**­Environmental Inequality in West Africa**

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**ABSTRACT**

This chapter reviews the topic of environmental inequality in Africa, with a particular focus on West Africa and the country of Burkina Faso. We address a broad tendency in mainstream approaches to African environmental issues of ignoring questions of inequality and downplaying the historical, social, political, and economic drivers of environmental degradation. The chapter begins with an overview of historically produced environmental inequality between Africa and wealthier nations; we review the role of colonialism and racism, the establishment of patterns of ecologically unequal exchange, and the effects of neoliberal structural adjustment policies and “sustainable development” programs. We then shift scales to look at inequalities *within* African nations. The bulk of the chapter explores two case studies from Burkina Faso, pulling out the threads of colonial history and ongoing environmental inequalities through examples of 1) land and access to natural resources and 2) cotton production and pesticide exposure. These case studies illustrate both historical and present-day inequities in resource enclosures, land grabbing, mining, export-oriented agricultural practices, and exposures to toxicity. We show how these inequalities create significant livelihood hardships for marginalized people and can contribute to violent conflict. Numerous groups have emerged to protest and resist these injustices, calling for changes to the underlying institutional, political, and economic drivers of these inequalities.

**Key words:**

Global environmental justice, Burkina Faso, colonialism, pesticides, land tenure, ecological imperialism

**1. Introduction**

For decades, environmental justice scholars and activists in North America have sought to document and explain the fact that marginalized people and communities are disproportionately exposed to environmental harms, from living next to toxic dumps to having pesticides waft through their communities (Cole & Foster, 2001; J. L. Harrison, 2011). This scholarship and movement have drawn important attention to class and race-based inequalities in both access to environmental goods and exposure to environmental harms, challenging mainstream environmentalism’s failure to recognize the deep social inequalities underlying peoples’ experiences of the environment. In seeking to explain these inequalities, researchers have repeatedly underlined the importance of the interconnected and historical dynamics of colonialism, capitalism, and racism (Bullard, 2008; Cole & Foster, 2001; Gilio-Whitaker, 2019; Gould et al., 2008; Pulido, 2000).

 Much of this research has focused on inequalities within the United States. However, many of the same processes shaping environmental inequalities within the U.S. are at play elsewhere (Agyeman, 2014; Downey, 2015; Faber, 2008; Pellow, 2007; Pellow et al., 2001). Taking a global lens reveals how entire regions and continents may face similar dynamics as poor communities of color within the U.S.: grappling with histories of oppression and marginality alongside high burdens of toxic exposure or environmental harms and exclusions (Pellow et al., 2001). Opening up the geographic scale of environmental inequality research, particularly to marginalized regions of the world such as sub-Saharan Africa, is vitally important, particularly as African peoples seek new pathways of “sustainable development” in the 21st century, seeking to stand on their own feet in a world system that has long undermined them (Mbembe, 2021).

 Turning to Africa, we can re-consider the core questions of environmental inequality research: Who has access to or control over environmental resources and amenities and who doesn’t? Who is disproportionately exposed to environmental harms? And, most significantly, *why*? What (historically embedded) social processes help explain these inequalities? This chapter seeks to provide a brief response to these questions, reviewing the topic of environmental inequality in Africa with a particular focus on West Africa and the country of Burkina Faso. We speak to a gap in North American environmental sociology, where African case studies and topics have been largely absent. More broadly, we seek to address an overall inattention to environmental inequality in Africa. Most mainstream international policymakers, development agencies, and African governments overlook questions of environmental inequality. One perspective is that Africa needs development first, and environmental concerns (not to mention questions of environmental inequalities) can come later.[[1]](#footnote-1) Some adherents to this view even believe that Africa is relatively unpolluted, and can reasonably absorb more environmental harm, particularly in the name of economic development.[[2]](#footnote-2)

A different view, prominent among many global organizations today, is that “Africa faces serious environmental challenges, including land degradation, deforestation, biodiversity loss and extreme vulnerability to climate change” (United Nations Environment Program 2021). This perspective recognizes environmental harm, yet often overlooks the underlying social and political forces producing that harm, not to mention differential experiences of environmental harm or exclusion. Environmental organizations working in Africa tend to focus on “natural resource” issues and wilderness conservation, often viewing nature as “out there” and in need of protection from human activity, generally through protected areas (West et al., 2006). Furthermore, many of these global institutions continue to point blame for environmental degradation onto the practices of poor Africans (i.e. the specter of population growth, elephant poachers, or women collecting firewood), revealing vestiges of the early “sustainable development” era that framed poverty itself as the cause of environmental degradation (see Gray & Moseley, 2005). Largely missing from mainstream perspectives is how African environmental issues are – as they are everywhere – deeply interwoven with structures of power that simultaneously produce environmental harm and shape who disproportionately benefits or is harmed by environmental policies and environmental change (Robbins, 2012).

This chapter explores the broad contours of environmental inequality in Africa. For this review, we consider environmental inequalities[[3]](#footnote-3) quite broadly, including: 1) distributional inequality, or material inequalities in environmental amenities and exposure to harms, 2) participatory/procedural inequality, or who gets to take part in decision-making processes that shape environments and resource access, and 3) recognitional inequality, or whose knowledge and cultural practices and beliefs are valued more or less (Cole & Foster, 2001; Schlosberg, 2004). For this brief chapter, we focus foremost on distributional inequality, noting the need for more work on the broader dimensions (and intersections) of environmental inequalities in Africa. Distributional inequalities can include disparate exposures to environmental harms, disparate social and health impacts related to environmental harm, or disparate access to natural resources. It can also include a more expansive consideration of the “relative distribution of burdens versus benefits.” In an environmentally equal (or roughly equal) world, those who “receive greater benefits than others from the capitalist production and distribution process should bear a greater share of the burdens of this process,” and vice versa (Downey, 2005: 5). Yet, as we will see, this is often *not* the case.

We begin with an overview of environmental inequality between Africa and wealthier nations, and then shift scales to look at inequalities *within* African nations, with a focus on West Africa. We then explore two case studies from Burkina Faso, where each author has conducted fieldwork (the first author, a White American, has studied cotton production; the second author, Burkinabè, has conducted extensive research on land, natural resources, water, and the relationship between neoliberal policy and environmental change). Given the paucity of environmental sociology research in Africa, we draw on interdisciplinary African scholarship and from neighboring disciplines – in particular the field of political ecology – to draw the contours of environmental inequality in Africa.

**2. Environmental inequality in sub-Saharan Africa in historical perspective**

***2.1 Global inequality***

A significant axis of environmental inequality in sub-Saharan Africa is at the global scale: inequality *between* Africa and its former colonizers and other wealthier nations and trade partners. Environmental sociologists have explored this through the concept of “ecologically unequal exchange” (EUE) (Clark & Foster, 2009; Rice, 2007). This concept has roots in world-systems theory, a body of scholarship that has questioned mainstream economic explanations for global inequality. World-systems theorists contend that wealthier nations have gotten wealthy not through their ingenuity, technical savvy, and inherent superiority, but through their exploitation of poorer nations (Rodney, 1972; Wallerstein, 2004). EUE extends this thinking to examine systemically unequal *ecological* relationships between wealthier “core” nations and “periphery” nations:

“Three core regions of the modern world-system – the United States, the European Union, and Japan – are all net importers of both raw material equivalents and embodied energy … these asymmetric resource flows … contribute to growing inequalities between affluent core regions of the world-system, on the one hand, and impoverished extractive economies in the periphery, on the other” (Hornborg & Martinez-Alier, 2016, p. 329).

In Africa, ecologically unequal exchange occurs as a pattern of African nations exporting raw resources (many of which have significant local environmental impacts) and serving as repositories for waste from wealthier nations.

A clear example of these asymmetrical resource flows occurs in mineral mining and electronic (e-)waste (Agyeman, 2014; Faber, 2008; Pellow, 2007). For example, tantalum (coltan) is an essential raw material for electronics like cell phones, computers, and gaming devices like Playstations. Forty percent of the world’s tantalum is mined and exported from the Democratic Republic of the Congo (DRC), a region with a turbulent colonial history and significant ongoing conflict. As you read this, it is likely that you have tantalum from the DRC somewhere near you in your cellphone or computer – devices that are more widely owned (and rapidly discarded) in wealthier nations than in nations like the DRC (Forti et al., 2020). One analysis found that in 2000, roughly three-quarters of global coltan was consumed by *only ten* wealthier countries (including the U.S., Germany, and China) (Moran et al., 2015). Meanwhile, tantalum mining in the DRC harms both workers and the environment, exposing workers to hazardous levels of inhaled dust (Leon-Kabamba et al., 2018), radiation (Mustapha et al., 2007), and producing degraded ecological landscapes (Jacka, 2018).

Furthermore, when people in the U.S. and Europe “recycle” their electronics, some of that e-waste is shipped back to Africa, such as to the Agbogbloshie e-waste dumping site outside of Accra, Ghana, where people manually sort through and burn electronics in order to extract small amounts of valuable minerals (see the documentary by Krones & Weigensamer, 2018; Little, 2019).In processing this e-waste, workers and the local ecosystem are exposed to numerous toxic byproducts, and a growing body of research has found e-waste processing to be associated with a long list of adverse health effects, including **“**adverse birth outcomes, altered neurodevelopment, adverse learning outcomes, DNA damage, adverse cardiovascular effects, adverse respiratory effects, adverse effects on the immune system, skin diseases, hearing loss, and cancer” (Forti et al., 2020, p. 64). In other words, consumers of cell phones in the U.S. and Europe experience only the benefits of these resources, while people in African nations (and other “periphery” nations) bear the environmental and health consequences of both the supply and disposal of these resources: a classic example of an uneven distribution of benefit and burden.

 Africa’s environmentally unequal relationship with wealthier nations has deep roots in colonial history, as we will explore in greater depth in our case studies in Burkina Faso. It is worth reminding readers that “the main purpose of colonial rule (was) the exploitation of the colonized country” (Crowder, 1968, p. 169). The industrial revolution, which produced wealth accumulation in core countries, was fundamentally predicated on imperial resource extraction in the colonies (Beckert, 2015; Luxemburg, 2015), what Clark and Foster (2009) dub “ecological imperialism.” From the late 1800s through the first half of the 20th century, European colonizers in Africa focused on resource extraction, building roads and railways to export raw materials, setting up plantation agricultural systems, or demanding crop quotas. Resource extraction relied upon various systems of forced labor, including in French West Africa (Cordell et al., 1996; Crowder, 1968). Forced labor in Belgian Congo was unfathomably horrific, killing and maiming millions of Congolese people in the late 1800s, all in the quest for rubber and ivory for Europe (Hochschild, 1999).

 It is also worth reminding readers of how the land theft, outright pillage and plunder, and forced labor of the colonial era were ideologically justified. Colonizers drew on the language of humanitarian goodwill, of a “civilizing mission” bringing light to the “dark” continent and the so-called backward, primitive peoples of Africa. These racist discourses (like those in the U.S. at that time) were not rooted in empirical observation of ostensible racial differences, but created by the need to justify human and environmental exploitation (Mbembe, 2021).

 It is perhaps tempting to believe that this era of racism and resource plunder is confined to history, an atrocious and regrettable episode, but one that clearly ended when most African nations gained independence in the 1960s. Yet patterns of ecologically unequal exchange between Africa and wealthier nations have continued, alongside racist discourses that treat Africans and African countries as “under-developed,” language that replaced “un-civilized” but that continues to treat Africans as incapable of managing their own resources (Agrawal, 1997; Pierre, 2020).

Two policy programs in particular have facilitated ongoing, though heterogeneous, patterns of unequal resource extraction and environmental inequality: 1) neoliberal “structural adjustment” and 2) “sustainable development.” The first refers to a period of vast governmental re-structuring that began in the 1980s. This period of time saw the ascendance of neoliberal ideology: a belief that free markets, private enterprise, and de-regulation would create economic growth and social progress (Harvey, 2005). Guided by this ideology, the World Bank and the International Monetary Fund (IMF) sought to restructure most “developing” world governments, which were facing serious debt crises.[[4]](#footnote-4) The World Bank and IMF offered to bail governments out, but with conditionalities attached (in other words, we’ll give you money *on the condition that*…). These conditionalities and associated programs came to be called “structural adjustment programs” (SAPs), and dramatically reshaped African governments. SAPs reduced government spending across the board (including for healthcare and education), opened up countries to foreign financial investment, reduced “barriers to trade,” and forced governments to privatize industry or public utilities (G. Harrison, 2004; Van de Walle, 2001). The idea was that smaller governments and free markets would produce greater economic growth and better welfare for all, though most evaluations have since found that SAPs had devastating consequences across the board (Downey, 2015; Vreeland, 2003). Furthermore, in terms of participatory or procedural injustice, SAPs were also highly undemocratic. As Downey (2015) has convincingly shown, undemocratic global institutions (themselves heavily influenced by U.S. and corporate interests) gave African peoples and leaders very little choice in their self-governance.

Neoliberal restructuring has had significant consequences for the environment and inequality. SAPs forced African economies away from local industry or production, to focus instead on exporting raw materials from agriculture, timber, mining, or oil. For example, during this period, many African nations revised their national mining laws to allow foreign companies greater leeway. Mining operations are now extractive enclave economies, often heavily protected by armed guards and military presence, and operated by foreign companies who pay few taxes to African governments. Today, the vast majority of the wealth and resources produced by these mines simply leave Africa (Downey, 2015; Ferguson, 2006). Some of the money that African governments *do* collect goes to repaying interest on loans they owe to international banks and development organizations. SAPs thus reproduced the colonial pattern of resource extraction, compelling governments to continue sending environmental resources *out* of Africa, while producing environmental harm at home (i.e. denuded landscapes, water pollution, mine tailings, and pesticide use in export-oriented agriculture). SAPs also laid the groundwork for what many have called “land grabbing,” or the “land rush” in Africa in recent years. Under the umbrella of the fight against hunger and food and nutritional insecurity, large international firms as well as governments (e.g. Olam, Walmar International, Cargill and Unilever, Yara; many governmental entities from the Middle East and Asia) purchase and operate vast areas of land in Africa, presented as the “new frontier of agro-business” (Delcourt, 2019).

 A second, less obvious, global apparatus also produces ongoing environmental inequalities between Africa and wealthier global nations. As Western nations have become increasingly concerned about environmental issues, they have widely embraced an ideology of “sustainable development” or “green growth” that sees environmental issues as resolvable through global (Western, expert-led) scientific management and neoliberal solutions that seek to privatize nature in order to protect it (Bakker, 2010; Goldman, 1998; Igoe & Brockington, 2007). Yet many of these efforts involve treating Africa as a “sink” for Western pollution, as in efforts to offset (wealthy nation) carbon emissions by purchasing forest in Africa, efforts than can dispossess or exclude local peoples from managing their land (Lyons & Westoby, 2014). In other cases, efforts to conserve “humanity’s patrimony” in the form of biodiversity conservation generally focus on the Global South, including Africa, yet rarely consider how local people live with and in those ecosystems. Sustainable development and conservation efforts (not uniformly, but often) reproduce colonial attitudes that Westerners have a unique ability to understand and manage the environment (see Agrawal, 1997; Open Letter, 2020) – an attitude that produces participatory and recognitional injustice in global environmental management and continues to operate on the scaffolding of racist beliefs in African lack or inability (Pierre, 2020). Just as racism in the U.S. has produced and justified environmental inequalities, we also see environmental racism operating at a global level.

 Lastly, climate change represents a fundamental and ongoing global environmental inequality that is particularly acute for Africa. Africans have contributed very few global greenhouse gas emissions, both historically and today. While the average Sub-Saharan African emitted only 0.8 metric tons of carbon in 2018, the average person in the U.S. emitted 15.2 tons, nearly *twenty times* more (World Bank, 2020)! Despite this, Africans are poised to suffer some of the most severe consequences of climate change, including droughts and heat waves that will greatly affect rain-fed agricultural production, and alter pest and disease ecologies (Fields, 2005). This produces a double exposure: because of decades of neoliberal economic restructuring, African governments are facing the onslaught of climate change yet have few resources to respond to the unfolding crises (Blaikie et al., 1994; O’Brien & Leichenko, 2000).

***2.2. Environmental inequalities within Africa***

 As important as it is to highlight global-scale inequalities between Africa and wealthier nations, the global scale of analysis nonetheless overlooks how environmental politics play out *within* African regions and nations. As Newell (2005) remarks,

“Rather like their counterparts in the North, Third World elites tend not to live near toxic waste sites, nuclear facilities or industrial belts producing hazardous chemicals” (p. 74)…Nonetheless, “patterns of exploitation that exist within countries along the lines of class, caste, race and gender are often exacerbated by global economic pressures” (p. 87).

Indeed, many of the issues discussed above with regards to North/South (or Core/Periphery) exploitation and colonial and neo-colonial extractive economies also exacerbate and re-shape inequalities *within* Africa. Since the 1990s, SAPs had a broad effect of increasing inequalities (Forster et al., 2019; Vreeland, 2003), often exacerbating pre-existing inequalities, though with uneven and contingent outcomes as people contested and navigated new policy configurations.

Some of the most insightful literature on environmental inequalities within Africa comes from the inter-disciplinary field of political ecology, a loose collection of scholars who contend that environmental issues are always shaped by power (politics) – thus the term “political” ecology (Robbins 2004). Political ecology has pushed back against dominant narratives of environmental decline in Africa: the “a-political ecologies” of Malthusianism that blame environmental problems on population growth or the behaviors of poor people (Gray & Moseley, 2005; Leach & Mearns, 1996).

In contrast, political ecology has focused on questions of resource access and control, processes of marginalization, power imbalances at multiple scales, and conflicts and resistance. Many classic political ecology studies have revealed complex and shifting gender inequalities in resource access and control, particularly in agricultural settings where communities have increasingly grown cash- and export-oriented crops. Women sometimes lose access to resources yet craft strategies of resistance (Carney, 1993; Wooten, 2003), or they may gain access, yet meet with pushback (Schroeder, 1999). This literature has shown how environmental resource access and control is often mediated by local gender politics – in interaction with other social locations along lines of ethnicity, class, or other dimensions of social status (Carr, 2008; Luna, 2019).

Many local-level environmental inequalities result in significant conflicts over resources, particularly in the face of resource privatization (See Section 4.2). Another axis of conflict runs between African elites (often governments) and groups excluded from political power and the material benefits of resource extraction. In Nigeria, for example, the government has operated in a “slick alliance” for decades with multinational oil companies like Shell and Chevron, who have extracted oil from the Niger delta. Since the 1990s, the Nigerian army has violently quelled resistance movements from local people; first the Ogoni movement, whose leader Ken Saro-Wiwa was murdered, and then the Movement for the Emancipation of the Niger Delta, an uprising that led to extraordinary violence in the early 2000s (Watts, 2009). These violent contestations erupted amidst the smoke of oil flares, oil spills, and destroyed ecosystems and livelihoods. This environmental pollution and resource enclosure disproportionately harmed local people while benefitting an elite few; according to Watts, “eighty-five per cent percent of oil revenues accrue(d) to one percent of the population” (2009: 4). In many cases, enclave extraction economies that benefit global elites are achieved via the cooperation (rather, the co-optation) of local elites who carve out their own slice of benefits. Ecological destruction (or ecocide) is thus committed in tandem with human destruction (genocide) (Lynch et al., 2021).

**3. Case studies of environmental inequalities in Burkina Faso**

We now turn to two case studies of environmental inequalities in the West African country of Burkina Faso. With an area of 274,200 square kilometers (km²), roughly the same size as the U.S. state of Colorado, Burkina Faso is a landlocked country located in the Sudano-Sahelian zone, marked by chronic climatic droughts for several decades (Fontes & Guinko, 1996). Burkina Faso has a population of roughly 20 million people (INSD, 2020). Like many other West African nations, Burkina Faso was colonized by France (during which time it was named Upper Volta) and gained independence in 1960. Burkina Faso experienced a brief period of anti-imperialist leadership under Thomas Sankara in the 1980s, but Sankara’s assassination gave way to a nearly 30-year period of rule (1987-2014) under Blaise Campaore, during which time Burkina Faso followed most of the neoliberal “structural adjustment” playbook (Zagré, 1994).

A majority of Burkinabès (“Bur-key-NAH-bay”) live in rural areas, farming for subsistence (crops like millet, sorghum, corn, peanuts, and beans) as well as for sale, and raising animals. Agricultural activities employ more than 80% of the population, and have for a long time been the main source of income (cotton in particular) for the Burkinabè economy, before being outclassed by gold since the 2010s (Engels, 2018; Werthmann, 2017). Because of repeated droughts and low soil productivity over most of the territory, agricultural yields are uncertain and sometimes in deficit, which causes persistent food crises (Engels, 2015; Tankari, 2020). These food crises, aggravated by the combined effects of terrorist attacks (which have lasted since 2015), the Covid-19 pandemic, and climate variability (FSIN, 2020; Zidouemba et al., 2020), have significantly increased migratory flows of rural populations – from the arid zones of the Center and the North in particular – to the cities or fertile zones of the West and South and to nearby countries like Côte d’Ivoire and Ghana (Cordell et al., 1996; Zagré, 1994).

In the following, we explore two case studies of environmental inequality in Burkina Faso: land and natural resources, and the case of cotton and pesticides, drawing out the interplay of global processes and local-level inequalities, and historical and present-day inequalities.***3.1 Land and natural resources***

In pre-colonial Burkina Faso, “natural resources” were managed by traditional chiefdoms (earth priests/land masters or *chefs de terre*) or lineage elders in villages or communities. In a self-sustaining agriculture, land was perceived and managed as a common-pool resource; user rights were granted to community members, with primacy to male heads of household, while delegated or temporary use rights were allocated to women, youth, and migrants. With colonial conquest, traditional land tenure was challenged in favor of the French colonial legal/normative system. French hegemony was enshrined in the *Indigénat Codes*, applied between 1887 and 1946, which ordered forced labor for the execution of the colonial economic program. This included carrying out forestry and plantations, maintaining the gardens of administrative officials, and growing and harvesting horticulture products (including cotton) (Cordell et al., 1996; Crowder, 1968; Isaacman & Roberts, 1995). Colonial activities were centered on developing and extracting the territory's resources.

In addition, the finance law of 1900 accentuated the exploitation of natural resources and hardened the conditions for the application of the *Indigénat Codes* in Francophone West Africa, and in Burkina Faso in particular (Korbéogo, 2013, p. 78). In this logic, the policy of protected areas and classified forests – officially aiming at the protection of the environment against deforestation – also legitimized colonial land control (appropriation by dispossession of indigenous people) as well as the restriction of indigenous peoples’ access to flora and fauna resources for hunting and gathering activities. During this colonial era, protected areas came to cover nearly 14% of the national territory, estimated at approximatively 139,000 km² (MEEVCC, 2020).

Delimited in both urban and rural areas, these protected areas were ecological enclaves meeting the imperial needs of nature conservation as well as hunting and tourism purposes, access to which was exclusively reserved for colonial administrators and White people. The creation of protected areas forced displacements and resettlements or confined local populations who, consequently, were dispossessed of property and use rights of their ancestral lands, including the loss of farming and grazing areas, and prohibition of harvesting and hunting. For example, *Bangr Weoogo* Urban Park (which in Moore language means the forest of knowledge), is a park of 90 hectares in Ouagadougou’s inner-city. It was registered in 1917 by the French colonial administration, and access was clearly forbidden to the indigenous population (Bondaz, 2011, p. 3). For this reason, in colonial Burkina, protected areas were considered by some indigenous people as symbols of colonial environmental hegemony; they were markers of environmental inequality based on racial differentiation. Rights to access natural resources were structured by racial identity, with White supremacy over Blacks.

This environmental imperialism (Clark & Foster, 2009; Grove & Grove, 1996), or environmental racism (Holifield, 2001) was denounced by one village chief interviewed:

“(…) The memory we have of French colonization is marked by violence, forced labor within the operations of planting trees and building roads, for example. After defeating us militarily, the White [colonizers] proclaimed themselves kings of the villages and of the bush. Local populations like those of Fada N’Gourma have been dispossessed of their ancestral lands and confined to small areas. To gain access to natural resources, one must have permission from the colonial administration. The offenders were arrested, judged and sentenced to pay fines or prison. Which means that Black people and Nature were under the domination of Whites” (Fada N’Gourma, November 2007).

Indeed, land registration policies in the colonies of Francophone and Anglophone West Africa in general and in Burkina Faso in particular did not have the support of indigenous people (Berry, 1993; Biebuyck, 1963; Lavigne-Delville et al., 2000). Faced with indigenous resistance against colonial “land grabs” and their inherent inequalities, the colonial administration was forced to integrate village chiefdoms into its chain of command; this process of hybridization thus generated an institutional pluralism in land governance.

From 1960, land tenure and the management of protected areas were carried out by the postcolonial Burkinabè state, heir of the colonial system. Land and resource governance became co-managed between state institutions and traditional chiefdoms, whose socio-political roots and traditional legitimacy make them influential in local arenas. In the absence of significant legal reforms following independence, colonial land inequalities were therefore reproduced. As the country became integrated into global value chains – apart from cereal products – its agricultural system remained oriented to the production of raw materials for Western industries (as we will see with the example of cotton in the next section).

In recent years, the "mining boom" (Chouli, 2014) has marked nearly 40% of Burkina Faso’s territory for exploration and mining since 2018, sometimes in defiance of official requirements (Engels, 2018). Ranked among the five largest gold producers in Africa (Valcambi, 2020), Burkina Faso grants exploration and industrial mining permits to international private companies (e.g. Endeavor Mining and Iamgold Essakane SA from Canada, Nordgold from Russia, MNG Gold from Turkey). In addition to numerous socio-environmental conflicts linked to artisanal mining sites, industrial or artisanal gold mining companies sometimes extend their activities beyond their allocated areas; these illegal/illicit expansions often create violent conflicts between mine operators and village residents (Engels, 2018; Luning, 2008; Werthmann, 2017). These conflicts relate to access to agricultural land and pastures, air and water pollution by chemicals used by mining companies (including mercury and arsenic), forced displacement, or lacking or insufficient compensation for local populations.

Indeed, the national legislative and political framework has favored natural resource privatization, which increases environmental inequality. Apart from the Sankara regime, the postcolonial land tenure system remains largely neoliberal, in particular since the 1990s. In this dynamic, four land reforms (1991, 1996, 2009 and 2012) have incrementally facilitated the acquisition of individual private property titles of urban and rural land. Early and recent works (Hilgers, 2008; Korbéogo, 2021; Marrengane et al., 2021; Peters, 2004) show that urban planning in Africa often creates opportunities for land grab or land value capture by “traditional leaders” and politically/economically powerful elites. In both urban and rural Burkina, recent land reformshave allowed local elites (e.g. mayors, civil servants, traditional authorities, and private real estate companies) to benefit from large-scale speculation and land grabbing (ANBF, 2016; Korbéogo, 2021).

A significant example is the Millennium Challenge Burkina Faso Compact, signed in July 2009 between the government of Burkina Faso and the United States, to incentivize peasant land registration (Korbéogo, 2015; MCC, 2015). Apart from the rural communes benefiting from the land tenure security pilot project, the new institutional mechanism has favored the emergence of “new actors” qualified as agro-business men/women (economic operators, political entrepreneurs, and civil servants) and the proliferation of private real estate companies. The former mayor of the rural commune of Bama, located 25 kilometers from Bobo Dioulasso (the second largest city in Burkina Faso), testifies to the grabbing of rural land by wealthy people:

“Land laws are made for people who know the value of land and who can afford it. In our commune [Bama] several political leaders and businessmen living in Ouagadougou and in Bobo-Dioulasso have acquired large areas of land. These leaders go through intermediaries who put them in contact with the customary holders of the land, and as they present themselves as people who want to farm, it facilitates the acquisition of land for sums of money much lower than the real value of the land. Subsequently, the latter put up fences around the area and then take the steps to acquire the land entitlement. These practices have accelerated the cession of local lands to migrants, which provokes land scarcity and leads to land disputes” (Bama, August 2010).

On July 6, 2020, some residents of Bama, dissatisfied and contesting the legality of the *lotissements* (newly privatized parcels), organized a protest march to demand the cessation of the activities of their municipality as well as the suspension of the *lotissements*. Even though the demonstration was dispersed by the police, protests persist and cause tensions between local strategic groups (e.g. autochthons versus migrants) (Diarra, 2020). Land acquisitions in Bama sometimes extend to more than 200 hectares and are often owned by politicians, civil servants, and “big men” and “big women.” In addition, the 2006 report of the Ministry of Agriculture on applications for rural land titles shows that 60% of applicants are residents of Ouagadougou and Bobo Dioulasso. This situation reveals the unequal access to land between village residents and city residents.

Furthermore, pre-existing gendered inequalities in access to land have been reinforced by privatization processes. Male domination and gender inequality in access to resources have historically been constructed through socialization, the division of social labor, and ordered by traditional institutions and norms. In patriarchal societies such as the *Moose* and *Gourmantche* (inhabitants of the Gourma region) societies (Korbéogo, 2013, 2014), filiation, succession, and heritage are organized according to androcentric norms, which favors men because of their socially assigned status as heads of the household and the main providers of domestic subsistence. The gendered social relations justified women’s traditional exclusion from participating in agricultural works such as clearing of new fields, considered as a means of social appropriation of land. Privatizing land through individual titles has perpetuated and in some ways exacerbated women’s exclusions from land. Individual land titles supersede what were previously highly complex systems of land tenure and use rights (Kevane & Gray, 1999). While in some cases women may gain new opportunities to access land through the market (Kevane & Gray, 1999), in other cases women may lose what were previously usufruct rights (rights to use portions of resources on the land) (Gray & Kevane, 2001). Women also often lose out in political negotiations for land tenure; a diagnosis of the land security project of the Millenium Challenge Compact shows that out of 5,000 land title applications, only one hundred (2%) involved women.

***3.2 Cotton and pesticides***

We now turn to a case study of cotton, a central thread in the colonial history of Burkina Faso and still the most important export cash crop in Burkina Faso. Cotton exports produce up to US$300-500 million in export earnings each year, second only to gold (IMF, 2016). Significantly, the state emphasizes cotton production in part due to pressure from the World Bank, IMF, and other lenders that seek to maximize economic growth (and thus to repay loans). Cotton production is thus heavily influenced by IMF and World-Bank imposed conditions on Burkina Faso’s economic activity.

Cotton also has long roots in colonial history. In the first half of the 20th century, France implemented various programs of taxation, forced labor, and cotton quotas to try to coerce West Africans into growing cotton for the French textile industry (Cordell et al., 1996; Crowder, 1968; Isaacman & Roberts, 1995). Although Africans resisted these programs in creative and often successful ways (Bassett, 2006; Cordell et al., 1996), these onerous programs ­– backed by the violence of the *Indigénat* – nonetheless dramatically reshaped rural life and agricultural practices in West Africa, in particular by contributing to new patterns of migration and wage labor as Burkinabès sought ways to live within an oppressive colonial regime (Cordell et al., 1996).

Following independence in 1960, cotton production remained closely controlled by and associated with the French textile industry for the latter decades of the 20th century (Dowd-Uribe, 2014). Furthermore, the broader framework of agricultural modernization (which promotes pesticide use) is rooted in what many scholars refer to as “racial capitalism”: how global capitalism and modernization are interwoven with histories of racialized labor exploitation and ideological/cultural systems that justify racialized inequalities (Itzigsohn & Brown, 2015; Matlon, 2016; Murphy, 2021; Williams, 2020). In Burkina Faso, pesticides are widely (though not uniformly) associated with the status attributes of “modernity” and of moving upward in a global racial hierarchy (Luna, 2018; Luna et al., 2021; Stein & Luna, 2021).

Contemporary cotton production is rife with environmental inequalities, both between farmers and the wealthier nations who consume their cotton, and also between actors within Burkina Faso (Gray et al., 2018; Gray & Dowd-Uribe, 2013; Luna, 2018). At the global scale, cotton production represents a form of ecologically unequal exchange. Ninety-eight percent of Burkina Faso’s cotton is exported (Sylla, 2017), usually in raw form with no value added, since local textile manufacturing was shut down during the structural adjustment era (Zongo, 2014). One farmer interviewed explained that “We in Burkina, we export our sweat and our soil. 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.” This insightful explanation of ecologically unequal exchange describes how exported cotton literally embodies farmers’ labor as well as the ecological resources of Burkinabe farmers’ soil, which has degraded over decades of intensive cash-crop production and now requires the addition of fertilizers. Farmers’ own food and environmental needs may be marginalized; as Cheru observed following the first round of neoliberal reforms in the 1980s: “scarce land, water, credit and technology are being preempted by the export sector while the needs of small farmers in the areas of soil conservation, reforestation, and food security are ignored” (1992). The rising use of herbicides, for example, appears to be reducing women’s ability to grow household vegetable crops within and along the edges of their fields.

 Cotton farmers also use significant amounts of highly harmful pesticides, including insecticides like *chlorpyrifos*, which has been found to have significant neuro-developmental impacts on children. Young men mix chemicals, often with their bare hands, filling up backpack sprayers and spending hours walking up and down fields, pumping the sprayers and misting toxic chemicals across the fields (and themselves). They rarely wear protective gear. Moreover, their family members regularly re-enter fields directly after spraying, and families drink water and wash clothes in the streams directly next to fields. Farmers report regular incidences of pesticide poisoning, from headaches and “cold-like” symptoms to more acute episodes of vomiting and neurological symptoms. Despite all of this, most cotton farmers make very little money, and large numbers of them fall into debt from growing cotton (Gray, 2008; Gray et al., 2018; Gray & Dowd-Uribe, 2013).

 Pesticide use thus represents an environmental inequality in terms of what Downey (2005) calls the “relative distribution of benefits and harms,” where the people who *benefit* from cotton production – consumers, global textile companies, agribusiness companies, banks, government employees, and cotton sector employees – are not the same people who experience *the harms* of cotton production. Furthermore, for many farmers, insecticides feel more like an imperative than a choice (particularly in that the state cotton company tells farmers to use them), representing participatory inequality. Many farmers today feel like they have very little say in the cotton sector overall. This has worsened following neoliberal restructuring in the 1990s and early 2000s, and the creation of a cotton farmers’ union that most small-scale farmers view as co-opted by wealthier farmers (Dowd-Uribe, 2014; Engels, 2021). These inequalities do not go unnoticed by cotton farmers, many of whom are quite angry at this unequal system and have historically (Bassett, 2006) and continue to regularly engage in varying levels of protest against those they see as eating the fruits of their labor (Engels, 2021; Luna, 2019).

**4. Socio-political effects of environmental inequality**

***4.1 Deterioration of livelihoods***

Environmental inequalities create and exacerbate deteriorating conditions of life for urban and rural peoples, as expressed in economic precarity, food insecurity, mobility or forced displacements, the need to shift occupations or livelihoods, and broader downward social mobility. In rural areas, these deteriorating conditions may be caused by land expropriation, the degradation of fertile agricultural soil, or the shrinking of grazing areas for animals – all of which may be induced by forestry and mining projects or land predation by dominant actors or social groups (see section 3.1). Intensive cash-cropping can also make farmers food insecure when they run out of cash, particularly the poorest set of farmers who are more likely to fall in debt. In urban and peri-urban areas, land and resource privatization are also at work, producing unequal access to productive resources such as land and water for either residence or urban agriculture activities. Both rural and urban residents make similar criticisms of the injustices produced by privatization:

(Rural): “Before, we were poor, but ever since the advent of the Hydro-Agricultural Project of Bagré [a World Bank financed dam, irrigation, and agricultural project in the mid 2010s], our situation has gotten worse. We lost our agricultural land without sufficient compensation, and when the rice-growing area was developed, access was very selective. The acreage was very small, [between 0.5 and 1 hectares], and peasant families could not feed themselves and also have any monetary revenue from this […]. The other big problem is access to water. The big producers are installing motorized pumps to get water from the irrigation canal, but this draws down the flow of water considerably and dries out our rice. The richest do want they want, but us small-scale producers, we suffer injustices” (Interview with a farmer, June 2015, second author).

(Urban): “If the rich people and the political authorities weren’t so greedy, each family should have a right to a parcel of land. Unfortunately, there is too much corruption and injustice in the system of allotting/privatizing land. Some people have 10, 20, or even more than 100 plots, while the rest of us don’t even have access to a single plot. For more than 20 years, we’ve lived in this neighborhood without land rights, without electricity or water, without maintained roads. During the rainy season, after a big rain we can’t even leave our houses. We fear flooding. We can’t say we live in the city, it’s like we live in a village! We are right to ask, where are our public authorities?” (Interview with a woman in Ouagadougou, 2018, second author).

Environmental inequalities thus bring direct negative consequences for the living conditions of socially marginalized actors and groups. In Burkinabè agriculture, particularly given long-term soil decline and limited access to agricultural technologies, productivity usually depends on expanding acreage. Yet the shrinking of parcel sizes in some areas (due to land enclosures for mining or agro-business, and to population growth) makes it hard for these families to produce enough. In urban areas, unequal access to formal land rights leads to the development of spontaneous neighborhoods with sanitation problems, greater exposure to seasonal illnesses like malaria, incidents of flooding, and lack of access to water. These processes are also documented more broadly in West Africa.

***4.2 Environmental inequality and violence/conflicts***

Environmental inequalities can also result in conflict. For several decades, conflicts have erupted over the enclosure of protected natural areas and over industrial and artisanal mining operations in several regions of Burkina Faso and in neighboring countries. Locally affected populations are often opposed to these projects that threaten their ways of life and the local socio-ecological balance, and many of these projects are implemented through the use of police violence in order to counter local resistance (Downey, 2015). Inequalities in access to natural resources (land tenure, irrigation, pasture for animals, urban land plots) can augment tensions and exacerbate individual or intercommunity resentments or between strategic groups.

 Numerous empirical studies have found a correlation between resource shortages for local users and the development of those resources by outside actors (Engels, 2018; Hagberg, 2001; Korbéogo, 2013, 2020). Resulting conflicts often pit young against old, farmers against pastoralists (animal herders), native residents against migrants, citizens against foreigners. Conflicts develop both within lineages and communities as well as between countries over access and control of natural resources. When regulatory institutions are ineffective, these conflicts erupt, ranging from verbal confrontations to armed wars. Bloody and deathly conflicts have erupted between farmers and Peul/Fulani pastoralists in particular[[5]](#footnote-5), illustrating the use of violence as a means to access resources necessary for survival.

 Regarding the question of urban land access, the magnitude of inequalities and the increasing presence of sometimes violent social protest movements has resulted in many people viewing the situation as a “*poudrière foncière*,” or a “land tenure powder keg.” The use of violence to contest environmental inequality can even manifest in extreme forms, like jihadist terrorism. A recent study (Hubert, 2021, p. 343) finds that, in the face of the Burkinabè state’s failure to address unequal resource access, various armed groups are able to recruit from local populations by offering them the possibility of access to or control over natural resources. Hubert argues that violence has enabled some armed groups to occupy ecological reserves and mining areas, which facilitates their enrollment of people from marginalized groups, including pastoralists.

Case studies from across Africa have demonstrated this nexus between environmental inequality and violence or armed conflict (Homer-Dixon, 1994; Le Billon, 2001; Moyo & Yeros, 2005). The study of violence in these contexts (such as jihadist-related groups) needs to be understood through this historical perspective, with particular attention to the politics of natural resource governance and the legitimacy (or illegitimacy) of regulatory institutions. Le Billon argues for “approaching resource-linked armed conflicts as historical processes of dialectic transformation of nature and social groups. Contemporary resource-linked conflicts are rooted in the history of ‘resource’ extraction successively translated by mercantilism, colonial capitalism, and state kleptocracy” (2001, p. 563). Our point is *not* to draw a deterministic arrow from environmental degradation to violent conflict (for cautions against this kind of determinism, see Hunter et al., 2015). Instead, our emphasis is on the historical production of environmental *inequalities* and injustices. Furthermore, there is no systemic correlation and cases are varied and complex. Yet unequal access to natural resources is a critical component of socio-economic vulnerability, undermines social cohesion, and can play a role in provoking conflicts capable of threatening broader social institutions.

**5. Conclusion**

The case studies mobilized in this chapter have focused primarily on Burkina Faso and neighboring areas. However, these case studies are illustrative of broader trends in sub-Saharan Africa. Our empirical evidence illustrates environmental inequality between the Global North and the Global South, and *within* countries in Africa. A central theme of this chapter has been to highlight how these inequalities were historically built during colonization, but have been reproduced in the postcolonial era, through neoliberal reforms and “good governance” or sustainable development-related interventions. The last few decades of neoliberal governance have exacerbated the colonial pattern of resource privatization for (White/Western) elites (as in the case of protected areas and mining contracts), and incentivized cash-crop agriculture that degrades farmers’ soils, exposes them to pesticides, and leaves the most marginalized farmers in debt. Our central preoccupation has been to demonstrate the extraordinary degree of inequality that has been produced by colonial-era and more recent development policies.

 We hope this chapter can open several doors for future research, practice, and engagement on environmental inequalities in Africa. For the environmental sociology community, we hope to open doors to broader geographies and bodies of scholarship and practice, including greater dialogue with literature from political ecology and from scholarship produced by African scholars. For students, we hope to have provided a useful review and introduction to this important topic. For development practitioners and those working on environmental and conservation issues in Africa, we hope to bring into focus the centrality of colonialism, inequality, and racism for understanding environmental problems in Africa. This includes paying closer attention to how environmental degradation and social injustice are not separate issues, but have been co-produced through the “colonial inhabitation” of the earth (Ferdinand, 2021).

 Lastly, there are important social movements and resistance efforts afoot in many regions of Africa. In Burkina Faso, the *Organisation Democratique de la Jeunesse du Burkina* Faso (Democratic Youth Organization; ODJ) has organized throughout the country to contest ongoing inequalities produced by the global neoliberal, imperial, and colonial world-system. Other groups and movements have organized to protest land enclosures, cotton production’s exploitative conditions (Engels, 2021), dam placements, and corporate influences on agriculture (Luna, 2020). These movements highlight the environmental inequalities at the heart of “business-as-usual” development politics, and the urgent necessity for change.

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1. This perspective has been referenced in U.S.-based environmental justice scholarship, as when Bullard and Wright (1990, 390) noted that working class and communities of color in the U.S. have been exposed to environmental harms because they are seen to have a “*third world view* of development—that is, any development is better than no development at all.” [↑](#footnote-ref-1)
2. As in the infamous (and debated) memo attributed to former World Bank president Larry Summers, which wrote that "underpopulated countries in Africa are vastly underpolluted,” and “the economic logic (of dumping toxic wastes there)… is impeccable.” [↑](#footnote-ref-2)
3. Following Holifield (2001), we recognize that there are not neat definitions of each of these terms. We use inequality as a broad descriptive term, noting that in many cases people involved interpret these inequalities as injustices. [↑](#footnote-ref-3)
4. These crises were caused by a complex array of factors, including previous rounds of development loans that were hard to repay, combined with a global fiscal crisis and the Volcker Shock of 1980 that significantly raised interest rates on loans (Downey 2015). [↑](#footnote-ref-4)
5. As in the 1980s and onward in Cote d’Ivoire (Bassett, 1988), and in 2004 in Baléré, Burkina Faso (Korbéogo, 2013) and in 1995 in Mangodara (Hagberg, 2001; Ouedraogo, 1997). [↑](#footnote-ref-5)