



CHAPTER 3

From Habitat to Plantation: Causes of Conversion in sub-Saharan Africa

Introduction

Agriculture is a major part of sub-Saharan Africa's economy, but its expansion poses significant threats to great ape habitats and forests. The sector accounts for nearly one-quarter of the continent's gross domestic product (GDP) and, in one way or another, it employs nearly two-thirds of its labor force (UNECA, 2013, 2014).¹ The production of agricultural commodities—for both subsistence and export—has been an important contributor to economic growth over the past several decades and will likely continue to be a key driver of future development, as indicated by nascent shifts in the composition of agricultural activity on the continent.

Historically, sub-Saharan Africa's agricultural sector has been fragmented and

“ Since the turn of the 21st century, sub-Saharan Africa has seen a new wave of agro-industrial land investment. ”

dominated by smallholder farms. While the definition of a “smallholder farm” varies regionally, it typically refers to small-scale plots—often less than 0.01 km² (1 ha) but sometimes up to 0.1 km² (10 ha)—cultivated both for subsistence purposes as well as to grow a limited number of cash crops (Dixon, Tanyeri-Abur and Wattenbach, 2004). While large-scale, foreign-owned plantations persisted throughout the colonial period, their prevalence declined during the second half of the 20th century, in part because of the increased risks due to instability and regulatory ambiguity that arose in the post-colonial period (Smalley, 2013). Some plantations were taken over by governments while others were abandoned.

In addition to the decline of large-scale plantations, frequent civil unrest, remoteness, poor infrastructure and other destabilizing factors have reduced efforts to conserve the continent’s forest resources and ape habitat to a level of “passive protection” (Megevand, 2013). At particular risk are the dense tropical forests of the Congo Basin, which are among the last largely intact forest areas in the world. They represent nearly three-quarters of Africa’s forest cover and a large portion of its biodiversity (Hourticq and Megevand, 2013). Central and West Africa are also home to four of the world’s six great ape species. Detailed information on the species and ranges of African apes is provided in the Apes Overview in this edition of *State of the Apes*.

African apes already face numerous pressures, including the impact of extractive industries, the expansion of smallholder farming and the illegal hunting of wild meat (Arcus Foundation, 2014). These and other factors have contributed to the shrinking of ape habitat and have led to substantial declines in ape populations over the past several decades (Junker *et al.*, 2012). Although large-scale commercial agriculture—the subject of this edition—has not yet been a leading driver of the decline of African ape species,

important shifts in the composition of sub-Saharan Africa’s agricultural sector are likely to have significant implications for the continent’s forests and ape habitat.

Since the turn of the 21st century, sub-Saharan Africa has seen a new wave of agro-industrial land investment. Foreign companies, for a long time reluctant to invest in large-scale operations on the continent, have shown increasing interest in acquiring African land for the production of food, biofuels and animal feed. Over the past 15 years, hundreds of land deals—involving both foreign and domestic investors, as well as partnerships between foreign companies and African governments—have resulted in the allocation of thousands of square kilometers (millions of hectares) of land for industrial-scale agricultural cultivation. While these projects—many of which have not yet started operation—have the potential to provide substantial economic opportunities to some of the poorest regions of the world, they could also have significant negative consequences for sub-Saharan Africa’s forest resources and local communities, unless they are managed appropriately.

This chapter presents an in-depth look at the recent expansion of industrial agriculture in ape range states and the extent to which it may affect sub-Saharan Africa’s forest resources and ape habitats. The first section provides an overview of the expansion of the continent’s agro-industry, including a description of recent trends in large-scale land acquisitions and an in-depth look into the development and market for specific commodities, particularly palm oil. The following section explores the sources of agricultural land investment in the region, including the geographic distribution of investor companies, as well as their sources of funding. The third section discusses the drivers of the recent trend in land acquisitions, while the fourth dives deeper into the current and potential effects of large-scale agricultural development on ape habitat.

The final section considers the expansion of industrial agriculture from the perspective of sustainable development and identifies key factors that can encourage ecologically sustainable and equitable economic growth.

Key findings include:

- The cultivation of oil palm has been one of the most widespread and most visible objectives of land investments in sub-Saharan Africa during the most recent wave of land acquisitions (from 2000 onward). The crop accounts for the largest portion of active investments, both in terms of project quantity and land area acquired.
- Unlike in Southeast Asia, the primary markets for commodities derived from oil palm are domestic, reflecting increasing demand for vegetable oil in sub-Saharan Africa. Palm oil exports are relatively small and most often destined to regional trading partners.
- The drivers of the expansion of industrial agriculture include an increase in demand for agricultural commodities, both domestic and international, relatively easy access to land on the African continent and lower set-up costs, thanks to government incentives intended to attract foreign investment. Increases in land prices and the perception of declining land availability in Southeast Asia have also driven agricultural investment toward Africa.
- To date, industrial agriculture has not been a leading driver of deforestation in sub-Saharan Africa, although planned investments, if fully developed, could substantially threaten the continent's forests, including ape habitats.
- There is a pressing need to assess current and planned industrial agriculture projects to determine the specific impacts on ape populations and habitat in sub-Saharan Africa.

Expansion of Africa's Agro-Industry

Overview of Broad Trends

Agriculture is the largest driver of economic activity in sub-Saharan Africa. The sector—including subsistence and smallholder farms as well as large estates—accounts for approximately 25% of the continent's GDP and nearly two-thirds of its employment (UNECA, 2013, 2014). Sub-Saharan African countries are major producers of cash crops such as cocoa, coffee, tobacco, sugar and cotton. Agricultural production and its contribution to the region's economy has expanded steadily over the last few decades: the annual rate of growth of agricultural GDP rose from 2.16% in the 1980s, to 2.95% in the 1990s and 3.44% during the first decade of the 21st century (Fuglie and Rada, 2013). This growth in output has been paralleled by a rise in employment. According to the Food and Agriculture Organization (FAO), approximately half of the increase in employment in sub-Saharan Africa between 1999 and 2009 can be attributed to the expansion of the agricultural sector (FAO, 2012b).

The growth in agricultural production has had significant land use implications. Since per-hectare yields and technological inputs have undergone little change (FAO, 2009b), the majority of the region's output increase has been driven by greater use of natural resources, namely, an expansion of the total land area under cultivation. FAO data show that the area under temporary and permanent crops in sub-Saharan Africa increased by 36% between 1990 and 2012. The rise has been particularly pronounced in Mali (230%), Sierra Leone (206%), Benin (83%), Ghana (76%) and Burkina Faso (70%) (FAOSTAT, n.d.). The vast majority of this expansion can be attributed to the proliferation of smallholder farms rather than industrial-scale operations, and small-

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scale plots continue to dominate agricultural activity. In fact, 85% of Africa's farms occupy less than 0.02 km² (2 ha) (Jayaram, Riese and Sanghvi, 2010).

While smallholders remain the principal drivers of agricultural production on the continent, agribusiness has shown increasing interest in acquiring African land since the turn of the century. According to the Land Matrix, an independent repository of global land deals, the pace of acquisition² in Africa was relatively slow until about 2005, at which point it accelerated substantially, peaking in 2009 (Land Matrix, n.d.; see Box 3.1). The number of signed contracts appears to have dropped off since then, although this decline may be as much a reflection of companies' reluctance to publicize deals under negotiation as a real hesitation to undertake large land acquisitions on the continent (Anseeuw *et al.*, 2012b).

Accurate figures for the total land area acquired for large-scale agriculture across sub-Saharan Africa are difficult to obtain, largely because details on concluded land deals are not publicly available. According to the Land Matrix database,³ some 114,000 km² (11.4 million ha) have come under agro-

industrial contract since 2000. This figure is most likely an underestimate as the database includes only deals that have been made public. The figure also excludes plantation-style timber and pulpwood contracts (Land Matrix, n.d.).

A separate, recent analysis found that up to 227,000 km² (22.7 million ha), an area nearly the size of Ghana, has been acquired across sub-Saharan Africa since 2005.⁴ Large-scale agricultural projects comprise approximately 85% of this land area, while plantation forestry accounts for the remainder. The mean contract size is approximately 404 km² (40,368 ha), although this figure is skewed upward by several large acquisitions—half of all land deals are smaller than 123 km² (12,300 ha) (Schoneveld, 2014a). A smaller-scale study of land allocated to large-scale plantations in Central Africa found that more than 15,000 km² (1.5 million ha) were under agro-industrial concession in Cameroon, the Democratic Republic of Congo (DRC), Gabon and the Republic of Congo (hereafter Congo) as of the end of 2013 (Feintrenie, 2014). Although this figure includes several plantations that were in operation before the recent wave of land investments, the majority of projects either obtained a new owner or were wholly initiated after 2000.

A good deal of agricultural land investment has been directed toward ape range states⁵—Central and West Africa account for approximately 9% and 30% of the total land area acquired, respectively (Land Matrix, n.d.). Table 3.1 provides several estimates of these acquisitions by country. Within Central Africa, Congo has received the most investment interest in terms of land area, with as much as 9,000 km² (900,000 ha) under commercial contract. In West Africa, Ghana, Liberia and Sierra Leone have been the largest recipients of new land investment, collectively accounting for up to 45,000 km² (4.5 million ha) under contract.

In addition to geographic variation, agricultural investments have also targeted

BOX 3.1

The Land Matrix

The Land Matrix is an independent initiative that monitors and catalogs land deals around the world. Coordinated by the International Land Coalition, the Land Matrix's Global Observatory aggregates information on intended, concluded and failed attempts to acquire land through concession, lease and purchase. The database covers deals greater than 2 km² (200 ha) that were initiated after 2000 and entail plans to convert forests, smallholder farms and other land types to commercial production. For maps showing land deals in some ape range states, see Chapter 2.

Information on land deals is drawn from a variety of sources, including research publications, media reports, government records and company materials. Although attempts are made to ensure accuracy, some of the information may be unreliable or incomplete. Land deals often lack transparency since many completed deals are not publicly reported, and the scope and size of actual projects may differ from that reported in the database.

TABLE 3.1**Land Acquired in Selected Ape Range States**

Country	Land Matrix (n.d.)		Feintrenie (2014)		Schoneveld (2014a)	
	No. of projects	Contract area (km ²)	No. of projects	Contract area (km ²)	No. of projects	Contract area (km ²)
Central Africa						
Cameroon	6	1,281	3	3,045	14	3,715
Central African Republic	2	140	–	–	2	138
Congo	4	6,140	5	7,422	8	8,939
DRC	7	2,075	2	2,833	11	3,560
Gabon	3	732	4	2,194	5	3,998
West Africa						
Ghana	27	7,511	–	–	45	20,662
Guinea	5	1,090	–	–	5	12,495
Ivory Coast	6	681	–	–	5	1,132
Liberia	8	6,157	–	–	11	10,759
Nigeria	27	2,471	–	–	42	7,838
Senegal	16	2,592	–	–	24	6,174
Sierra Leone	16	10,423	–	–	19	12,948

Notes: Columns are not fully comparable, as Land Matrix (n.d.) and Feintrenie (2014) data include agro-industrial contracts signed since 2000 and exclude plantation forestry contracts, while Schoneveld (2014a) includes both agro-industrial and plantation forestry contracts concluded since 2005. Moreover, the Land Matrix reports publicly available data while the two other sources include primary and confidentially obtained information.

multiple crops. Oilseed crops, including castor, oil palm, sesame and sunflower, have piqued the most commercial interest, accounting for more than 60% of all land area acquired on the African continent since 2005. Oil palm alone represents approximately 22% and is the second-largest crop after jatropha in terms of total land area purchased for cultivation. After oilseed crops, sugarcane has attracted the most commercial investment, accounting for approximately 13% of the total land area purchased; cereals represent another 6% (Schoneveld, 2014a).

Agribusiness investment in traditional African cash crops such as cocoa, coffee, tea, tobacco and cotton has been relatively low (Schoneveld, 2014a). This is the result of a

mix of factors, including their history as largely smallholder-grown commodities—whose cultivation continues to be strictly governed by contract arrangements between small-scale producers and commodity buyers—the relative maturity of the markets for these crops, and a general preference for fungible investments such as oilseed crops and sugarcane, as a hedge against price volatility.

Land continues to be attractive across sub-Saharan Africa and, despite the marked decrease in the number of land acquisitions since 2009, several large-scale leases remain in negotiations (Land Matrix, n.d.). Information on the scope of these projects is often sparse and unreliable, however. Even when negotiations are concluded successfully, the land area eventually contracted is

BOX 3.2**The Rise and Fall of Jatropha**

Jatropha, a perennial tree whose seeds can be crushed to produce oil, has led commercial land investment over the past decade. Drought-resistant and able to grow in poor-quality soil, jatropha saw significant commercial interest for a few years starting around 2004, as mandatory biofuel blend requirements came into effect in European and other developed nations (von Maltitz and Stafford, 2011). At its peak, nearly 100 projects and more than 30% of the total land area acquired on the continent was set aside for jatropha cultivation (Schoneveld, 2014a).

The jatropha bubble burst in 2009, when the global financial crisis restricted credit availability and dampened the demand for biofuels. Many jatropha projects were shelved; those that entered production experienced disappointing yields and were either abandoned or sold (von Maltitz and Stafford, 2011). Today, international interest in jatropha cultivation is limited and very few projects remain active in sub-Saharan Africa.



often far smaller than originally planned by the investor or reported in the media. It is thus difficult to predict with any certainty how much land is in the pipeline for commercial agricultural development in the coming years.

Oil Palm**Plantation Area**

Investment in oil palm in sub-Saharan Africa has garnered significant international media attention due to both the quantity and size of reported land deals. The crop has been the second-biggest target of foreign agricultural land investment over the past decade and, since the decline of jatropha (see Box 3.2), it has risen to dominate commercial agricultural interest.

Varying estimates exist for the extent of commercial oil palm leases in the region, as it is not always easy to isolate palm oil from the broader set of land acquisitions. According to the Land Matrix, contracts that list oil palm as an intended crop encompass 27,000 km² (2.7 million ha) across sub-Saharan Africa. However, this figure may overestimate the total land area leased for oil palm cultivation because it includes large multi-crop plantations that do not provide a crop-specific breakdown of their concessions. Among monocrop projects, oil palm land deals comprise about 14,000 km² (1.4 million ha) (Land Matrix, n.d.). Either or both of these figures may also underestimate the true land area allocated to industrial-scale oil palm cultivation, as some land deals may not be included in the Land Matrix database.

Other estimates have also been put forth. Schoneveld (2014a) concludes that land transfer agreements for oil palm finalized since 2005 comprise at least 36,000 km² (3.6 million ha) across sub-Saharan Africa, while another study finds that 18,000 km² (1.8 million ha) of land have been leased for

the crop's cultivation in West and Central Africa alone (Economist, 2014). Based on these estimates, it is clear that leases for oil palm account for at least 14,000 km² (1.4 million ha), that another 10,000 km² (1 million ha) or more have been leased for multi-crop plantations that include oil palm and that both of these estimates could be low.

The vast majority of the continent's oil palm concessions lie in West Africa and the Congo Basin. In terms of land area, investment has been concentrated in Congo, Liberia and Sierra Leone. The Congo total is dominated by one single land deal—the 4,700 km² (470,000 ha) Atama plantation, located in the Cuvette and Sangha provinces. Cameroon has also attracted a substantial amount of investor interest, as indicated by the size of announced oil palm plantation projects, but the area leased to date remains relatively small (Land Matrix, n.d.). For more information on the historical development of industrial agriculture in Cameroon, see Chapter 2, page 46.

Production

Sub-Saharan Africa has been a palm oil producer for decades—in fact, the crop traces its origin to West Africa—but its output has been a tiny fraction of the global total and has been dominated by smallholder farms. Even today, as much as 80% of the land area planted with oil palm is occupied by plots ranging from 0.02 km² to 1 km² (2–100 ha) (Wich *et al.*, 2014). To a lesser degree, large estates have also been involved in oil palm cultivation in countries such as Cameroon, DRC, Ghana and Ivory Coast (Kim *et al.*, 2013; Ecobank, 2014; Feintrenie, 2014).

Of the new wave of large-scale land investments, a relatively small fraction of the total contracted land has been planted and an even smaller portion has seen the start of production. Land Matrix data show that of the 27,000 km² (2.7 million ha) that

have come under contract since 2000, a large portion has not yet been planted and fewer than 2,000 km² (200,000 ha) are currently in production. Although this figure may underestimate the true total due to incomplete information and missing data, evidence suggests that the majority of recent projects have either not broken ground or are at very early stages of development (Land Matrix, n.d.).

Due to the limited output from newly established estates, sub-Saharan Africa remains a marginal player in the global palm oil market. Although the continent's overall production—both on large-scale plantations and smallholder farms—has increased steadily over the past decade, from 1.7 million tonnes in 1992 to 2.4 million tonnes in 2013, this accounted for just 4.4% of the global market (FAOSTAT, n.d.; see Figure 3.1).

The region's palm oil production is dominated by Nigeria, which has been responsible for approximately half of the continent's total output for much of the past two decades (FAOSTAT, n.d.). The vast majority (more than 90%) of this oil comes from wild oil palm groves cultivated by local farmers; planted estates—whether small, medium or large—represent a very small share of total production (Gourichon, 2013).

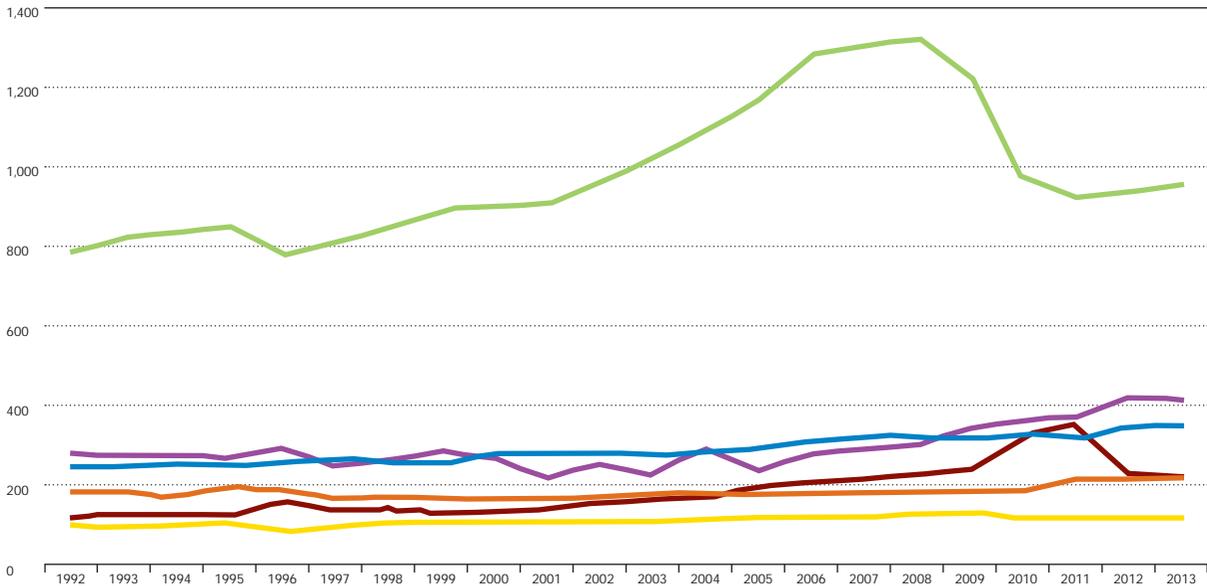
Beyond Nigeria, a handful of other countries have also contributed to African palm oil's modest growth in recent years. With total output of 415,000 and 225,000 tonnes, respectively, Ivory Coast and Cameroon were the continent's second- and third-largest producers in 2013 (FAOSTAT, n.d.). Ivory Coast's rise as a palm oil producer can be attributed, at least in part, to the PALMCI group, the country's largest commercial oil palm grower. The company, which is majority-owned by locally based Société Immobilière et Financière de la Côte Africaine (SIFCA) (52.5%) and the Wilmar–Olam joint venture Nauvu (25.5%), controls close to 400 km² (40,000 ha) of

Photo: Drought-resistant and able to grow in poor-quality soil, jatropha saw significant commercial interest for biofuel from 2004 to 2009. © Angkawijaya92 | Dreamstime.com - Jatropha Curcas Fruit Photo

FIGURE 3.1**Palm Oil Production in Sub-Saharan Africa, 1992–2013**

Key: ■ Nigeria ■ Ivory Coast ■ Cameroon ■ DRC ■ Ghana ■ All other states

Tonnes (thousand)



Data source: FAOSTAT (n.d.)

industrial estates and 1,330 km² (133,000 ha) of outgrower plots. PALMCI's annual output of roughly 300,000 tonnes of crude palm oil represents nearly 80% of the Ivory Coast's total production (PALMCI, 2012).

Agro-industry is somewhat less dominant in Cameroon, where approximately half of the total palm oil output is produced on agro-industrial estates and one-third on independent smallholder plots; the rest comes from supervised smallholder plantations (Hoyle and Levang, 2012). Four commercial ventures currently lead the country's agro-industrial production: Luxembourg-based Société Financière des Caoutchoucs (SOCFIN) partially owns two local companies, Société Camerounaise de Palmeraies (SOCAPALM) and Société Africaine Forestière et Agricole du Cameroun (SAFACAM), while the government of Cameroon wholly owns another two estates, Cameroon Development Corporation and Pamol. Although the country has attracted significant com-

mercial oil palm interest in recent years, virtually all of its current agro-industrial production comes from these older estates.

Ghana and the DRC are the only other African producers with annual outputs greater than 100,000 tonnes; all other nations collectively produce just under 350,000 tonnes of palm oil—a nominal quantity compared to giants such as Indonesia which, in 2013, supplied 26 million tonnes of the commodity (Rusmana and Listiyorini, 2014; FAOSTAT, n.d.).

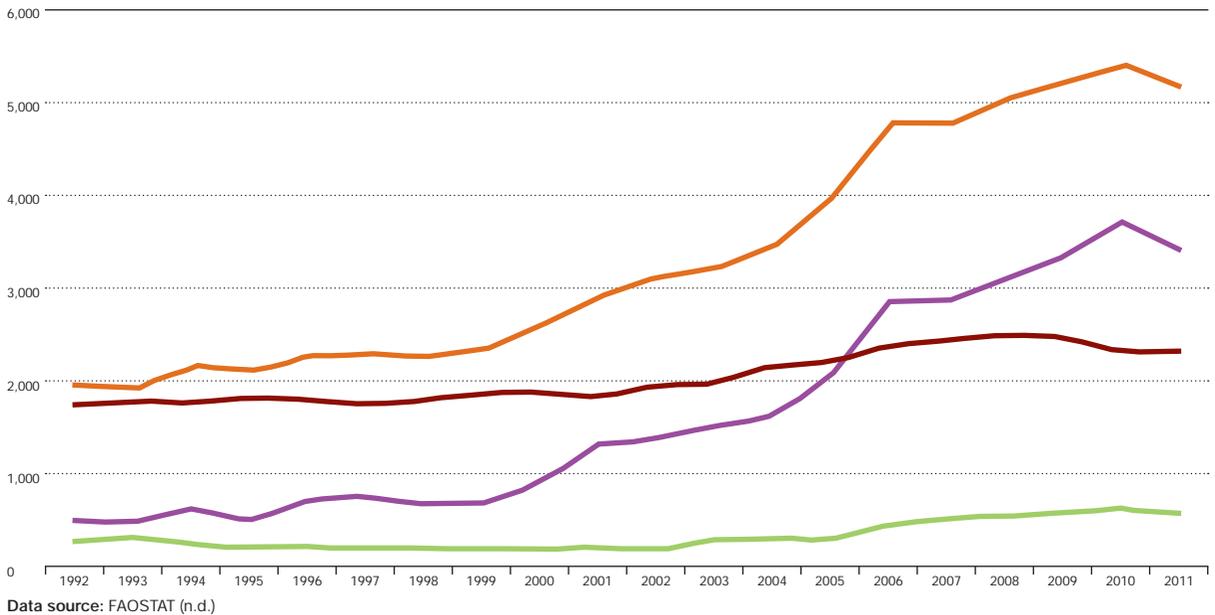
Trade

In contrast to sub-Saharan Africa's relatively steady production, demand for palm oil on the continent has expanded rapidly over the last decade (FAO, 2013). This has led to a surge of imports, largely from global producers such as Indonesia and Malaysia, yet also from regional suppliers. Between 2000 and 2011 sub-Saharan Africa's imports of crude

FIGURE 3.2**Sub-Saharan Africa's Palm Oil Trade, 1992–2011**

Key: ■ Export ■ Import ■ Production ■ Consumption

Tonnes (thousand)



palm oil increased nearly threefold, while production rose by a little more than one-quarter (FAOSTAT, n.d.). Today, sub-Saharan Africa remains a large net importer of palm oil, with domestic demand far outstripping supply (ZSL, n.d.-a; see Figure 3.2).

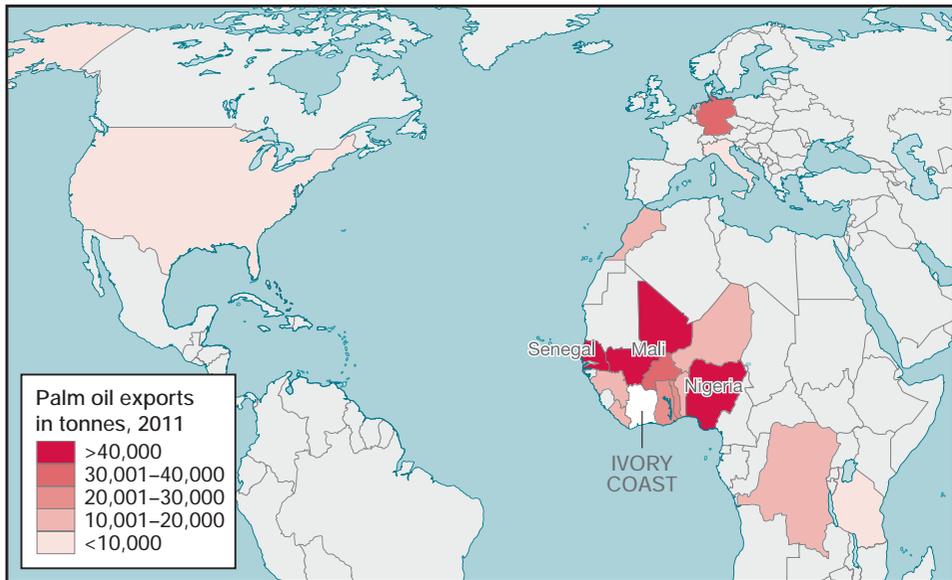
Exports of palm oil are still very limited. Although several producer countries send some quantity of the commodity abroad, trade is typically confined to regional partners. For example, exports of palm oil from West Africa—primarily from Ivory Coast—are mostly destined for neighboring Burkina Faso, Ghana, Mali, Nigeria, Senegal and Togo. In Central Africa, Cameroon, the region's largest producer, exports palm oil to Gabon and the Central African Republic (CAR), among a few others (USDA FAS, n.d.).

With growing production and relatively small domestic demand, Ivory Coast is sub-Saharan Africa's only net-exporter of palm oil (see Figure 3.3). The country's primary export market is regional as well, although

it also sells a small quantity of palm oil to Europe and the United States. Germany is by far Ivory Coast's largest non-regional client, purchasing 12% of the country's total exports in 2011 (USDA FAS, n.d.).

Future Expansion

Large-scale land acquisition for oil palm development in sub-Saharan Africa has proceeded rapidly over the past decade. Yet despite the myriad agreements and flurry of media reports, the land area currently under agro-industrial oil palm cultivation remains small in comparison to that suggested by announcements of land deals. Once contracts are concluded, the process to identify suitable land, complete environmental impact assessments and secure the necessary materials and workforce is lengthy (RFUK, 2013). The future of oil palm development on the continent is therefore uncertain, with the continued attractiveness of abundant land

FIGURE 3.3**Geographic Distribution of Ivory Coast's Palm Oil Exports, 2011**

Data source: USDA FAS (n.d.)

complicated by difficult operating conditions and a host of other challenges.

Several recent developments, in particular, have reduced interest in oil palm cultivation on the continent. The 2014 Ebola outbreak slowed economic activity and investment—including in the palm oil sector—throughout West Africa, particularly in the most heavily affected countries (World Bank, 2015a). Executives of palm oil companies active in the region have even noted that the Ebola crisis led to a *de facto* moratorium on new deforestation in affected areas.⁶ Although the outbreak is now contained, fears may continue to repress interest from international investors for some time.

Another factor that has inhibited oil palm investment on the continent is the global decline in the price of crude palm oil. Despite sharp dips in late 2008 and early 2009 as a result of the global economic recession, the price of crude palm oil remained at a historic high through the end of the decade, reaching an average monthly peak of US\$1,292 per tonne⁷ in February 2011 (Mongabay, n.d.).

Since 2011, however, prices have declined sharply, fluctuating between US\$800 and US\$900 per tonne during most of 2013 and dipping below US\$800 per tonne in August 2014 for the first time in five years; at this writing, the price per tonne stood at well below US\$700 (Agrofin, n.d.).

Industry experts predict continued price declines due to abundant global supplies of edible oils (Pakiam, 2014). For example, there are large soybean crops in the United States and there has been a massive expansion in the planted area in Southeast Asia over the past few years. Many plantations have reached maturity at the same time, flooding the global market with edible oils. Although the majority of palm oil produced in sub-Saharan Africa is sold locally, and local palm oil prices are typically higher than those a producer is able to obtain on the international market, as discussed below, the persistence of low international prices may reduce the appetite of commodity companies to make relatively high-risk investments in Africa.

While challenges abound, some investor interest in large-scale oil palm cultivation is likely to persist, due to both growing domestic demand for the commodity as well as government-led campaigns to attract greater foreign direct investment. In fact, governments across the region are actively promoting commercial agricultural investment, especially in oil palm, due to its potential to promote economic growth, local employment and poverty alleviation (see Chapter 1). Cameroon's Rural Sector Development Plan, for example, aims to increase production to 450,000 tonnes by 2020 through both industrial and smallholder operations (Hoyle and Levang, 2012), double the amount that it produced in 2012 (FAOSTAT, n.d.). The Congolese government, meanwhile, has said that it plans to develop plantations covering 10,000 km² (1 million ha) by the early 2020s (Tsoumou, 2011). Finally, in Gabon, the government's Strategic Plan for an Emerging Gabon calls for the conversion of the country into Africa's largest producer of palm oil, most of which is to be facilitated by Olam's plan to plant 1,300 km² (130,000 ha)⁸ of oil palm by 2018–19 (Fern, 2013). For more information on Olam's activities in Gabon, see Chapter 5.

Overall, intended deals in sub-Saharan Africa cover 8,500 km² (850,000 ha), with the majority located in Cameroon (Land Matrix, n.d.). Yet, as noted in Box 3.1, reliable information on specific deals under negotiation is difficult to obtain. Media reports can be inaccurate and companies may keep plans from becoming public, especially before an agreement is reached, due to the recent wave of negative publicity around “land grabs” on the continent (see Chapter 4). Many of the projects known to be under negotiation have not progressed and may not materialize, while other, unpublicized deals may be proceeding behind closed doors.

Africa's choice

The African model of agriculture—characterized by the predominance of smallholder farms using low-quality stock and achieving lower yields—has many advantages, particularly for smallholder farmers and their communities. It provides broadly distributed benefits and allows farmers more flexibility in managing agriculture to meet their needs and those of their communities. Since the African model is not conducive to large concentrations of capital, it may even keep the expansion of agriculture into forests in check. Despite these benefits, pressure from international agribusiness and state actors to develop a larger commercial plantation sector is likely to continue at some level for the foreseeable future. If these plans actually pass from the project negotiation phase to large-scale development, African countries and communities will face a choice about which model of large-scale tropical agriculture they want to adopt: the Asian or the Brazilian model.

In the Asian model, rapid development would be accompanied by massive forest clearance and significant associated impacts on great apes, as well as on local communities.

Although oil palm is native to West Africa, its home base remains undisputedly Southeast Asia. Indonesia and Malaysia have tripled their production over the past 15 years and currently account for about 85% of the global total (FAOSTAT, n.d.). The rapid expansion in the crop's cultivation has had a devastating impact on Southeast Asia's environment and communities. Palm oil producers have cleared several hundred thousand square kilometers of native forests to expand plantations, contributing to significant increases in carbon dioxide emissions and putting immense pressure on local populations of orangutans, gibbons, Sumatran tigers and other species (Sheil *et al.*, 2009). In Indonesia, fires set annually

“The Brazilian model can serve to promote the protection of forests and the growth of agriculture.”

to help clear forests and peatlands—largely to make way for oil palm plantations—have created dangerous haze that routinely spreads to neighboring Malaysia and Singapore (Varkkey, 2013). Moreover, lax law enforcement and unclear land ownership have led to social conflicts. In 2012, for instance, 59% of Indonesia’s 1,000 palm oil companies were found to be connected to land conflicts with local communities (Hadinaryanto, 2014). Without stronger regulations, large intact forests across the Congo Basin could experience the same fate as the “paradise forests” of Borneo, Sumatra, Sulawesi, peninsular Malaysia and even parts of New Guinea.

The other option is the Brazilian model, which can serve to promote the protection of forests and the growth of agriculture. While the model was imperfectly applied in the beginning, the Brazilian government subsequently joined with key agriculture companies and civil society to implement strong forest protections that have reduced the rate of deforestation by more than 70% since 2004 (INPE, 2013). This success can be attributed to factors such as the soy industry’s voluntary moratorium on new deforestation (following campaigns by non-governmental organizations (NGOs)), similar commitments in the cattle sector, improved law enforcement, recognition of indigenous land rights and the creation of new protected areas (CLUA, 2014). These steps have not inhibited agricultural development; in fact, they may even have made it more efficient and profitable. By concentrating development on large areas of degraded land and improving yields, Brazil has managed to achieve steady increases in the production of soy, cattle and other commodities even as it has made great strides in protecting forests (Strassburg *et al.*, 2012).

Whether Africa follows the Asian or Brazilian model for commodity agriculture will be determined by many forces, includ-

ing whether governments show the political will to protect forests and communities, whether international corporate agriculture players adopt and implement strong forest conservation policies, and the extent to which African civil society can join with international NGOs to scrutinize commodity expansion efforts in Africa.

Other Agricultural Commodities

The recent wave of investment in oil palm plantations has been one of the largest and most visible components of active land acquisitions in sub-Saharan Africa. Yet foreign direct investment in crops is by no means limited to oil palm. Sugarcane, rubber and cereals (especially rice) have also piqued investor interest, as discussed below.

Sugarcane

Although sugarcane is grown across the continent, traditional areas of large-scale cultivation are located in East and Southern Africa. In sub-Saharan Africa, South Africa is by far the largest producer, accounting for about one-quarter of total output;⁹ Kenya, Mauritius, Swaziland and Zimbabwe are also significant producers (FAOSTAT, n.d.). Although these regions contain far less ape habitat, some human–wildlife conflict has been reported around sugarcane plantations in Uganda (see Case Study 1.2 in Chapter 1). The land area under sugarcane cultivation has increased markedly over the past two decades, from 9,310 km² (931,000 ha) in 1992 to 13,000 km² (1.3 million ha) in 2013. Madagascar and Nigeria were responsible for a large portion of the increase, although traditional growers, including Kenya, Mozambique, South Africa and Zimbabwe, also saw significant expansions in land area harvested (FAOSTAT, n.d.).

Over the past decade, investor interest in sugarcane has been in part driven by the projected growth in demand for biofuels; the vast majority of projects concluded since 2000 aimed to produce for both the food and biofuel markets (Land Matrix, n.d.). Investment in the crop represents approximately 13% of the total land area acquired over the past decade (Schoneveld, 2014a). The most popular destinations of recent international land investments have been Ethiopia, Mozambique and Tanzania, in terms of both the number of projects as well as the total land area acquired. Areas where the crop has not traditionally been cultivated have also seen some sugarcane investments, including approximately 450 km² (45,000 ha) in Sierra Leone, 200 km² (20,000 ha) in Cameroon and 150 km² (15,000 ha) in Ivory Coast. South African companies such as Illovo Sugar¹⁰ and Crookes Brothers have sought land outside of the country, investing in plantations in Congo, Mali, Mozambique, Swaziland and Zambia. As with oil palm, however, only a small portion of the total area acquired has actually been cultivated (Land Matrix, n.d.).

Large-scale investment in sugarcane plantations appears to have dropped off over the last couple of years—the majority of deals recorded in the Land Matrix were concluded prior to 2011. Little information exists on new projects under negotiation; this suggests slowing investor interest but can also be a reflection of a more limited willingness to publicize incomplete contracts.

Rubber

In sub-Saharan Africa, the principal producers of natural rubber are located in West and Central Africa, the largest of which are Cameroon, Ivory Coast, Liberia and Nigeria (FAOSTAT, n.d.). Between 2000 and 2012, the total area harvested for rubber cultivation increased by approximately

1,150 km² (115,000 ha), with the majority of that increase coming from Cameroon, DRC and Ivory Coast. The crop is produced both by smallholder farms as well as large plantations, the latter principally located in Cameroon, DRC and Gabon (Hourticq and Megevand, 2013). Trade in rubber is still relatively limited—only Cameroon, Ivory Coast and Nigeria export any significant quantity of the commodity, while imports are nominal across the region (FAOSTAT, n.d.).

Rubber producers, however, have been turning increased attention to West Africa, which has a climate suitable for rubber cultivation as well as a significant pool of agricultural workers (Hawkins, 2012). A number of land deals concluded over the past decade have targeted rubber production, amounting to a contracted land area of about 7,700 km² (770,000 ha) (Land Matrix, n.d.). The majority of these have set aside land for the cultivation of rubber and one other commodity, most often oil palm because the site requirements for the two crops are similar (FAO, 2001). It is unclear how much of the land area will be dedicated to rubber production specifically.

Liberia has the greatest number of concluded deals, with approximately 3,000 km² (300,000 ha) under contract. The Sime Darby rubber and oil palm plantation covers nearly two-thirds of that total. The development of these areas, however, may be significantly impacted by the newly concluded Norway–Liberia agreement on reducing emissions from deforestation and degradation, as discussed below (see Box 2.3 in Chapter 2). Other companies are reportedly seeking land in Cameroon, the DRC and Gabon (Land Matrix, n.d.).

Cereals

Cereal crops are harvested across sub-Saharan Africa, largely by smallholders for domestic



consumption. In terms of production volume, the most common crops are corn, rice, wheat and sorghum. Corn is grown in some quantity in virtually all sub-Saharan African countries, although Ethiopia, Kenya, Malawi, Nigeria, South Africa, Tanzania and Zambia are the largest producers. The crop has been the fastest-growing cereal in terms of total area under cultivation, increasing by approximately 70,000 km² (7 million ha) from 2003 to 2013. This has resulted in a substantial rise in output, from 45 to nearly 71 million tonnes during the same time period. Producer countries export limited quantities of corn; in 2011, approximately 5% of total production was exported (FAOSTAT, n.d.).

Investors have shown some interest, albeit limited, in commercial corn cultivation in sub-Saharan Africa. This is evidenced by the conclusion of several dozen land deals since 2000; the majority of which cover relatively small land areas—with a mean of 130 km² (13,000 ha)—and target multiple commodities, with corn as one of four or more planted crops. The most popular destinations for investment—Ethiopia, Mozambique, Tanzania and Zambia—have limited or no ape habitats, although several land deals have also been concluded in ape range states, such as the DRC, Ghana, Nigeria and Senegal (Land Matrix, n.d.).

The second most widely cultivated cereal, rice, is largely grown in West Africa, Tanzania and Madagascar, although smaller quantities are produced across the continent. Production increased rapidly during the past decade, from just under 19 million tonnes in 2003 to 29 million in 2013 and the total land area under cultivation expanded by approximately 30,000 km² (3 million ha). As with corn, sub-Saharan Africa exports a limited quantity of rice—approximately 1% in 2011; the vast majority is consumed within the region (FAOSTAT, n.d.).

The scale of investor interest in rice cultivation has been commensurate with that of corn in terms of the number of land deals concluded, although rice is much more likely to be the sole crop planted. The average project size is also relatively small, at approximately 180 km² (18,000 ha). The largest number of land deals involving rice have been concluded in East and West Africa, particularly in Ethiopia, Ghana, Mozambique, Nigeria, Sierra Leone and Tanzania (Land Matrix, n.d.).

Wheat and sorghum, the two other cereals that are widely grown in sub-Saharan Africa, are almost entirely produced for local consumption and have received very little investor interest (FAOSTAT, n.d.; Land Matrix, n.d.).

Sources of Investment

Broad Trends

The wave of recent land acquisitions has substantially increased foreign direct investment in sub-Saharan Africa's agriculture. Although capital comes from a variety of entities, including private companies, governments, international financial institutions and sovereign wealth funds, foreign companies dominate land-based investments (Farole and Winkler, 2014). An analysis of 520 projects across all agricultural commodities found that 86% of primary investors—actors directly involved in land acquisition and project implementation—were of foreign origin; ranked in terms of land area acquired. In regional terms, European investors account for roughly 40% of the total land under contract, while Asian and North American actors represent 19% and 15%, respectively (Schoneveld, 2014a).

There are, however, important differences in the purpose of investment across country of origin. Acquisition of land for biofuel

production¹¹ is particularly common among European and North American investors; nearly 60% of land purchases for biofuels have been made by firms of European origin. *Jatropha* investments, in particular, were dominated by European and US actors, often small new ventures funded by venture capital, private equity funds or alternative stock exchanges (Schoneveld, 2014a). Thriving before the financial crisis of 2008–9, these small and often poorly capitalized firms were the hardest hit by the global economic downturn and accompanying credit restrictions. Lacking adequate financial backing—and seeing poor yields—many have since withdrawn from the continent (von Maltitz and Stafford, 2011).

Agricultural investment in food crops, such as cereals, roots and tubers, and vegetables—which comprise only a small fraction of the total land area acquired over the past decade—has come from a much more diverse range of sources, including the Middle East, North Africa, China, India and, often, Africa itself. Sub-Saharan companies have also been an important source of investment in land for food production. In fact, nearly 40% of land deals entered into since 2000 have involved a regional actor, either as the sole investor or in partnership with a foreign entity (Land Matrix, n.d.).

Oil Palm

Sources of outside capital for specific projects are difficult to determine, reflecting not only the complicated ownership structure of many commodity growers and traders, but also the fact that a substantial number of companies that are privately held and do not make their transaction details public. Moreover, funding flows may vary based on the type of company seeking to fund operations. Broadly, oil palm investors can be categorized into three groups:

Photo: Across sub-Saharan Africa, cereal crops are largely grown by smallholders for domestic consumption. The most common crops are corn, rice, wheat and sorghum. © Jabruson, 2015. All Rights Reserved. www.jabruson.photoshelter.com

1. **Plantation owners who wish to grow their operations:** These include state-owned enterprises (such as the Cameroon Development Corporation) and regional palm oil companies (such as Ivory Coast-based SIFCA), as well as primarily foreign entities with a long-standing presence on the continent (such as the Belgium-based Siat Group).
2. **Large Asian agribusinesses that aim to expand into Africa:** Often cited in media reports on land acquisitions in Africa, this group includes companies that already own oil palm estates in Southeast Asia—such as Golden Agri-Resources (GAR), Sime Darby and Wilmar—as well as traders seeking to enter upstream production (such as Olam International). Large European and US companies, including Bunge, Cargill and Unilever, have thus far not expanded production in Africa, as far as public data show (Land Matrix, n.d.).
3. **New ventures with plans to grow oil palm for the first time:** Mostly foreign-owned, these are relatively small and unknown enterprises aiming to enter the palm oil marketplace, both for food and biofuel production, for the first time; they include Atama, Biopalm Energy, FRI-EL Green Power and Herakles Farms.

Well-capitalized and profitable from large-scale operations in Indonesia and Malaysia, many Asian agribusinesses have used revenue to fund expansion into sub-Saharan Africa rather than relying on specific project finance. There are exceptions. Golden Agri-Resources, for example, received a US\$500 million loan from the China Development Bank Corporation to finance its plantation in Liberia (Bank Track, n.d.). Olam International, meanwhile, received a US\$228 million loan from the Development Bank of Central African States and several other lenders—including BGFI Bank of Gabon, the African Export-Import

Bank, and Africa's leading banking group, Ecobank—to develop an oil palm and rubber plantation in Gabon (Agence France-Presse, 2012). For more information on Olam's activities in Gabon, see Chapter 5.

Companies already operating on the continent have also received some funding from African financial institutions to extend their operations. In 2007, the African Development Bank provided a €10 million (US\$13 million) loan to Siat to expand its oil palm and rubber estates in Gabon (AFDB, 2008). Meanwhile, the private equity fund African Agriculture Fund—capitalized by European and African development finance institutions—has made equity investments worth US\$19.5 million in Feronia's oil palm estate in the DRC (Phatisa, n.d.). Through its subsidiary Golden Oil Holdings, the equity fund now owns a 32.5% share in Feronia (Bloomberg, n.d.).

The role of international development banks in oil palm development in sub-Saharan Africa has been the subject of some debate. Although media reports attribute several large-scale deals to these institutions—including the ones described above—others have found that only a small fraction of all concluded agreements have received international development bank financing (Schoneveld, 2014a). The World Bank, which has funded some palm oil projects in West Africa through its private-sector lending arm, the International Finance Corporation, issued a revised palm oil lending policy in 2011 following an 18-month suspension on new lending to the sector (World Bank, 2011). Although the policy does not wholly preclude the financing of palm oil, it refocuses lending to smallholder projects and activities that increase land productivity. In general, the perception that international development bank involvement has been significant may simply reflect the fact that information on these transactions is much more readily available than it is on those involving private financial institutions.

Financial Institutions and Sustainable Lending

In general, private financial institutions appear to be aware of deforestation as a serious concern in oil palm development (Hays and Hurowitz, 2013). Although other social and environmental issues overshadowed palm oil as top priority in the past, the commodity has since become the most visible sustainability topic. A number of industry players, including BNP Paribas, Citi, Credit Suisse, ING, Rabobank and Standard Chartered have already adopted specific policies for palm oil or broader agribusiness lending (CLUA, 2014), yet the extent to which these policies are applied remains both unclear and difficult to study due to the absence or weakness of disclosure practices. Other banks continue to operate without or with weak policies on palm oil or other agricultural commodities.

To help make more responsible investments, private financial institutions claim to need better data on corporate performance and adherence to established sustainability standards. The most commonly used indicator, membership in a body such as the Roundtable on Sustainable Palm Oil (RSPO), has not been sufficient to prove adherence, because verifying on-the-ground compliance of RSPO-certified companies remains difficult (see Chapter 5). Moreover, in cases where certain criteria were not initially met, obtaining real-time information on progress—changes in corporate operations that may make them more or less likely to qualify for funding under certain sustainability requirements—is challenging (Hays and Hurowitz, 2013).

It is important to note, however, that some observers question the presence of an “information gap” in the financial industry in view of the immense number of resources that institutions have available for data collection and due diligence.

Wherever gaps do exist, the NGO community can play an important role in the provision of timely data on corporate performance to the financial sector. Although such work is already under way, financial institutions cite the lack of a common language as a persistent barrier to stronger partnerships. Specifically, financiers note that information regarding corporate environmental practices must be less rhetorical, more detached and more analytical if it is to be valuable as input into financial decisions—in contrast to the style often used by the NGO community to sensitize the public to a particular topic. By adopting terminology and language that is more familiar to the financial industry, NGOs may be able to increase their ability to inform funding decisions (Hays and Hurowitz, 2013).

“By adopting terminology and language that is more familiar to the financial industry, NGOs may be able to increase their ability to inform funding decisions.”

Drivers of Expansion into Africa

The drivers of increased agricultural land investment in sub-Saharan Africa can be generally grouped into three categories:

1. an increase in global demand for agricultural commodities;
2. easier access to land on the African continent; and
3. lower set-up costs.

These are further described below.

Increased Demand for Agricultural Commodities

The Shift from Fuel to Food

Demand as a driver of large-scale land acquisition in sub-Saharan Africa has experienced a marked shift between the initial years of the boom—from about 2005 to 2010—and the post-financial crisis period. While

Photo: Demand as a driver of large-scale land acquisition in sub-Saharan Africa has experienced a marked shift from the cultivation of biofuel feedstock, to food production. Oil palm fruit en route to processing.
© Patrice Levang

the earlier period was characterized by a rise in land acquisition for the cultivation of biofuel feedstock, the post-crisis years saw a decline in biofuels development in favor of food production.

Influenced by a decline in easily recoverable oil reserves and national pushes to diversify supplies of vehicle fuels, the global demand for biofuels has risen considerably since 2000 (Hourticq and Megevand, 2013). Aiding this growth has been an increase in demand for transport fuel from emerging markets such as China and India, as well as the implementation of national policies around the world to promote the development of renewable energy (Cotula, 2013).

European nations, in particular, have driven the biofuel-based land purchases since the adoption of the 2003 Biofuels Directive. The directive, which required that 5.75% of all transport fuels used in the European Union (EU) come from renewable sources by 2010 (EU, 2003), had important implications for Europe's biofuel industry. As imports supplied roughly 40% of Europe's domestic consumption (Gerasimchuk, 2013), European companies began looking outward to secure new sources of raw materials to meet future growth in demand. This trend is reflected in the composition of the concluded land deals in sub-Saharan Africa, more than half of which represent investments that involve Europe-based companies and either partially or fully target the biofuel market (Land Matrix, n.d.). Europe, however, has not been the only source of growing demand for biofuels—several dozen countries around the world have also adopted biofuel targets or mandates over the past decade (CFS, 2013).

Although demand for biofuels continues to grow globally (Schroeder, 2014), the rush for African land to cultivate biofuel feedstock has waned since 2009. First, the 2007–08 food crisis highlighted the attractiveness of investment in food crops as a way of ensuring global food security and shone

a harsh spotlight on the use of food crops as a biofuel feedstock (ActionAid, 2012). Second, the global financial crisis has significantly depressed demand and credit availability for biofuel projects (IEA, 2009). This is particularly true of jatropha cultivation, which, as described above, drove large-scale land acquisitions in Africa until the bubble burst in 2009 (see Box 3.2). Lacking



experienced staff and poorly capitalized, many projects have been postponed or abandoned entirely. Investors in oil palm plantations largely survived the financial downturn—although their numbers have also declined—but due to limits on entering the biofuel market, as described below, as well as the growing demand for cooking oil on the continent, these have since turned

their attention towards cultivating oil palm for food.

Finally, more recent European policy changes have dampened the attractiveness of obtaining land for biofuel production. In 2009, the 2003 Biofuels Directive was repealed and replaced by the Renewable Energy Directive, which set a minimum 10% target for renewable transport fuels by 2020



(EU, 2009). Importantly, the law also put in place a sustainable biofuels requirement that the feedstock generate a net reduction in greenhouse gas emissions without negatively impacting biodiversity or land use. In October 2012, the European Commission went even further, publishing a proposal to limit food crop contribution to no more than half of the 10%. After nearly two years of deliberations, the EU's Council of Energy Ministers agreed to a 7% cap on food-based biofuels (ICCT, 2014).

Domestic versus International Demand

The final destination of food crops produced on African agro-industrial estates varies by crop. Cereals, roots and tubers, and vegetables are grown for both domestic consumption and export. Companies from the Middle East and North Africa, for example, have sought to acquire land to supplement domestic food production, while others have looked for new market opportunities. Some Chinese and Indian companies, for instance, see agricultural expansion into Africa as an opportunity to establish a foothold for product sales on the continent (Schoneveld, 2014a).

Palm oil, however, has been primarily cultivated to supply domestic or immediate regional demand. Consumption of palm oil, which is largely used directly as cooking oil, has risen rapidly across sub-Saharan Africa (see Figure 3.2), a trend that is expected to continue well into the next decade (Ofon, 2014). Even with increased production, local supplies have not been sufficient to meet the growing demand. In West Africa alone, the excess demand for palm oil grew from 250,000 tonnes in 2002 to 1.2 million tonnes in 2012 (FAOSTAT, n.d.). The figure is projected to rise further—to 1.5 million tonnes by 2020, according to one estimate (ITC, 2012), although this may be an underestimate given the current growth rates. Across the continent,

palm oil consumption is expected to grow by 60% between 2014 and 2030 (Ofon, 2014).

This rate of growth in demand is difficult to match with domestic production. Given the current levels of palm oil consumption in sub-Saharan Africa—approximately 5.2 million tonnes in 2011—a 60% increase would necessitate more than a threefold increase in production by 2030 to meet the domestic demand with local supplies.¹² While this is not entirely impossible, achieving such rapid growth will be exceedingly difficult given that production over the last decade increased by only 16% (FAOSTAT, n.d.). Therefore, in the short term, almost all expansion in regional production is likely to be absorbed by countries in sub-Saharan Africa, with the remaining gaps satisfied by imports (ITC, 2012).

Beyond the ready local market, companies that produce palm oil in the region are further incentivized to sell the commodity to domestic consumers because they are likely to obtain a higher price within sub-Saharan Africa than on the international market. The difference between world and West African palm oil prices, for example, has widened over the past two decades, from a differential of approximately 3.3% in 1993 to nearly 55% in 2011 (Dublin-Green, 2013). This is a reflection of the region's significant excess demand—propped up by relatively low yields and increasing preferences for palm oil for cooking compared to other vegetable oils—high cost of transport and the prevalence of import tariffs (ITC, 2012).

Easier Access to Land

The focus on sub-Saharan Africa as a destination of large-scale agricultural land investment is primarily a reflection of substantial land access, in terms of both perceived availability and the relative ease of acquisition. The continent has the greatest availability of non-cultivated arable land in the world,

“The focus on sub-Saharan Africa as a destination of large-scale agricultural land investment is primarily a reflection of substantial land access, in terms of both perceived availability and the relative ease of acquisition.”

accounting for approximately half of the world total (Jayne *et al.*, 2014). The Congo Basin countries alone represent roughly 40% of the total uncultivated, unprotected and sparsely populated land suitable for agriculture in sub-Saharan Africa—and 12% of such land globally (Hourticq and Megevand, 2013). When it comes to solely non-forested land, the Congo Basin accounts for one-fifth of all suitable agricultural land area in sub-Saharan Africa and 9% of such land worldwide.

It is important to note, however, that some of the land cited as “available” is subject to competing claims. In particular, portions of it may already be in use by local communities, but complex and confusing land tenure laws allow governments to cede tracts to agribusiness; the ramifications can include tensions between governments, business and civil society, the loss of land and livelihoods, and direct conflict (Cotula *et al.*, 2009). For more information on land tenure and relevant legal frameworks, see Chapter 4.

Despite these challenges, foreign companies continue to turn to the continent to bypass the real and perceived constraints on expansion at home. These include increasing protection of the rights of local and indigenous peoples, and awareness of the environmental impacts of forest conversion, such as climate emissions and threats to biodiversity. Moreover, even when degraded land is available, the investment necessary to cultivate it—engaging in long and costly administrative or legal proceedings and carrying out consultations with local communities—is greater than that required in sub-Saharan Africa, where regulation is poor and local community rights are even weaker than those in Southeast Asia.

Lower Set-up Costs

Although it may be as or more expensive to operate in sub-Saharan Africa than in Southeast Asia or other parts of the world, myriad incentives designed to attract com-

panies have substantially lowered the cost of establishing agro-industrial projects on the African continent. The main incentive is the remarkably low price of land. Annual lease rates rarely surpass US\$5 per hectare (Schoneveld, 2011), in comparison to about US\$150 to US\$300 in Latin America and US\$250 to US\$500 in Indonesia (Manciana, Trucco and Pineiro, 2009; Olam, 2010). In contrast, a hectare of land in the United States can cost more than US\$1,600 (USDA, 2014a). In some cases, developers are not asked to pay annual rental fees; rather, the economic development and regional job creation is taken as payment for the land (Cotula, 2011).

Total acquisition costs, including other acquisition expenditures such as negotiation, land surveying, legal and corporate expenses as well as any compensation for local communities, have been estimated at US\$825 per hectare in sub-Saharan Africa, compared to US\$1,000 in Indonesia (Ofon, 2014). Although the overall cost of plantation management is similar to that encountered in Southeast Asia, and profits are typically smaller due to lower yields, African labor is often cheaper and the corporate taxes levied on profits from producing plantations are either low or entirely negligible (ITC, 2012). Therefore, overall returns to investment are often comparable.

Governments in sub-Saharan Africa have also enacted numerous incentives aimed at attracting foreign agricultural investors and facilitating the ease of doing business. Beyond low land-lease fees, incentives include low taxation rates and tax holidays, flexible labor regulation and rights to water, minerals and timber in the concession area (Linder, 2013). International trade policies have also extended privileges to African producers. Under the EU’s Everything-but-Arms arrangement and the Africa Growth and Opportunities Act in the United States, products derived from sugar and palm oil are exempt from tariffs and quotas when

“ It is important to note that some of the land cited as “available” may be subject to competing claims. ”

they originate in African least developed countries (European Commission, 2014; USITC, 2015).

Despite ample demand and financial incentives, the cost of operating in sub-Saharan Africa can still be prohibitively high. While unskilled labor is abundant, skilled local personnel can be scarce and expensive. Risks to operations frequently include corruption, unstable institutions, inadequate transport infrastructure and poor communication networks, as well as violence and general political instability (von Maltitz and Stafford, 2011). All of these factors can raise costs, increase risk and discourage large-scale investment.

Industrial Agriculture and Ape Habitat

Unlike in the tropical zones of Latin America and Southeast Asia, deforestation in sub-Saharan Africa is still principally caused by expansions in smallholder farming (Rudel, 2013). This is particularly evident around the peripheries of urban centers in densely populated areas (Hourticq and Megevand, 2013). In general, the most forested regions of Africa—such as the Congo Basin, which represents 70% of the continent’s forest cover—have not yet experienced the scale of industrial agricultural expansion¹³ and associated deforestation that has been observed in other tropical areas around the world (Rudel, 2013). It is important to note that although large-scale agriculture has thus far not had widespread effects on forests in the Congo Basin, the effects of industrial and artisanal timber harvesting have been significant. For more information, see *State of the Apes: Extractive Industries and Ape Conservation* (Arcus Foundation, 2014).

Given the recent rise in large-scale land acquisition, greater attention is being placed on the potential impacts of industrial agricultural expansion on forest degradation and

loss. For example, one recent study suggests that fully developing one of the large oil palm plantations that have already broken ground in three countries—Herakles in Cameroon, Olam in Gabon and Atama in Congo—would increase the annual deforestation rate by 12%, 140% and 50%, respectively (Lawson, 2014).

Of equal concern is the international “leakage” of deforestation, as financial incentives and policy directives aimed at reducing deforestation are increasingly preventing companies from clearing forests in their traditional regions of operation and thus encouraging them to move into sub-Saharan Africa, where arable land is abundant and regulations are relatively weak (Wich *et al.*, 2014). This threat is particularly salient for palm oil investments as large oil palm corporations are more likely to convert remote native forests than revive old estates or operate on degraded land (Koh and Ghazoul, 2010).

Additionally, to speed up the land acquisition process and minimize the possibility of land use conflicts wherever land tenure systems are ambiguous, investors may decide to operate in areas that were not previously owned by other entities. Evidence also shows that some investors specifically target densely forested areas to recover some of the initial investment costs by harvesting timber within the concession (RFUK, 2013).

The extent to which agricultural expansion threatens forests varies across regions. Although some overlap between suitable arable land and forest areas is evident in West Africa, especially in Guinea, Ivory Coast and Liberia, the majority of intact forest landscapes—unbroken expanses of natural ecosystems of at least 500 km² (50,000 ha) that are minimally influenced by human economic activity—lie in the Congo Basin, namely in Cameroon, Congo, the DRC and Gabon (Mackey *et al.*, 2015). In Gabon and Congo, approximately 93% and 85% of suitable arable land, respectively, lies under forest cover (Schoneveld, 2014a).

The pressures on ape species also vary across regions. In West Africa, chimpanzees have already suffered significant population losses due to forest clearance and hunting. In Central Africa, where large tracts of native forest remain intact, apes have been threatened by the international trade in wild meat, which is often linked to commercial logging operations that facilitate access to their habitat. Cross River gorillas, a subspecies of western gorilla, have seen approximately 60% of their habitat disappear in the last two decades; meanwhile, eastern gorillas have lost half of their traditional range since the early 1990s. Bonobos, who live only in the DRC, have seen nearly 30% of their habitat destroyed (Junker *et al.*, 2012). All species of African apes are threatened: the western gorilla (both subspecies) and the mountain gorilla are critically endangered, while Grauer's gorilla and all species of the chimpanzee are endangered (IUCN, 2014a).

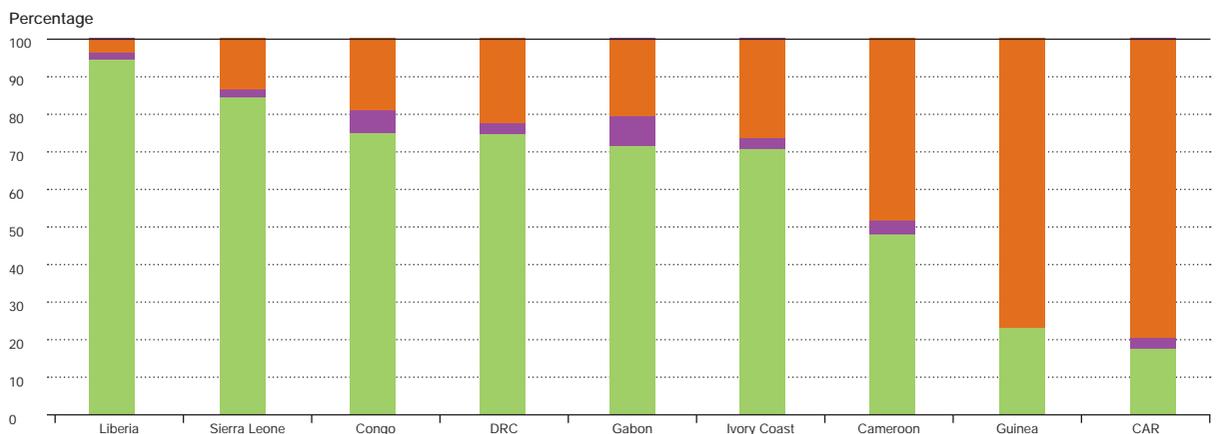
Oil palm plantations are most likely to have an impact on ape habitats, not only because concessions to cultivate the crop account for the largest portion of acquired land area, but also because they often lie in densely forested areas. According to a recent

analysis, approximately 60% of the land currently allocated to oil palm concessions overlaps with great ape habitat. The principal areas of intersection appear in Cameroon, Gabon and Liberia (Wich *et al.*, 2014).¹⁴ Yet, since spatial data for oil palm concessions are rarely available and development to date has been sluggish, it may be more instructive to look at the proportion of great ape habitat that is suitable for oil palm cultivation. According to the same analysis, the average overlap between the great ape range and land suitable for oil palm is 40%, excluding areas under official protection. Regional variations abound. In countries with significant ape habitat—more than 50,000 km² (5 million ha)—the overlap ranges from 20% in CAR, to nearly 75% in the DRC and Congo, to 94% in Liberia (Wich *et al.*, 2014; see Figure 3.4).

The extent to which different great ape species are threatened by oil palm development also varies. Eastern gorillas (including lowland and mountain gorillas) are least threatened, as the overlap between their ranges and unprotected oil palm-suitable land amounts to less than 10%. Chimpanzee habitat exhibits the second-smallest amount of overlap, averaging around 39%. A much

FIGURE 3.4
Proportion of Great Ape Habitat Suitable for Oil Palm

Key: ■ OP suitable (not protected) ■ OP suitable (protected) ■ Not OP suitable



Note: The figure includes countries with more than 50,000 km² (5 million ha) of ape habitat.

Data source: Wich *et al.* (2014)

BOX 3.3

Documented Impacts from Large-scale Palm Oil Expansion in Africa

Industrial agriculture regularly has a negative impact on natural forests, great apes and other wildlife populations and local communities in Africa. Industrial logging remains the largest driver of forest degradation and poses an enormous threat to great apes due to habitat destruction as well as poaching and its related wild meat trade.

Evidence shows that the consequences of recent industrial agricultural development projects can be harmful in multiple ways. A number of projects have attracted the attention of local and international NGOs, the media and other stakeholders because of their destructive impact on environmentally significant locations and local communities as well as their apparent immunity from prosecution and disregard for best practices.

Table 3.2 outlines nine agricultural expansion projects in six different West and Central African countries and indicates what is known about associated forest clearance and impacts. Almost all of these projects are in early stages of development, during which the clearance of natural forest begins. They vary in size, with some plantations as large as 3,000 km² (300,000 ha). Six of the projects have already been documented as having a negative impact on great ape habitat. This includes direct habitat destruction—coupled with the indirect effects caused by the influx of workers and families into these once densely forested areas—which could endanger the very survival of great apes in Africa.

The Atama palm oil project in Congo is to cover an area encompassing large tracts of primary and swamp forest (RFUK, 2013). According to a recent mission report, Atama has been selectively logging in a forested area of approximately 50 km² (5,000 ha) and had fully cleared and planted 5 km² (500 ha) by the end of 2013 (Wah Seong, 2013; WWF-CIRAD, 2014). The Atama project's development is threatening forests which have been found to be habitat for record densities of western lowland gorillas (WCS, 2014). The plantation could also produce severe indirect impacts on the surrounding forests.

Government inspectors and the officially mandated independent monitor—the Independent Monitoring of Forest Law Enforcement and Governance (IM-FLEG)—have repeatedly found Atama's operations to be in violation of a range of laws, for example because they failed to have the legally required environmental impact assessment, cleared forest many kilometers outside the area licensed for clearance, laundered illegal timber, subcontracted illegally and failed to pay due taxes. IM-FLEG has repeatedly recommended that the company's operation be suspended (IM-FLEG, 2013, 2014).

In Cameroon, two plantations operated by Herakles Farms and Sud-Cameroun Hevea are poised to replace a total of 650 km² (65,000 ha) of the Congo Basin rainforest with oil palm and rubber. While a total of less than 45 km² (4,500 ha) has been

cleared to date, the Herakles Farms plantation alone is set to destroy the habitat of 23 different mammals, including a rare subspecies of the chimpanzee (Waltert, 2013; Kupsch *et al.*, 2014). Both projects have also been beset by conflict with local communities: there is evidence that Herakles Farms violated procedures of free, prior and informed consent (FPIC) (Oakland Institute, 2012); operated illegally, including by cutting timber illegally (Greenpeace USA, 2013; Greenpeace International, 2014b); assaulted and harassed an opponent of the project (FPP, 2014a; Jacquemart, 2014); and drew accusations of corruption (Greenpeace and Oakland Institute, 2013). Meanwhile, Sud-Cameroun Hevea is accused of operating illegally by clearing rainforests in the periphery of the Dja Faunal Reserve on permanent forest estate in south Cameroon (CIFOR, 2015; UNESCO, n.d.).

The Olam project in Gabon may be one of the largest industrial agriculture plantations in the region. To date, about 200 km² (20,000 ha) have reportedly been developed. Although Olam returned a portion of the land it originally acquired to the government of Gabon to protect high conservation value (HCV) habitats, further research will be required to assess potential indirect impacts on great ape habitats, such as through the influx of workers and wild meat hunting (Olam, n.d.). Social conflict, including corruption and harassment of civil society groups, has also been reported (Publish What You Pay, 2013). For more information on Olam's activities in Gabon, see their case study in Chapter 5, page 147.

Liberia has allocated vast amounts of land to industrial agriculture plantations in recent years. Three palm oil plantations—Liberia Palm Developments (LPD) (also known as Equatorial Palm Oil), Sime Darby and Golden Veroleum Liberia (GVL)—could together cover more than 6,000 km² (600,000 ha). Forest clearance and plantation development for any of these three is likely to impact great ape populations.

Liberia Palm Developments, which potentially overlaps with a protected area, is threatening the last littoral forest in West Africa (Small, 2013; BirdLife International, n.d.). Sime Darby's concession is close to or borders on five protected areas, thereby increasing the likelihood of direct and indirect impacts on endangered wildlife in the Upper Guinean Forest ecosystem, including great apes (Bene *et al.*, 2013; Evans and Griffiths, 2013). Golden Veroleum Liberia borders the Tai-Sapo-Cestos biodiversity hotspot and is near Sapou National Park, which has the largest remaining forest block in West Africa and is home to an important population of the endangered western chimpanzee. Destruction of chimpanzee habitat has been documented and additional direct and indirect impacts are likely (Dowd *et al.*, 2014); on a more positive note, GVL has agreed to halt all development of chimpanzee habitat, which covers approximately half of the proposed development area.

All three plantations have elicited complaints from local communities. Specifically, all three have violated FPIC procedures (FOE Europe, 2013; FPP, 2014b, 2015); both LPD and GVL

TABLE 3.2**Selected Projects' Impacts on Forests and Ape Habitat as of November 2014**

Project	Location	Plantation size (km ²)	Commodity	Forest clearance so far	Impacts on great apes?
Atama	Congo	1,800 (180,000 ha) (Lawson, 2014)	Palm oil	At least 5 km ² (500 ha) and selective logging of tens of km ² (WWF-CIRAD, 2014)	Yes (WWF-CIRAD, 2014)
Golden Veroleum Liberia	Liberia	2,200 (220,000 ha) (Kenrick and Lomax, 2013)	Palm oil	At least 30 km ² (3,000 ha) (FPP, 2015), including at least 0.5 km ² (50 ha) of high conservation value chimpanzee habitat (Dowd <i>et al.</i> , 2014)	Yes (Dowd <i>et al.</i> , 2014); further monitoring needed
Herakles Farms	Cameroon	200 (20,000 ha) (Mongabay, 2013)	Palm oil	Roughly 10 km ² (1,000 ha)*	Yes (Waltert, 2013; Kupsch, Serge and Waltert, 2014)
Liberian Palm Developments (plantation also known as Equatorial Palm Oil)	Liberia	1,690 (169,000 ha) (Equatorial Palm Oil PLC, 2010; KLK, 2015)	Palm oil	Unknown; 1,470 km ² (147,000 ha) expansion under way (Equatorial Palm Oil PLC, 2010)	Further research needed; indirect impacts likely
Olam	Gabon	3,000 (300,000 ha) (RFUK, 2013)	Palm oil and rubber	208 km ² (20,808 ha) has been developed, of which 188 km ² (18,793 ha) has been planted (Olam, 2014)	Yes (RFUK, 2013)
Sime Darby	Liberia	2,200 (220,000 ha) (Sime Darby, 2013)	Palm oil and rubber	Unknown; plantation size exceeds 100 km ² (10,000 ha) (Sime Darby, 2013)	Yes (Bene <i>et al.</i> , 2013)
Sud-Cameroun Hevea	Cameroon	450 (45,000 ha) (GMG, n.d.)	Palm oil and rubber	33 km ² (3,274 ha) cleared as of November 2014*	Yes (UNESCO, n.d.)
Wilmar	Nigeria	270 (27,000 ha) (Wilmar, 2013b)	Palm oil	Unknown; at least "several thousand hectares" (several dozen km ²) of natural forest lost (FOE Europe, 2014)	Further research needed; indirect impacts likely
Wilmar	Uganda	400 (40,000 ha) (FOE Europe, 2014)	Palm oil	Unknown: approximately 36 km ² (3,600 ha) of natural forest cleared to date in highly biodiverse areas (FOE International, 2013)	Further research needed

Note: * Clearance information is drawn from unpublished sources, including maps, that were reviewed by the authors.

have played a role in assaulting and harassing opponents (All Africa, 2014; FPP, 2014b); and reports indicate that GVL has further jeopardized local food security (Forest Trust, 2013). Wilmar has plantations in Nigeria and Uganda that could cover up to 670 km² (67,000 ha). Although more research is needed on the impact of these operations, assessments show that a significant area (several thousand hectares) of natural forest in regions of high biodiversity has already been lost to these plantations in each country (FOE International, 2013; FOE Europe, 2014). The company's plantation in Nigeria potentially overlaps with a forest reserve and the Cross River National

Park (ProtectedPlanet, n.d.-a, n.d.-b); moreover, it is likely to have direct and indirect impacts on associated wildlife (FOE Europe, 2014). Wilmar is facing social conflict, including renewed concerns over the failure to observe FPIC processes in both locations (FOE International, 2013; FOE Europe, 2014).

The environmental and social problems caused by these nine plantations are not unique. They point to the potential consequences of industrial agriculture throughout the African continent if corporate best practices are not implemented and if legal and governance reforms, including adequate land use planning, are not passed and enforced by national governments.

Photo: Forests in a number of countries have enjoyed “passive protection” due to their remoteness, poor infrastructure and history of political instability. This situation may change rapidly as governments, companies and populations make inroads into previously inaccessible territories. Bwindi area, Uganda.
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greater degree of overlap is observed for the western gorilla in Cameroon, Gabon and Congo (65% in all three countries), and the bonobo in the DRC (91%) (Wich *et al.*, 2014). The extent to which ape habitats are threatened by specific projects is discussed above in Box 3.3.

Beyond demonstrating the significant amount of overlap between ape habitats and areas suitable for oil palm cultivation, this analysis illustrates that only a small fraction of vulnerable habitat is currently under protection across sub-Saharan Africa. Even when official protections are in place, the development of adjacent areas still poses an indirect threat due to increases in the local population and a subsequent rise in the number of incursions into protected forest, illegal logging and hunting of wild meat (Linder, 2013).

Sustainable Development

Powerful forces are driving commodity expansion to Africa. Agriculture is a key driver of economic activity in sub-Saharan Africa and will likely continue to play an important role in the economy. Although smallholders have thus far dominated agricultural production, large-scale plantations could also have a role to play in future development, especially as a source of new financial capital, skills, technologies and—if planned responsibly—local and regional employment. If agriculture is to play a positive role in Africa’s development, strong company and government policies will be needed to avoid deforestation and promote greater respect for the rights and livelihoods of local residents.

Thus far, forests in a number of countries have enjoyed “passive protection” due to their remoteness, poor infrastructure and history of political instability (Hourticq and Megevand, 2013). This situation may change rapidly, however, as governments, companies





and populations make inroads into previously inaccessible territories. The Congo Basin, which contains the largest remaining stretch of relatively untouched forest, is already experiencing substantial development as its vast land area and investor-friendly governments facilitate large-scale agricultural land acquisitions across multiple crop categories. Given the recent interest in land in the region, as well as its abundant agricultural potential, there is a distinct need to ensure that development projects are undertaken responsibly, such that environmental and social costs are kept to a minimum while substantial benefits accrue to the local communities. The following three approaches are among the ways to increase economic activity while minimizing social impacts:

- **Cultivate non-forested or degraded lands:** There is substantial potential to expand agricultural activity in sub-Saharan Africa without threatening vulnerable habitats. In the Congo Basin alone, cultivated land area can nearly double without the conversion of forests (Hourticq and Megevand, 2013), although deeper analysis is required to determine how much land is truly free of conflicting claims. Potentially available land includes old plantations and other formerly cultivated areas that have long been abandoned. Developing oil palm projects on non-forested or degraded lands can produce economic benefits without threatening great apes or other regional biodiversity (Wich *et al.*, 2014). To encourage investment, governments can tie some established financial incentives to the cultivation of less vulnerable land.
- **Engage smallholder farms:** Small-scale oil palm cultivation is already common across sub-Saharan Africa and many older estates source a portion of their fresh fruit bunches from associated smallholder farms. The crop's cultivation is

particularly attractive to small-scale growers due to its low susceptibility to pests and diseases, relatively small input requirements, and the need for a large workforce (Hoyle and Levang, 2012). A number of new concessionaires have also discussed developing operations according to the nucleus estate–out-grower model in order to involve local communities and leverage existing human resources (TechnoServe, 2011). Despite its promise, the practice remains largely in the conceptual phase and few (if any) new plantations have significant smallholder components. If properly implemented, however, greater smallholder involvement can be a practical way to prevent the myriad negative social impacts that often accompany large-scale oil palm cultivation and help ensure that the benefits of “development” are truly felt at the local level.

- **Increase yields from existing plantations:** Annual yields of oil palm fresh fruit bunches average 7.8 tonnes per hectare across sub-Saharan Africa—less than half of the average annual yield from oil palms planted across Southeast Asia (Wich *et al.*, 2014). While low yields have traditionally plagued smallholder farms with limited access to inputs and technology, agro-industrial plantations across the continent are also facing similar challenges. In Cameroon, for example, smallholder farms produce an average of 0.8 tonnes of crude palm oil per hectare while agro-industry yields approximately 2.3 tonnes per hectare. In contrast, the global industrial average is 4.0 tonnes per hectare (Hoyle and Levang, 2012). The low yields result from a number of factors, including less consistent rainfall than in Southeast Asia, a lack of proper inputs such as fertilizer—a common constraint among smallholder farms—as well as the prevalence of low-yield-variety oil palm (ACET, 2013). Raising

yields could help encourage economic growth and meet domestic demand without requiring significant additional land cultivation—but this is far from assured. By contributing to profits, greater yields could also further incentivize agricultural expansion and deforestation in the region (Gutiérrez-Vélez *et al.*, 2011). In the absence of strong forest conservation measures and improved governance, a pure yield improvement program runs the significant risk of driving unsustainable expansion of agriculture with a variety of negative impacts. Yet this risk can be mitigated, for example if financial support to increase yields is tied to agreements that farmers will refrain from clearing forest for the expansion of crops.

A number of corporate and political forces can enable the development of responsible agro-industry. In particular, large agricultural growers, traders and consumer companies can undertake voluntary commitments to eliminate deforestation and other abuses from their supply chains. This is already happening on a significant scale, particularly within the palm oil industry. After facing harsh criticism of its operations in Indonesia, Wilmar, the largest trader of palm oil globally, released its “no deforestation, no peat, no exploitation” policy in early December 2013 (Wilmar, 2013a). While a handful of such commitments had been announced in preceding years—Nestlé, for example, made the first zero-deforestation commitment in 2011—Wilmar has gone further. In addition to applying the policy on its own plantations, the company has extended it to all of its third-party suppliers. Moreover, rather than focusing solely on palm oil, the commitment covers all commodities Wilmar produces and trades around the world. For information on Wilmar’s growing commitment to sustainability, see their case study in Chapter 5, page 144.

Wilmar’s announcement was succeeded by a host of similar corporate commitments. In February 2014, Golden Agri-Resources, which had already adopted a no-deforestation policy for its own plantations, expanded it to third-party suppliers (Butler, 2014). By mid-2014, US-based company Cargill had announced a similar commitment for palm oil, and Bunge followed suit in October (Bunge, 2014; Cargill, 2014). A number of consumer companies have also adopted similar policies for their suppliers (CLUA, 2014).

Despite the recent proliferation of important zero-deforestation commitments, much of the industrial agricultural development in Africa remains to be covered by the new policies. With respect to oil palm development, the majority of ongoing and planned projects that are likely to impact great ape territory are not yet bound by zero-deforestation commitments, largely because a substantial proportion of African production is consumed on the continent and does not flow through large international traders and procurers. One exception is Wilmar, which is among the few traders that also own plantations in Africa. It is possible that zero-deforestation approaches could spread to smaller producers and regional traders that want access to global markets; alternatively, large global players that have made such commitments may convince governments to enforce policies more broadly, or extend their reach by purchasing small players. Even without such global trade pressure, the region’s large palm oil producers can do much more to ensure that their operations do not negatively impact sensitive forest areas.

Corporate commitments are an important first step in ensuring responsible and sustainable agricultural practices. On-the-ground practices, however, must adhere to written policy. Environmental groups have continued to draw attention to ongoing violations on large plantations and in supply chains in Africa and elsewhere, demonstrating the difficulty of changing entrenched agricultural practices (see Box 3.4).

“Corporate commitments are an important first step in ensuring responsible and sustainable agricultural practices. On-the-ground practices, however, must adhere to written policy.”

BOX 3.4**Toward More Responsible Practices in Industrial Agriculture in Africa**

The expansion of industrial agriculture is very difficult to reconcile with wildlife conservation. Establishing plantations always involves the large-scale removal of existing vegetation, which often entails the loss of dense natural forests that serve as the habitat of great apes and other wildlife. In addition, such development tends to be accompanied by a massive influx of workers and their families to these once remote forested areas, increasing the demand for wild meat and related hunting and poaching; these factors have an indirect, yet severe, impact on the surrounding forest even if it remains standing (Linder, 2013).

Industrial agriculture is also increasingly provoking conflict over land and human rights abuses, as a rise in land acquisition threatens local communities' livelihoods and access to land. If new agricultural development is not managed properly, the destruction that large-scale palm oil has caused in Southeast Asia over the past years is set to be replicated on the "new frontier" for industrial agricultural production: Africa (Greenpeace International, 2012; RFUK, 2013).

It is therefore crucial that those involved in industrial agriculture adopt and implement strong policies to avoid deforestation and respect the rights and livelihood of local residents. First and foremost, it is the role of governments to engage in proper land use planning and establish strong environmental and social safeguards before industrial plantation concessions are allocated. Where governance is weak and law has not achieved these safeguards in practice, corporations must be especially careful to adhere to external standards and be fully transparent and responsible, especially toward local communities (Global Witness, 2012).

In Africa, corporations and governments have been slow to recognize the need for and to ensure the implementation of best practices in industrial agriculture. However, a few global producers and traders are taking initial steps toward limiting the negative environmental and social impacts of industrial agriculture in Africa.

Both Wilmar and Golden Veroleum Liberia, the latter through major shareholder Golden Agri-Resources, have made global commitments to follow no-deforestation policies that include respecting the rights of local communities (Golden Agri-Resources, 2011; Wilmar, 2013a). In both cases, however, implementation has been slow at best, which has meant ongoing adverse environmental and social effects (Greenpeace International, 2014a; FPP, 2015; Greenomics Indonesia, 2015).

In February 2011, GAR announced a forest conservation policy, which committed the company's global operations to protect forests, peatlands and the right of local communities to give free, prior and informed consent (Golden Agri-Resources, 2011). GVL has taken steps to set aside HCV forests and protect

wildlife (Wright and Tumbey, 2012). Assessments to identify high carbon stock (HCS) forests are also under way; in fact, GVL has pioneered the HCS methodology in Africa as a tool for the identification and protection of forests (Greenpeace International, 2013). However, GVL's implementation has faltered at times. Specifically, the company destroyed some HCV chimpanzee habitat, although it put a halt to clearance in that area in January 2013. In addition, GVL provoked several incidents of severe social conflict (Dowd *et al.*, 2014); it has also continued to violate communities' rights to FPIC procedures (FPP, 2015).

Established in December 2013, Wilmar's "no deforestation, no peat, no exploitation" policy includes forest and social protections similar to GAR's (Wilmar, 2013a). In the first year of implementation, Wilmar reported on efforts in the company's plantations in Nigeria and Uganda (Wilmar, 2013b); however, international and local NGOs have accused the company of continuing to clear forests—including in globally recognized key conservation areas—and of perpetuating social conflict in both countries (FOE Europe, 2014). Although Wilmar has "reaffirm[ed] its commitment to open, transparent and considerate practices" (Wilmar, 2013b), the company still needs to respond to accusations and dramatically improve the transparency of its implementation process.

A third global company, Olam, has taken some noteworthy steps toward responsible practices in its plantation in Gabon. The Gabonese government offered Olam areas of primary forest inside intact forest landscapes, as well as areas recognized as Ramsar wetlands for conversion. It was thanks to Olam's voluntary policies—not Gabonese government policy—that parts of the concession area that were ecologically most important were not converted and instead returned to the government (Olam, n.d.; C. Stewart, personal communication, 2014).

Olam conducted HCV assessments, which revealed that only a fraction of the total land bank was appropriate for palm oil development (Proforest, 2014). To date, Olam has followed the recommendations based on these assessments and protected the identified HCV areas (RFUK, 2013); however, the company does not recognize, nor protect, HCS forests, which include areas adjacent to narrowly defined HCV land that would provide important buffers from poaching and habitat fragmentation. Olam's plantation is thus still likely to impact great apes and other large mammals; it will also continue to have indirect impacts—including through increased poaching—on endangered species in and around its land bank (RFUK, 2013).

While the policy commitments that GVL and Wilmar have made are steps in the right direction, they are both struggling with on-the-ground implementation. Many stakeholders are currently hailing the Palm Oil Innovations Group (POIG) as the most groundbreaking and comprehensive model for best practice in the palm oil sector. Its criteria, which should be easily applicable to other industrial agriculture, go beyond the requirements of the RSPO and cover plantation creation

and operation with considerations for environmental responsibility, partnerships with communities, and corporate and product integrity (POIG, 2013).

At the national level, some steps are being taken toward providing needed reforms. In Cameroon, for instance, the government is preparing a national palm oil strategy, which could—provided adequate safeguards are incorporated—serve as a foundation for limiting the harmful impact of palm oil development on forests and local communities. In the same vein, the Cameroonian government is reviewing land use planning processes (Gwinner, 2013). A solid national palm oil strategy should be based on strong land use planning laws; in parallel, participatory and transparent processes with local communities are needed to prevent conflicts over environmental and social issues.

Cameroon is also revising several sectoral regulations, including the Forest Code and Mining Code (FPP, 2012a). In view of the fact that land concession decisions and requirements for industrial agriculture companies are dictated by several ministries without inter-agency consultation, efforts need to be made to establish clear environmental safeguards and cross-sectoral integrated policies, as these will be critical for the long-term health of the country's forests and great ape populations.

Ultimately, Congo Basin countries need to develop palm oil national strategies that not only lay out strict social and environmental safeguards, but also require full transparency in land acquisition processes. These strategies need to be based on proper participatory land use planning processes that are developed with all stakeholders and that promote full civil society engagement.

In Liberia, another model of legislative and governance reforms appears to be under way. In September 2014, the governments of Liberia and Norway signed an agreement to cooperate on reducing emissions from deforestation and degradation. The agreement stipulates that corporations will be allowed to do business in the Liberia only if they implement commitments that are at least as strong as Wilmar's policy to protect forests and respect local communities. It also provides a road map for the recognition of customary land use rights and the inclusion of strong environmental and social safeguards, including no-deforestation standards, into the national legal framework (Norway and Liberia, 2014). Liberia has in past years allocated vast land areas to large-scale agricultural concessions that have led to deforestation and numerous conflicts; if implemented, this agreement could integrate much-needed safeguards into national law. For more information on the Norway–Liberia deal, see Box 2.3 in Chapter 2.

No one political prescription is a cure-all for every country. These examples, however, can provide a basis for understanding how legislative and regulatory reforms can fundamentally change where and how industrial agriculture operates in African countries. As stressed above, establishing country-specific legal and regulatory reforms is not enough; they must be accompanied by proper enforcement. Governance reforms aimed at eradicating corruption and ensuring transparent legal enforcement are critical. As long as corruption and the lack of transparency remain dominant features of forest governance in African countries, it is unlikely that any voluntary commitment will have the desired effect of limiting the negative impact on the forests, wildlife and people.

Moreover, corporate action alone is not enough. Governments must create an enabling environment for sustainable development, not least by enacting clear and strong legal structures around forest governance and stamping out corruption. Among nations' top priorities must be creating and enforcing fair and transparent processes for the granting of concessions and the resolution of competing claims to land. This includes recognizing the land rights of local communities and indigenous groups, as well as consistently requiring project developers to obtain free, prior and informed consent from affected populations.

To prevent illegal deforestation and hunting of wild meat, governments must create a solid legal framework that eliminates impu-

nity for those who illegally obtain and trade timber and wildlife. Although several such laws exist across the continent, enforcement is often poor due to inadequate resources and expertise, as well as a tendency to accord a low priority to environmental crimes (Lindsey *et al.*, 2012). Legislation must be backed by a legal system that has the capacity to police and prosecute perpetrators.

As noted above, local and national-level authorities must construct a level playing field for agribusiness by rooting out corruption. When one company or set of actors is able to benefit from bypassing regulations or paying bribes, it becomes difficult for its peers to remain economically competitive without engaging in similar activities. Despite corporate players' best intentions, the prevalence

of corruption perpetuates a race to the bottom in terms of environmental and social standards. By disincentivizing irresponsible operations, governments can create a business environment that rewards sustainable practices and ensures that competition engenders greater protections for communities and ecosystems.

Conclusion

Sub-Saharan Africa has experienced a substantial increase in agricultural land investment over the past decade. Looking to take advantage of easier access to land, lower set-up costs and a growing demand for key agricultural commodities, foreign companies—both alone as well as in partnership with domestic governments—have received access to thousands of square kilometers (millions of hectares) of land for the cultivation of crops such as oil palm and other oilseeds, sugarcane, cereals and a variety of fruits and vegetables. During the first decade of the 21st century, the anticipated growth in global demand for biofuels drove scores of companies, large and small, to invest in a then little-tested but seemingly promising crop called jatropha and encouraged others to cultivate more traditional biofuel feedstocks such as oil palm and sugar. By 2010, the jatropha bubble had burst and concerns about land use and food security impacts linked to traditional biofuels have since pushed many of the original oil palm and sugar investors to turn their attention to food-oriented markets. Still, interest in African land has remained intact, although companies have increasingly chosen not to publicize deals concluded or under negotiation in an effort to escape the negative media attention that followed earlier investors.

Development of acquired land has proceeded slowly, curtailed by confusing land tenure regimes, insufficient infrastructure,

regional unrest and, in some instances, opposition from local communities. While these factors have slowed the land use and ecosystems impacts of the new wave of agricultural investment, they have not eliminated them completely. Several environmental costs are already becoming apparent. Moreover, the costs associated with future land development are potentially significant, as a few large-scale projects are threatening ape habitat. Since large portions of land suitable for oil palm cultivation overlap with forest areas, the rapid and unchecked spread of agricultural estates could result in widespread deforestation and loss of habitat for vulnerable ape species on the scale seen in parts of Southeast Asia. Meanwhile, the local population growth that often accompanies the development of a new industry can exacerbate already common threats, such as the illegal hunting of wild meat.

Agriculture is a key driver of economic activity in sub-Saharan Africa. A significant portion of the new agro-industrial production, especially that of palm oil, is and will likely continue to be used to satisfy the growing demand for food and fuel on the continent. The need to promote responsible development is thus pressing. As this chapter describes, efforts must be made to ensure that agribusinesses commit to avoid razing HCV and HCS forests, governments incentivize the regeneration of abandoned plantations and the inclusion of smallholder farms, and communities become empowered to demand change when their livelihoods are threatened by poorly planned large-scale land development. While some progress is already being made, a great deal more will have to be done. With the new wave of large-scale agricultural expansion still in its early stages, a variety of economic and political factors have aligned to make the current moment one filled with opportunity to ensure this expansion is achieved without inflicting irreversible damage on Africa's forests, wildlife and people.

“With the new wave of agricultural expansion still in its early stages, a variety of factors have aligned to make the current moment one filled with opportunity to ensure this is achieved without inflicting irreversible damage on Africa's forests, wildlife and people.”

Acknowledgments

Principal authors: Maria Belenky and Michael Wolosin with Climate Advisers, and Glenn Hurowitz, formerly with Climate Advisers

Boxes 3.3 and 3.4: Amy Moas and Rolf Skar, both with Greenpeace US

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Endnotes

- 1 This chapter uses the term “continent” to refer to sub-Saharan Africa. Unless specifically mentioned, North Africa is outside the scope of this analysis.
- 2 Throughout this report, “land acquisition” or “land contracted” implies the concession, lease or purchase of land from a government or government entity to a third party, either public or private, for commercial use.
- 3 All Land Matrix figures cited in this chapter are current as of November 2014.
- 4 This figure is based on the sum of what the analysis terms “category 1” (more accurate) and “category 2” (less accurate) data. The category 1-only total is about 179,240 km² (17.9 million ha).
- 5 Ape range states include Angola, Burundi, Cameroon, Central African Republic, Congo, Ivory Coast, DRC, Equatorial Guinea, Gabon, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Nigeria, Rwanda, Senegal, Sierra Leone, South Sudan, Tanzania and Uganda (GRASP, n.d.).
- 6 Author communication with palm oil executives at the Liberia Roundtable on Forest-Friendly Palm Oil, Cocoa, and Paper & Pulp Development, 2014.
- 7 The figure includes the cost of purchase, insurance and freight to Rotterdam.
- 8 Of the total 1,300 km² (130,000 ha), 300 km² (30,000 ha) are to be allocated to smallholders.
- 9 If North Africa were also taken into account, Egypt would be Africa’s largest producer of sugarcane.
- 10 Illovo ended its engagement in Mali in May 2012 due to incomplete funding and security concerns.
- 11 A number of crops, particularly oil palm and sugarcane, but also corn, sorghum, soybeans and others, are fungible and can be channeled to food- and non-food-related industries. Producers can and often do allow market conditions to determine the end use, shifting between food and biofuels according to demand.
- 12 The estimate of current consumption was derived by adding sub-Saharan Africa’s net imports in 2011 (the last year for which data are available) to its 2011 level of production, assuming stable standing stock. The source of both figures is FAOSTAT (n.d.). The calculation is as follows: With a 60% increase in consumption, sub-Saharan Africa’s 2030 demand will be approximately 8.2 million tonnes. As current production is about 2.3 million tonnes, production will have to grow more than threefold to meet domestic demand in 2030.
- 13 For the purposes of this chapter, “industrial agriculture” excludes logging and forestry operations.
- 14 These areas only include concessions for which spatial data was available (ten units across five countries). Because of gaps in coverage, the true overlap may be significantly different.