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# The Commons

Drivers of Change and Opportunities for Africa

Edited by Stéphanie Leyronas,  
Benjamin Coriat, and Kako Nubukpo



# Land-Based Commons: The Basis for a Peaceful Form of Economic Development?

Mathieu Boche, Patrick d'Aquino, Nicolas Hubert, Stéphanie Leyronas, and Sidy Mohamed Seck

## Introduction

Many natural resources and rural spaces in Sub-Saharan Africa are shared and commons-based managed by one or more social groups. These land-based commons are established forms that adopt a practical perspective on land relations in accordance with use. In many situations, they define the local regulations for accessing land and natural resources.

Land-based commons respond to multiple challenges that go beyond the already complex issue of resource management. In certain situations, they curb threats to social stability by safeguarding access to resources and land for various categories of people in local populations, as well as mitigating threats to ecological balance by relying on flexible and extensive ways of making use of resources. Finally, they support formal and informal forms of entrepreneurship that prioritize cooperation and the maintenance of a certain redistribution of resources on the basis of principles and rules that have been inherited or developed by the community (Lange, Wodon, and Carey 2018; World Bank 2018, 2019).

However, African commons are facing numerous challenges, which are linked to demographic, social, and economic transformations, as well as to climate change. This trend is multiplying the number of actors involved, with mounting pressure to come up with practices that are better suited to specific situations. On the one hand, commons are being undermined by land policies that, since independence and despite some legislative advances, have massively favored a standardized approach to the question of land, one seeking to promote the exclusive ownership of land along with its commodification. On the other

hand, they are being threatened by public policies that seek to extract natural resources as a driver of macroeconomic development.

In this chapter, we will examine how these forms of land-based commons can provide the basis for a type of economic development that preserves social stability and enables the sustainable use of natural resources. We will analyze this dynamic in three stages. In the first section, we will go through the issues related to preserving natural resources in Sub-Saharan Africa and provide an overview of the evolution of the normative regimes that define and regulate land-based commons. This section will make it possible to characterize these commons in terms of the resources they offer, the rights and arrangements on which they depend, and the social organizations that are responsible for their governance. In the second section, we will highlight and demonstrate how land-based commons are facing a series of transformations that are changing the social and political regimes that regulate their management and access. The aim of the third and final section is to provide a survey of the guarantees of security and support that these modes of managing and using natural resources require to support peaceful and sustainable economic development. In particular, it will analyze the ways to rethink the involvement of states and local authorities.

## **Construction and Representation of Land-Based Commons in Sub-Saharan Africa**

### **Issues Relating to the Preservation of Commons-Based Managed Natural Resources**

Despite its increasing urbanization, Africa remains a predominantly rural continent. The land available for agriculture is about 456 million hectares, nearly half of which consists of forests and protected areas (Chamberlin, Jayne, and Headey 2014). The labor market remains dominated by agriculture, which accounted for 53 percent of the workforce in 2019.<sup>1</sup> Land and natural resources are the economic base for millions of people living in rural areas; they impact upon issues of food security, peacekeeping, and economic growth (Lavigne Delville and Durand-Lasserve 2009).

For decades, African territories have been subject to extreme variations in the availability of natural resources, in both time and space (variability from one plot to the next or from one region to another within the same season, variability from one year to the next). This variability has been accentuated by the demographic growth observed on the continent and the reduction in surface area of arable land (Milleville and Serpantié 1994). Since the 1970s, Africa has also been one of the areas of the world that has been most severely affected by the consequences of climate change. Several studies highlight the impact that

sulfur dioxide emissions from Asia, Europe, and the United States have had on the reduction of rainfall in the Sahel, which led to the major droughts of the 1970s and 1980s (Ackerley et al. 2011; Chang et al. 2011; Westervelt et al. 2017). According to the Food and Agriculture Organization (FAO),<sup>2</sup> the continent is thus losing almost 3 million hectares of forest each year, while desertification affects 45 percent of the land, and up to 65 percent of productive land is considered degraded.<sup>3</sup>

To adapt to this variability, African societies have developed collective organizations that rely on local, composite, and evolving rules (Berkes, Colding, and Folke 2000; Ellis and Swift 1988; Scoones 1994). The purpose of these rules is to regulate access to land and natural resources (box 2.1). Their resilience lies in the fact that they can be adapted in such a way that everyone has access to sufficient resources to support themselves, whatever the environmental conditions. This flexibility can be illustrated, for example, in the rules for organizing the occupation of space in the Sahel, where agricultural, pastoral, and fishing practices are closely interconnected in the same areas. In zones where agricultural uses are a priority, pastoralism can be practiced provided that the measures necessary to protect the resource for the former are taken by the latter (e.g., limiting the damage caused by herds in cultivated fields in zones where agriculture takes priority) and vice versa. Fishing practices serve as a complementary means of development depending on changes in the water level.

These organizations, which we refer to as “land-based commons,” use and manage resources in many situations in Sub-Saharan Africa (Abernethy and Sally 2000; Beck and Nesmith 2001; Brockhaus, Djoudi, and Kambire 2012; Williams 1998). They operate through sophisticated practices, in multiscale groupings from the nuclear family unit up to subregional coordination, such as for the purpose of transhumance (Armitage et al. 2009; Berkes 2002).

### **A Diversity of Land-Based Commons Situations**

African land-based commons are often described as “customary,” but this adjective, which yokes practices to tradition, ignores their social and political evolution (Mansion and Broutin 2013). In Sub-Saharan Africa, we find a real diversity of situations involving commons, from action situations known as “primo-commons,” in which there is very little commodification, or where this at least occurs in forms that are distinct from market mechanisms, to “neo-commons,” which do, in contrast, feature commodification (Le Roy 2016). This distinction is not stabilized and can lead to discussion, but it allows us to highlight the conflict of legitimacy that exists between repositories of traditional and customary rules and norms and the normative framework of the state.

Primo-commons are the domain of local communities that have developed a common-pool means of organizing access to land and natural resources for centuries (Barrière and Barrière 2018; Brossier, Jourde, and Cissé 2018; Juul 2001;

**BOX 2.1**

## Collective Organizations to Adapt to Natural Resource Variability—The Example of Water and Grazing Resources in Kenya

In Aubert et al. (2019), Hess shows how access to water and pasture in the same territory can be organized in a variety of ways that can be continuously reconfigured according to the status of the resource in question. The Waso rangelands cover over 95 percent of the Kenyan county of Isiolo (about 20,000 square kilometers) and are part of a vast commons that stretch into the neighboring counties of Marsabit to the north, Wajir to the north-east, and Garissa to the east. In the county of Isiolo, management of the Waso rangelands is the responsibility of the Borana pastoralist group. In the course of history, other groups of herders have acquired seasonal or even multiyear access rights. Depending on the season and the resource's strategic importance, several systems of regulation and resource management are now being applied at different institutional levels:

- *Warra*: the household. The movements of the family and livestock are controlled by the head of the household.
- *Olla*: grouping of 30 to 100 *warra*. Each *olla* is headed by a chief who is responsible for community welfare. He decides, in consultation with certain heads of household, on the community's strategic mobility and its livestock.
- *Artha*: grouping of two to three *olla*. Each *artha* coordinates the use of the pastures during the dry and wet seasons.
- *Dedha*: a grazing area delimited and used by several *artha*. Each *dedha* is managed by a council of elders (*jarsa dheda*).
- *Mada*: a grazing area surrounding a water source (dam or well). Access to each *mada* is regulated by a clan (*aba ella*) that has priority rights of access to the water point. The use of wells and reservoirs is coordinated at the community level by a subgroup of the council of elders (*aba erega*), which decides on how water rotations are organized.

Strategic water sources are jointly managed by the *aba ella* and *aba erega*. The *aba ella* assign priority access rights to water, based on clan membership. If water and pasture are plentiful, secondary access rights are assigned by the *aba erega*. These secondary rights define not only who has access but also the order of priority. Access to the main water points during the dry season is strictly controlled by the council of elders (*jarsa dheda*) to avoid overuse.

Access to pastures is regulated by the *jarsa dedha*. The council allocates seasonal access rights to the land, taking into account different animals' needs (young animals, lactating females, and the rest of the herd) and the level of abundance of pasture. The council also defines reserve areas to accommodate herds during periods of drought. The council thus has authority over the seasonal movements of the entire community and over the dates of access to grazing reserves. It is also responsible for negotiating occasional access to its territory by neighboring pastoral communities.

Thébaud and Batterbury 2001). These include, for example, the management of Sahelian water sources and adjoining pastures by the lineages or fractions that founded them. Relationships within a predetermined social group (e.g., kinship, alliance, place of residence) set entitlement status and govern access to land and natural resources. Primo-commons refer exclusively to the rules, norms, and institutions of the traditional organization of societies.

These social and political constructions are often inherited from precolonial, long-standing traditions. They are based on ontologies, imaginaries, and representations of nature that are grounded in the sacredness of mother earth and its association with supernatural powers (Chene-Sanogo 2012). Recent interdisciplinary scholarly debates addressing the cultural approach to environmental systems emphasize the mutually constitutive relationships between human societies and the environment (Berkes, Folke, and Colding 2000; Cudworth and Hobden 2011; Fish, Church, and Winter 2016; Folke 2006; Masterson et al. 2017). These co-constitutive relationships are central mechanisms of many primo-commons in Sub-Saharan Africa and contribute to shaping the material and symbolic lifestyles, values, and practices attached to them. From this perspective, the environment and the various elements of nature do not refer solely to shared resources or spaces but to social constructs forming socioecosystems out of which commons are constructed (box 2.2).

First and foremost, primo-commons are shaped by representations of the world and sociopolitical structures that are unique to each society. They are structured according to the traditional rules, norms, and institutions of social groups. To understand them, it is essential to consider the different power relationships, inequalities, mechanisms of authority distribution, and processes of exclusion, whether they are gendered, social, political, or ethnic.

In a changing world, and as a result of the multiple challenges facing rural territories, fewer and fewer instances in Sub-Saharan Africa can be classified exclusively as primo-commons. Rural space brings increasingly heterogeneous actors into play (e.g., farmers, herders, miners, customary authorities, entrepreneurs, and urban elites), along with different modes of exploiting the environment<sup>4</sup> in relation to market mechanisms.<sup>5</sup> These actors do not share the same social norms and are engaged in intensifying competition (Hesse et al. 2013), yet it is from their interaction and their perceived interdependence that primo-commons are transformed and neo-commons emerge from them as an extension (box 2.3).

Thus, by their very nature, land-based neo-commons bring together different types of communities and actors: administrative communities and actors (e.g., villages or local governments), social communities (e.g., tribes, lineages, or clans), and socioeconomic actors (e.g., working youth or women). The “community” here is defined based on social relations as much as on membership and can therefore be very socially and economically

**BOX 2.2****Interdependent Socioenvironmental Relationships—The Example of Primo-Commons in Burkina Faso**

The numerous anthropological and sociological studies of the groups that make up contemporary Burkina Faso (Dassetto and Laurent 2006; Hagberg, Gomgnimbou, and Somé 1996; Héritier-Izard 1973; Izard 1986a, 1986b, 1990) show that their social and political structures incorporate substantial interpretive dimensions that influence the definition of cultural, social, and political structures while determining the terms of access to land, agricultural crops, and wildlife. Izard (1986a, 1986b, 1990), for example, describes the construction of social and political identities in Mossi kingdoms in Burkina Faso as being based around a trichotomy of power, autochthony, and ancestralism. Each of these elements proves decisive in the different ways in which the environment is interpreted and the associated access and management arrangements are made. Cultural power is connected to the immaterial dimension of the environment (or invisible world), with which it is necessary to interact to allow access to environmental services (Izard 1986b, 231). Some resources are designated as religious sites, such as sacred groves or marigots, access to which may be prohibited for agropastoral practices. Specific customs and practices associated with the intangible dimensions of the environment allow these religious sites to be maintained. In some Burkinabe communities, elders sow *nééré* seeds, or seeds from other fruit trees, during their walks in the bush; in endogenous cultural representation, it is the “spirits” (or intermediaries with the invisible world) who sow the seeds (Hubert 2021a).

**BOX 2.3****Primo- and Neo-Commons—The Case of Mohéli Park in Comoros**

In the local history of commons, the island of Mohéli is regarded as a relay island between the Comoro Islands and Anjouan. All fishers, regardless of where they reside, are allowed access to the marine area. Conflicts related to accessing resources are dealt with by three Councils of Elders (recognized leaders) and the Ulema Council (the religious authority). In the context of the establishment of the national park, on the other hand, the management of natural resources is carried out by three institutions: the park leadership, its Management Council, and its Scientific Council. The confrontation between these two models gives rise to a composite system drawing on Muslim law, Comorian law, and custom. This arrangement makes it possible to secure ancestral rights to shared resources and to build on the achievements of the fishing rules already in place, while at the same time being part of a process of subsidiarity set up by the state. This example illustrates the emergence of neo-commons that reconcile the traditional dynamics of primo-commons based on fishing and the new natural resource regulation measures linked to the establishment of the Mohéli National Park in 2001 (Aubert et al. 2017).



heterogeneous (Aubert et al. 2017). Neo-commons involve the hybridization of different registers of norms: the traditional rules for organizing local communities and the norms defined by the legal framework of the state. Integration into the community can occur for several reasons. In the context of state-supported common property, individual membership in an association holding an exclusive right to the resource may be the origin of the group of right holders. The community can also result from the very processes of creating the resource (e.g., the construction of collective irrigation canals), in which case the investment of work time is the determining factor in membership of the collective. Finally, it can result from a territorial claim or an affirmation of identity—for example, the Collectif de défense des terres de Fanaye (Fanaye Land Defense Collective).<sup>6</sup>

Like *primo-commons*, neo-commons may feature certain anachronisms and elements of vertical decision-making. However, they usually develop horizontal mechanisms for deliberating the rules with varying degrees of success. They should not be perceived as static structures that are frozen in time. On the contrary, they are exposed to the dynamic character of environmental systems and to the ongoing development of human communities.

Finally, land-based commons are increasingly confronted with the interlock of multiple resources, both tangible and intangible (Aubert et al. 2017). For example, managing a commons based around a pasture zone requires paying attention to the production, processing, and marketing of products, as well as their interactions with other domains and resources (e.g., agricultural, forestry, and nontimber forest product chains).

### **Resources, Users, and Authorities: An Analysis of Commons through Modes of Access**

Returning to the characterization of commons as presented in chapter 1, land-based commons in Sub-Saharan Africa present some unique features: territorialized resources, modes of access organized as “bundles of rights,” and flexible governance mechanisms.

African commons develop practical approaches to land relations. There is not *one* resource but *many* resources, both tangible and intangible, whose access and use are governed by rules developed and implemented by collectives operating at different scales (Delay, Aubert, and Botta 2020). An ecosystem consists of different “ecological facets” in the sense of “spatial units for combining ecological and usage data” (Blanc-Pamard 1986, 19, cited in Colin, Lavigne Delville, and Léonard 2022; Papazian et al. 2016). Each ecological facet comprises a certain number of resources, potentially varying according to the season and used by a variety of people based on a set of access and exploitation rules. Cultivated spaces can therefore also be spaces for grazing (after the harvest), gathering (trees present in the field, for fruit, foliage, bark, wood), and hunting, for actors



who may be different from the owner of the field. This results in an overlap of uses in the same space (Fache, Ancy, and Lavigne Delville 2022). Conversely, the same resource (e.g., forage resources) can be found in different ecological facets (e.g., lowlands, wooded areas, fallow lands, moors, permanent pastures, pastures on harvested fields). In each of these facets, the resource may be subject to specific ecological dynamics and to different rules of access and exploitation (e.g., free access on bushes and fallows, manure contracts with the field holder for crop residues). These different ecological facets are themselves integrated into collectively owned and organized territories.

Through the use of the “bundles of rights” principle, as discussed in chapter 1 (Epstein 2011; Penner 1995; Schlager and Ostrom 1992), African land-based commons recognize one or more functions of land and resources for the benefit of one or more persons (Le Roy, Karsenty, and Bertrand 2016). On the same piece of land, rights for the passage and grazing of animals, agricultural cultivation of the soil, hunting, and wood harvesting or gathering may coexist, each right being held over different spaces and resources and at different times by several individuals or groups (Mansion and Broutin 2013). The different components of a bundle of rights are embedded in given cultural and historical contexts and are often characterized by oral and informal agreements. They may be managed by different individuals and regulated by different authorities (such as the state or local government) and transferred separately. The practice of *tutelage* illustrates, for example, the possibility for indigenous rights holders to transfer part of their rights (e.g., cultivation rights) to migrant families who arrived after the initial distribution of land. The counterpart can either be a share of the harvest or monetary (Chauveau 2008). It is therefore not the status of the land (communal, private, or state owned) that determines land relations in Sub-Saharan Africa but the rights that govern access to land and resources.

Finally, African land-based commons develop flexible governance arrangements<sup>7</sup> that draw, depending on the context and purpose of land tenure security, on different tenure regimes derived from custom, religion, law, governmental bodies, or elections (Papazian et al. 2016). The rules arising from the different registers are (or are not) made use of by participants in commons, depending on whether they are (or are not) seen as opening up new opportunities in the management of commons. African land-based commons thus have to deal with the legal pluralism at work in African territories (Goldstein et al. 2015), which we will discuss in the next section, with an understanding of “juridicity” in order to “be emancipated from legal science” (Le Roy 2021).<sup>8</sup>

In the next section, we will discuss in greater detail how these different regimes that mutually constitute commons are adapting to different structural developments. These evolutions can be environmental and initiated by climate change or social, triggered by internal political reconfigurations in Sub-Saharan

African countries or by the multiscale integration generated by globalization, which puts the local in competition with the global. These changes can be self-sustaining and emerge locally from the very communities that make up commons, or they can be perceived as being imposed from above by exogenous actors. In each case, they can represent both threats and opportunities for the perpetuation of land-based commons.

## Drivers of Change in African Land-Based Commons

Land-based commons are facing a series of changes that are transforming the social and political regimes that govern their management and access. These changes can be opportunities for commons, or they can jeopardize their very existence. They are associated with different phenomena, ranging from the process of modernization to the reconstruction of political regimes, as well as demographic and land pressure and urbanization processes. In this section, we emphasize four main drivers of change and risk for commons: the orientations of policies for formalizing land rights, competition between the uses of natural resources and conservation issues, the processes of individualization and commodification, and, finally, the processes of monopolization.

### Commons-Based Managed Spaces and Resources: The Poor Relation of Land Policies

Colonization was the source of profound changes in land tenure systems in that it imposed a modern legal framework that was far removed from customary norms and oriented toward private property. The latter was then determined by the administration and based on the issuance of land titles and the establishment of a land registry (Chauveau 2018; Payne, Durand-Lasserve, and Rakodi 2009). The legitimacy of land-based primo-commons was contested, to the point that they were considered “vacant and ownerless” spaces (the principle of state ownership) and declared the eminent property of the state, which appropriated the natural resources (e.g., wood, minerals, land).

Following independence, a large part of the population occupied, lived on, and made use of land without having legally recognized rights to it. This situation went on for a long time. The colonial and postcolonial regimes gradually created a dualism in land management. This dualism manifests itself in several forms. The first is spatial dualism, because the legislative texts make a distinction between the way in which land can be managed and used by colonists, on the one hand, and indigenous populations, on the other. Second, it manifests itself in legal pluralism as a result of the superimposition of regimes in areas where the land tenure systems associated with primo-commons, based on use, have persisted alongside the so-called modern land tenure systems,

based on ownership of the land base, after independence. In the same territory, different sources of legitimacy (customary, neo-customary, colonial, and neocolonial<sup>9</sup>) can thus overlap or clash, opening up the possibility for actors to circumvent local rules by mobilizing other norms and other authorities and vice versa.

This legal pluralism is coupled with a plurality of authorities (bodies issuing access rights and arbitration bodies): land chiefs, administrative village chiefs, territorial administration, technical services, and communally elected officials (Lavigne Delville 2012). In contexts of strong legal and institutional uncertainty, the limits of legitimacy of the different norms and the hierarchy of mandates between these different authorities are regularly called into question. As competition for resources increases with growing demographic pressure, the selective and competitive mobilization of one tenure regime or another and the appeal to various arbitration bodies lead to land use conflicts, land grabs, and social and even political tension (Chauveau 2018).

It was at the time of structural adjustment policies that the formalization of land rights in written form was promoted as a condition for economic development (Lavigne Delville and Mansion 2015). Spurred on by World Bank research on land programs in Thailand (Feder and Nishio 1998; Feder and Onchan 1987)<sup>10</sup> and the theories of De Soto and Diaz (2002), many land formalization programs have emerged in Sub-Saharan Africa with the objective of unifying rights through the promotion of individual private property. Land legislation has then often led to the weakening, or even delegitimization, of local land-based commons (Chauveau 2018).

This systematic registration approach aims to make an inventory of all plots of land and to formalize the rights that apply to them. These policies aim to group “informal” rights into one of the legal categories provided for by the law. This may result in the issuance of a land title resulting from the registration procedure or from certificates or attestations (Lavigne Delville 2018). However, these documents generally do not specify the content of the rights held by the various rights holders over a plot. They are therefore interpreted as evidence of exclusive private ownership. The systematic application of these policies most often amounts to a profound transformation of rural land rights and the exclusion of many rights holders. Those with rights of access to natural pastoral or forestry resources in areas under shared governance are generally the ones who are forgotten and lose out the most in these approaches.

Since the early 2000s, alternative hybrid approaches to land tenure security based on governance and securing social arrangements have emerged. The evolution of some of these approaches over the past 20 years, aimed at ending the principle of state ownership and recognizing different land tenure relationships,

has in part allowed for the securing of land-based commons. These reforms, which represent a legal and sociopolitical revolution, remain insufficient and still have many shortcomings (Mansion and Broutin 2013).

### **Perceptions of Nature and Conservation Policies**

In Sub-Saharan Africa, the colonization process not only profoundly shaped the relationship to land and its management but also attempted to impose a Western perception of the environment and sociocultural representations of nature. From the colonial perspective, Sub-Saharan Africa was seen as a primitive natural sanctuary to be exploited or protected, one devoid of any human presence (Hartmann 2014; Rodary 2011; Selby 2014; Selby and Hoffmann 2014; Verhoeven 2014). Under the aegis of colonial administrations, numerous natural protected areas (parks and reserves) were then created (box 2.4), relying on a conservative perception of the environment based on the control of territory and the exclusion of riparian communities (Duffy 2006; Hagberg, Gomgnimbou, and Somé 1996).

The establishment of nation-states inherited from the colonial period was a continuation of the objective of increasing control over natural resources (wood, minerals, land), which often led to local powers being undermined and the increased protection of parks and reserves. The deployment of water and forestry agents in West and East Africa in the twentieth century resulted in the claim to a “monopoly of nature protection” in the name of “public utility” and “raison d’Etat” (Bergeret 1994). While constituting a security force within those regions where natural protected areas are located, these water and forestry agents have often been met with reluctance by local populations and have even resulted in major local conflicts (Duffy 2006; Hagberg, Gomgnimbou, and Somé 1996; Hubert 2021b; Massé 2020; Poda 2001; Sachedina 2010). In South Africa, nature management and the creation of reserves and protected areas was also one of the centerpieces of the territorial engineering involved in colonial segregation and subsequently in apartheid (Giraut, Guyot, and Houssay-Holzschuch 2005). Later, the rise of climate change and biodiversity preservation issues on the international scene reinforced these dynamics (Obura and Treyer 2022), with environmental conservation spaces being considered crucial in the fight against climate change (Saradoun et al. 2022; Villette 2021).

These conservation areas were established by demarcating large areas originating from colonial hunting reserves. The riparian communities were then deprived of access to environmental services, including flora, traditional medicines, and fauna. Hunting activities, traditionally practiced for dietary subsistence, were criminalized and treated as poaching, unless hunting permits were obtained at prohibitive costs. These large conservation areas, such as the Transfrontier Conservation Area in Kavango-Zambezi, have favored

**BOX 2.4****The Protected Natural Areas Model in Sub-Saharan Africa**

The model of protected natural areas that are exclusively for conservation is proving to be increasingly controversial. These environmental protection areas, including reserves and national parks, represent a real asset for biodiversity conservation, especially in those regions that are most vulnerable to climate change (Turner et al. 2021). However, the imposition of a restrictive vision of conservation on fenced areas that do not allow any other use of previously shared resources has led to numerous local and national conflicts. The example of the Ngorongoro Conservation Area in Tanzania illustrates this tendency toward conflicts (Gagnon-Champigny 2020).

Faced with this observation, several local initiatives have emerged on the continent and are making it possible to generate a true entrepreneurial model combining the preservation of commons, the management of conflicts over use, and local economic development. This is notably the case of the alternative “Fortress Conservation” model in Tanzania (Blache 2020) or the village hunting zones (VHZs) in Burkina Faso. In southeast Burkina Faso, communities bordering the Pama Reserve, located within the socioeconomic integration zone of the Arli National Park, have formed a VHZ in order to develop their own tourism industry based around wildlife observation and small game hunting. This self-managed nature reserve makes it possible to increase the economic benefits of tourism and to distribute them more equitably among local communities. VHZs also play a role in protecting the environment and preserving land-based commons in areas marked by the expansion of agricultural activities. By integrating the socioeconomic fabric endogenous to environmental conservation and increasing the economic benefits associated with tourism, these self-constituted areas reinforce both riparian populations’ appropriation of natural protected areas and the efficiency of their role in protecting biodiversity (Hubert 2021b, 8–10).

We can observe a similar dynamic with the conservancy model deployed in Namibia (Galvin, Beeton, and Luizza 2018). These conservancies are constructed on a communal basis but remain under the administration of regional conservation associations. They have both a conservation mission, involving managing conflicts of usage and local development through the sustainable use of natural resources, notably via tourism and hunting, but also including social objectives (notably through investments made in communities, e.g., in education and health services). The conservancies in Namibia benefit from many international donors but are seeking greater autonomy by attempting to diversify the funding sources available for their operations. This shift in the business model, however, risks generating a certain dependence on international finance, whose primary objectives may appear distant from the social benefits also offered by the conservancies. Similarly, although these conservancies are designed to be self-managing and to integrate traditional authorities, as well as to work closely with local populations, local decision-making bodies generally have no rights to the land and remain dependent on the decisions that national authorities may make on land management. This is one of the main limitations expressed by conservancy members.

These community-based conservation models thus face a range of challenges (Campbell and Shackleton 2001): clarifying the mandates of regulatory authorities, governance and collaboration with local governments, transparency of management bodies, funding for ongoing social engineering over time, and respect for legitimate land rights within land policies.

centralized governance and an economic model based on revenue from international tourism.

As an alternative to these major conservation programs and the establishment of public protected areas, a wave of programs supporting community-based natural resource management emerged in the 1990s. Faced with the failure of large national programs, community-based forms of natural resource management conservation have emerged, directly rooted in land management approaches and embracing the dynamics of decentralization in many countries across the continent (Bollig 2016; Rodary 2008).

### **The Process of Individualizing and Commodifying Commons-Based Managed Land and Resources**

Demographic pressure, the rise of market forces, and the desire that younger members of society have for greater autonomy have led to the restructuring of domestic units. Larger family units, where they formerly existed, are tending to fragment in the direction of the household scale, which is asserting itself as an economic unit (Quesnel and Vimard 1996; Raynaut and Lavigne Delville 1997). These changes can coexist with the maintenance of land management at the level of extended family groups. However, they influence the rules of land transfer within the family group.

These processes of individualization can be coupled with the commodification of the land (Lavigne Delville et al. 2017). Depending on the rural society, this commodification may be part of a long-term process or more recent in nature (box 2.5). There are multiple drivers of this: insertion into commodity chains, emergency or distress sales (e.g., medical expenses, family events, weddings, and funerals), reconversion strategies, adjustments related to the fragmentation of inheritances, or offers from external actors. Administration rights and usage rights tend to be bundled together in these processes and become similar to property rights. The holders of land rights then act as *de facto* owners (Bon et al., forthcoming).

The individualization and commodification of rights do not necessarily go hand in hand (Colin and Bouquet 2022). There can be commodification (e.g., at the level of lineage segments) without complete individualization of rights (Diongue et al. 2021; Magnon 2013). Conversely, when faced with financial opportunities, younger members of society who normally do not have the right to sell, or even actors with no land rights, may engage in land transactions or question arrangements made by their elders.

The conditions under which agriculture is practiced, particularly natural parameters (climate and soil fertility) and the framework provided by public policies, also influence land tenure practices in rural areas (see chapter 3). Thus, the marginalization of agriculture or the lower profitability of production due to agricultural policies (cost of labor and inputs) and climatic unpredictability

**BOX 2.5****The Emergence of Private Ownership and the Commodification of Family Land in Southern Benin**

Simonneau (2015) recalls the relatively long-term processes of the emergence of individual ownership and the commodification of land in Benin. The traditional regime, as in other Sub-Saharan African countries, sees land as a sacred and inalienable resource. Its management on behalf of the community is conducted by a land chief, who is also a spiritual leader. The notion of individual ownership does not exist (Ouedraogo 2011). Several political, social, and economic developments nevertheless led to the emergence of individual ownership before the colonial period (Mondjannagni 1977; Pescay 1998).

An initial shift took place at the beginning of the seventeenth century with the creation of the great royalties, whose kings claimed land powers for themselves. The latter had their palaces built on domains that were initially ancestral or gave them to royal delegates for management, which constituted a first type of private appropriation of the land.

At the end of the seventeenth century, under demographic pressure, the king's authority weakened, as did the spiritual component of the bond between human beings and the land. Work gradually became the main basis of the right to land, and the previously inalienable and sacred character of the land became more flexible. In addition, ancestral lands were gradually being organized around more segmented categories (clan, ethnic group, lineage, family). The dispersion of clans and ethnic groups, migrations, and the assimilation of foreigners mean that only family properties remain.

Individual ownership emerged in the nineteenth century for three reasons: (a) royal delegates ended up taking over the land they were only previously responsible for managing and sometimes gave it to freed slaves; (b) after the abolition of slavery in 1848, the explosion of trade in palm oil products increased the economic importance of palm grove ownership; and (c) certain social groups emancipated themselves from customary land rules, such as freed slaves returning from Brazil with a strong attachment to the notion of land ownership acquired on the plantations.

Facilitated by these developments, the sale of land by customary owners became possible in the 1990s (Sotindjo 2010). Colonial legislation ("Coutumier du Dahomey" 1933) provided for the sale of family land. The commodification and individualization of rights increased in the 1990s under the influence of democratization, structural adjustment programs, and the collapse of the banking system (1988). Land ownership, even when semiformal, embodies aspirations for social ascension and has a central savings function in the household economy.



(violent weather events, hydric stress, and irregularity of rainfall) stimulates the sale of land, particularly for real estate development (Bon et al. forthcoming).

The emergence of urban middle classes in Africa with savings and investment capacity has reinforced the development of land markets in many rural areas of the continent. With the capacity to invest, but also with political influence or support, executives have acquired land in order to engage in agriculture or for real estate purposes. In Côte d'Ivoire, investments by urban executives are one of the major determinants of the development of the cocoa and rubber plantation economy (Ruf, Salvan, and Kouamé 2020). The development of land markets also occurs in conjunction with urban sprawl (Durand-Lasserve, Durand-Lasserve, and Selod 2015). In many cases, appropriations occur on spaces that are commons-based managed or used for different purposes.

### **Multiple Land-Grabbing Processes**

Land-based commons are also exposed to land-grabbing processes (box 2.6). These land grabs are the result of internal dynamics as well as the attraction of national and international investors.<sup>11</sup> These large-scale land grabs have taken on many forms, most often involving the granting of land concessions by states to investors (Boche 2014). National laws allow the state to expropriate land valued by local populations in the name of public interest so that it can facilitate the arrival of investors seeking to develop agroindustrial plantations.

Special economic zones (SEZs) have also proliferated on the continent in recent years. In general, SEZs are intended to promote investment to foster industrial development. States invoke the concept of public utility in order to register the land in its name and transfer management to the administration. In Senegal, the law creating SEZs was adopted in January 2017. In the face of the stalled land reform process, concerns have been expressed that the establishment and operation of SEZs could facilitate a form of state reappropriation of land control over areas with “high economic potential.” In Madagascar, successive laws and programs have established various forms of SEZs: free zones and free enterprises, industrial investment zones, and agricultural investment zones. The SEZ law led to public challenges in 2017 and reservations issued by the High Constitutional Court. A draft law on “special status land” was also created in 2020 to formalize the status of areas dedicated to investment but also protected areas or pastures. It too is controversial, as it provides that the lands concerned, including community lands, be titled in the name of the state and managed by the administration (Burnod et al. 2022).

This process has three major consequences. It alters the social and cultural roles that co-constitute land-based commons. It modifies the relationship of populations to the land, deconstructing the social structures that were previously associated with it. It intensifies the conversion of land uses (for industry, agribusiness, or real estate) in areas often already heavily used by local communities for their own food production (agriculture, livestock, gathering,

**BOX 2.6****Commons Undermined over Mineral Resources**

According to the report *Structural Transformation and Natural Resources* (AfDB et al. 2013), opening up access to natural resources to international economic actors is encouraged to stimulate the growth of a country's gross domestic product and to take advantage of the revenue from mining or other industries (Ashukem 2020; Delors 2019; Gyapong 2021; Oliveira, McKay, and Liu 2021) so as to initiate national development projects (Campbell 2009). Actors exploiting natural resources for industrial means are guaranteed priority access by modern land codes and land tenure regimes (Campbell 2009; Chouli 2014; Hubert 2018).

In most cases, mining codes rely on the modernization of land tenure regimes and codes to establish “financial compensation” for populations expropriated by mining development. This process can have positive spillover effects on local populations (Chuhan-Pole, Dabalen, and Land 2017). However, it assigns a monetary value to the land, which is calculated in terms of the economic value of the farmers’ annual agricultural yields and transposed onto the individual property regime.

In Burkina Faso, this monetary value is directly associated with a sense of danger by communities in the sense that it tends to negatively modify living habits, intracommunity relationships, and the connection to the land. With the inflation generated locally by the establishment of industrial mining sites, people who have received financial compensation often find themselves quickly short of money. They are not used to managing their budget over several years, do not have access to infrastructure that allows them to store large sums of money over the long term, and no longer have agropastoral spaces or economic activities in which they could invest their capital. They are then exposed to theft, racketeering, and predation, which quickly places them in situations of great insecurity.

The mining companies also exploit the confusion generated by overlapping land tenure regimes, as described earlier. The Burkinabe mining code states that the subsoil is the property of the state and decides on the procedures for determining compensation in case of expropriation. In accordance with this code, compensation for mining companies is set in exchange for the transfer of exclusive ownership of the land and natural resources. They are determined according to a price per hectare set by the mining companies based on a fixed indemnity, calculated on the annual yield of agropastoral operations over a three-year period. The operators, on the other hand, sign an agreement for the transfer of their exploitation rights for a temporary period.

Thus, the most striking alteration brought about by the financial compensation of land expropriations in Sub-Saharan Africa is the monetary value conferred on land. It effectively establishes the private and individual character of property and deprives land tenure of its sociopolitical role in the environment (Hubert 2018, 2021a).

or fishing). The expropriated people then look for new land on which to practice their agricultural or pastoral activities, or else they decide to emigrate. Thus, in addition to accelerating the transformation of ecosystems, the privatization of spaces where common-pool resource management takes place leads to the transformation of the social, economic, and cultural fabric of land-based commons.

To conclude the first two sections of this chapter, observation of the dynamics under way in the field reveals the vitality and ingenuity of local actors in land-based commons. Building on traditions and experiences of land and resource pooling in situations of climatic and socioeconomic uncertainty, original and innovative forms of pooling are emerging and gradually being structured so as to respond to the multiple social, economic, and ecological challenges they face. However, the institutional and political frameworks in which these dynamics are emerging are not evolving at the same speed. They remain anchored in standardized frameworks, fixed and unsuited to current and rapid changes in the environmental and socioeconomic context. The forms of commons-based entrepreneurship that emerge from these social innovations therefore find themselves in an institutional context that does not allow for sufficient recognition, security, and support to ensure their sustainability.

## **Developing Commons-Based Entrepreneurship for Land and Natural Resources**

Under certain conditions, land-based commons can lead to the monitored and measured development of agro-entrepreneurship. Developing commons-based economic entrepreneurship (see chapter 1) requires several levels of security that must be addressed in an integrated manner (box 2.7). The first is the establishment of land governance arrangements that take charge of the management of territories and allow the rules, agreements, and use of commonly managed resources to be established. Second, it is about securing the financial and economic conditions for the development of these economic activities. Finally, it is a matter of (re)thinking the commitment of the state.

### **Safeguarding Use Rather Than Ownership**

Legal pluralism and the involvement of a number of different authorities result in significant land tenure insecurity for holders of land-based commons in Sub-Saharan Africa. This feeling of security of tenure is understood here as the ability to have confidence in the fact that the rights one holds over land and natural resources will not be challenged without reason and that, if they are, they will be confirmed by arbitration bodies considered legitimate. It is therefore required that land regulation institutions be effective, that their decisions be predictable, and that conflicts be arbitrated in favor of legitimate right holders.

**BOX 2.7****Supporting the Development of Commons-Based Economic Entrepreneurship in the Senegal River Valley—An Integrated Approach**

Support for the growth of commons-based economic entrepreneurship in the Senegal River Valley has been organized in a triple-pronged strategy, the systems and tools for which were progressively developed by a cluster of projects financed by the Agence française de développement (AFD) (French Development Agency) since 2012, which were then implemented throughout the territory by local actors. The strategy involves (a) the provision of social and land security tools; (b) the establishment of local development funds, managed by municipalities, for the realization of infrastructure essential to the development of economic entrepreneurship; and (c) the organization and development of local actors' capacity for greater integration into the most profitable local sectors. These tools have facilitated the emergence of numerous entrepreneurial initiatives in the region's agrosilvopastoral sectors.

The securing of the use of natural resources has been formalized in a communal document called the Plan d'occupation et d'affectation des sols (POAS), which is enshrined in Senegalese decentralization laws and policies (Bourgoin et al. 2020; d'Aquino et al. 2020; Papazian et al. 2016; Richebourg 2019). The POAS allows for the official recognition and safeguarding of common lands included in these plans. This recognition implies a legal recognition of local, common-pool governance of these resources. Commons have been secured through precise registration maps of secured rights in affected plots registered in a Land Information System at the communal level. In the case of commons-based managed spaces, the question of allocating land to collectives in a form that is not considered private appropriation (or "internal monopolization," as some villagers have pointed out) arises. Several legal formats are being experimented with, such as economic interest groups, users' associations, and the creation of communal zones.

The areas that are communally managed in the valley are generally located in the area outside the major riverbed. This is an area that suffers from a lack of basic infrastructure, particularly that which is necessary for economic development (cattle pens, meat markets, pastoral water points, dairies, collection centers for harvested products, pastoral and forestry facilities). Financial securitization has focused on financing public infrastructure in such a way that the management of funds is adapted to joint social organizations. A local financing line has been created, the Fonds d'Appui aux Investissements (Investment Support Fund), the management of which has been entrusted to local authorities. The infrastructure is installed on land allocated by the local authority, which is legally responsible for managing the land and then grants a mandate to an association of local users to manage the infrastructure. An effort has also been made to create pastoral units that assemble the users of an area surrounding a permanent water source (usually a borehole) for the more productive development of this area as a commons. Physical or

*(continued next page)*

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**Box 2.7 (continued)**

organizational developments (pasture management) and technical support for productivity are implemented and can follow the same management mandate scheme as for infrastructure, in order to promote more productive resource management while making it possible to organize their use collectively. This formula thus allows this community to better ensure the preservation of local resources, the health of animals and ecosystems, the concerted management of natural and pastoral resources, and an increased income for the actors and the local community in an integrated way and under its own direction.

The process of ensuring economic security has focused on identifying high value-added sectors. The forms of support have been diverse, ranging from strengthening the organizational dynamics to enhancing the value of the entire value chain.

This integrated system initially provided the basis for a major part of Senegal's rice production, before being extended over the past 10 years to agrosilvopastoral resources in nonirrigated areas.

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The way in which land tenure is secured has been the subject of controversy since the colonial period. There is tension between the objective of promoting access to legally recognized rights for efficient economic agents and the objective of protecting existing rights, particularly for those in the most vulnerable groups. Since the 1990s, most countries in Sub-Saharan Africa have implemented large-scale formalization policies for “customary” rights. These policies, referred to as “registration,” “legalization,” or “securing land rights through title,” have had mixed results, and in Africa, only 5 to 20 percent of land is now reportedly registered, that is, recorded and entered in a land book or registry that is guaranteed to be maintained by the state (Mansion and Broutin 2013).

This property-based perspective, which is the predominant approach today, raises several questions:

- It equates the land base (the spatial surface) with the resources it contains (Delay, Aubert, and Botta 2020). Access to the resource is guaranteed by access to the space, which amounts to ignoring the possible interconnection of resources within the same space, the connectivity of these resources with other spaces, and the different users and forms of use at work discussed in the first section of the chapter. This approach obscures those practices of commons that stem from societies' historical adaptation to their environment and whose sense of land security depends more on social recognition than on legal recognition (Le Roy et al. 2019).
- In a context of legal pluralism, any new land policy is not imposed *de facto* but is added to existing modes of regulation so it can be reinterpreted and hybridized (Papazian et al. 2016).

- Colonial and then postcolonial authorities had already shown some reservations about systematic and authoritarian campaigns to securitize land and distribute it among peasantry, entrepreneurs, and international firms because of the risks of aggravating social and ethnic divides (Chauveau 2017).
- The idea that lack of access to full ownership is the main obstacle to investment has been challenged in numerous analyses (Binswanger, Deininger, and Feder 1993) that point to the price relationship between agricultural production and inputs, dysfunctions within the sectors, difficulties in accessing bank credit, and climatic risks. The expected benefits of formalization do not, therefore, take into account the need to act at a more global level of agricultural and economic policies in order to combat the precariousness of farmers in Africa (Bromley 2009).

The legal and social securitization of land-based commons presupposes that the formalization of rights is considered just one means among others and that it paves the way for a flexible approach to safeguarding rights. This requires a fine-grained understanding of “action situations” (see chapter 1) and adopting a pragmatic approach to land relations. Goulin et al. (2018) show, for example, that the development of family fish farming in certain communities in Côte d’Ivoire helps to meet national market demand while developing local entrepreneurship, strengthening the socioeconomic fabric, and making use of swamp-land or partially swamped locations that are less exposed to land pressure. This agro-entrepreneurship is developed through the acquisition of land from customary authorities, either by donation, counterparty, negotiation, or purchase for nonnative actors, or by inheritance for native actors. This development of entrepreneurship participates in the shift in regimes that jointly constitute commons as well as in the transformation of environmental uses and services. Goulin et al. (2018) conclude that the transformations brought about, when they remain within commons, have “made it possible for fish farmers, regardless of their mode of access, to enjoy the right to make use of the fish farming areas that had been ceded to them in an almost uninterrupted and continuous way. It should be concluded that these modes of access are all favorable to fish farming when the fish farmers are guaranteed permanent exploitation rights.”

In concrete terms, the rights of access to and use of natural resources can be secured through the adoption of land use planning and land tenure security tools. The knowledge and sharing of information on ecological potential and users, as well as the mapping of uses and management rules, are essential prerequisites. Security is achieved through the mapping of priority zones, the formalization and dissemination of the access and management rules in force, and a permanent coordination mechanism to ensure that these provisions are respected.

## **Securing and Promoting the Conditions for the Emergence of Commons-Based Entrepreneurship**

If we refer to the categories proposed in chapter 1, the economic models of land-based commons are most often market based, in the sense that participants in commons value the units of resource taken from commons in the market through the rights they have been allocated. But land-based commons are also based on hybrid models. Beyond the safeguarding of access and usage rights over natural resources, the development of commons-based entrepreneurship relies on four additional factors.

The first factor is the financing of collective infrastructure that makes it possible to create value from natural resources. This includes large-scale hydro-agricultural developments, pastoral water systems, storage, marketing and distribution infrastructures, and access roads, for example. This development requires prior negotiation with the rightful claimants and local actors as well as their free, prior, and informed agreement on the compensation for the damage caused, then their involvement in the creation of these collective resources, in the form of contributions in kind (e.g., free labor) or in cash (e.g., cofinancing of the acquisition of equipment or replenishment of a maintenance fund). The delegation of the management of the work must be accompanied, if necessary, by capacity building and be carried out in a proportionate manner based on commitment contracts signed between the beneficiaries, the state services, and the representatives from the local authorities.

The second factor is the organization of sustainable collective action. Understood as arising from the mobilization of a group of people who are aware of their common interest and their advantage in defending or advancing it (Froger and Méral 2002, 15), collective action can take the form of multiple institutional arrangements combining actors and instruments of public, market, and community regulation. The development of collective action in natural resource management is made difficult by a set of factors such as the identification of the relevant territorial scale, conflict between objectives that are at odds, and the difficulties of carrying out precise monitoring that allows for decision-making and is supported by an institution recognized as legitimate by all participants (Petit 2019). The mobilization of preexisting ecological and social solidarities and the recognition of the heritage value of the territory and of natural resources are powerful vectors for ensuring mobilization over time. Collective action will flourish on this fertile ground provided certain conditions for effectiveness are met (box 2.8).

The third factor that abets the emergence of commons-based entrepreneurship is the existence and accessibility of a technical and economic management support system to enable the establishment of a stable economic model. Entrepreneurs are too often left alone to develop their production and marketing



**BOX 2.8**

## Conditions for the Effectiveness of Local Agreements Establishing Collective Action

The 2012 Negos-GRN research program *Promouvoir une gestion locale concertée et effective des ressources naturelles et foncières* (Promoting Concerted and Effective Local Management of Land and Natural Resources) identified a set of conditions for effective collective action:<sup>a</sup>

- Having a shared understanding of the problem and the key resource management issues in order to develop a collective, shared commitment.
- Co-constructing and negotiating clear, applicable, and adaptable rules for access, operation, and administration. The rules must be appropriate, make sense to the actors for whom they apply, and be simple and workable.
- Putting in place low-cost and inexpensive monitoring and sanctioning mechanisms.
- Considering local negotiation frameworks and representation issues (e.g., historical links between villages or elders' rights in speaking and decision-making).
- Identifying and working on substantive issues with common actors.
- Obtaining support from the state's technical services to allow a margin of flexibility between the legal framework and the application of local arrangements. The involvement of decentralized local authorities is crucial to lend a certain legitimacy to the operating agreements of commons and to ensure mediation with the state services.
- Mobilizing a set of actors recognized as legitimate to provide information or legal recognition. The perceived legitimacy of technical services to provide technical oversight and support is an important factor. Similarly, local governments and local communities are generally relevant for the legalization of agreements to form the group of common participants.
- Ensuring compliance with existing rules at the time of the first infractions. The credibility of the management system depends on it. A second litmus test occurs when the collective must adopt the rules it has set for itself.

a. The source for this information is policy briefs developed under the Negos-GRN program implemented by a consortium of actors led by the French nongovernmental organization GRET.

models. Advisory and management systems are often lacking because of low government investment in agricultural and rural training. On the continent, there are several systems financed and supported by producers' organizations and agricultural sectors (including management and rural economy centers in Senegal, local agricultural advice from the Malagasy professional agricultural organization Fifata, service delivery centers in Mali, and the program to consolidate and sustain agropastoral advice in Cameroon).

The fourth factor is the capacity for commercialization, which makes it possible both to secure the income of participants in commons and to provide the means for collective action. The economic model is necessarily dependent on the nature of the products and their destination. Economic sustainability requires the integration of the economic activities of commons into promising sectors, including the organization of production, collection, processing, and contracting with other actors in the sector. This also requires regulatory mechanisms such as hunting quotas or financial mechanisms such as taxation, which recognize the social and environmental value of the services provided by commons. The marketing of production and the certification of accounts by management and rural economy organizations allow participants in the common property grouped in associations, cooperatives, or economic groups to have access to rural credit.

### **Rethinking the State's Commitment**

Safeguarding land-based commons, as well as the forms of entrepreneurship they encourage, depends on negotiated and institutionalized local management that allows for the strengthening of both collective and public action. With few exceptions, African land-based commons need the technical and political support of public, state, and decentralized actors in order to bolster their legitimacy. They also need to be able to mobilize these public actors to strengthen their capacity to act, particularly to have access to technical support and to ensure that their rights are respected. Proper coordination between these modes of regulation makes it possible to reduce uncertainty about the norms governing the exploitation of natural resources and about the authorities' capacity to ensure the effective implementation of the rules (Ndione and Lavigne Delville 2012).

The effectiveness of negotiated local management depends on many factors (box 2.9). Above all, it presupposes a reciprocal recognition of legitimacy but

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#### **BOX 2.9**

### **Success Factors for Conservancies in Sub-Saharan Africa**

According to Campbell and Shackleton (2001), the success of conservancies depends on eight factors: the genuine political will of governments to transfer decision-making authority to the local level across the entire bundle of rights; clarification of the mandates and relationships between the different actors; integration of natural resource management commissions into decentralized local governments; representativeness, accountability, and transparency of management bodies; continuous social engineering over time; recognition of the place of traditional authorities; support for the private sector to generate income based on the use of resources; and recognition of the added value created in order to determine the best organizational structure.

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also of the interests and needs of each party. It calls into question both the commitment of the authorities and the position of the communities concerned (box 2.10).

On the side of the public authorities, negotiated local management requires the construction of real subsidiarity frameworks that make the coexistence of practices and decision-making at the appropriate scales coherent (Hesse 2011). This consists in coordinating the legitimate authorities at the different levels of rules as recalled in chapter 1 (operational level, collective level, and institutional level). Users remain in control, in space and in time, of the development of operational rules and of part of the collective rules (Delay, Aubert, and Botta 2020), which are therefore not based on externally imposed norms (see chapter 7). From this perspective, for example, a land or natural resource

#### BOX 2.10

### The Principles of a Tripartite Agreement—The Example of the Senegal River Valley

The contractual form chosen to safeguard commons-based entrepreneurship in the valley is a tripartite agreement, one between users of natural resources, a local community, and a public technical partner. It takes up the fundamental principle of the traditional management of commons in the valley (Schmitz 1994) and incorporates the diversity of the parties involved into the agreement, each assuming its traditional role in the organization of society.

This type of contract defines the rights and duties of the three partners, each one bearing witness to the commitments of the other two. It provides legal and social security for the economic exploitation of the area, without private appropriation. This formula was implemented, starting in 2005, for the use of water in the context of hydro-agricultural developments: the contract, called the *Charte du domaine irrigué* (Irrigated Domain Charter), brought together the water user (irrigation farmer on a public hydro-agricultural development), the *Société d'aménagement et d'exploitation des terres du Delta du Fleuve Sénégal* (SAED) (Society for the Organization and Exploitation of the Senegal River Delta), and the local community, which was responsible for the land base. This tripartite contractual form has been extended to public infrastructure for investment, with the addition of a management mandate, as well as to the agrosilvopastoral development of a common space.

This type of contract makes it possible to empower and legally recognize the moral identity of a collective of users without transferring property rights. It also makes it possible to provide regulated access to users who are not members of the association or group of legal entities managing the infrastructure, the space, or the resource. However, the day-to-day benefit of these tools is still underutilized, and their inclusion in the long term constitutes a strategic challenge for SAED.

management law must remain a framework law to allow local actors to design, propose, and define operational and collective rules and processes for resource management (GELOSE Law in Madagascar, Land Law in Niger).

On the side of the communities involved in land-based commons, mobilizing the support of public authorities entails engaging with them and recognizing their interests, which can be manifold: “for local authorities, an interest in seeing their legitimacy reaffirmed; for elected officials, a political and symbolic interest in getting involved in a subject of interest to their fellow citizens; for technical services, interest in being able to present instances of sustainable management” (Lavigne Delville and Djiré 2012a, 1).

The modalities for implementing collaborative management have been the subject of an extensive literature (Bachir, Vogt, and Vogt 2007; Djiré 2003; Djiré and Dicko 2007; Faye, Haller, and Ribot 2018; Ostrom 1990; Petit 2019; Seegers 2005; Tall and Gueye 2003). It appears that in many situations, agreements benefit from being formalized by law. Legal recognition lends agreements between parties the power of local regulation that can be enforced against third parties and limits the possibility of their being challenged by the state. The involvement of commons, when the decentralization processes at work allow it, is often preferable to the technical services of the state, as commons are elected bodies that are normally closer to the concerns of citizens (Lavigne Delville and Djiré 2012b). However, legal formalization remains a first step, and it is over time, in the face of reality, that the effectiveness of such mechanisms is to be determined (box 2.10).

## Conclusion

Land-based commons are rooted in the age-old experience of African societies when it comes to adapting to environmental and socioeconomic uncertainty while preserving access to resources, and thus survival, for the maximum number of users. Their nature and form evolve with each new context. Over the past few decades, hybrid neo-commons have emerged that combine pooled administration, individualized initiatives, and private investment. Many examples therefore show that a more peaceful form of entrepreneurship is being integrated into the evolution of commons, in innovative forms that ensure a social balance that can prevent tensions and conflicts from arising.

The sociopolitical nature of the regulation of land and natural resources is thus emphasized in this context and leads us to question the most appropriate forms of regulation and public policy, in a situation characterized by legal plurality and frequent competition between land regulation actors.

A strong guideline emerges from this chapter: given the nature of states in Sub-Saharan Africa, in many situations, only local populations have an interest

in preserving natural resources over the long term. However, they can only do so to the extent that they retain the capacity to define and enforce their collective rules of operation within a clear institutional framework that is backed up by the state. It is not so much the legal status of the area in question that seems to be decisive but rather the guarantee of exploitation rights, the suitability and effectiveness of the rules, and the clarity of the institutional framework.

In this context, the challenge is to establish the foundations for collaborative management and development involving participants in land-based commons, public actors, and private investment. This type of collaborative management necessarily involves internal processes of negotiation between local actors and the state. It also implies rethinking public support policies to secure and boost the innovative entrepreneurial dynamics that emerge. A new intersectoral approach to public policy (land tenure, decentralization, investment support, structuring of value chains) must be developed, not in a standardized way, but in a way that is different for each cultural, social, institutional, and economic context. The best way to achieve this is to rely on a multiactor dialogue at the local level.

What emerges from these trends is a new role for the state, a profound paradigm shift that should be encouraged, where the challenge is not only to respond to contemporary environmental crises but also to build links and coordination between different authorities in a context where they are distinctively numerous. It is important to strengthen local authorities as a space where these links between the social realities of the territory and the national state system can be forged, thus participating in the construction of a new social pact between the state and its citizens, consistent with the processes of democratization and decentralization in the face of the loss of momentum of the modes of governance that have emerged since independence.

## Notes

1. "Employment in agriculture (percentage of total employment) (modeled ILO estimate)—Sub-Saharan Africa," World Bank, accessed October 26, 2022, <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=ZG>.
2. United Nations, "La restauration des terres dégradées en Afrique progresse lentement et nécessite des efforts accrus (FAO)," September 29, 2021, <https://news.un.org/fr/story/2021/09/1105052>.
3. These figures presented by the FAO may be open to interpretation and dispute. Nevertheless, they remain representative of environmental degradation in Sub-Saharan Africa.
4. For example, the evolution of irrigation techniques toward pressurized systems with high investment costs per hectare means that the same rules of cohabitation between farmers and breeders can no longer be maintained.

5. For example, a land base managed by the collective that includes different types of land tenure, with traditionally commons-based spaces and plots under private ownership with more intensive modes of exploitation, individually or for a subgroup of the community; or individual use of certain resources such as the collection of fodder or the gathering of gum or fruit within a space used in common for other of its resources.
6. Inter-réseaux Développement rural, “Fanaye: Arrêt définitif du projet SENETHANOL,” November 24, 2021, <https://www.inter-reseaux.org/ressource/fanaye-arret-definitif-du-projet-senethanol/>.
7. Here, the term *governance* is used in the strong sense of the “coordination of actors, social groups, and institutions to achieve collectively defined and discussed goals” (Le Galès 2019).
8. Le Roy (2011) proposes a more detailed analysis of bundles of rights through the theory of land control, which he applies to commons-based land appropriation regimes in his book *La terre de l'Autre*.
9. Neo-customary approaches refer to practices that build on customary ownership, including actors who claim to be directly or indirectly customary and sell more rights than the customary system recognizes (Durand-Lasserve, Mattingly, and Mogale 2004). Neocolonial approaches refer to practices involving the administrative recognition of possession and usage rights and the consecration of ownership into property rights (Comby 2013).
10. According to Bromley (2009), this work suffers from methodological bias.
11. See open-access platform on large-scale land acquisitions in Africa: <https://landmatrix.org/>.

## References

- Abernethy, Charles L., and M. H. Sally. 2000. “Experiences of Some Government-Sponsored Organizations of Irrigators in Niger and Burkina Faso, West Africa.” *Journal of Applied Irrigation Science* 35 (2): 177–205.
- Ackerley, Duncan, Ben B. Booth, Sylvia H. E. Knight, Eleanor J. Highwood, David J. Frame, Myles R. Allen, and David P. Rowell. 2011. “Sensitivity of Twentieth-Century Sahel Rainfall to Sulfate Aerosol and CO<sub>2</sub> Forcing.” *Journal of Climate* 24 (19): 4999–5014. <https://doi.org/10.1175/JCLI-D-11-00019.1>.
- AfDB, OECD, UNDP, and ECA (African Development Bank, Organisation for Economic Co-operation and Development, United Nations Development Programme, and United Nations Economic Commission for Africa). 2013. *African Economic Outlook 2013: Structural Transformation and Natural Resources*. Paris: OECD Publishing. [https://www.oecd-ilibrary.org/development/african-economic-outlook-2013\\_aeo-2013-en](https://www.oecd-ilibrary.org/development/african-economic-outlook-2013_aeo-2013-en).
- Armitage, Derek, Ryan Plummer, Fikret Berkes, Robert Arthur, Anthony Charles, Iain Davidson-Hunt, Alan Diduck, Nancy Doubleday, Derek Johnson, Melissa Marschke, Patrick McConney, Evelyn Pinkerton, and Eva Wollenberg. 2009. “Adaptive Co-Management for Social–Ecological Complexity.” *Frontiers in Ecology and the Environment* 7 (2): 95–102. Accessed October 7, 2022, from <https://doi.org/10.1890/070089>.

- Ashukem, Jean-Claude N. 2020. "The SDGs and the Bio-Economy: Fostering Land-Grabbing in Africa." *Review of African Political Economy* 47 (164): 275–90. <https://doi.org/10.1080/03056244.2019.1687086>.
- Aubert, Sigrid, Martine Antona, François Bousquet, Camilla Toulmin, Patrick d'Aquino, "Foncier et développement" technical committee. 2017. "Opportunités et défis d'une approche par les communs de la terre et des ressources qu'elle porte." <https://www.foncier-developpement.fr/wp-content/uploads/Approche-par-les-communs-de-la-terre2.pdf>.
- Aubert, Sigrid, Patrick d'Aquino, François Bousquet, Martine Antona, and Camilla Toulmin. 2019. "L'approche par les communs de la terre et des ressources qu'elle porte: Illustration par six études de cas." <https://www.foncier-developpement.fr/wp-content/uploads/CTFD-Regards-sur-le-Foncier-6-Approche-par-les-communs.pdf>.
- Bachir, Amadou, Gill Vogt, and Kees Vogt. 2007. "La convention locale au Niger. L'expérience de la forêt classée de Takieta." *IIED Afrique*, no. 4. [https://www.iedafrique.org/IMG/pdf/CL.\\_Niger.pdf](https://www.iedafrique.org/IMG/pdf/CL._Niger.pdf).
- Barrière, Olivier, and Catherine Barrière. 2018. *Un droit à inventer: Foncier et environnement dans le delta intérieur du Niger*. Marseille: IRD Éditions. <http://books.openedition.org/irdeditions/14471>.
- Beck, Tony, and Cathy Nesmith. 2001. "Building on Poor People's Capacities: The Case of Common Property Resources in India and West Africa." *World Development* 29 (1): 119–33. [https://doi.org/10.1016/S0305-750X\(00\)00089-9](https://doi.org/10.1016/S0305-750X(00)00089-9).
- Bergeret, Anne. 1994. "Les forestiers coloniaux français: Une doctrine et des politiques qui n'ont cessé de 'rejeter de souche'." In *Les Sciences hors d'Occident au 20ème siècle*, edited by Yvon Chatelin and Christophe Bonneuil, 59–74. Paris: ORSTOM Éditions.
- Berkes, Fikret. 2002. "Cross-Scale Institutional Linkages: Perspectives from the Bottom Up." In *The Drama of the Commons*, edited by Elinor Ostrom, Thomas Dietz, Nives Dolšák, Paul C. Stern, Susan Stonich, and Elke U. Weber, 293–321. Washington, DC: National Academy Press.
- Berkes, Fikret, Johan Colding, and Carl Folke. 2000. "Rediscovery of Traditional Ecological Knowledge as Adaptive Management." *Ecological Applications* 10 (5): 1251–62. <https://doi.org/10.2307/2641280>.
- Berkes, Fikret, Carl Folke, and Johan Colding. 2000. *Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*. Cambridge: Cambridge University Press.
- Binswanger, Hans P., Klaus Deininger, and Gershon Feder. 1993. "Agricultural Land Relations in the Developing World." *American Journal of Agricultural Economics* 75 (5): 1242–48. <https://doi.org/10.2307/1243465>.
- Blache, Adriana. 2020. "De la 'Fortress Conservation' aux nouveaux modèles de gestion participative de la biodiversité en Tanzanie." *VertigoO—La revue électronique en sciences de l'environnement* 20 (1). <https://doi.org/10.4000/vertigo.27524>.
- Blanc-Pamard, Chantal. 1986. "Dialoguer avec le paysage ou comment l'espace écologique est vu et pratiqué par les communautés rurales des hautes terres malgaches." In *Milieux et paysages: Essai sur diverses modalités de connaissance*, edited by Yvon Chatelin and Gérard Riou, 17–36. Paris: Masson.



- Boche, Mathieu. 2014. "Contrôle du foncier, agricultures d'entreprise et restructurations agraires: Une perspective critique des investissements fonciers à grande échelle: Le cas de la partie centrale du Mozambique." PhD dissertation, Paris-Sud University. <https://tel.archives-ouvertes.fr/tel-01126967>.
- Bollig, Michael. 2016. "Adaptive Cycles in the Savannah: Pastoral Specialization and Diversification in Northern Kenya." *Journal of Eastern African Studies* 10 (1): 21–44. <https://doi.org/10.1080/17531055.2016.1141568>.
- Bon, Bérénice, Claire Simonneau, Éric Denis, and Philippe Lavigne Delville, eds. Forthcoming. *Conversions des usages des sols liées à l'urbanisation des suds*. Vol. 2. Case study. Paris: "Foncier et développement" technical committee.
- Bourgoin, Jeremy, Djibril Diop, Djiby Dia, Moussa Sall, Romaric Zagré, Quentin Grislain, and Ward Anseeuw. 2020. "Regard sur le modèle agricole sénégalais: Pratiques foncières et particularités territoriales des moyennes et grandes exploitations agricoles." *Cahiers agricultures* 29: 18. <https://doi.org/10.1051/cagri/2020018>.
- Brockhaus, Maria, Houria Djoudi, and Hermann Kambire. 2012. "Multi-level Governance and Adaptive Capacity in West Africa." *International Journal of Commons* 6 (2): 200–32. <https://doi.org/10.18352/ijc.331>.
- Bromley, Daniel W. 2009. "Formalising Property Relations in the Developing World: The Wrong Prescription for the Wrong Malady." *Land Use Policy* 26 (1): 20–7. <https://doi.org/10.1016/j.landusepol.2008.02.003>.
- Brossier, Marie, Cédric Jourde, and Modibo Ghaly Cissé. 2018. "Relations de pouvoir locales, logiques de violence et participation politique en milieu peul (région de Mopti)." Rapport du projet "Stabiliser le Mali." University of Quebec in Montreal and Centre FrancoPaix.
- Burnod, Perrine, Heriniaina Rakotomalala, Valérie Andriamanga, and Lydia Razanakolona, "Foncier et développement" technical committee. 2022. *Zones dédiées à l'investissement à Madagascar (ZEF, ZII, ZES, ZIA): Caractéristiques et incidences foncières*. [https://www.foncier-developpement.fr/wp-content/uploads/Regards-sur-le-foncier-11\\_ZES-Madagascar.pdf](https://www.foncier-developpement.fr/wp-content/uploads/Regards-sur-le-foncier-11_ZES-Madagascar.pdf).
- Campbell, Bonnie. 2009. *Mining in Africa: Regulation and Development*. London: Pluto Press.
- Campbell, Bruce, and Sheona Shackleton. 2001. *Devolution in Natural Resource Management: Institutional Arrangements and Power Shifts: A Synthesis of Case Studies from Southern Africa*. Jakarta, Indonesia: Center for International Forestry Research.
- Chamberlin, Jordan, Thomas S. Jayne, and Derek D. Headey. 2014. "Scarcity amidst Abundance? Reassessing the Potential for Cropland Expansion in Africa." *Food Policy, Boserup, and Beyond: Mounting Land Pressures and Development Strategies in Africa* 48: 51–65. <https://doi.org/10.1016/j.foodpol.2014.05.002>.
- Chang, Ching Yee, John C. H. Chiang, Michael F. Wehner, Andrew R. Friedman, and Reto Ruedy. 2011. "Sulfate Aerosol Control of Tropical Atlantic Climate over the Twentieth Century." *Journal of Climate* 24 (10): 2540–55.
- Chauveau, Jean-Pierre. 2008. "Transferts fonciers et relations de tutorat en Afrique de l'Ouest." In *Ruralités nords-suds: Inégalités, conflits, innovations*, edited by Hervé Rakoto Ramiarantsoa, Bénédicte Thibaud, and Daniel Peyrusaubes, 81–95. Paris: L'Harmattan.
- Chauveau, Jean-Pierre. 2017. "Les politiques de formalisation des droits coutumiers en Afrique rurale subsaharienne: Une perspective historique." In *La formalisation des*

- droits sur la terre: Bilan des expériences et des réflexions*, 49–66. Paris: Agence française de développement.
- Chauveau, Jean-Pierre, “Foncier et développement” technical committee. 2018. “Les politiques de formalisation des droits coutumiers en Afrique rurale subsaharienne: Une histoire tourmentée.” [https://www.foncier-developpement.fr/wp-content/uploads/2018\\_FR-Fiche-Chauveau.pdf](https://www.foncier-developpement.fr/wp-content/uploads/2018_FR-Fiche-Chauveau.pdf).
- Chene-Sanogo, Alima. 2012. “Enjeux fonciers et développement ‘durable’ au Mali.” PhD dissertation, University of Burgundy. <https://tel.archives-ouvertes.fr/tel-00839314>.
- Chouli, Lila. 2014. “Social Movements and the Quest for Alternatives in Burkina Faso.” In *Liberalism and Its Discontents: Social Movements in West Africa*, edited by Ndongo Samba Sylla, 263–303. Berlin: Rosa Luxemburg Foundation.
- Chuhan-Pole, Punam, Andrew L. Dabalen, and Bryan Christopher Land. 2017. *L'exploitation minière en afrique: Les communautés locales en tirent-elles parti?* Washington, DC: World Bank. <https://doi.org/10.1596/978-1-4648-0819-7>.
- Colin, Jean-Philippe, and E. Bouquet. 2022. “Les marchés fonciers. Dynamiques, efficacité, équité.” In *Le foncier rural dans les pays du Sud. Enjeux et clés d'analyse*, edited by Jean-Philippe Colin, Philippe Lavigne Delville, and Éric Léonard, 453–522. Versailles and Marseille: QUAE and IRD.
- Colin, Jean-Philippe, Philippe Lavigne Delville, and Éric Léonard, eds. 2022. *Le foncier rural dans les pays du sud. Enjeux et clés d'analyse*. Versailles and Marseille: QUAE and IRD.
- Comby, Joseph. 2013. “Sortir du système foncier colonial.” <http://www.comby-foncier.com/sortir.pdf>.
- Cudworth, Erika, and Stephen Hobden. 2011. *Posthuman International Relations: Complexity, Ecologism, and Global Politics*. London: Bloomsbury Publishing.
- d'Aquino, Patrick, Omar Fedior, Kader Ngom, and Aziz Sow, “Foncier et développement technical committee.” 2020. “Quels mécanismes opérationnels pour faciliter la sécurisation de communs agrosylvopastoraux au Sahel? Le produit de vingt ans d'apprentissage sur la rive gauche de la vallée du fleuve Sénégal.” [https://www.foncier-developpement.fr/wp-content/uploads/2020\\_Fiche-foncier\\_Aquino-Fedior-Ngom-Sow-VF.pdf](https://www.foncier-developpement.fr/wp-content/uploads/2020_Fiche-foncier_Aquino-Fedior-Ngom-Sow-VF.pdf).
- Dassetto, Felice, and Pierre-Joseph Laurent. 2006. “Ramatoullaye: Une confrérie musulmane en transition.” *Recherches sociologiques et anthropologiques* 37 (2): 51–62. <https://doi.org/10.4000/rsa.564>.
- Delay, Étienne, Sigrid Aubert, and Aurélie Botta, “Foncier et développement” technical committee. 2020. “Définir et mettre en oeuvre une approche par les communs tissés autour de la terre et des ressources qu'elle porte.” [https://www.foncier-developpement.fr/wp-content/uploads/2020\\_Fiche-foncier\\_Delay-Aubert-Botta-VF.pdf](https://www.foncier-developpement.fr/wp-content/uploads/2020_Fiche-foncier_Delay-Aubert-Botta-VF.pdf).
- Delors, Foyet Gankam Arsène. 2019. “Données d'observations de la terre et outils cartographiques libres à la caractérisation de la dynamique foncière face à l'accaparement des terres à grande échelle au sud-ouest Cameroun.” *African Journal on Land Policy and Geospatial Sciences* 2 (2): 100–11. Accessed October 7, 2022, from <https://doi.org/10.48346/IMIST.PRSM/ajlp-gs.v2i2.15974>.
- De Soto, Hernando, and Harry P. Diaz. 2002. “The Mystery of Capital. Why Capitalism Triumphs in the West and Fails Everywhere Else.” *Canadian Journal of Latin American & Caribbean Studies* 27 (53): 172–74.

- Diongue, Momar, Abdoulaye Diagne, Mamadou Bouna Timera, and Pape Sakho. 2021. "Gestion des propriétés lignagères et stratégies d'appropriation à la périphérie de Dakar: Le cas de Kounoune dans la commune de Bambilor (Sénégal)." In *Une Afrique des convoitises foncières. Regards croisés depuis le Mali*, edited by Monique Bertrand, 231–48. Toulouse: Presses Universitaires du Midi.
- Djiré, Moussa. 2003. "Les conventions locales, un outil de gestion durable des ressources naturelles? Acquis et interrogations à partir d'exemples maliens." Paper presented at the workshop "Comment sécuriser les droits fonciers en milieu rural" at the Forum Praia +9, CILSS, Bamako, Mali, November 17–21.
- Djiré, Moussa, and Abdel Kader Dicko. 2007. *Les conventions locales face aux enjeux de la décentralisation au Mali*. Paris: Karthala.
- Duffy, Rosaleen. 2006. "The Potential and Pitfalls of Global Environmental Governance: The Politics of Trans Frontier Conservation Areas in Southern Africa." *Political Geography* 25 (1): 89–112. <https://doi.org/10.1016/j.polgeo.2005.08.001>.
- Durand-Lasserve, Alain, Maÿlis Durand-Lasserve, and Harris Selod. 2015. *Land Delivery Systems in West African Cities: The Example of Bamako, Mali*. Washington, DC: World Bank.
- Durand-Lasserve, Alain, Michael Mattingly, and Thomas Mogale. 2004. "La nouvelle coutume urbaine. Évolution comparée des filières coutumières de la gestion foncière urbaine dans les pays d'Afrique subsaharienne." [https://www.gemdev.org/old/prud/rapports/rapport19\\_3.pdf](https://www.gemdev.org/old/prud/rapports/rapport19_3.pdf).
- Ellis, James E., and David M. Swift. 1988. "Stability of African Pastoral Ecosystems: Alternate Paradigms and Implications for Development." *Journal of Range Management* 41 (6): 450–59. <https://doi.org/10.2307/3899515>.
- Epstein, Richard A. 2011. "Bundle-of-Rights Theory as a Bulwark against Statist Conceptions of Private Property." *Econ Journal Watch* 8 (3): 223–35.
- Fache, Elodie, Véronique Ancey, and Philippe Lavigne Delville. 2022. "Gouverner les ressources partagées." In *Le foncier rural dans les pays du Sud. Enjeux et clés d'analyse*, edited by Jean-Philippe Colin, Philippe Lavigne Delville and Éric Léonard. Versailles and Marseille: QUAE and IRD.
- Faye, Papa, Tobias Haller, and Jesse Ribot. 2018. "Shaping Rules and Practice for More Justice: Local Conventions and Local Resistance in Eastern Senegal." *Human Ecology* 46: 15–25. <https://doi.org/10.1007/s10745-017-9918-1>.
- Feder, Gershon, and Akihiko Nishio. 1998. "The Benefits of Land Registration and Titling: Economic and Social Perspectives." *Land Use Policy* 15 (1): 25–43. [https://doi.org/10.1016/S0264-8377\(97\)00039-2](https://doi.org/10.1016/S0264-8377(97)00039-2).
- Feder, Gershon, and Tongroj Onchan. 1987. "Land Ownership Security and Farm Investment in Thailand." *American Journal of Agricultural Economics* 69 (2): 311–20. <https://doi.org/10.2307/1242281>.
- Fish, Robert, Andrew Church, and Michael Winter. 2016. "Conceptualizing Cultural Ecosystem Services: A Novel Framework for Research and Critical Engagement." *Ecosystem Services* 21: 208–17. <https://doi.org/10.1016/j.ecoser.2016.09.002>.
- Folke, Carl. 2006. "Resilience: The Emergence of a Perspective for Social-Ecological Systems Analyses." *Global Environmental Change* 16 (3): 253–67. <https://doi.org/10.1016/j.gloenvcha.2006.04.002>.

- Froger, Géraldine, and Philippe Méral. 2002. "Des mécanismes de l'action collective aux perspectives pour les politiques d'environnement." In *Gouvernance II. Action collective et politique d'environnement*, edited by Géraldine Froger and Philippe Méral, 9–24. Geneva: Helbing & Lichtenhahn.
- Gagnon-Champigny, Chloé. 2020. "Les réfugiés de la conservation: Les parcs Serengeti et Ngorongoro (Tanzanie) et Thung Yai-Huai Kha Khaeng (Thaïlande) comparés au parc national Assinica (Québec)." Master's thesis, University of Sherbrooke and University of Liège. <https://savoirs.usherbrooke.ca/handle/11143/17614>.
- Galvin, Kathleen A., Tyler A. Beeton, and Matthew W. Luizza. 2018. "African Community-Based Conservation: A Systematic Review of Social and Ecological Outcomes." *Ecology and Society* 23 (3). <https://www.jstor.org/stable/26799165>.
- Giraut, Frédéric, Sylvain Guyot, and Myriam Houssay-Holzschuch. 2005. "La nature, les territoires et le politique en Afrique du sud." *Annales. Histoire, sciences sociales* 60 (4): 695–717.
- Goldstein, Markus, Kenneth Hounbedji, Florence Kondylis, Michael O'Sullivan, and Harris Selod. 2015. "Formalisation des Droits Fonciers dans les Zones Rurales d'Afrique de l'Ouest: Résultats Initiaux d'une Étude Expérimentale au Bénin." Policy Research Working Paper, World Bank, Washington, DC. <https://doi.org/10.1596/1813-9450-7435>.
- Goulin, Aymard Boris, Adja Ferdinand Vanga, Yao Célestin Amani, Mélécony Célestin Blé, and Blé Marcel Yoro. 2018. "Accès au foncier relatif à la pisciculture familiale au centre-ouest et au sud-ouest de la Côte d'Ivoire." *Vertigo—La revue électronique en sciences de l'environnement* 18 (2). <https://doi.org/10.4000/vertigo.22306>.
- Gyapong, Adwoa Yeboah. 2021. "Land Grabs, Farmworkers, and Rural Livelihoods in West Africa: Some Silences in the Food Sovereignty Discourse." *Globalizations* 18 (3): 339–54. <https://doi.org/10.1080/14747731.2020.1716922>.
- Hagberg, Sten, Moustapha Gomgnimbou, and Désiré Boniface Somé. 1996. *Forêts classées et terres des ancêtres au Burkina Faso*. Department of Cultural Anthropology and Ethnology, Uppsala University. <http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-43539>.
- Hartmann, Betsy. 2014. "Converging on Disaster: Climate Security and the Malthusian Anticipatory Regime for Africa." *Geopolitics* 19 (4): 757–83. <https://doi.org/10.1080/14650045.2013.847433>.
- Héritier-Izard, Françoise. 1973. "La paix et la pluie: Rapports d'autorité et rapport au sacré chez les Samo." *L'Homme* 13 (3): 121–38.
- Hesse, Ced. 2011. "Ecology, Equity, and Economics: Reframing Dryland Policy." *Opinion: Lessons from Adaptation in Practice*. <https://www.iied.org/17106iied>.
- Hesse, Ced, Simon Anderson, Lorenzo Cotula, Jamie Skinner, and Camilla Toulmin. 2013. "Managing the Boom and Bust: Supporting Climate Resilient Livelihoods in the Sahel." Issue Paper, 1–32. <https://www.iied.org/sites/default/files/pdfs/migrate/11503IIED.pdf>.
- Hubert, Nicolas. 2018. "La nouvelle législation minière burkinabée: Quels risques en matière de développement durable?" *Canadian Journal of Development Studies* 39 (4): 500–14. <https://doi.org/10.1080/02255189.2018.1460261>.
- Hubert, Nicolas. 2021a. "Environnement, ressources, et conflits au Burkina Faso." PhD dissertation, University of Ottawa. <https://doi.org/10.20381/ruor-26093>.

- Hubert, Nicolas. 2021b. "The Nature of Peace: How Environmental Regulation Can Cause Conflicts." *World Development* 141 (105409). <https://doi.org/10.1016/j.worlddev.2021.105409>.
- Izard, Michel. 1986a. "Le calendrier du Yatenga." *Systèmes de pensée en Afrique noire* 7: 45–55. <https://doi.org/10.4000/span.559>.
- Izard, Michel. 1986b. "L'Étendue, la durée." *L'Homme* 26 (97–98): 225–37.
- Izard, Michel. 1990. "De quelques paramètres de la souveraineté." *Systèmes de pensée en Afrique noire* 10: 69–92. <https://doi.org/10.4000/span.875>.
- Juul, Kristine. 2001. "Power, Pastures, and Politics: Boreholes and the Decentralization of Local Resource Management in Northern Senegal." In *Politics, Property, and Production in West African Sahel: Understanding Natural Resource Management*, edited by Tor A. Benjaminsen and Christian Lund, 57–74. Stockholm: Elanders Gotab.
- Lange, Glenn-Marie, Quentin Wodon, and Kevin Carey. 2018. *The Changing Wealth of Nations 2018: Building a Sustainable Future*. Washington, DC: World Bank.
- Lavigne Delville, Philippe. 2012. "Promouvoir une gestion locale concertée et effective des ressources naturelles et foncières: Les conditions d'une gestion durable des ressources naturelles 'communes.'" *Les Notes de politique de Negos-GRN* 4.
- Lavigne Delville, Philippe. 2018. "Public Policy Reform in West Africa: Between Polity, Politics, and Extraversion. Water Supply and Rural Land Tenure (Benin, Burkina Faso)." *Gouvernement et action publique* 7 (2): 53–73. <https://www.cairn-int.info/journal-gouvernement-et-action-publique-2018-2-page-53.htm>.
- Lavigne Delville, Philippe, Jean-Philippe Colin, Ibrahima Ka, and Michel Merlet. 2017. *Étude régionale sur les marchés fonciers ruraux en Afrique de l'ouest et les outils de leur régulation. Ouagadougou and Dakar: UEMAO/IPAR*. [https://www.ipar.sn/IMG/pdf/ipar-uemoa-rapport\\_sur\\_les\\_marches\\_fonciers\\_ruraux\\_en\\_afrique\\_de\\_l\\_ouest\\_et\\_les\\_outils\\_de\\_leurs\\_regulations.pdf](https://www.ipar.sn/IMG/pdf/ipar-uemoa-rapport_sur_les_marches_fonciers_ruraux_en_afrique_de_l_ouest_et_les_outils_de_leurs_regulations.pdf).
- Lavigne Delville, Philippe, and Moussa Djiré. 2012a. "Les conditions d'effectivité des conventions locales—Engagement des autorités et pragmatisme dans la mise en oeuvre." *Les Notes de politique de Negos-GRN* 9: 1–4.
- Lavigne Delville, Philippe, and Moussa Djiré. 2012b. "Promouvoir une gestion locale concertée et effective des ressources naturelles et foncières: Les conditions d'effectivité des conventions locales." *Les notes de politique de Negos-GRN* 9.
- Lavigne Delville, Philippe, and Alain Durand-Lasserve, "Foncier et développement" technical committee. 2009. "Gouvernance foncière et sécurisation des droits dans les pays du Sud (livre blanc)." [https://agritrop.cirad.fr/556116/1/document\\_556116.pdf](https://agritrop.cirad.fr/556116/1/document_556116.pdf).
- Lavigne Delville, Philippe, and Aurore Mansion. 2015. *La formalisation des droits sur la terre dans les pays du sud: Dépasser les controverses et alimenter les stratégies*. Paris: Ministère des Affaires étrangères et du Développement international (Maedi), Agence française de développement.
- Le Galès, Patrick. 2019. "Gouvernance." In *Dictionnaire des politiques publiques*, edited by Laurie Boussaguet, Sophie Jacquot, and Pauline Ravinet, 297–305. Paris: Presses de SciencesPo.

- Le Roy, Étienne. 2011. *La terre de l'autre. Une anthropologie des régimes d'appropriation foncière*. Paris: LGDJ Lextenso.
- Le Roy, Étienne. 2016. "Double Helix' Commons." *Droit et société* 94 (3): 603–24. <https://doi.org/10.3917/drs.094.0603>.
- Le Roy, Étienne. 2021. *La révolution des communs et le droit. Nouveaux enjeux fonciers en Afrique, Amérique et Europe*. Quebec: Éditions science et bien commun. <https://doi.org/10.5281/zenodo.5730710>.
- Le Roy, Étienne, Bruno Delmas, Gaël Giraud, and Philippe Bonnichon. 2019. *Les communs, aujourd'hui! Enjeux planétaires d'une gestion locale des ressources renouvelables*. Paris: Karthala. <https://documentation.insp.gouv.fr/insp/doc/SYRACUSE/115230/les-communs-aujourd-hui-enjeux-planetaires-d-une-gestion-locale-des-ressources-renouvelables-sous-la>.
- Le Roy, Étienne, Alain Karsenty, and Alain Bertrand. 2016. *La sécurisation foncière en Afrique: Pour une gestion viable des ressources renouvelables*. Paris: Karthala.
- Magnon, Yves Z. 2013. "En attendant l'aéroport: Pression marchande et vulnérabilités sociofoncières et agricoles à Glo-Djigbé (arrondissement rural du sud-Bénin)." *Autrepart* 1 (64): 107–20.
- Mansion, Aurore, and Cécile Broutin. 2013. "Quelles politiques foncières en Afrique subsaharienne? Défis, acteurs, et initiatives contemporaines." In *Le Demeter 2014: Économie et stratégies agricoles*, 159–80. Paris: Club Déméter. [http://publications.cirad.fr/une\\_notice.php?dk=570489](http://publications.cirad.fr/une_notice.php?dk=570489).
- Massé, Francis. 2020. "Conservation Law Enforcement: Policing Protected Areas." *Annals of the American Association of Geographers* 110 (3): 758–73. <https://doi.org/10.1080/24694452.2019.1630249>.
- Masterson, Vanessa, Richard Stedman, Johan Enqvist, Maria Tengö, Matteo Giusti, Darin Wahl, and Uno Svedin. 2017. "The Contribution of Sense of Place to Social-Ecological Systems Research: A Review and Research Agenda." *Ecology and Society* 22 (1). <https://doi.org/10.5751/ES-08872-220149>.
- Milleville, Pierre, and Georges Serpantié. 1994. "Intensification et durabilité des systèmes agricoles en Afrique soudano-sahélienne." *Promotion de systèmes agricoles durables dans les pays d'Afrique soudano-sahélienne* 10–14: 33–45.
- Mondjannagni, Alfred Comlan. 1977. *Campagnes et villes au sud de la République populaire du Bénin*. Paris and The Hague: Mouton.
- Ndione, Emmanuel, and Philippe Lavigne Delville. 2012. "Promouvoir une gestion locale concertée et effective des ressources naturelles et foncières: Institutionnaliser une gestion négociée des ressources naturelles: Un enjeu de gouvernance, une contribution au renforcement de l'action publique." *Les Notes de politique de Negos-GRN* 7. [https://www.foncier-developpement.fr/wp-content/uploads/Note-politique-Negos\\_7.pdf](https://www.foncier-developpement.fr/wp-content/uploads/Note-politique-Negos_7.pdf).
- Obura, David, and Sébastien Treyer. 2022. "A 'Shared Earth' Approach to Put Biodiversity at the Heart of the Sustainable Development in Africa." AFD Research Papers 265. Paris: AFD. <https://www.afd.fr/en/ressources/shared-earth-approach-put-biodiversity-heart-sustainable-development-africa>.
- Oliveira, Gustavo de L. T., Ben M. McKay, and Juan Liu. 2021. "Beyond Land Grabs: New Insights on Land Struggles and Global Agrarian Change." *Globalizations* 18 (3): 321–38. <https://doi.org/10.1080/14747731.2020.1843842>.



- Ostrom, Elinor. 1990. *Governing Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511807763>.
- Ouedraogo, Hubert M. G. 2011. "De la connaissance à la reconnaissance des droits fonciers africains endogènes." *Études rurales* 1 (187): 79–93.
- Papazian, Hermine, Patrick d'Aquino, Jérémy Bourgoïn, and Alpha Ba. 2016. "Jouer avec diverses sources de régulation foncière: Le pluralisme sahélien." *Économie rurale. Agricultures, alimentations, territoires* 353–54: 27–44. <https://doi.org/10.4000/economierurale.4904>.
- Payne, Geoffrey, Alain Durand-Lasserve, and Caroline Rakodi. 2009. "The Limits of Land Titling and Home Ownership." *Environment and Urbanization* 21 (2): 443–62.
- Penner, James E. 1995. "The Bundle of Rights Picture of Property." *UCLA Law Review* 43: 711–820.
- Pescay, Michel. 1998. "Transformation des systèmes fonciers et 'transition foncière' au sud-Bénin." In *Quelles politiques foncières pour l'Afrique rurale? Réconcilier pratiques, légitimité et légalité*, edited by Philippe Lavigne Delville, 131–56. Paris: Karthala.
- Petit, Olivier. 2019. "Contraintes, enjeux et mise en oeuvre de l'action collective pour la gouvernance des ressources naturelles et de l'environnement." In *Économie et gestion de l'environnement et des ressources naturelles*, edited by Olivier Petit, 41–55. Quebec: Institut de la Francophonie pour le développement durable and Université Senghor.
- Poda, N. Evariste. 2001. "Le sacré et les lieux sacrés: Voie privilégiée de sauvegarde de l'environnement. Cas de Tio et de Negarpoulou." In *Aménagement intégré des forêts naturelles des zones tropicales sèches de l'Afrique de l'Ouest*, edited by Proseper D. Savadogo, 263–68. Ouagadougou, Burkina Faso: CNRS.
- Quesnel, André, and Patrice Vimard. 1996. *Recompositions familiales et transformations agraires: Une lecture de cas africains et mexicain*. Paris: ORSTOM. [https://horizon.documentation.ird.fr/exl-doc/pleins\\_textes/pleins\\_textes\\_6/b\\_fdi\\_45-46/010006615.pdf](https://horizon.documentation.ird.fr/exl-doc/pleins_textes/pleins_textes_6/b_fdi_45-46/010006615.pdf).
- Raynaut, Claude, and Philippe Lavigne Delville. 1997. "Transformation des rapports sociaux et dynamique d'usage des ressources (2): L'émancipation de la force de travail." In *Sahels: Diversité et dynamiques des relations sociétés-nature*, edited by Claude Raynaut, 315–46. Paris: Karthala.
- Richebourg, Camille. 2019. "Participations citoyennes au processus de réforme foncière au Sénégal (2010–2017): TerriStories, un jeu de rôles et de simulations pour faire délibérer des paysans?" PhD dissertation, EHESS. <https://www.theses.fr/2019EHES0067>.
- Rodary, Estienne. 2008. "Developing Conservation or Conserving Development? Some Historical Thoughts on the Two Terms and the Way Forward." *Mondes en développement* 141 (1): 81–92. <https://doi.org/10.3917/med.141.0081>.
- Rodary, Estienne. 2011. "Crises et résistants: Les écologies politiques en Afrique." *Écologie & politique* 42 (2): 19–32. <https://www.cairn.info/revue-ecologie-et-politique-e-sciences-cultures-societes-2011-2-page-19.htm>.
- Ruf, François, Marie Salvan, and Jérôme Kouamé. 2020. "Qui sont les planteurs de cacao de Côte d'Ivoire?" *Papiers de recherche*, 1–111. <https://doi.org/10.3917/afd.thier.2020.01.0001>.

- Sachedina, Hassanali T. 2010. "Disconnected Nature: The Scaling Up of African Wildlife Foundation and Its Impacts on Biodiversity Conservation and Local Livelihoods." *Antipode* 42 (3): 603–23. Accessed October 7, 2022, from <https://doi.org/10.1111/j.1467-8330.2010.00765.x>.
- Saradoum, Goy, Lucie Félicité Temgoua, Mbaidje Osée Mbaikambeye, Francis Brice Silatsa Tedou, and Allaissem Behimnan. 2022. "Estimation du potentiel de séquestration de carbone des aires protégées: Cas de la forêt classée de Djoli-Kera, Tchad." *Vertigo—La revue électronique en sciences de l'environnement*. <https://doi.org/10.4000/vertigo.34658>.
- Schlager, Edella, and Elinor Ostrom. 1992. "Property-Rights Regimes and Natural Resources: A Conceptual Analysis." *Land Economics* 68 (3): 249–62. <https://doi.org/10.2307/3146375>.
- Schmitz, Jean. 1994. "Cités noires: Les républiques villageoises du Fuuta Tooro (Vallée du fleuve Sénégal)." *Cahiers d'études africaines* 133–35: 419–60. <https://doi.org/10.3406/cea.1994.2058>.
- Scoones, Ian. 1994. *Living with Uncertainty: New Directions in Pastoral Development in Africa*. West Yorkshire: Intermediate Technology Publications.
- Seegers, C. 2005. *Les conventions locales, un outil fonctionnel dans la gestion forestière décentralisée? Evaluation comparative de trois expériences sénégaléo-allemandes*. Dakar: PERACOD, GTZ.
- Selby, Jan. 2014. "Positivist Climate Conflict Research: A Critique." *Geopolitics* 19 (4): 829–56. <https://doi.org/10.1080/14650045.2014.964865>.
- Selby, Jan, and Clemens Hoffmann. 2014. "Rethinking Climate Change, Conflict, and Security." *Geopolitics* 19 (4): 747–56. <https://doi.org/10.1080/14650045.2014.964866>.
- Simonneau, Claire. 2015. "Gérer la ville au Bénin: La mise en œuvre du registre foncier urbain à Cotonou, Porto-Novo et Bohicon." PhD dissertation, University of Montreal. <https://papyrus.bib.umontreal.ca/xmlui/handle/1866/13501>.
- Sotindjo, Sébastien Dossa. 2010. *Cotonou l'explosion d'une capitale économique: (1945–1985)*. Paris: L'Harmattan.
- Tall, Serigne M., and Marième B. Gueye. 2003. "Les conventions locales: Un outil de co-gouvernance en gestion des ressources naturelles." IIED Sahel.
- Thébaud, Brigitte, and Simon Batterbury. 2001. "Sahel Pastoralists: Opportunism, Struggle, Conflict, and Negotiation. A Case Study from Eastern Niger." *Global Environmental Change* 11 (1): 69–78. [https://doi.org/10.1016/S0959-3780\(00\)00046-7](https://doi.org/10.1016/S0959-3780(00)00046-7).
- Turner, Matthew D., Tanya Carney, Laura Lawler, Julia Reynolds, Lauren Kelly, Molly S. Teague, and Leif Brottem. 2021. "Environmental Rehabilitation and the Vulnerability of the Poor: The Case of the Great Green Wall." *Land Use Policy* 111 (105750). <https://doi.org/10.1016/j.landusepol.2021.105750>.
- Verhoeven, Harry. 2014. "Gardens of Eden or Hearts of Darkness? The Genealogy of Discourses on Environmental Insecurity and Climate Wars in Africa." *Geopolitics* 19 (4): 784–805. <https://doi.org/10.1080/14650045.2014.896794>.
- Villette, Michel. 2021. "Des crédits carbone au service du développement africain." *Annales des mines—Responsabilité et environnement* 103 (3): 95–99. <https://doi.org/10.3917/re1.103.0095>.



- Westervelt, Daniel M., Andrew J. Conley, Arlene M. Fiore, Jean-Francois Lamarque, Drew Shindell, Michael Previdi, Gregory Faluvegi, Gustavo Correa, and Larry W. Horowitz. 2017. "Multimodel Precipitation Responses to Removal of U.S. Sulfur Dioxide Emissions." *Journal of Geophysical Research: Atmospheres* 122 (9): 5024–38. <https://doi.org/10.1002/2017JD026756>.
- Williams, Timothy O. 1998. "Multiple Uses of Common Pool Resources in Semi-Arid West Africa: A Survey of Existing Practices and Options for Sustainable Resource Management." <https://vtechworks.lib.vt.edu/handle/10919/66582>.
- World Bank. 2018. *The World Bank Annual Report 2018*. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/30326>.
- World Bank. 2019. *The World Bank Annual Report 2019: Ending Poverty, Investing in Opportunity*. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/32333>.