayment structures of SOFITEX, which force farmers to pay each other’s debts. Nonetheless, once people begin farming “one by one,” rather than as a large group, the division of labor on the farm changes dramatically. The line between men’s work and women’s work blurs, and people increasingly just do the tasks necessary to keep the farm afloat. As one older man recounted:

When the big families splintered apart into smaller groups, that’s why women began to do different jobs to help their husbands in the fields: to prepare the field, to cut down trees, to plant. And the men too, the men didn’t plant (before), but now the men plant too because they can increase their acreage by helping to plant. And when the time comes to weed, the women now help the men weed. This is especially where it is only a man and his wife (farming together). And when the time to spray comes, the wife can even take the pump and spray, while the husband is doing other things, (especially) if the field is big (Older man).

This man illustrates how once families split apart, labor demands increased – to the point of breaking down traditional gender boundaries in work tasks. When families farmed as a large group, farm tasks were often divvied up to (gendered) work parties and mutual-aid work groups between families. Now, however, the husband and wife/wives20 must perform all of the farm tasks themselves, which increases each person’s workload. Furthermore, many older men and

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20 Polygamy is also relevant to this situation of declining familial labor. Many men and women told me that men are trying to marry more women in order to obtain more field labor (also see Chapter 3).
women now find themselves farming alone. Some explained that, “our children no longer give us food,” so they have to farm small plots of land for food and income. These older farmers explained that new technologies like GM cotton and herbicides were helping them keep afloat.

The process of splitting appears to have begun accelerating in the 1980s and is still underway, with only a few families still farming with multiple adult men. The few families that have not split apart appear to be much better off than the split-up families, as they are able to pool resources to purchase tractors (which are more economically viable with their larger-scale farms) and for labor activities. In some sense, it is ironic (in the face of arguments about African farmers being insufficiently individualistic) that the less individualized farmers are often doing better than those farmers that have split apart. Still, the splintering continues, and my interviews with state-level actors indicate that this process is countrywide. The director of cotton production and research at the Burkina state cotton company (SOFITEX), for example, told me that families are splitting apart at an accelerating rate in all regions of Burkina Faso. He called it “a loss of solidarity.”

**Young men and women refusing to work**

Another major change in family labor practices is a decline in labor from young adult male children and from some women. Young men are less willing to do farm work for their parents, for reasons quite similar to those that lead to families splitting – they want to make money for themselves. One young man told me: “You see all the young people in town who say they don’t go to the fields anymore? They aren’t just lazy. They are sick of cotton. They are sick of working for free.” Some young men leave to work in the burgeoning (formal and informal) gold mines in Burkina and others migrate to look for work in the Ivory Coast.
In my conversations with rural young men, nearly all of them told me that they wanted to get out farming. They talked about going to the city, getting “white people” jobs, doing anything, really, other than farming. They saw farming as low-status, hard, poor, dirty, and backward (echoing Chapter 4). Many young men told me they would migrate to the “white people” countries if they could, and one young man was baffled by my decision to do research in Burkina: “Why on earth did you come here? You left paradise to come to hell. Why would you do that?” For these young men – increasingly exposed to television and social media – the Western world looks a lot more interesting than bending over in their dad’s fields all day in the hot sun for a pittance of money.

Additionally, some women are refusing to work for their husbands if they feel that they are not being given a fair share of the resulting income. Men refer to these women as “muruti musow” – rebel or protesting women, and frequently remarked to me that (African) women today don’t know their place anymore. In contrast, self-identified muruti musow explained that they are refusing because their “eyes are open” now, and they are “more evolved” – they have seen how things can be for women elsewhere, and they want more autonomy and power. Increasing economic opportunities also play a role: as one woman told me, “Today women can make money on their own, so they can leave their husbands. Before, that just wasn’t an option.” In this case, cultural and economic changes intersect to produce a shift in the “micropolitics of labor mobilization and control” (Berry 1993: 137).

**Putting children in school**

The final major driver of labor shortages is that most families now put all of their children in school. I see this as more of a cultural than an economic decision, given the high unemployment rate and the crisis of “jeunes diplômés chômeurs” (young unemployed graduates)
in Burkina Faso (Calvès, Kobianè, and N’Bouké 2013; Calvès and Schoumaker 2004). Echoing the sentiments of young men, farmers told me that they did not want their children to become farmers, and that if their kids did become farmers it was a sign of failure. Instead, they want their kids to get “white people jobs”:

Me, all of my kids, I put them all in school. I want them to have knowledge, to study the world, and to be able to get jobs. If they get a job, well, all of them cannot get a white person’s job, but if the person has a lot of knowledge, even if it is agriculture, they can make a little bit. But if they get a white person’s job, that is good (Middle aged man).

“White people jobs” (tububu baara) refer to salaried jobs, in contrast to jobs based on physical labor. These jobs symbolize modernity and development – which are high status traits in Burkina. Families are thus putting their kids in school in response to their changing world – they want their kids to have the skills to succeed in a world that is shaped by white people:

Me: Why are people putting their kids in school?
R: It’s so that they will be instructed (educated), so they can advance in life. You see, before, when people didn't put kids in school, they became nothing. Even if you said (a simple expression in French), they did not understand. But kids today understand French and if the whites need them, they can go work for them, which helps the parents (Middle aged woman).

R: (Kids) have to go to school. If they don’t, they won’t know anything, they won’t find “hakili” (thoughts/ideas/intelligence).
Me: Why is hakili important?
R: By going to school, they can learn things. They can become people. They can become important/serious people, not like us. They will learn how to do things, and escape the poverty that we are in (Middle aged man).

These two excerpts illustrate peoples’ aspiration for Western ideas and Western forms of thinking, as illustrated in Chapter 4. The woman says that kids who didn’t go to school became nothing, while the man believes that by going to Western school, his children can become people. They are both referring to the cultural status that comes with economic success and associations with modernity.
This embrace of Western (French) education is a dramatic reversal from previous
generations, when people resisted French schooling in much the same way they had resisted
slavery and colonialism. People told me that when families were first forced to send kids to the
French people’s school, they “gave up” the kid that was least liked, which was seen as a
punishment. One younger man told me that before, school was seen as “losing our own culture
and being indoctrinated by white people. But now, everyone wants to go school.” A middle-aged
man told me, “Our fathers didn’t like the tubabs (white/French people). They didn’t want their
kids going to the tubab schools and didn’t want them getting tubab jobs. But now it’s different.
(Now) everyone wants a tubab job” (i.e. any kind of desk job).

Because of these desires, families now go to great lengths to put their kids in school. In
doing so, they give up two of their most precious resources: money and labor.

School requires huge sums of money, so if you have big fields and a good income, you
can handle all of these expenses. You have to pay fees, and buy bicycles and school
materials (uniforms, books)... If you don’t have a good income it’s difficult. And then we
have to feed ourselves too. And the things we need now, they are expensive - the shoes
for the boys and the (fabric skirts) for the girls. Without money, what are you going to
do? (Middle-aged woman).

In addition to creating monetary demands, putting kids in school significantly reduces farmers’
labor force. The school year – based on the French school calendar – runs from mid-September
to mid-July, overlapping with several labor-intensive farming activities: planting in May and
June, and the harvest from October to January. School thus puts farmers in a serious bind: they
need more money to pay for school fees, but they have less labor to farm – which reduces their
ability to make money! Putting kids in school thus exacerbates the feedback loops of
intensification, debt, and technology adoption that I identified earlier.

21 The theme of Western school as a cultural threat is echoed in other historical and literary
works in West Africa (i.e. Kane 1961).
Furthermore, several people told me that they see school as re-enforcing the cultural shift towards individualism. They see Western education (both formal – in school, and informal – via media) as contributing to why young people today no longer respect tradition or elders and increasingly seek individual wealth and status:

(Discussion of a traditional practice)… School has stopped all of that. You know if you put a child in school, he is more “awakened” (nyeyelelen - eyes open) than you are… When we put our kids in school, that is what explains that now if we tell a child to go over there, he/she says, no I won’t go (Middle aged woman).

This woman identifies the association between Western schooling and the common expression of “having one’s eyes open” (nyeyelelen/nyeyelela), which generally refers to an individualistic attitude associated with modernity and the West, and she argues that this is why kids today no longer listen to their elders. In another example, a man in his 30s told me:

Now people in town say “our eyes are opened” – they think that before, they didn’t know anything, but now they do. They don’t want to do any form of collective work or work that doesn’t get money. Before, people used to get together in work groups to go harvest cotton. But now that doesn’t happen. ... Everyone just thinks about himself and getting money.

Many others told me that the problem with kids today is that they think they are superior because they have been to school and their “eyes are open” now, so they no longer have any respect for their parents. Thus, putting kids in school appears to reinforce the cultural shift towards individualism and aspirations for modernity, creating another small feedback loop within this system.

Conclusion

When taken together, the economic and cultural factors described in this chapter interact to produce a cyclical and compounding process that results in increasing labor shortages and further drives technology adoption. Figure 8 illustrates how the economic and cultural drivers of labor shortages and monetary demands feed back into the system. I drew together existing
literatures on technology adoption and innovation (farmers’ economic decision-making, factor scarcities, and cultural influences), showing that these different drivers of technology adoption can – at least in this case – actually create a mutually reinforcing system.

**Figure 8: Changing labor dynamics and feedback loops in technology adoption**

A simpler explanation of this chapter is that I simply asked a long chain of “why” questions:

Why are farmers adopting technology? Because they have a labor shortage. Why do they have a labor shortage? Because they are trying to increase production, their families are splitting, and they are putting kids in school. Why are their families splitting and why are they putting kids in school? And so forth. In the process of peeling back the layers of the onion, I revealed processes of change that were driven by interconnected economic and cultural drivers.

Within the layers I examined, I found a compounding and cyclical process – wherein farmers’ actions continue to re-create the constraining structures that they face. This story of technology adoption thus resonates with Gunnar Myrdal’s (1957; also see Wallerstein 1989; Winant 2001) theory of “circular and cumulative causation,” wherein changes in one realm lead
to changes in other areas, creating feedback loops that continue to drive change. In economics, this theory is generally in opposition to “equilibrium” theories that assume social processes will return to some kind of balanced state. In this case, economic pressures to increase income and cultural shifts toward individualism have led to behaviors that *reinforce* economic pressures and individualism, thus driving what environmental sociologists would call an ongoing “treadmill of production” (Gould, Pellow, and Schnaiberg 2008). My finding of a circular dynamic is likely to be found elsewhere in other (so-called vicious or virtuous) circles, but my point here is not that this specific dynamic is generalizable. My point is that the often-isolated “variables” or forms of explaining technology adoption are not isolated in practice, as evidenced by this interactive system.

In reflecting on this specific case, however, one of the ironies in the circular dynamic I observed is that farmer aspirations for autonomy and individualism have actually produced new forms of structural constraints on farmers’ behavior. As farmers split apart from each other and put their kids in school, they now must provide all of their own farm labor while simultaneously increasing their incomes. Their children increasingly refuse to do farm work and instead seek off-farm employment, partially because of their changing attitudes and aspirations produced by Western education. Thus, despite farmers’ aspirations for autonomy and individual-level wealth accumulation, they are producing their own labor constraints and now must find the money to purchase labor or labor-saving technologies. This chapter thus pushes the literature on technology adoption to consider the role of deeper social dynamics in shaping the context of farmers’ “choices,” which may be less agentic than they appear.

This chapter also contributes to the field-based empirical description of African agrarian change, a task that has seen declining attention since its peak in the 1970s (Oya 2007).
Although not a focus of this chapter, one of the outcomes of the process I have described is that larger, wealthier farmers are more easily able to stay afloat in this cycle, while the poorest farmers slip behind, producing rising rural differentiation (Berry 1993, 1985; Iliffe 2015; Oya 2007). This adds to similar findings in the Burkinabè cotton sector (Gray 2005; Gray and Dowd-Uribe 2013; Gray et al. 2018).

Additionally, one of the tensions emerging from my findings concerns the “Janus face” of capitalist or liberal individualism (also see Ferguson 2013). Most of my research respondents felt a deep ambivalence about increasing economic independence from their families. As people become less dependent on the household head, they are freer to express disagreement and resistance. This is the “empowerment” component of liberal individualism – rising equality and opportunity, particularly for previously dominated groups. Yet, this also means that in a classic Polanyian (1944) sense, money has freed people from social relations. This process also comes with a cost, and not just the kind of cost I documented in this paper (having to purchase labor or technology). Many of the quotes in this chapter, and my data more generally, reveal a sense of sadness and loss that many people feel about their changing social world – a sense that kindness and solidarity between people have been replaced by greed and competition. Yet despite this sadness, many people still celebrate some of their newfound freedoms and the material benefits afforded by new technologies. They thus take part in producing, but also reflexively critique, these processes of economic and cultural change associated with modernity and capitalism.

In conclusion, this chapter contributes to drawing together several literatures that have each sought to make sense of why farmers adopt technologies as a result of both individual choices and structural constraints. I have illustrated how these choices and constraints can be mutually created, in this case through a circular and cumulative process wherein both economic
Pressures and cultural change reinforce the drive for labor-saving technology. In terms of answering the puzzle of this dissertation, this chapter extends the findings of both Chapter 3 and Chapter 4. It expands on the cultural field discussed in Chapter 4, revealing additional ways in which aspirations for modernity are shaping farmers’ lives. Furthermore, it builds on Chapter 3, by emphasizing the intersection of economic and cultural forces in shaping farmer behavior. In particular, this chapter shows how farmers end up consenting to a system that reproduces their marginalization because of the reinforcing economic and cultural dynamics that now constrain their choices. In other words, it now “makes sense” to adopt labor-saving technologies, despite their cost and consequences, because farmers have very few alternative options.
CHAPTER 6

CONCLUSION

This dissertation sought to shed light on a puzzle: How is it that in 2016, Burkinabè cotton farmers are apparently choosing to take part in a system that produces benefits for white capitalists yet regularly puts farmers into debt and harm’s way? In other words, despite dramatic changes in global political-economic organization over the last few centuries, why are black Africans still taking part in a system that has historically – and still today – extracts profits from their laboring bodies and continues to leave them in a marginalized position in the global economy? At the broadest level, this puzzle concerns the ongoing production of racially stratified global inequalities. In addressing this puzzle, I framed it as a question about how and why capitalism is extending its reach into the Burkinabè countryside. More specifically, I asked why farmers are adopting new agricultural technologies – which deepen their integration into the precarities of capitalist markets, increase debt, contribute to widening social inequalities, and often result in ecological degradation and exposure to chemicals.

In the preceding chapters, I have argued that aspirations for symbolic and material status play a significant (though certainly not exclusive) role in shaping this outcome. In each chapter, I explored how status politics related to desires for modernity intersect with – and deepen – the material processes of capitalism. Chapter 3 illustrates how intersectional identity politics facilitate processes of capital accumulation, in that people justify passing on economic exploitation to less modern others – such as those who are rural and uneducated. Chapter 4 illustrates how pesticide adoption is partially driven by desires for the status attributes of Western/white modernity, and beliefs about black bodies’ ability to absorb pollution. I argued that these aspirations and beliefs play a role in reproducing ecological and health inequalities.
Chapter 5 illustrates how rising individualism and aspirations for modernity help to drive labor shortages, which in turn reinforce technology adoption, debt, and deepening relations of capitalism.

Building on the specific contributions of each chapter, in this conclusion I discuss how my findings as a whole contribute to several bodies of literature. After first noting some limitations of this work, I then discuss my broader theorization of Burkinabè “aspirations for modernity,” explaining how a Bourdieusian framing helps us understand why dominated people make decisions that paradoxically reproduce their own marginalization. I next discuss how my findings fit into and contribute to several broader bodies of literature, including scholarship on the production of inequality within the global world-system, agrarian political economy, and literatures on post-development and modernity.

The novel contribution of this dissertation is to argue that aspirations for status within a racialized and unequal global culture have facilitated the expansion of capitalist agriculture, and thus – ironically – the deepening of both environmental and economic inequalities. All told, I found a story about how technology-intensive cotton farming is part of a broader system of economic and cultural forces that materially produce and discursively justify global inequalities. Input-intensive cotton production in Burkina produces “White Gold” – literally cotton – but also greater economic and environmental wealth and health for Western capitalists and consumers, while simultaneously producing “Black Debt” – ongoing economic and environmental hardship for African farmers, and the continued devaluing of black identities and bodies.

**Limitations and suggestions for future research**

Ethnographic research often produces unexpected findings, and one’s original research questions may not match the puzzles that emerge from one’s data. I found this to be the case.
Most of my original research questions and frameworks were re-worked along the way, and by the time themes began to coalesce I was nearly done with data collection. This dissertation thus opens up many questions that are insufficiently answered. I did not explore, for example, the historical roots or changes in the social attributes that I argue are currently valued in Burkina Faso. I did not examine how this cultural field came to be, how it has changed, or how it has emerged via specific relationships to colonialism or exposure to Western culture. These would be valuable questions for future research, and for longitudinal or historical research projects (i.e. work by Leslie Gray and Tania Li). Future research could also document (and seek to explain) variation in the cultural field I depicted here: Who is more or less likely to subscribe to or reject these beliefs about modernity? Are there particular class, ethnic, or spatial variabilities, and why? How do these beliefs (statistically) correspond with wealth and/or farm practices? These are the kind of emergent questions I did not ask because I didn’t know that was what I was studying.

Finally, this dissertation does not engage with Downey’s (2015) IDE theory (Inequality, Democracy, and the Environment), which seeks to explain the production of global inequalities by focusing attention on the behaviors of elite actors. It would be fruitful for future research to try to stitch together the ways in which specific global policies, actors, and networks influence and interact with the kinds of material (and cultural) fields that I depicted in this research.
**Figure 9: Images of modernity.** Small towns and communities throughout Burkina connect to the outside world via French satellite TV.

**Figure 10: Dreams of wealth.** This 33-year old farmer in Kongolekan grows six hectares of cotton. He told me knew he would go into debt before he even planted. He dreams of moving to the city and opening up a tailor shop.
Aspirations for modernity

The inclusion of Africa in the Neo World Order is founded on its exclusion, its negations, its erasure—on, some would say, the uncertainty that it even has a future. Which takes us forward, full circle, to the past. After all, as the objects of colonization, Africans were both seduced and pressed into a capitalist economy that offered them cash and commodities but thwarted their upward mobility, into polities that recognized their rulers but demeaned and disempowered them, into nation-states that annexed their territories and taxed them but denied them rights of citizenship, into a civilization that spoke of Christian humanism but subjected them to racial discrimination. All of which reiterates how, for Africa, the telos of Euromodernity as an ideological formation was contradicted, chronically, by the experience of modernity as an imperial project, a project founded on an unstable ratio of promise and privation (Comaroff and Comaroff 2004:335).

In addressing the ongoing gap between promise and privation—Africans’ desire for modernity despite persistent economic exclusion (Burke 1996; Comaroff and Comaroff 2004; Ferguson 1999, 2006; Piot 2010; Weiss 2009)–I follow James Ferguson’s (2002, 2006) call to deal with the difficult, uncomfortable questions that emerge when we take seriously African desires for modernity. Ferguson’s call was directed at the anthropological silence (and “squirming”) regarding African desires to “become like you,” the white Westerner. Most post-development and postcolonial scholars have struggled with or ignored African mimicry and desires for whiteness out of concerns about re-producing colonial tropes and racism. As Piot has pointed out, “postcolonial theory’s focus on hybrid culture […] stops short in analyzing this new—post-postcolonial—terrain” (Piot 2010:16). Ferguson argues that, to the extent that “the embarrassment of African mimicry” has been dealt with, it has been creatively interpreted as African resistance, or as the appropriation of white culture into local cultural systems. Others have emphasized that African cultures are just as modern as any other—forged in relationship with the West, just as Western culture was forged in relationship with its others (e.g. Piot 1999). Yet Ferguson argues that these conversations about multiple, alternative, and hybrid modernities
can inadvertently gloss over the persistent economic inequalities between different 
“modernities,” losing sight of the many Africans (and others) who desire not an alternative 
modernity, but the “Capital M” Modernity that promises material wealth, running water, health 
care, and symbolic ranking in the global hierarchy. Piot (2010) frames this rising rejection of 
African tradition as a new, agentic way in which Africans are seeking inclusion in the global 
order.

My findings and conclusions support both Ferguson and Piot’s arguments – I too find 
Burkinabè embracing Western modernity, rejecting tradition, and seeking inclusion in the 
global order. I too see Burkinabè’s desires for modernity as not merely internalized racism, but 
as a response to global economic and political inequalities. They see that white people and 
Western countries hold the wealth and power and status, and they are making decisions within 
this global system. However, Ferguson seems to avoid the (still squirmy) question of internalized 
racism in his goal of making “aspirations for Westernness” coeval to material “aspirations for 
better standards of living.” How do aspirations for better standards of living explain skin 
bleaching, or the kinds of arguments I heard about whose bodies can or cannot absorb pesticides?
Furthermore, Piot’s conclusion is that Africans are exercising agency in converting to 
Christianity, seeking to emigrate, and rejecting African tradition. While I agree with both 
Ferguson and Piot’s conclusions, I don’t think they go far enough in theorizing the underlying 
racism at play in these aspirations for modernity, nor how these aspirations may actually work to 
re-produce a hierarchical world divided by race and class.

I view Burkinabè desires for Western/white modernity as rooted in both material and 
symbolic aspirations for status in an unequal global economy and a global culture of “racialized 
modernity.” In other words, African desires for modernity are not only desires for wealth and
running water, but also desires for recognition and symbolic status. Yet symbolic status remains racialized. Many Africans find themselves in a state of racial double-consciousness, of “always looking at one’s self through the eyes of others, of measuring one’s soul by the tape of a world that looks on in amused contempt and pity” (Du Bois 1903:2). Yet rather than analyzing this through psychoanalysis or social psychology (Fanon 1952; Itzigsohn and Brown 2015), I use a Bourdieusian framework in order to explicitly consider peoples’ aspirations for modernity as rooted in a hierarchical system of symbolic domination. In this frame, people seek to improve their own position in the “game” by obtaining various forms of socially-valued capitals.\textsuperscript{22} In Chapter 4, I described Burkina Faso’s current cultural field, in which people desire material wealth (economic capital) and status attributes (cultural capital) such as large farms, purchased technologies, Western education, speaking French, dressing in an urban/Western fashion, motorcycles and cars, not engaging in physical labor, and lighter skin. This cultural field is clearly visible in the analyses presented in Chapters 3 and 5. In Chapter 3, I explored how attributes of urbanness, Western education, and wealth are leveraged as markers of social difference – separating the more “modern” men from the more backwards men of the villages. In Chapter 5, I examined how aspirations for modernity have played out in desires for individualized wealth, decisions to send children to (Western) school, and women and young men’s rejection of previous cultural norms. Each chapter thus explored variations of how people are seeking to obtain the symbolic and material status associated with Western modernity.

\textsuperscript{22} It is worth noting – as Piot (1999) has argued – that Bourdieu’s agonistic model describes a capitalist, Western society, in which people vie to improve their individual status, and seek to accumulate individual capital. Piot, I think accurately, argues that this model may not fit all societies, and we must be careful not to impose “universal” models from the West. However, the fact that this model fit my observations may reflect the widespread cultural changes that I reported in Chapter 5 of this dissertation, where people claim that a previous culture of communalism and solidarity has been replaced by a culture of individualistic status- and wealth-seeking.
Using a Bourdieusian framing, we can also conceptualize the small number of resistance movements in Burkina as the cultural (autonomous) pole of Burkina’s cultural field, in opposition to the more powerful economic (heteronomous) pole, which has been represented in much greater detail in this dissertation. Like most cultural fields, the heteronomous pole (which embraces modernization) has been strongly influenced by economic interests and the broader “tyranny of the market” (Bourdieu 1998). Movements that seek to resist this tyranny engage in cultural politics – contesting the very “rules of the game” that structure this cultural field. This dissertation has shown that in the Burkina case, there are very few movements contesting the basic rules of the game of the global system of racial inequality.

There are limitations to how far Bourdieu can take us, however. I draw on Bourdieu in order to situate status aspirations within structures of social domination, yet Bourdieusian theory has under-theorized relationships between local, global, and transnational fields (Go 2008; Hilgers and Mangez 2015). In Chapter 4, I noted that Burkina’s cultural field is clearly influenced by colonial history and contemporary interaction with other countries via channels such as migration, television, social media, and NGOs. Status aspirations are shaped by Burkinabè views of themselves in the context of a global status hierarchy, and likely reinforced by their ongoing economic exclusion (Comaroff and Comaroff 2004; Ferguson 2006; Piot 2010). However, how Burkina Faso’s cultural field fits into a global economic and cultural system is a question I leave for future exploration. Furthermore, while Bourdieu is useful for theorizing behavior as motivated by aspirations for status within a hierarchical system, Bourdieu’s overarching theory of domination remains silent on the topic of exploitation (Burawoy and Von Holdt 2012b; Desan 2013). I thus use Bourdieu to help make sense of the puzzle of this dissertation, but I would suggest that current Bourdieusian theory (and this dissertation) cannot
answer the much broader question of how racial inequality and exploitation is reproduced in our current world-system.

**Racial inequality in the world-system**

I follow scholars such as Wallerstein, Myrdal, and Winant in framing the global capitalist world-system as constituted by racial inequality. Winant (2001) and Wallerstein (1989) have both argued that the world-system is not just about economics but about race, and that “underdevelopment” is, at its core, about racial inequality. The world-system has produced accumulation and unequal exchange, argues Winant, “only to the extent that it was racialized” (2001:14). Wallerstein (1989) argues that the system has kept people out while keeping them in, meaning that periphery nations have been central to wealth accumulation (they are kept in), but have never gotten to share that wealth (they are kept out) – similar to others’ arguments for “inclusive exclusion” (Agamben 1998; Comaroff and Comaroff 2004).

Several bodies of literature have explored the production of these racialized inequalities. One thread has focused on political-economic and military mechanisms associated with colonialism, imperialism, development, and neoliberal trade reforms (Amin 1973; Clark and Foster 2009; Downey 2015; Harrison 2004; Headrick 1981; Isaacman and Roberts 1995; Rodney 1972). In a different thread, postcolonial theorists and others have emphasized the role of knowledge production and discourse in underwriting the expansion of the world capitalist system as a racialized international division of labor (Goldman 2005; Hall 1996; Kapoor 2008; Krishnaswamy and Hawley 2008; McClintock 1995; Quijano 2007; Spivak 1988). In both threads, there is a broad recognition that, as Winant writes, “racism has been crucial to the global reproduction of capital for five hundred years. It remains so today” (2001:14).
This dissertation also argues that racism works to reproduce global inequalities and exploitation, but in a different way. Similar to my argument in Chapter 4, which targets environmental inequality scholarship, I argue that racial inequality today is not only produced by racism from whites and racist policies or economic systems – although these forms play important roles. I found that, paradoxically, inequalities can also result from peoples’ aspirations for status within a racialized global hierarchy. As individuals strive to improve their status within this hierarchy, they do so by accepting the “rules of the game” and thus the overall system of domination (Bourdieu and Wacquant 1992). This involves not only internalizing racism, as we saw in Chapter 4, but also internalizing the broader cultural valuation of and aspirations for “Euromodernity” and development, as we saw in Chapters 3 and 5.

My unique findings are to show that as people seek status within this system, they can inadvertently reproduce inequalities, both locally and globally. In Chapter 3, I showed how peoples’ efforts to secure their own status resulted in the economic exploitation and symbolic marginalization of other groups. I showed how urban, educated, wealthy men disparage rural, less-educated, poorer men, and in doing so they justify passing on economic pressures and exploitation. I then showed how higher status men draw on status differences such as education or wealth to justify widening inequalities and social differentiation. As people seek to maintain their own social position, they do so by passing on exploitation. In passing on exploitation, they ensure cotton production, thus facilitating the extraction of surplus value from the Burkinabè cotton sector. This chapter thus shows how individual aspirations for maintaining status and social position can exacerbate local economic inequalities while also maintaining the broader extraction of surplus value.
Chapters 4 and 5 argue that aspirations for modernity and Westernness also motivate farmers’ adoption of purchased technologies – either directly (Chapter 4) or indirectly (Chapter 5). Technology adoption contributes to both local and global inequalities. Locally, technology adoption is the primary source of farmer’s debt, which has dramatically changed farming communities. As noted in Chapters 3 and 5, debt is a source of substantial conflict between and within families – often leading to families or even GPCs splitting apart. As others have found (Gray and Dowd-UrIBE 2013; Moseley 2005; Gray et al. 2018), I found that the poorest farmers struggle to repay their debts, and may find themselves on a downward cycle of selling farm implements like oxen. Wealthier farmers can benefit from this by purchasing inputs cheaply from poor farmers, or by selling their technology services to poor farmers. Technologies thus help the wealthier farmers get ahead, while pushing the poorer farmers behind. Furthermore, in terms of global inequalities, farmers’ technology purchases amount to substantial sums of money (at least US$110 million in 2014) that flow out of Burkina Faso and support the profits of international agri-businesses (see Appendix A).

In addition to economic inequalities, I also explored how aspirations for status can produce environmental and health inequalities. In Chapter 4, I contended that Burkinabè farmers’ exposure to chemical pesticides constitutes an environmental inequality, in that farmers reap few of the benefits of cotton production, yet they face the majority of the environmental and health burdens associated with chemical-intensive cotton farming. I argued that farmers’ aspirations for status (associated with the technologies themselves as well as their labor-saving properties) play a role in technology adoption and use, thus inadvertently working to produce this environmental inequality. Additionally, one of the outcomes of extensive cash crop cotton production is that farmers export their soil fertility (Bingen 1998; Gray 2005; Moseley 2005). Thus, the very fact
that Burkinabè farmers grow cash-crop cotton year after year – ninety eight percent of which is exported – is itself an environmental inequality. People elsewhere benefit from this cotton (either through employment or investment in the cotton commodity chain or by purchasing goods made with cheap cotton), yet these people do not pay the price of Burkinabès’ declining livelihood base.

Coercion and consent

By turning attention to the role of culture and aspirations for status in the expansion of capitalism and the (re)-production of inequalities, I do not intend to undermine the importance of political-economic forces, particularly the role of undemocratic global institutions, networks of elite actors, and violence (Downey 2015). I follow many others who recognize the intertwining of cultural and political-economic forces, moving beyond the classic Marx-Hegel divide and the simmering tensions between Marxists and post-structuralists (Freidberg 2004; Lawson 2007; Li 2014; Rankin 2004; Winant 2001; Yeh 2013). The cultural aspirations I have discussed in this dissertation do not exist independently. Instead, they work in tandem with economic pressures. In Chapter 3, I showed how cultural processes essentially channel the flow of economic exploitation: actors with different sets of intersectional identities, each seeking to maintain their own social position in a hierarchical system, pass economic exploitation on to actors below them in the social scale. Their behavior is strongly shaped by their need to maintain their own economic position, and their lack of choices. In Chapter 5, I explored how political-economic pressures and cultural changes combine in a compounding, “circular and cumulative” process that reinforces the deepening of capitalism. On the economic side, economic pressures to increase production press farmers to increase farm size, and thus to adopt new technologies. These economic pressures intersect with and reinforce changing cultural dynamics.
The intersection of political-economic compulsion and cultural aspiration resonates with Antonio Gramsci’s concept of hegemony, which seeks to explain “how and why subordinate groups seem to consent to their own oppression” (Yeh 2013:12). For Gramsci, hegemony involves an unstable combination of coercion and consent. In the case of Burkinabè cotton farmers, I found that many farmers are both compelled and desiring to join modern capitalist agriculture. As other scholars have shown, and I briefly explored in Chapter 5, Burkinabè farmers are compelled in that they have very few options other than input-intensive cotton production, due to cotton company and state policies, global trade and monetary policy, local ecological limitations such as soil degradation, land enclosures, and climate change (Gray 2005; Gray and Kevane 2001; Gray and Moseley 2008). Yet the contribution of this dissertation was to show how they also “consent” to this process, in that they desire modernity. Ironically, their cultural consent has compounded their diminished choices, as I showed in Chapter 5.

In finding that culture can facilitate capitalism, my findings also contradict the argument that “African culture gets in the way of capitalism,” an argument frequently put forth by both critics and proponents of capitalist expansion in Africa (Hydén 1980; Rostow 1990; also see Njoh 2006). I found that cultural structures can grease the wheels of capitalism rather than providing “friction” (Tsing 2005). Part of this finding is my contention that Burkinabè culture is not a locally bounded, non-rational, non-Western “culture” being invaded or penetrated by the alien forces or logics of capitalism. As numerous scholars have shown and argued, African cultures are deeply interwoven with the global projects of modernity and capitalism, and have been for quite some time (Berry 1993; Burke 1996; Guyer 2004; Piot 1999). Africans may increasingly be staking out their cultural inclusion in modernity in an effort to obtain membership in global society, thus furthering their economic integration (Ferguson 2006).
Whither resistance?

These desires for inclusion may explain why I did not find a widespread Polanyian “double movement” emerging in response to the expansion of commodification and capitalism in Burkina. In Chapters 3 and 5, I found that rising individualism and divisions across intersectional identities lead to increasing fragmentation, and prevent the emergence of broader resistance to capitalist exploitation. As quoted in Chapter 3, an older male farmer told me:

Farmers no longer have a common voice…Things have changed, and new times demand more and more money, and each person… (seeks his own projects). This makes me sad, because when people are united, they can fight a big battle. But when we are dispersed, we can’t achieve much anymore.

As each person seeks his or her own projects, social solidarity has unraveled – and so too any sense of shared struggle or a shared target of resistance. Still, as illustrated in Chapter 3, people at multiple levels of the cotton chain recognize and do resist their economic exploitation. They are not, in other words, so absorbed in (or “mystified” by) games of “making out” that they cannot see their own exploitation (Burawoy 1979). Nor have they fully internalized the system of domination, as in Bourdieu’s concept of misrecognition (Bourdieu 2000; Burawoy and Von Holdt 2012b). They have internalized the system enough to act according to its rules, but many people nonetheless recognize the injustices of the system. It may be that farmers (and others) consent to the system because they are stuck in what Bourdieu (Bourdieu and Wacquant 1992) calls the “antinomy of domination” – they see few options for systemic change, and their only hope for improving their own lot in life is through individual efforts to move up the hierarchy.

In arguing that many Burkinabè§ desire modernity, this dissertation also provides an empirical critique of several bodies of postcolonial and post-development scholarship that have argued that peasants or subaltern people will resist (or are resisting) the expansion of capitalism, development, and modernity. In broad brush, this includes post-development scholars who argue
that people in developing countries are resisting the monolithic narrative of development (Chakrabarty 2009; Escobar 2011), postcolonial science and technology studies scholars who seek to provide counter-histories to the “master narratives” of how Western technologies and science travel (Anderson and Adams 2008; Harding 2011); and various neo-Polanyian agrarian populists and food sovereignty scholars who argue that peasants will resist their integration into the self-regulating market (Altieri 2009; McMichael 2014; Shiva 2016).

Many scholars have raised concerns with these literatures, including a concern about unintentionally re-essentializing the “other” (as peasant, as closer to nature, as irrational) (Brass 2000; Nanda 2001; Watts 2003). Watts (2003) has argued that these approaches often obscure the structural inequalities and violence of “twenty-first century empire” and capitalism, and risk falling into populist myopias. The concern I focus on here regards the academic attempt to recast the world by changing the narratives we tell. In focusing so relentlessly on rejecting modernity and unearthing counter-narratives, these literatures may ironically overlook or misrepresent those who do not share the same critical vision (which may include those we aim to empower) (Abraham 2006; Nanda 2001; Ferguson 2006; Bernstein 2014).

Critiques of the food sovereignty literature have underscored the mismatch between the optimistic vision of sustainable, tradition-loving peasants fighting back against capitalism and empirical findings in various parts of the world (Agarwal 2014; Bernstein 2014; Jansen 2015; Li 2015; Park et al. 2015). For example, Agarwal (2014:1256) argues: “What if a significant proportion of farmers make choices (admittedly within the constraints they face) that diverge notably from those desired by the food sovereignty movement for a presumed common good?” Bernstein argues that “virtuous farming is practiced mainly by the poorest farmers who confront major ecological and social constraints rather than ‘choosing’ to farm how they do and
‘choosing’ to remain poor” (Bernstein 2014:1049). In sum, these scholars have pointed our attention to the crucial difference between wanting to find resistance to capitalism, development, or modernity, and actually finding that resistance (also see Burawoy 2010; Hough and Bair 2012).

In this dissertation, despite my careful attention to the negative consequences of “development” and Western “techno-science,” and my search for hybridities, frictions, and alternatives, I found that most of my Burkinabè respondents did “not put cynical sneer quotes around development, progress or science” (Nanda 2001:181). Nor were people involved in wholesale rejection or resistance against Western modernity and capitalism. As I showed in Chapter 3, many groups of people are indeed resisting their exploitation, but they often place the blame on local groups. In Chapters 4 and 5, I showed how many Burkinabè desire Western technologies and Western education, urban jobs, and the broader material and cultural symbols of “modernity.” Thus, while I share post-development, postcolonial, and food sovereignty scholars’ concerns about the negative consequences of global capitalism and Western-centric development, I suggest that we cannot assume that our research subjects share this critical view. My point is not to uncritically embrace these desires and thus reproduce a modernist narrative, failing to recognize the ongoing symbolic domination and persistent material inequalities and violence inherent in this system. My point is that we cannot assume resistance (Burawoy 2010).

Having made this point, I also do not wish to completely elide the resistance efforts that I did find, which did not get much attention in this dissertation. Others have documented broader movements of resistance, such as West African organizing against U.S. cotton subsidies (Baffes 2011; Heinisch 2006; Watkins 2002). This movement was primarily based at the state level, organized by more powerful farmers and state actors. Even at the peak of organizing in the mid-
2000s, many farmers remained completely unaware of the issue (Gray 2008). I would also contend that this movement was still “contained within capitalism” (Hart 2001): it embraced free trade ideology, and merely aimed to tweak the margins. Bassett (2008) argues that even if U.S. subsidies were removed, the gains for West African farmers would quickly dissipate; as long as Africans produce undifferentiated commodities, they will always be at a disadvantage.

Farmers and rural residents have at times engaged in movements, including periodic cotton boycotts and even the burning of cotton fields, particularly in response to low cotton prices (Gray and Moseley 2008). Yet the movements I documented in this research are small. In Kongolekan and Dougoumato, a site that was specifically chosen because of the presence of activism, the anti-GMO activists were a very small group, spearheaded by a half dozen men. These men felt somewhat maligned and marginalized by other men in their communities, who didn’t understand what they were doing. A sizeable group of farmers in the area had refused to grow or abandoned GM cotton, but not out of resistance to seed privatization or capitalist appropriation. Many farmers had been convinced (apparently by local organizers and French NGOs) that GM cotton was killing their cattle and poisoning farmers, while others (particularly smaller farmers) simply could not afford the risk of planting US$50 worth of seed per hectare, which they might lose to poor germination due to variable rainfall. Most of these farmers, however, were still enthusiastic about herbicides and other new farm inputs.

It is also worth pointing out that some of the movements for resistance or alternatives themselves come from Western countries, particularly the anti-GMO movement, which finds much of its energy and funding from France. Additionally, organic farming in Burkina (which is a miniscule portion of cotton production) has been supported by the Swiss NGO Helvetas. In contrast, the group Organisation Democratique de Jeunesse de Burkina (ODJ) appears to be a
locally-based movement with a fair amount of support and a strong anti-colonial message. ODJ held a mini conference on cotton in 2016, and made a similar analysis to my own, arguing that cotton does not profit the majority of producers, yet makes profits for external actors. ODJ is currently working to convince farmers to leave cotton production and to protest SOFITEX (Bassolé 2018), but they face an uphill battle given the compounding set of cultural and economic factors that keep farmers on the cotton treadmill.

**Concluding remarks**

One of the implications of this dissertation is that efforts to promote sustainable and equitable agriculture in Burkina (and most likely other African countries) face significant cultural barriers. In Chapter 4, I showed how many Burkinabè see organic and other forms of labor-intensive “sustainable agriculture” as going backward. Hand-made compost is called “black skin dirt.” Physical labor is stigmatized as a mark of poverty – and even as causing dark skin. Few farmers want to engage in labor-intensive agriculture that forces them to forgo the use of new agricultural technologies. These cultural obstacles to sustainable agriculture are also present in U.S. and European farming contexts (Bell 2004; Burton et al. 2008), but my findings show that Africans face an additional racialized component of cultural stigma. Furthermore, my findings in Chapter 5 show that farmers face serious labor constraints that have been produced by both economic and cultural forces. Based on my findings of a compounding and cyclical process, these constraints are only likely to get worse over time, making it even less likely for farmers to be able to choose (even if they wanted to) labor-intensive agricultural practices. Thus, for scholars and others working to promote sustainable agriculture in Africa, my findings indicate that we cannot overlook how colonial legacies of racism shape farmers’ attitudes and behaviors toward new farming technologies or techniques, nor farmers’ severe labor constraints.
Those promoting alternative pathways for agricultural change would do well to recognize farmers’ desires for modernity and for labor-replacing technologies.

What this suggestion means, however, in a tangible sense, is that were are back to the basic quandary that this dissertation sought to address: the fact that as small-scale farmers adopt purchased technologies as part of expanded cash-cropping, many of them enter deeper into debt, produce environmental degradation, expose themselves to chemicals, and maintain global inequalities. Yet farmers do this because they have few other good options, and they are trying to improve their own lives (materially and symbolically) in the best ways that they can, inching upward within the system. My findings thus leave us in an uncomfortable space. I can neither embrace the techno-optimism of much mainstream development scholarship (which tends to overlook the ongoing reproduction of global inequalities), nor can I embrace a populist vision of smallholder farmers resisting capitalist expansion, (which tends to overlook farmers’ aspirations for symbolic and material capital). In the end, it is hard to not feel much like the farmers, who, when faced with the difficulties of their lives and the inequalities of the world, shrug and spread their hands wide in a rhetorical refrain: “An be se ka mun fo? An be se ka mun ke? – What can we say? What can we do?” They then wait in silence, not waiting for an answer, but to emphasize the absence of an answer. My hope is that this dissertation offers more than silence. It does not offer an obvious answer to what farmers can do, nor a policy or technological “fix” to cotton farmers’ difficulties. Instead, I have described the deeper material and cultural forces that work to reproduce this system of inequality. Understanding these forces is – I hope – an important step towards change.
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APPENDIX A: COTTON COSTS AND PROFITS

This appendix discusses some of the flows of money through the Burkinabè cotton sector. I detail the outflow of money from the cotton sector to international agribusinesses (via the purchase of technology inputs), as well as where this money goes. I then provide SOFITEX data on the extent of both “external” GPC debt (the entire GPC is indebted) and “internal” GPC debt (some members within the GPC are indebted). Finally, I calculate farmers’ costs and profits for growing cotton, based on data from SOFITEX (for input costs as well as “average” farm size and average yields), combined with data collected during my fieldwork regarding the full costs and time demands of cotton production.

How much money farmers spent on agricultural inputs:

According to SOFITEX statistics from 2016 (from the Direction d’Intrants et du Credit Agricole), in 2014, SOFITEX farmers took out a total of 63.8 billion FCFA (US$110 million) worth of agricultural inputs on credit, including fertilizer, insecticides, herbicides, and pesticide sprayers. Farmers also purchase large amounts of products outside of SOFITEX, particularly herbicides, so this number does not include all of their purchases. The number was certainly higher in 2016, given that farmers expanded production significantly (from 565,000 tons in 2014 to 683,000 tons in 2016). Taking the 2016 costs for fertilizers (60,000 FCFA per ha) and insecticides (22,800 FCFA) alone, multiplied by roughly 700,000 hectares of cotton, farmers in 2016 purchased roughly US$72 million worth of fertilizer and US$28 million of insecticides.

The ten-year credit average between 2005 and 2014 was 45 billion FCFA per year (which includes several years of low production from 2008 to 2011 due to low cotton prices). During that ten years, the average yearly amount of money paid to all farmers (after subtracting debts) was 43 billion FCFA. This number, as I emphasize below, excludes a substantial portion
of farmers’ costs of cotton production, meaning that the amount farmers actually earn is much lower than this. In other words, no matter how you slice it, cotton farmers give more money to agrichemical companies and banks than they make for themselves.

To calculate the total spent on Bt cotton seed between 2008 and 2015, I used data from AICB’s internal “memorandum” from 2015, which reports 1.9 million hectares grown with Bt cotton between 2008-2015. Using data from USDA’s 2016 West Africa Cotton and Products Update, farmers grew another 370,000 hectares of Bt cotton in 2015-2016 (56% of 663,000 hectares). This makes a total of 2.27 million hectares. At 27,000 FCFA /hectare on average (there were some price fluctuations), this amounts to roughly 61 billion FCFA, or US$122 million (using an exchange rate of 500 FCFA/US$1).

**Where does this money go?**

Some of this money flows to banks as the interest rate that farmers pay. This includes a mix of international and local banks. Some of the money also stays with SOFITEX, but much of it goes to the companies supplying the inputs. In 2016, the Burkina-based company Saphyto supplied around 40% of herbicides and insecticides to SOFITEX (Interview with the director of Saphyto). Saphyto has historically been owned in large part by the French company Arysta LifeScience France (which was acquired by the U.S. company Platform Specialty Products Corp. in 2015), although apparently a Burkinabè actor has purchased a larger share than Arysta in 2016. SOFITEX also owns a share in Saphyto. However, Saphyto simply mixes ingredients – it still purchases raw pesticide ingredients from other companies. Other SOFITEX inputs, including fertilizer, are supplied by companies such as: Dow (U.S.), Louis Dreyfus Company (Netherlands), Monsanto (U.S./ Germany), Savana (France), ALM (France), BASF (U.S.), Toguna Agro-Industries (Mali), Arysta Life Science (France), Groupe DTE (China). Burkina-
based Tropic Agro Chem supplies fertilizers purchased through other suppliers. Non-SOFITEX products that I found in farmers’ fields and in the market were from some of these same companies, as well as other Chinese companies, including Shenzhen Baocheng Chemical Industry Co., Changzhou Good-Job Biochemical Co., and Zhejiang Chemicals. *In sum, much of the money that farmers spend on agri-chemicals flows out of Burkina Faso.*

**Debt**

The following numbers on debt are all calculated using SOFITEX statistics that I obtained in 2016, most of them pertaining to the 2015-2016 cotton season. They give a picture of the entire SOFITEX region, and are based on SOFITEX’s own numbers. However, it should be added that not all of these numbers are perfect. Some statistics are likely quite accurate. Other statistics (on internal debt, for example) are based on surveys (and then extrapolation based on the survey data). Statistics on hectares in production are produced by extension agents (ATCs). ATCs and their assistants do go out to measure farmers’ fields with GPS devices, but they cannot reach very many farmers’ fields, and they fill in their gaps with guesses or reports from GPC secretaries. In this context, some farmers over-report their production in order to get access to more inputs (particularly fertilizer), which makes their yields look worse on paper than they actually are (it also puts them at greater risk of going into debt). Other farmers may under-report their hectares in order to minimize their credit and the risk of falling into debt. In this context, it is very hard to know what the “real” numbers are, and thus important to treat these numbers as good, but still not perfect, estimates.

“*External debt*” means that the entire GPC owes money to SOFITEX. In other words, the sum total of credit taken out by the GPC is greater than the money they earned from their cotton. When groups fall into external debt, SOFITEX may work with the group to get them back on
their feet, or it may require a certain amount of debt to be repaid before the group can produce again (this is a policy change since the early 2000s). SOFITEX has gaps in their statistics on this, which makes it hard to calculate the percentage of GPCs that are in external debt. According to SOFITEX, in 2016, 2,691 GPCs were in external debt, with an unknown number (due to gaps in their statistics) of these GPCs “suspended” from production. In 2016 there were 6,900 GPCs producing cotton for SOFITEX. We can thus get a possible range (this calculation logic comes from a SOFITEX director who was walking through the statistics with me): If the 2,691 GPCs were all suspended (but we know they were not), then 2691/9591, or 22% of all GPCs are indebted; if none of them were suspended (but we know some were), then 2691/6900, or 39% of all GPCs are indebted. The real percentage of externally indebted GPCs is thus somewhere in between 22 and 39%, perhaps around 30%.

“Internal debt” refers to the debt of individual farmers within a GPC. In this situation, other farmers’ profits (within the group) generally go towards covering this owed money. According to an internal SOFITEX study, in the 2015-2016 season, around 18% of farmers fell into debt (28,723 farmers out of a total of 161,540 farmers who took out credit), and 12% of farmers were not paid their full cotton earnings because their income went to cover other farmers’ debts. The average amount of debt was 98,000 FCFA (~ US$70). This picture of debt, however, is skewed, because it only takes into account a small portion of farmers’ actual costs – those that are purchased through SOFITEX.

**Calculating farmers’ incomes**

SOFITEX calculates farmers’ projected incomes (and their debt) based on adding up the input costs of fertilizer, seed, and pesticide, and then subtracting this from the amount of money the farmer is owed for their cotton. For example, during the beginning of the 2016-2017 cotton
season, SOFITEX explained to farmers that their profit margin on one hectare would be 151,125 FCFA, assuming a yield of 1,000 kg/hectare. This was calculated based only on the final revenue (1000 kg x 235 FCFA = 235,000) minus the inputs costs of 83,875 FCFA, which includes seed (1075 FCFA), urea (15,000 FCFA), NPK fertilizer (45,000 FCFA), and “phyto-sanitary” treatments (insecticides) (22,800 FCFA). In these calculations, an average farmer growing 3 hectares would “hypothetically” earn 453,375 FCFA, or around US$780. Even if average farmers did earn this much, this is still an extremely small amount of money in global perspective. However, average farmers do not earn this much, and they were keen on telling me so.

First, average yields are lower than 1000 kg/ha, and this is directly documented by SOFITEX. The “average” farmer for all SOFITEX regions in 2015 grew 3.1 hectares, and yielded 2,828 kg of cotton, for a yield average of 912 kg/hectare. In the Houndé region more specifically, the average cotton farm was 4.44 hectares, yielding 3740 kg, for an average yield of 842 kg/hectare. At 912 kg/hectare, our hypothetical farmer’s 3-hectare income already falls to 391,335 FCFA, or US$675. [((912x235)-83,875)x3]. Second, and more importantly, farmers have substantial production costs in addition to the technologies that they purchase from SOFITEX. During my fieldwork, I collected data on all the activities – and associated time and costs – that go into cotton production. I did this during interviews, and on several occasions late in my fieldwork I sat with groups of 5-10 male farmers and talked through my findings, confirming or adding costs and the amount of time involved in different tasks. For calculating the time costs of some group activities (such as tying and weighing cotton for the “marchés auto-gérés,” or loading cotton into the containers), I accompanied farmers to do the activity, taking
notes on how many people were present, how long they worked, and – for some tasks – how many kilograms of cotton they dealt with.

Then, drawing on SOFITEX data for average yields (912 kg/ha) and average farm size (3 ha), I calculated out an estimate of costs and profits of cotton production that is closer to reality than the numbers we hear from SOFITEX, and from economic papers such as found in Vitale and Greenplate (2014). The following tables calculate out costs and profits for six hypothetical farmers: 3 and 6 hectare cotton farmers with oxen who rely entirely on household labor, 3 and 6 hectare cotton farmers with oxen who hire labor for half of the harvest, and 3 and 6 hectare cotton farmers without oxen who hire out most farm tasks. Again, the average SOFITEX farmer is a 3 hectare farmer with oxen with yields of 912 kg/ha – and I highlight the outcomes in the table for this hypothetical average farmer. Based on my fieldwork, I also assume that most farmers have to hire labor for the harvest, because one hectare of cotton takes one person 30 days to harvest, and farmers are facing major labor shortages. I thus estimate that the average farmer would hire half of his harvest.

For capital costs, I did not collect enough fine-tuned data to differentiate between a 3 and 6 hectare farmer. The following calculations are a rough estimate of capital costs (as reported by farmers), assuming either a 3 or 6 hectare farm (because many inputs are not divisible, such as a pair of oxen, or a motorcycle). However, some of the poorest farmers do get by without a motorcycle (although this adds significantly to their time and input delivery costs), and larger and wealthier farmers may also have tractors, “tricycle” motorcycles with a pickup bed, tractor implements, etc. I want to emphasize the variability in farmers’ decisions and behaviors, and the fact that I did not collect enough data to properly compare costs between farm sizes, nor to fully capture the range of variability in costs. I recognize that individual
farmers may have significantly higher or lower costs than this. My aim here is to give a rough estimate of capital costs for farmers because other authors have not done so, and thus implicitly assume that farmer have no capital costs. All calculations are in FCFA.

**Table 1: Capital/fixed costs for a small to mid-size farm (3-6 hectare)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Years</th>
<th>Cost/year (cows)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprayer backpack</td>
<td>21,500</td>
<td>5</td>
<td>4,300</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>600,000</td>
<td>15</td>
<td>40,000</td>
</tr>
<tr>
<td>Motorcycle maintenance</td>
<td></td>
<td></td>
<td>15,000</td>
</tr>
<tr>
<td>Gas (650 per trip to fields x 4 months of farming x 5 trips per week)</td>
<td></td>
<td></td>
<td>50,000</td>
</tr>
<tr>
<td>Cart</td>
<td>50,000</td>
<td>30</td>
<td>1,667</td>
</tr>
<tr>
<td>Corruption costs - payments to cotton conditioners to ensure &quot;1st choice cotton&quot;</td>
<td>2,000</td>
<td></td>
<td>2,000</td>
</tr>
<tr>
<td>UNPCB (union) fees – low estimate</td>
<td>2,000</td>
<td></td>
<td>2,000</td>
</tr>
<tr>
<td>Cows - 2 (Grown cow: 250,000. Child cow: 100,000. Rough estimate: 150,000 X 2 cows = 300,000)</td>
<td>300,000</td>
<td>8</td>
<td>37,500</td>
</tr>
<tr>
<td>Animal maintenance - vaccines</td>
<td></td>
<td></td>
<td>5,000</td>
</tr>
<tr>
<td>Cow plow</td>
<td>35,000</td>
<td>15</td>
<td>2,333</td>
</tr>
<tr>
<td>Cow food</td>
<td></td>
<td></td>
<td>25,000</td>
</tr>
<tr>
<td><strong>TOTAL YEARLY COST</strong></td>
<td>114,967</td>
<td>69,833</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2: Yearly input costs and labor days per hectare (2016)**

<table>
<thead>
<tr>
<th>YEARNLY INPUTS</th>
<th>DAYS/HA (If family labor)</th>
<th>INPUT COST/HA (all farmers)</th>
<th>DAYS/H A (If hired for half of harvest)</th>
<th>ADDED COST/H A (If hired for half of harvest)</th>
<th>DAYS/HA (If mostly hired labor)</th>
<th>ADDED COST/H A (If mostly hired labor)</th>
<th>SOFITE X view of farmer costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing fields</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Walking cows to/from fields</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tilling</td>
<td>3.0</td>
<td>3.0</td>
<td>0.0</td>
<td>25,000</td>
<td>10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivering inputs to farm</td>
<td>1.0</td>
<td>1.0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeds and planting</td>
<td>3.5</td>
<td>1,075</td>
<td>3.5</td>
<td>0.0</td>
<td>15,000</td>
<td>1,075</td>
<td></td>
</tr>
<tr>
<td>Replanting</td>
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<td>1.0</td>
<td>1.0</td>
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<td></td>
<td></td>
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<tr>
<td>Equipment Maintenance</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Herbicide spraying 1 (pre-emergence)</td>
<td>0.3</td>
<td>7,500</td>
<td>0.3</td>
<td>0.3</td>
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<td></td>
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</tr>
<tr>
<td>Thinning</td>
<td>2.0</td>
<td>2.0</td>
<td>0.0</td>
<td>5,500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbicide spraying 2</td>
<td>0.3</td>
<td>10,750</td>
<td>0.3</td>
<td>0.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(selective)</td>
<td>1.0</td>
<td>60,000</td>
<td>1.0</td>
<td>1.0</td>
<td>60,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----</td>
<td>--------</td>
<td>-----</td>
<td>-----</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer</td>
<td>2.0</td>
<td>2.0</td>
<td>0.0</td>
<td>10,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weeding with cows</td>
<td>2.0</td>
<td>2.0</td>
<td>0.0</td>
<td>12,500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hilling with cows</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insecticide spraying</td>
<td>2.5</td>
<td>22,800</td>
<td>2.5</td>
<td>0.0</td>
<td>6,000</td>
<td>22,800</td>
<td></td>
</tr>
<tr>
<td>Harvest</td>
<td>30.0</td>
<td>15.0</td>
<td>12,500</td>
<td>0.0</td>
<td>25,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meals for harvest laborers</td>
<td>1.0</td>
<td>4,500</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation of cotton to silo</td>
<td>1.0</td>
<td>1.0</td>
<td>0.0</td>
<td>5,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPC fees (paid per kg)</td>
<td>2,800</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>58.5</strong></td>
<td><strong>109,425</strong></td>
<td><strong>43.5</strong></td>
<td><strong>12,500</strong></td>
<td><strong>10.5</strong></td>
<td><strong>117,750</strong></td>
<td><strong>83875</strong></td>
</tr>
</tbody>
</table>

**FIXED TIME ACTIVITIES**
(somewhat unrelated to hectares)

| Meetings with GPC, ATC, fora, etc.             | 10.0| 10.0  | 10.0 |
| Tying and weighing (marché auto-géré)*       | 7.0 | 7.0   | 7.0  |
| Loading cotton into containers**             | 3.5 | 3.5   | 3.5  |
|                                                | **20.5** | 0 | **20.5** | 0 | **20.5** |

*The “MAG” is done either GPC-wide, or in sub-groups, in order to weigh individual farmers’ cotton before loading it into the containers. (Observations = 20 men, 4 hours, 4 tons). This works out to 20 "man" hours per ton (hectare). 20 men's cotton x 3 ha x .9 tons = 54 tons. 54x20man hours = 1080 man hours/20 men = 54 hours per man. 54/8 hours a day = 7 days). However, MAGs are only done for farmers who cannot fill a container by themselves, and must combine with other farmers to do so (generally less than 6 or 8 tons, but this varies according to how early a farmer finishes the harvest. Early in the season, SOFITEX will pick up smaller amounts to get the gins running). What this means is that larger-scale farmers may form sub-groups within a GPC of other larger-scale farmers, and they do not participate in MAGs. However, the saved labor time of not having to do MAGs is counter-balanced by the increased labor time of loading trucks with more cotton. I thus do not try to distinguish these differential labor costs between 3 or 6 hectare farmers.

**(Also GPC-wide or in sub-groups). Observations: 15 men, 4 hours, 6 tons. This works out to 10 "man" hours per ton. 54 tons = 540 hours. 540/20 men = 27 hours per person/8 hours = roughly 3.5 days per person.)
Table 3: Estimated average yearly incomes from cotton (2016)

<table>
<thead>
<tr>
<th>Ha</th>
<th>Labor Days</th>
<th>Capital Costs</th>
<th>Input Costs</th>
<th>Totals</th>
<th>Net Income ($/year) based on yields (kg) per hectare, price of 235 FCFA/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>842</td>
</tr>
<tr>
<td>SOFITEX view of 3 ha farm, all household labor</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>251,625</td>
<td>251,625</td>
</tr>
<tr>
<td>3 ha farmer – all household labor, has cows</td>
<td>3</td>
<td>196</td>
<td>184,800</td>
<td>328,275</td>
<td>513,075</td>
</tr>
<tr>
<td>3 ha farmer - hired labor for half of harvest, has cows</td>
<td>3</td>
<td>151</td>
<td>184,800</td>
<td>365,775</td>
<td>550,575</td>
</tr>
<tr>
<td>3 ha farmer - mostly hired labor, no cows</td>
<td>3</td>
<td>52</td>
<td>114,967</td>
<td>681,525</td>
<td>796,492</td>
</tr>
<tr>
<td>6 ha farmer, all household labor, has cows</td>
<td>6</td>
<td>372</td>
<td>184,800</td>
<td>656,550</td>
<td>841,350</td>
</tr>
<tr>
<td>6 ha farmer - hired labor for half of harvest, has cows</td>
<td>6</td>
<td>282</td>
<td>184,800</td>
<td>731,550</td>
<td>916,350</td>
</tr>
<tr>
<td>6 ha farmer, mostly hired labor, no cows</td>
<td>6</td>
<td>84</td>
<td>114,967</td>
<td>136,350</td>
<td>1,478,017</td>
</tr>
</tbody>
</table>

Table 4: Average return to labor (2016)

<table>
<thead>
<tr>
<th>Ha</th>
<th>Labor Days</th>
<th>Daily Wage based on yields (kg) per hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>842</td>
</tr>
<tr>
<td>&quot;SOFITEX&quot; view of per ha profit of 3 ha farm, all household labor</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>3 ha farmer all household labor, has cows</td>
<td>3</td>
<td>196</td>
</tr>
<tr>
<td>3 ha farmer - hired labor for half of harvest, has cows</td>
<td>3</td>
<td>151</td>
</tr>
<tr>
<td>3 ha farmer - mostly hired labor, no cows</td>
<td>3</td>
<td>52</td>
</tr>
<tr>
<td>6 ha farmer, all household labor, has cows</td>
<td>6</td>
<td>372</td>
</tr>
<tr>
<td>6 ha farmer - hired labor for half of harvest, has cows</td>
<td>6</td>
<td>282</td>
</tr>
<tr>
<td>6 ha farmer, mostly hired labor, no cows</td>
<td>6</td>
<td>84</td>
</tr>
</tbody>
</table>
Based on the above calculations (and again, these are estimates, but based on extensive discussions with farmers about their actual costs), the “average” SOFITEX farmer does not net 391,000 FCFA. Instead, he nets closer to 92,000 FCFA. In 2016 (at an exchange rate of 580 FCFA/US$1), this was around US$160, at a daily wage rate equivalent (per day of a family person’s labor) of just over US$1. This number is much closer to what I heard farmers tell me, and also reflects the poorer farmers’ views that small-scale and poor farmers can’t profitably grow cotton.

Further, I included the hypothetical cases of farmers who hire all their labor in order to verify what I heard from numerous sources (particularly SOFITEX employees) that it is no longer possible to farm cotton profitably if you hire out your labor. In other words, the only way to make a profit growing cotton is to exploit familial labor for less than the going wage rate. This appears clear in the above analyses, where both a three and six hectare farmer would lose money if he hired all his labor. It is also interesting to note that the daily wage rate farmers pay for different farm tasks varies considerably. This is due to seasonal labor bottlenecks and the time-dependent nature of many farm tasks. When one farmer needs a task done (and soon!), most other farmers need it done too. There is therefore no single “daily wage rate,” but instead a huge variation. Early season farm tasks are often the most expensive, as farmers are increasingly worried about late-season rainfall variability that has severely impacted crops that are not planted early enough.
APPENDIX B: INTERVIEW GUIDE

Sample interview questions with a rural cotton farmer.

1) Can you tell me a little bit about who you are, where you are from?
   • Where did you grow up? (did you go to school?)
   • Have you travelled to work anywhere else?
   • Do you have jobs or income activities other than farming?

2) Tell me about your experiences farming.
   • Where do you farm? How did you get access to your land?
     o How is farming organizing?
     o Who do the fields belong to?
     o If your family split up, can you tell me that story?
   • What do you farm, and how many hectares?
     o Do you grow some things to sell, and others to eat? How is this decided?
   • What kind of equipment do you use? How has this changed over time?
   • Who works on your farm?
     o Do you hire labor? Is it hard to come by? How does it work (pay/contracts/day labor?)
   • What needs to happen in order to have a good agricultural season?

3) Now I want to talk more broadly about the community, and the town, and how people live here. Can you tell me some about the kinds of changes you have seen since you were a kid?
   • (If more needed – some options for further probing)—
     o Changes in how people relate to each other?
o Changes in customs or traditions?

o (Leave open-ended) – probe – What do you think has caused these changes? How do you see them (are they good)?

o Changes in relationships between men and women? In men and women’s behavior?

o Changes in what constitutes “respect” in the community? What about shame?

• What about changes in farming? How is farming different now?

• Do you see a change in wealth or inequality in the community?

o What do you think explains that?

4) I also want to talk more about cotton farming in particular. Can you tell me a bit about your history and experience growing cotton?

• How long have you grown it? How much?

• Why do you grow cotton?

• What are the advantages?

• Who do you think gains from growing cotton?

• The decisions you make each year regarding cotton, that is, how many hectares, what kinds of inputs you use, how do you make these decisions? What are things that you take into account?

  o Do you talk with anyone about these decisions?

  o Explain how you decided for this year.

• What about your inputs and equipment, how has this changed?

• (When did you start using ----X---- technology?)

  o What are the advantages of using ----X----- technology?
Disadvantages/ concerns?

• Tell me about the fieldwork and labor for cotton.
• Do you make money from growing cotton?
• What do you generally do with this money?

5) What are the difficulties with cotton?

• Have these difficulties changed at all since you started growing cotton?
• Why?

6) What about GMO cotton (if already discussed, expand)

• When it first arrived, how was it explained? What was your reaction?
• What is GMO cotton? How is it different from other seeds?
• Have you grown it? Why?
  o What were your experiences? How long? If stopped, why?
  o Advantages/disadvantages?
  o Did it change the way you farm?
• Was there any debate at the level of the GPC or the town? Did other members of your GPC adopt or not adopt it?
• This year, SOFITEX stopped offering it. Why? What are your thoughts?

7) What have been your experiences with SOFITEX?

• Do you trust what they tell you? (why/why not?)
  o (Such as when they tell you to farm in a certain way or to use a given input)
  o If you went to the Forum, what was your impression?
• What about the ATCs, what are your experiences with them?
  o Do you trust them?
Do they help you?

Have you had any difficulties with them?

Do you think they treat all farmers the same?

8) What about the cotton union, UNPCB. What is your perspective on the union?

• (Has it changed?)

9) I want to learn more about the GPCs. How they are organized? Tell me about your own GPC.

• (If a leader, ask questions about that role)

• How were the members chosen/how are new ones added?

• What debates or difficulties has your GPC experienced?

• Do you have conflicts within the GPC?

• What about with other GPCs?

10) I would also like to talk about debt. Are there problems with debt here?

• Can you tell me a little bit about the history of debt problems (are they getting better/getting worse/ how are things changing?)

• What do you think are the reasons for debt?

• Can you talk a little more about your own GPC – does it have issues with debt? (internal/external)

  o How does the GPC resolve or manage this?

  o Has debt changed social relationships? How? What do you think about this?

• If you feel comfortable sharing, what has been your own experience with debt? Have you ever been in debt? Can you tell us about this and what happened?

  o How does debt or the risk of debt impact your decisions and how you farm?
What social impact did you feel?

What do you think contributed to your falling into debt?

- More generally, what do you see happening to people who fall into debt?

- Is there a social stigma or shame associated with debt?

11) What other risks do you manage as a farmer? What do you worry about?

12) Lastly, I want to hear about your desires for the future. What kinds of changes would you like to see, in your own life?

- What about in your community?

- Compared to what you want to see, what are your more realistic thoughts about what the future will actually look like?

- And what about your children – what future do you wish for and foresee for your children?