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ROOTED IN THE GROUND: REFORMING GHANA'S FOREST LAWS TO INCENTIVIZE COCOA-BASED AGROFORESTRY

INTEGRATED LAND AND RESOURCE GOVERNANCE TASK ORDER UNDER THE STRENGTHENING TENURE AND RESOURCE RIGHTS II (STARR II) IDIQ

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Tetra Tech Contact(s): Megan Huth, Project Manager
159 Bank Street, Suite 300
Burlington, VT 05402
Tel: (802) 495-0282
Fax: (802) 658-4247
Email: megan.huth@tetratech.com

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Submitted by: Melissa Hall, Deputy Chief of Party
Tetra Tech
159 Bank Street, Burlington VT 05401, USA
Tel: (802) 495-0282
Fax: (802) 658-4247

Contract Number: 7200AA18D00003/7200AA18F00015
COR Name: Sarah Lowery
USAID Office of Land and Urban
Contractor Name: Tetra Tech
Author(s): Robert O'Sullivan, Julie Fischer, Yaw Antwi, and Mark Freudenberger

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LIST OF ACRONYMS

BAAC	Bank for Agriculture and Agricultural Cooperatives
CFI	Cocoa and Forests Initiative
Cocobod	Ghana Cocoa Board
CREMA	Community Resource Management Area
CSO	Civil Society Organization
ESP-II	Environmental Sustainability Project
EU	European Union
FIP	Forest Investment Program
FLEGT	Forest Law Enforcement, Governance and Trade
FMNR	Farmer-Managed Natural Regeneration
FORIG	Forest Research Institute of Ghana
FPCF	Forest Carbon Partnership Facility
FREL	Forest Reference Emissions Level
FSC	Forest Stewardship Council
GHG	Greenhouse Gas
HFZ	High Forest Zone
IDIQ	Indefinite Delivery/Indefinite Quantity
IIED	International Institute for Environment and Development
ILRG	Integrated Land and Resource Governance
ITTO	International Tropical Timber Organization
MLNR	Ministry of Lands and Natural Resources
MTS	Modified Taungya System
NGO	Non-Governmental Organization
NSP	National Standard Principle
OASL	Office of the Administrator of Stool Lands
PEFC	Programme for the Endorsement of Forest Certification
R-PP	Readiness Preparation Proposal
SRA	Social Responsibility Agreement
STARR II	Strengthening Tenure and Resource Rights II

TGCC	Tenure and Global Climate Change
TRMA	Timber Resources Management Act
TUC	Timber Utilization Contract
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
VPA	Voluntary Partnership Agreement
WCF	World Cocoa Foundation

EXECUTIVE SUMMARY

The government of Ghana claims state ownership of all "naturally occurring" trees, including on land privately held under customary title. The lack of tree tenure and inability to capture economic benefits from trees is a major driver of tree loss and disincentivizes cocoa agroforestry. This report analyzes tree tenure law and policy in Ghana, including the proposed tree registration policy and justifications for state ownership of naturally occurring trees based in the 1992 Constitution. The authors propose an alternative interpretation of the 1992 Constitution based on customary law and usage that allows devolution of all tree rights to customary landowners without a constitutional amendment and removes the need for a tree registry. Evidence from devolution of tree tenure in the Sahel and China show that devolution can lead to increased tree cover. Based on this analysis a series of recommendations on tree tenure reform are posed for government, the cocoa sector, donors, and civil society.

COCOA AND FORESTS

Ghana is the world's second largest cocoa producer, and cocoa plays a critically important role in the economy with an estimated 30 percent of Ghana's population dependent on cocoa for part or all of their livelihoods. However, the cocoa sector is in trouble and smallholder cocoa production does not provide a reliable livelihood or ensure a healthy and sustainable ecosystem.

Traditional cocoa farms retained large shade trees which preserved many economically and environmentally important trees within the landscape. In the late 1950s the government inserted itself into the timber market and claimed rights to naturally occurring trees on cocoa farms. This led to increased timber harvesting from cocoa farms that was exacerbated in the 1980's when Ghana's cocoa marketing board changed its policy and advocated removing shade trees to increase cocoa productivity. The new cocoa board policy produced short term yield gains, but also increased susceptibility to diseases and shortened cocoa trees' productive life. The combined pressures from forestry and cocoa led to deforestation and fragmentation of forest landscape in Ghana's high forest zone and widespread removal of shade trees from farms. An average of 138,000 hectares of forest was lost per year from 2000 to 2015 and in 2007 it was estimated that 72 percent of cocoa farms across Ghana had "no to light" levels of shade.

The government of Ghana and cocoa industry actors acknowledge the vital role of improved cocoa production systems to mitigate and adapt to climate change, maintain biodiversity, conserve and enhance ecosystem services, and improve the livelihoods of cocoa farmers and their families. They recognize that increasing the number and quality of trees in Ghana's cocoa-growing landscape is critical to improve the health and sustainability of cocoa production and diversify income and resilience for cocoa households.

TREE TENURE: A KEY CHALLENGE TO RESTORING COCOA FOREST LANDSCAPE

A leading challenge to planting more shade trees is government ownership and control of all naturally occurring timber trees – even on privately held land. State ownership of naturally occurring trees is widely considered a strong disincentive for landowners and smallholders, regardless of land tenure, to nurture trees on their cocoa farms. In part this is because the benefits of harvesting naturally occurring trees are shared between loggers, traditional authorities, and the government, but landowners are excluded. Numerous government policy documents over the last decade have advocated for vesting title to naturally occurring trees with communities and farmers who cultivate and tend these trees.

TREE REGISTRATION IS NOT EFFECTIVE TREE TENURE REFORM

The current tree tenure reform efforts are focused on establishing a national tree registry where farmers can register title to trees on their land. Early tree registration policy allowed farmers to register planted trees as proof of ownership but maintained state ownership of naturally occurring trees. More recent policy allows farmers to register both planted and naturally occurring trees and separates rights to trees from rights to the land. This proposed separation of rights to land and trees changes customary tenure norms and creates the potential for conflict on many cocoa farms.

There are other problems with the proposed tree registration policy. If a farmer fails to register planted trees, the default determination is that planted trees were naturally occurring and owned by the state. It is also unrealistic and unsustainable to successfully establish and maintain a national tree registry. Tree registration is estimated to cost from $27 - $40 per farm, which scales to a cost of between US$47.5 million and US$86.4 million to register all the trees in Ghana's cocoa farms. This does not include the Forestry Commission's costs to process 1.7 million to 2.1 million individual records from cocoa farmers, the costs of tree registration in other parts of Ghana, or the costs to maintain the registry over time.

THE 1992 CONSTITUTION: A BARRIER TO REFORM?

Government sponsored policy reforms that argue cocoa farmers should have rights over all trees growing on their farms are a significant and positive step in the right direction. However, these calls for reform are accompanied by arguments that the current law is based on the 1992 Constitution, and that any law reform requires difficult constitutional amendments. There are two key issues under the 1992 Constitution: i) how natural resources and rights to naturally occurring trees are interpreted; and ii) how revenue from these resources is allocated.

INTERPRETATION OF THE 1992 CONSTITUTION THAT PROTECTS VESTED INTERESTS

The government claims naturally occurring trees on cocoa farms are considered a natural resource, and ownership of these trees is not separated from ownership of the land. However, stool lands are vested in the Stool who own them "on trust" for the Stool subjects, with government involved in regulation and management. While customary rights to stool land can be passed down to farmers, the Stool and state have retained rights to natural resources to exercise their fiduciary responsibilities as trustee. As naturally occurring trees are part of the Stool's resources, the Stool and government divide up the proceeds from timber revenue according to the constitutionally mandated split. This poses a major challenge as farmers are excluded from the revenue. Planted trees, on the other hand, are treated the same as crops whereby ownership does not by default coincide with ownership of the land. Farmers possess all ownership, management, and use rights to planted trees – and the subsequent benefits.

ALTERNATIVE INTERPRETATION THAT SUPPORTS DEVOLUTION

The authors analyzed the 1992 Constitution, customary tenure practices in the cocoa growing regions, and literature on tree tenure in Ghana and propose an alternative interpretation with two parts:

- First, the main customary land rights of usufructs, *asideɛ,* and *abunu* that support rural farmland holdings are created by clearing the natural resource of the primary forest. As a result, there is no remaining natural resource on usufruct, *asideɛ,* or *abunu* farmland.
- Second, all trees that are currently considered "naturally occurring" (and therefore argued to be a natural resource owned by the stool) are more correctly understood as farmed trees. As a result, they should be treated the same as planted trees and owned by the landowner.

This alternative interpretation results in eliminating the distinction between naturally occurring and planted trees on customary land with all rights to all trees flowing with these family or individual rights to the land. It also removes the need to register trees and allows tree tenure policy reform to move ahead without a constitutional amendment. The proposed interpretation of the 1992 Constitution and recognition of farmer's rights to all trees on their land should incentivize farmers to cultivate more timber and shade trees on their lands as they would be the legal and beneficial owners of these trees.

LESSONS FROM OTHER COUNTRIES

It can be difficult to establish a cause and effect relationship between tenure systems and sustainable forest systems, and evidence from other countries can help inform policy reform in Ghana. The most instructive cases for Ghana on devolution of rights are the innovative and impactful policy reforms that have been implemented in Sahelian West Africa and northern China. In both examples the devolution of rights to individuals led to increased forest cover, although in China this also required access to markets and benefits. This lesson from China is key: devolution of rights on its own may not be sufficient to incentivize tree planting. Devolution must be coupled with landowner's access to markets and benefits.

Ghana can also look to neighboring Côte d'Ivoire, which has gone through rounds of forest law reform in 2014 and 2019 that has resulted in provisions to explicitly state that natural or planted trees belong to the landowner. However, uncertainty and conflicts over underlying land tenure in Côte d'Ivoire highlight the need to look at both the land and tree governance framework together, along with the needs and motivations of end users and other stakeholders.

Other countries have experimented with tree registration systems with contrasting results. In Thailand, a government bank invested US$1 billion as part of a corporate responsibility initiative to establish a tree bank to help farmers access loans and income and has successfully registered over 11 million trees. The Philippines shares more similarities to Ghana, where a registry was established to differentiate ownership of naturally occurring and planted trees, but this has not been successful.

RECOMMENDATIONS

The Government of Ghana and the USAID recognize that strengthening land and tree rights is critical for Ghana to achieve its development goals both within the cocoa sector and more broadly. However, forest resources in Ghana represent an important source of revenue for the government, so bold reforms that limit or remove the state's control have met strong resistance by the Forestry Commission and customary powerholders, including the Stools and chiefs. As a result, years, even decades, of tweaking and modifying the legal and policy frameworks have been ineffective as the focus has been on enforcing and adjusting an inherently unenforceable and unfair legislative framework rather than tackling core issues.

Bold reform to divest tree tenure to customary landowners without any need to register each individual tree is needed. To help achieve this, a series of recommendations was developed for key stakeholders.

RECOMMENDATIONS FOR THE GOVERNMENT OF GHANA

1. Enact law reform to divest all tree rights to landowners. The law should be clear that all rights to all trees flows with rights to the land and this applies to customary rights holders. Rights to emission reductions can be separated from tree tenure and should not prevent devolution.
2. Implement and enforce existing permit regimes to generate revenue for the Forestry Commission. This can help replace lost revenue from the devolution of tree tenure.
3. Establish a fit-for-purpose rural land registry.

4. Engage in public consultation and outreach during and after the reform process.

RECOMMENDATIONS FOR THE COCOA SECTOR

1. Re-direct funds away from tree registration pilots to focus on other priorities.
2. Expand tree planting programs. This could be coupled with other policy innovations such as a payment for ecosystem services scheme or a tree bank like in Thailand.
3. Support customary land title registration.
4. Work with industry associations to support tree tenure reform including outreach to cocoa farmers.

RECOMMENDATIONS FOR DONORS

1. Develop a unified response to Ghana's tree registration policy to ensure donor support is aligned.
2. Help Ghana finalize the necessary legal and policy reforms to devolve tree tenure, including how devolution can comply with the sale of emission reductions to the Forest Carbon Partnership Facility. This may include supporting some of the outreach and convening and other costs of the reform process.
3. Support additional research on devolution of tree tenure. For example, ILRG suggests carrying out further analysis to help quantify Forestry Commission revenue from the proposed reforms.
4. Support land title registration, including through use of cost-effective mapping technologies and digital databases.
5. Support public outreach on tree tenure.

RECOMMENDATIONS FOR CIVIL SOCIETY

1. Conduct outreach and engagement with all stakeholders to help push for reform.
2. Support tree planting programs, particularly once reform has been enacted.

1.0 INTRODUCTION AND BACKGROUND

Ghana is the world's second largest cocoa producer and cocoa exporter (FAO STAT, n.d.; Fountain & Hütz-Adams, 2018). In 2010, cocoa accounted for eight percent of Ghana's gross domestic product, between 30 to 40 percent of total export earnings, and around 25 percent of the country's foreign exchange. Cocoa is part of Ghana's culture, particularly in rural areas where cocoa farming is estimated to employ over 2 million people directly, with around 6.3 million (or 26 percent of Ghana's total population) dependent on the sector (Ghana Cocoa Board, 2018; Peprah, 2015). Due to strong customary tenure norms, cocoa farming is dominated by smallholder farmers without large-scale concessions (Roth et al., 2017; Asare, 2010). Of the 900,000 tons of cocoa produced in 2010, 90 percent was grown by smallholders (Tawiah, 2015) and cocoa has been credited for helping alleviate poverty in Ghana in the past (World Bank, 2007; Vigneri & Kolavalli, 2018). This makes it a strategic sector for addressing rural poverty and improving the resilience of rural households, with the opportunity for holistic approaches to tackle other issues in the sector such as child labor and gender-based violence.

However, cocoa productivity is in decline as environmental problems increase. At the same time Ghana's population and demands on natural resources are increasing. This creates an urgent need to identify and implement effective solutions to maintain sustainable rural livelihoods. Strong customary norms will ensure cocoa is part of Ghana's rural economy for many years to come, but the country can no longer increase cocoa productivity by expanding the number and size of farms. Rural livelihoods and cocoa yields can only increase if cocoa-based agroforestry systems are adopted. This will require increasing the number of trees in Ghana's high forest zone[1] which will in turn: 1) improve and enhance the health and sustainability of the ecosystem, including cocoa production systems; 2) sequester carbon and contribute to climate change mitigation; 3) provide additional income for farmers; 4) increase resilience of cocoa production systems to climate change; and 5) enhance ecosystems services such as soil, water, and biodiversity conservation.

Agroforestry is part of Ghana's history and has been a large component of traditional farming practices. Since cocoa was first introduced in Ghana in the late 1800s,[2] smallholder farmers have managed cocoa farms and shade trees together by tending and nurturing a wide range of sapling and tree species. This combination was valued for the shade it provided cocoa, and as timber. However, a wide variety of disincentives have undermined agroforestry practices in Ghana, including lack of tree tenure security, inequities in benefit sharing arrangements, illegal logging, resource competition and conflicts, inappropriate agricultural extension advice, and poor terms of trade. This has led to widespread degradation and destruction of forest resources on farm and fallow land, and has nearly eliminated the shade cocoa agroforestry system with 72 percent of cocoa farms classified as having "no to light" levels of shade in 2007 (Kolavalli & Vigneri, 2011). Unfortunately, the degraded smallholder cocoa production system prevalent in Ghana today does not guarantee a basic livelihood for rural farm families or ensures the health and sustainability of the ecosystem or cocoa sector.

The objective of this report is to analyze current tree tenure policy in Ghana, identify examples of tree tenure policy in other countries that can help inform policy making in Ghana, and identify

[1] Ghana's high forest zone (HFZ), one of two major ecological zones in the country, spans the southwestern third of Ghana, receives the highest precipitation and consists of forests ranging from wet evergreen to dry semi-deciduous. The HFZ produces the bulk of Ghana's timber resources and is approximately eight million hectares. The HFZ is divided into five ecological sub-zones (Boateng et al., 2009).

[2] Ghana Cocoa Board reports 1879 as the date it was introduced (Ghana Cocoa Board, 2018), whereas Kolavalli & Vigneri (2011) report it was introduced in 1888.

straightforward policy and practical actions that would incentivize smallholder cocoa farmers to plant, nurture, and protect trees on their cocoa farms. This report also explores a number of key factors that have influenced on-farm tree management in Ghana's cocoa landscape, examines ongoing efforts to influence Ghana's related forest policies, and suggests approaches to re-incentivize farmers to practice shade cocoa agroforestry.

1.1 COCOA PRODUCTION, TIMBER EXTRACTION, AND DEFORESTATION

1.1.1 COCOA PRODUCTION AND DEFORESTATION: 130 YEAR HISTORY

Smallholder cocoa farmers traditionally established their farms by removing the forest understory and thinning the forest canopy. The farmer then protected and managed their farms with any timber or shade trees retained in cocoa farms through ongoing management decisions by farmers. During the initial cocoa frontier period in Ghana (1888 through 1937), the country saw exponential growth in its cocoa production and the region dominating global cocoa supply. Farmers were allowed to fell trees in off-reserve areas and a frontier approach to agricultural expansion prevailed. The sector stagnated briefly but then saw another period of rapid growth following the country's independence in 1957. During this period both land and labor were abundant and large landowners were able to attract immigrants to establish and maintain new farms by selling or allocating them small plots of land following customary norms (see Box 2 in Section 2.1 for an explanation of customary tenure). During the expansion phases before the 1960s, cocoa pioneers cleared primary forests to farm and benefited from the untapped soil fertility, which they augmented by burning the aboveground biomass immediately before planting cocoa.

Between 1965 and 1982, Ghana's cocoa industry nearly collapsed but then began a slow recovery. The major decline in cocoa production Ghana experienced in the 1960s was in large part due to the growing scarcity of forest land and the resultant rise in sharecropping arrangements, rather than land sales, between landowners and immigrant farmers. National cocoa production levels once again increased in the 1990s both by expanding into the Western Region's HFZ and by improving and intensifying production on existing farms by removing shade trees, increasing the use of fertilizers, hybrid cocoa varieties, and improving the control of pests and diseased trees (Kolavalli & Vigneri, 2011). Cocoa continues to move between boom-and-bust cycles and by 2005 crop yields and production suffered serious stagnation (Asare, 2013). In part this is due to the downside of short-term gains of sun-grown cocoa catching up with cocoa farmers along with increased diseases that are more prevalent in sun-stressed cocoa trees. Since 2010, Ghana's cocoa performance has worsened and yields are currently far below most other cocoa-producing countries, with an

Cocoa farm abutting Bura River Forest Reserve, Western Region, showing large trees felled to establish the farm
ROBERT O'SULLIVAN

average on-farm yield of 400 kg/ha (Aneani & Ofori-Frimpong, 2013). Cocoa production for the 2014/2015 and 2015/2016 cocoa seasons reached only 730,000 and 690,000 tons respectively, and up to 40 percent of cocoa farms in Ghana have been found to have low productivity and need to be replanted (Roth et al., 2017). The diminishing production leaves cocoa smallholders impoverished with very few alternative livelihood options available.

Expansion of cocoa production has contributed to high levels of deforestation in Ghana. From the standpoint of the smallholder, as long as there was forested land to access, it was more attractive and profitable to cut down the forest for new farms rather than replant aging cacao farms. Between 2000 and 2005, cocoa yields increased modestly, but the area under cultivation increased dramatically. The moderate gains in yield came at the expense of massively expanding areas under cultivation rather than through improved management of already cultivated areas (Roth et al., 2017). Over the period 2000 to 2015, an average of 138,000 hectares of forest was lost annually in Ghana's HFZ. During the decade from 2000 to 2010, deforestation across the cocoa forest landscape continued at a rate of approximately 1.4 – 2.1 percent per year but is now estimated to have jumped to 3.2 percent per year, due primarily to increased timber extraction and mining activities (Republic of Ghana, 2014; Republic of Ghana, 2017). Large expanses of Ghana's off-reserve forests have been converted to cocoa farms. Twenty-seven percent of the forest lost to agriculture conversion resulted from cocoa expansion, making it the single most significant commodity driver of deforestation in the HFZ (Republic of Ghana, 2017).

1.1.2 COCOA SHADE TREES AND THE TIMBER INDUSTRY

Cocoa is not the only cause of forest loss in Ghana. During Ghana's early expansion phase, smallholders practiced shade cocoa or agroforestry production by maintaining a significant number of trees on their farms. This was not only because cocoa requires shade, but also as a labor-saving practice during the long investment period. As land became less abundant and more effective techniques for forest clearing became available, the complex cocoa agroforestry system degraded. This accelerated when the management and commercial rights to timber species was transferred to the state under Ghana's 1974 Trees and Timber Decree. This produced a rapid expansion of timber harvesting in off-reserve areas, including cocoa farms (Oduro et al., 2011). The Ghana Forestry Commission regulated timber harvesting off-reserve to secure timber trees in these areas and reduce pressure on commercial timber exploitation within Ghana's permanent forest estate. At the same time the Forestry Commission planned a comprehensive plantation program to respond to the country's wood needs once the off-reserve resources were depleted (Affum-Baffoe, 2009). Timber harvesting was further driven in part by the International Monetary Fund when it pushed Ghana to expand timber exports to enable the country to acquire additional foreign exchange in the early 1980s (Glastra, 1999).

While the Forestry Commission tried to regulate timber harvesting, both licensed timber firms and illegal chainsaw operators harvested trees throughout Ghana's cocoa production areas. By the late 1980s and early 1990s, 70 – 80 percent of recorded timber production was from the off-reserve areas (Boateng, Okae, & Hansen 2009). By the mid-1990s, many of Ghana's forest reserves were also degraded because of over-harvesting, fires, and farming (Bird, Fometé, & Birikorang, 2006). Immediately following the completion of the Forestry Commission's 1996 national inventory, the high diameter classes of all the economic timber species in off-reserve areas suffered massive exploitation through 2004. After rapidly harvesting timber from cocoa farms for well over a decade, off-reserve timber harvest plummeted from approximately 1,500,000 cubic meters (m^3) in 1994 to 540,000 m^3 in 2003. For the same period, official data show forest reserve timber harvest increased from 120,000 m^3 in 1994 to 660,000 m^3 in 2003, resulting in an overall decline in Ghana's timber industry. In 1996, off-reserves supported a total tree standing volume of 95 million cubic meters, which decreased to

37 million cubic meters by 2005 (Ghana Forestry Commission-National REDD+ Secretariat, 2017). By 2009, off-reserve timber production had declined further to 30 percent of national timber production (Boateng, Okae, & Hansen, 2009) due to over-harvesting and loss of off-reserve timber stocks.

1.1.2.1 COMPOUNDED PRESSURE AND FEEDBACK LOOPS

The Ghana Cocoa Board (Cocobod) reversed its advice on shade trees in cocoa farms in the 1980s, which compounded the impact of the 1974 Tree and Timber Decree and pressure to increase timber exports. In the 1980s Cocobod's extension services agents encouraged farmers to abandon the traditional shade cocoa agroforestry system in favor of zero shade or full sun cocoa production to boost yields. The negative consequences of the shade-free cocoa system were initially masked by the short-term yield increases. Research conducted on the combined impact of sun tolerant varieties (Amelonado cocoa or *Theobroma cacao* L.) and increased fertilizer use resulted in yields three times as much as shaded trees over a 17-year period of continuous cropping. However, the study concluded that "the economic life of an unshaded Amelonado cocoa farm in Ghana may not last for more than 10 years of intensive cropping" (Ahenkorah et al., 1974; see also Ahenkorah, et al., 1987; Hurd & Cunningham, 1961; Obiri et al., 2007; Asare et al., 2019 for additional analyses of shaded versus full sun cocoa production systems). Cocobod's promotion of zero shade systems significantly shaped farmers' perceptions about shade and cocoa yields, thus weakening smallholders' motivation to retain an overstory on their cocoa farms.

Logging truck in Wassa Amenfi West
ROBERT O'SULLIVAN

The combination of expanding cocoa production and timber extraction pressures produced further feedback loops. Expanding cocoa cultivation propelled the construction and extension of roads and railways that were used to transport cocoa harvests to port. As timber harvesting increased, many migrants also followed the logging roads westward, expanding the cocoa frontier into the moist evergreen forest of the Western and Central Regions in the early 1960s (Asare, 2013). By moving from one forest area to another, smallholders tapped the "forest rent," a term that "explains why cocoa has shown such a strong tendency to follow the vanishing forest, with new plantations being established on cleared forestland rather than old and disease-infested plantations being replanted on the same site" (Ruf & Schroth, 2004, p. 111). These factors contributed to the growing fragmentation of forest landscape in Ghana's HFZ, along with the loss of biodiversity and the degradation of ecosystem goods and services, including a significant loss of major soil nutrients and an increase in the number and variety of pests and diseases attacking the cocoa trees. By 2007, 72 per cent of cocoa farms across Ghana were characterized as having "no to light" levels of shade (Kolavalli & Vigneri, 2011).

1.1.2.2 WEAK ENFORCEMENT OF TIMBER REGULATIONS

Regulation of timber harvesting off-reserve do not benefit farmers who grow naturally occurring trees, and the regulations are poorly enforced. Legal timber operators include holders of legal timber utilization contracts (TUCs) and other harvesting permits issued by the Ghana Forestry Commission.

The Forestry Commission's Forest Service Department allocates rights and also mediates conflicts related to negotiated social responsibility agreements (SRAs), and operators pay stumpage fees/royalties to the government and fulfill their obligations to communities under the legally required SRAs (Ayine, 2008). The Ghana Forestry Commission receives a "management fee" for the resource protection and enhancement roles played by the agency. However, in practice these management responsibilities fall on the shoulders of the farmers and the government uses the fee to regulate and control timber harvesting. There is limited accountability to the farmers or the local communities, and the timber industry actors rarely fulfill their obligations as detailed in the SRAs (see Box 1). To make matters worse, farmers are rarely compensated for damages to their crops resulting from commercial harvesting. According to Kotey et al. (1998), the timber industry has been able to "influence policies, stall legislation, and modify some working plan prescriptions" (p. 79) to the industry's benefit and to the detriment of the landowners and smallholder farmers who gain little if anything when commercial trees are harvested from their land.

Box 1: Social Responsibility Agreements

Under Ghana's 1997 Timber Resources Management Act and its subsidiary legislation, prospective investors are required to present proposals to help address the needs of the communities in the proposed operation area. The SRA emerged as a tool to rationalize and formalize an existing practice of resource allocation/benefit sharing by timber firms to local communities. The proposed terms assume an obligation to spend "not more than five percent of the annual royalties" and form part of the documentation evaluated before a TUC is awarded to an investor. According to Ayine (2008), while the legal framework provides an enabling environment for negotiations, negotiation and implementation of the agreements "leaves much to be desired" (p. 28). SRAs have been interpreted by some as a way to redress the benefit sharing arrangement contained in Article 267 of the 1992 *Constitution* (see Section 2). However, the SRA fails to fully address the (dis)incentive issue of adequate benefit sharing with landowners.

There is evidence that the current regulations are not enforced, with illegal timber making up a significant fraction of the domestic market. A timber industry and log ban export study completed in 2001 (Birikorang et al., 2001) estimated that in 1999, out of the 3.7 million m^3 of timber harvested, illegal chainsaw activities accounted for 1.7 million m^3, or 46 percent. Current rates of illegal timber are unclear, but the authors have observed "bush cut" timber, which is commonly understood to be illegally cut, is readily available in Accra and other local markets. Chainsaw operators have thrived in part because they have distributed benefits more widely to local communities and make payments directly to the farmers that are often significantly higher than any benefits farmers receive from timber firms through SRAs or direct compensation. As a consequence, cocoa farmers frequently negotiate deals with these illegal operators, even initiating the transaction by inviting chainsaw operators on their land.

1.2 BACK TO BASICS: WHERE ARE THE INCENTIVES?

Farmer and community rights to forests and naturally growing trees are weak in Ghana and do not adequately incentivize farmers to maintain trees. Since neither customary freeholders nor *abunu* farmers are entitled to any direct revenues from trees growing naturally on their land, they are discouraged from expending resources and effort to prevent illegal logging (Richards & Asare, 1999; Treue, 2001; Hansen et al., 2009; Acheampong & Marfo, 2011; Damnyang et al., 2012; Roth et al., 2017; Gaither et al., 2019). The majority of cocoa producing farmers are also disincentivized to plant trees or nurture naturally occurring trees on their farms, regardless of their tenure status. This is because *abunu* and *abusa* cocoa farmers as well as landowners have historically reaped few, if any, economic benefits from preserving, protecting, or planting trees. To make matters worse, smallholders are often not compensated for damages and yield losses when mature timber trees are harvested legally or illegally from their land (Marfo et al., 2006; Gaither et al., 2019). Crop damage

sustained from timber harvesting is seen as a form of elite capture since perpetrators routinely avoid compensating smallholder farmers for their losses (Marfo et al., 2006; Marfo, 2010; Gaither et al., 2019).

Inequitable benefit sharing and the farmer's lack of rights to the trees on his/her farm are key disincentives leading to the fast depletion of the timber resources (Boateng et al., 2009; Hajjar, 2015; International Union for Conservation of Nature, 2012). Simply stated, farmers perceive preservation of trees on their farms as incurring high costs (Owuba et al., 2001). Some researchers have proposed that farmers may be felling trees on their cocoa farms as an act of resistance and/or protest (Hansen, 2011; Asaaga & Hirons, 2019). This challenge has been known for decades. A 1993 study completed at the request of the Ghana Forestry Commission noted that legal restrictions to ownership and harvesting of trees create the very conditions the government seeks to prevent: "Farmers who see timber trees as a liability will not think twice about destroying them" (Mayers et al., 1996, p. 30).

The widespread lack of interest in nurturing and managing trees on cocoa farms is consistent with the argument made by Fortmann and Bruce (1988): "people will not preserve, protect or plant trees nor allow others to if doing so is costly to them personally" (p. 5). State ownership has distorted incentives, driving landowners and farmers alike to destroy trees and not replant or protect commercially important trees on their farms and fallow land. But traditional authorities, local government, and the Forestry Commission have consistently resisted devolving tree tenure or revising the benefit sharing arrangements. In sum, tree tenure and benefit sharing arrangements have long been regarded as disincentives to sustainable forest management in Ghana (Ghana Forestry Commission-Forestry Department, 1994; Ghana Forestry Commission-Forestry Department & IIED, 1994; Mayers et al., 1996; Kotey et al., 1998; Donkor & Vlosky, 2003; Domson & Vlosky, 2007; Boon, et al., 2009; Acheampong & Marfo, 2011).

Notwithstanding the disincentives to plant and nurture trees, many cocoa smallholders – landowners and leaseholders – continue to nurture and manage trees on their farms because of cocoa's preference for shade (Baffoe-Asare et al., 2013; Ros-Tonen & Derkyi, 2018; Asare, 2013; Asare & Anders, 2017). Cocobod has revised their earlier advice from the 1980s on shade tree removal and now advocates 15 – 18 permanent shade trees per hectare (Ghana Cocoa Board, 2018). Several recent field studies (Asare & Anders, 2017; Asare et al., 2019) found many cocoa farmers maintain valuable timber trees on their farms and did not find a significant relationship between cocoa yields and land tenure arrangement (i.e., whether the cocoa farm is inherited, purchased, or under an *abunu* arrangement). A recent USAID field study (Persha & Protik, 2019) found that approximately 77 percent of all farms in the Wassa Amenfi West District pilot villages included in the study reported having shade trees, irrespective of farm acquisition/tenure type. These findings demonstrate that a significant number of cocoa farmers, independent of the land tenure arrangements under which they cultivate cocoa, have an interest in and ability to protect the trees on their farms.

1.3 COCOA IS A SHADY BUSINESS – ARGUMENTS FOR PRACTICING COCOA AGROFORESTRY

The governance system of Ghana's cocoa sector has focused almost entirely on short-term production and sales. However, short-term planning has reached its limits. Ghana's cocoa growing areas are plagued with ecological problems, including declining soil fertility, increased incidence of pests and diseases, and inadequate farm maintenance. Many cocoa farmers are highly dependent on cocoa as their primary source of income, and the combination of low cocoa prices and low yields

have left many Ghanaian cocoa farmers[3] facing poverty, seasonal food security issues, trapped in debt cycles, and unable to earn a living income from cocoa (Bymolt et al., 2018; Fountain & Hütz-Adams, 2018; Roth et al., 2018; Jiekak & Freudenberger, 2019; Persha et al., 2019; VOICE Network 2020).

Continued expansion is not an option as the few remaining forests sit in forest reserves that need to be protected rather than converted to cocoa farms. Climate change is expected to create further challenges. Drought and rising temperatures will negatively affect cocoa suitability and more than half of current cocoa production (470,000 tons per year) is projected to require systemic adaptation. Many of the adaptation measures are "no regrets" options that will help increase productivity under current climate conditions, such as better pest and disease control, use of drought tolerant cocoa varieties, and ensuring there is optional shade. Without systematic adaptation, the estimated mean cost of climate change is estimated to be US$410 million per year by 2050 (equivalent to one percent of GDP at 2010 base year prices). There is considerable uncertainty on this figure due to uncertain climate impacts but the 90 percent confidence interval for cost estimates shows an impact range of between US$270 – $660 million per year by 2050 (0.7 - 1.6 percent GDP) (Bunn et al, 2018).

Environmental objectives, the interests of cocoa farmers, and the long-term survival of the sector have not been adequately considered (Tropenbos International-Ghana, 2018). Ghana desperately needs to find a viable and sustainable way to increase productivity, incomes, and resilience, while at the same time reduce deforestation. Although Asare et al. (2019) conclude that shade trees, fertilizers, and training have significant positive effects on farmers' yields, they acknowledge that previous land use contributes to variation between different farms and regions. Providing optimal shade throughout the productive life of cocoa plants is vital to achieve increased sustainable yields by reducing pests and disease. Recent analysis of climate change impacts on cocoa production recommends optimal shade of between 30 – 50 percent depending on the region. This corresponds to between 15 – 50 trees per hectare, depending on the species, age, and canopy area (Asare, 2019). However, there are different views as to the ideal composition of a mosaic cocoa agroforestry production system in Ghana, including the number and species of trees that should be grown on the cocoa farm (Ruf, 2011; Asare, 2013; Asare et al., 2019).

Shade cocoa, sometimes referred to as cocoa-based agroforestry or climate-smart cocoa production, effectively sequesters carbon and is an adaptive strategy to climate change threats. Kongsager et al. (2013) estimated a mature cocoa farm with 25 shade trees per hectare contained approximately 65 tC/ha. Shade cocoa increases a farmer's resilience by diversifying income – being able to reap the benefits from timber tree extraction is a significant benefit gained from planting and protecting trees on cocoa farms. Shifting to a cocoa agroforestry system also increases Ghana's resilience to a changing climate (Asare et al., 2019; Hirons et al., 2018a). Diversified shade cocoa farms and multi-strata agroforestry cocoa production systems that contain crops, native forest, and fruit trees are not only more sustainable, but also are valuable because they offer smallholders a range of agronomic, economic, cultural, and ecological benefits, which extend well beyond the farm. When the full ecosystem services of agroforests are included, they are the most profitable form of cocoa farming and more profitable than oil palm or rice (Asare et al., 2014), with more recent research finding cocoa farm yield can double when moving from zero to approximately 30 percent shade cover (Asare et al., 2019). Some also argue more research is needed on the financial viability and economic benefits of climate-smart cocoa (Enriquez et al, 2020).

Many researchers have explored the link between environmental degradation and access to and control over land and other resources (e.g., Place & Hazell, 1993; Gibson et al., 2002; Bugri, 2008;

[3] It should be noted that Bymolt et al (2018) also compared cocoa farmer poverty to other rural households to examine if poverty was cocoa specific. They concluded that cocoa households face similar levels of poverty as other rural and smallholder households and that poverty levels were less severe than reported by other researchers.

Lawry et al., 2014; Robinson et al., 2014) and connections between land degradation and poverty (Peprah, 2014). Others have emphasized the important link between forest and tree tenure and sustainable forest management and poverty alleviation (e.g., Fisher et al., 2012); rural households may be motivated to plant trees on farms more for the economic than the environmental benefits (Insaidoo et al., 2012; Ndayambaje et al., 2012; Oduro et al., 2018).

As far back as the 1990s, the Forestry Commission said it would address the disincentives that stem from the farmer's lack of tree rights (Boateng et al., 2009). More recently, the Constitution Review Commission in Ghana (Republic of Ghana Constitution Review Commission, 2011) recommended: "Natural trees should be vested in communities where the trees are found and farmers who cultivate these trees should enjoy the benefits from their proceeds of the sale of these trees" (p. 598). This policy position was recently reiterated in the Ministry's 2016 Tree Tenure and Benefit Sharing Framework, and yet no laws have been changed as a result.

It is clearly agreed that planting more shade trees and rehabilitating old and diseased cocoa farms will help revitalize the cocoa sector, and reforming tree tenure policy will help achieve this. To understand why this is easier said than done, a combination of vested interests, entrenched legal views, and a complex array of law and policy needs to be understood.

2.0 GHANA'S FOREST LAW AND POLICY

The governance and tenure of Ghana's forests and trees is the product of a long and intertwined history of customary norms and practices, colonial/state control and statutory laws, and on-the-ground practices. Under colonial rule, the British laid claim to land and other natural resources. Through indirect rule the colonial power allowed Stool chiefs to manage these valuable natural resources "for the people." Over time, the state asserted more direct control over Ghana's forest resources, including formal substantive rights to timber and the right to dispose of trees growing on individual farms.

Over the decades, Ghana's forestry policies and laws transferred virtually total control and management responsibilities to the state. In the past decade there has been a slow but progressive transfer of tree tenure and benefit sharing rights that favor landowners, resource users and communities. This recent trend is similar to the devolution of rights that other countries have been pursuing, but progress in Ghana remains slow, incomplete, and fraught with contradictions.

2.1 CUSTOMARY TENURE PRACTICES

Approximately 80 percent of the total land area in Ghana is estimated to be held under customary title (Ubink & Quan, 2008; Bugri, 2012) but the origins of this estimate are unclear.[4] According to Ghana's customary practices, the stool holds land and resources (including trees) in trust for the entire community.[5] Most cocoa farms are held under customary tenure arrangements,[6] and according to a 2015 study, tenure arrangements are often context-specific in cocoa-growing areas, with immigrant farmers at greater risk of being dispossessed of their land (USAID & World Cocoa Foundation, 2015).

The chief, as the representative of the landowning community, is empowered to act on behalf of the interests of the community. The institution of the chieftaincy and customary practices in Ghana underwent significant changes during the period from the 1930s through the 1950s. The chiefs developed personal alliances with the colonial administration and the institution evolved towards a much stronger recognition of individual, rather than community, rights (Slater, 2014). Wassa and Ashanti ethnic groups had broad territorial control in the cocoa growing regions and encouraged pioneer advancements into the primary forests by bestowing the "rights of first clearance" to migrant pioneers. This rapid conversion of forests into cocoa farms was in part a reaction to the colonial government's attempt to put forestland under reservation. The areas proposed as forest reserves were severely restricted by the stool landowners who wanted to maintain control of the land resources for cocoa cultivation (Derkyi, 2012; Jiekak & Freudenberger, 2019).

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[4] Multiple sources estimate stool land to account for approximately 80 percent of all land, two of which are cited here but should be treated with some caution. Ubink & Quan (2008) cite four references. Three were tracked down but none provided any basis or further references for the statistic, and one estimated customary land to be 80 - 90 percent. The fourth citation was a presentation or report to the Department for International Development that could not be located, but did not appear to be peer reviewed. Bugri (2012) is a World Bank report on the application of a land governance assessment framework that relies heavily on this statistic. It cites a single reference from a University of Cambridge departmental paper from 1998 that could not be located online. Attempts were made to track down the origin or method to substantiate the 80 percent claim from other commonly cited literature. All ran into similar dead ends where references either i) did not cite any sources for the claim, or ii) were older reports that did not appear to be peer reviewed and were not online.

[5] Much of the chief's power comes from their role as the administrators of stool land. An analogy could be drawn between stool land and crown land, though the regimes that control the two are different. The stool (also sometimes referred to as skin), like the crown, are Ghanaian symbols of chiefly power. Land under chief control is therefore called stool land (Slater, 2014).

[6] Asamoah & Owusu-Ansah (2017) did not identify any leasehold interests in cocoa farms and found 0.1 percent of farmers surveyed self-identified as "renting" the land. The rest self-identified their right as other forms of customary rights to the land. Others have identified efforts to register leases over cocoa farms including through conversion of customary rights to a lease (Roth et al., 2018). The prevalence of statutory leases was not quantified but is expected to be minimal.

According to customary tenure rules, allodial title holders and those who hold customary freehold to land have clear and permanent rights to land. Members of the community are free to develop farms by clearing unoccupied forested land. Community members have the right to fell trees for personal use or for sale, normally by providing a portion of timber products or proceeds to the Stool (Amanor, 2005). They also have the right to plant any species of trees; the planted trees are the property of the land holders. According to Acheampong et al. (2014), the planter can bequeath trees planted on privately acquired land to anyone. However, trees that are planted on family or lineage land can be inherited only by members of that lineage group. The rights of immigrants/non-indigene (or strangers) to trees planted appear to vary and are based on the terms of the land use agreement (lease, sharecropping, and other) (Acheampong et al., 2014). Farmers who acquire long-term customary tenure rights such as usufruct, *asideɛ* and *abunu* (see Box 2) also have the right to plant and use any species of trees (Antwi et al., 2018; Persha & Protik, 2019). A farmer's right to plant trees under an *abusa* contract is much weaker as the farmer does not have rights or title to the land being farmed – just a share of farm proceeds. As a result, *abusa* farmers do not have rights to plant trees or own trees they plant.

Elsewhere in Africa, customary norms may not expressly prevent land users from planting trees, but customary landowners have tended to discourage and/or oppose tree planting by land users. This is because tree planting is considered a long-term or permanent claim to the land, which would make it difficult for the allodial titleholders or those with customary freehold to reclaim the land once the land user has planted trees. Antwi et al. (2018) noted, "This feature of the customary system both strengthens rights of tree ownership if allowed by the landowner and creates conflict between the tree planter and the landowner if the act of tree planting is seen as a covert measure to assert rights to land ownership" (p. 8). This feature can be seen in both *abunu* and *abusa* arrangements, where *abunu* farmers gain tenure rights to the land and trees so long as the farm is under cocoa production, whereas *abusa* farmers are caretakers without any rights to land or trees if they plant them. In the case of *abunu,* the land rights are connected to land being maintained as a cocoa farm, but the landlord must normally give their consent for an *abunu* farmer to cut and replant an old or diseased cocoa farm. This is common in many areas, but in some areas the *abunu* farmer does not need landlord approval to cut and replant a cocoa farm, making it more akin to *asideɛ.* Approval requirements may disincentivize farmers from replacing aging or low-yielding cocoa trees with new trees, especially as land resources become scarcer and landlord consent harder to obtain (Tropenbos International-Ghana, 2018; Roth et al., 2018). It is important to note that planting trees does not create issues in long-term customary tenure rights such as usufruct or *asideɛ* as the land users are also the landowners with land rights in perpetuity.

The Forestry Department has struggled with the tenurial claims of the Stools in the HFZ from its inception in 1909 (Bird et al., 2006), and the government weakened the traditional authorities' tree rights with the 1974 Trees and Timber Decree (see below). As the law stands today, Ghana's off-reserve forests resources are vested in the traditional chiefs, Stools, and indigene families, managed by farmers, regulated by the government that distinguished between planted and naturally occurring trees, and logged by private operators. This forms a complex web of resource rights that does not lend itself to simple regulation.

Box 2: Customary Land Tenure Arrangements in Ghana's Cocoa Production System

Under customary practice, rights to trees are not separated from land rights. The key land rights affecting the cocoa production system are summarized below in hierarchical order:

Allodial title. The highest form of customary interest in land held commonly by indigene landowning groups. Only indigene landowning groups can hold allodial title to land. The allodial title may enter into customary tenure agreements with non-indigene "strangers" or immigrants, but not as usufruct title. While the stool still owns the allodial tile, possession and all rights of economic utilization are passed down to usufruct and *asideɛ*, which in turn can pass this down further to *abunu*. Given all the land under cocoa cultivation has been passed out in this way, the allodial title is essentially ceremonial without economic interest in the land. However, the allodial stool is referred to for dispute resolution and collects *afashyɛtoɔ* (fees) from strangers, as well as benefitting from land rents collected by the Office of Administrator of Stool Lands.

Usufruct (customary freehold). The usufruct is created through customary rules that entitle every indigene or sub-group of an allodial community the right to work any common forest. Lands, once worked and converted to usufruct, remain private within the usufruct family or clan and may be left fallow for years without loss of usufruct rights. The holder of allodial land has strong incentives to limit the rights of usufruct by, for example, allocating lands for cocoa production only to non-indigenes who cannot gain usufruct rights. Usufruct rights are perpetual and usufruct rights holders may enter into customary tenure arrangements with strangers/immigrants without involvement or interference of the allodial titleholder.

Stranger landowner (asideɛ). This is a variation of usufruct that is established when strangers migrate to a community and acquire land directly from the allodial. In Wassa Amenfi West this occurred roughly 50 to 60 years ago when land was in abundance. *Asideɛ* landowners have perpetual rights. They can sell the land with consent of the allodial at a fee, grant *abunu,* and bequeath the land. See Annex 3 for a template *abunu* tenure agreement from Wassa Amenfi West

"Tenant" farmer (abunu). Land rights are gained through a land agreement whereby a stranger or migrant or (in rare occasions) an indigene, acquires land for farming. The landlord provides uncultivated land to the farmer to clear and grow agreed upon cash crops (generally cocoa). The *abunu* farmer clears the land and establishes a cocoa farm. Once the cocoa matures sufficiently (five to seven years), the farm is split into two and the landlord keeps half and the *abunu* farmer keeps the other half. An *abunu* farmer can bequeath or sell the land and rehabilitate their farm (cut and replant cocoa). This often requires the consent of the landowner, but landlord consent is not universally required across Ghana. So long as the land is maintained as a cocoa farm, *abunu* tenure rights continue in perpetuity. *Abunu* farmers may also be expected to pay an annual flat fee (*afahyɛtoɔ*) to the allodial, but they do not pay rent to landlords. *Abunu* is often described as tenancy as the closest English equivalent, but *abunu* rights are different from a common law tenant. See Annex 3 for a template *abunu* tenure agreement from Wassa Amenfi West.

Caretaker (abusa). Under *abusa,* the landowner establishes a farm and a sharecropper or caretaker is hired to maintain the farm. In return for their labor the *abusa* farmer receives one-third of the cocoa yield. There is flexibility on how the remaining two-thirds is divided – this may all go to the landowner who is responsible for inputs, or one-third may go to the landowner and one-third be allocated to purchase inputs. The caretaker may be fired on short notice and does not have any rights to the land being farmed.

Sources: Roth et al., 2017; Asamoah & Owusu-Ansah, 2017; Roth et al, 2018

2.2 STATUTORY LAW AND POLICY

Ghana has experienced numerous tree tenure policies from the pre-independence period to the present. The customary norms discussed above, along with land and forestry-related laws, acts, and policies, drive the way forest resources are managed and exploited. Overall, the legal and policy frameworks prioritize the rights of the state to manage and profit from forest resources, finding justification for doing so in an interpretation of the 1992 Constitution. They also attempt to reconcile and rationalize the competing land and forest demands of farmers and loggers while recognizing limited rights of traditional authorities.

The following section summarizes the policy and legal frameworks and how they influenced the tree tenure rules and forest management initiatives in Ghana, with a focus on the 2016 Tree Tenure and Benefit Sharing Framework and Legal Reform Proposals and the 1992 Constitution. A more detailed chronological analysis of the following statutes and policy is found in Annex 1:

- 1948 Forestry Policy and the Trees and Timber Ordinance No. 20 of 1949
- 1962 Concessions Act (Act 124)
- 1974 Trees and Timber Act (National Redemption Council Decree 273)
- 1979 Economic Plants Protection Decree
- 1994 Forest and Wildlife Policy and Forestry Development Master Plans
- 1997 Timber Resources Management Act (TRMA) 547
- 1999 Forestry Commission Act 571
- 2002 Plantations Development Fund Act (Act 617), with amendments to the 1997 TRMA 547
- 2012 Forest and Wildlife Policy
- 2012 Tree Tenure Benefit Sharing Policy
- Timber Resource Management and Legality Licensing Regulations, 2017 (LI 2254)

2.2.1 OVERVIEW OF STATUTORY RIGHTS TO TREES AND CALLS FOR REFORM

Under Ghana's statutory law, the ownership of planted trees is distinct from that of naturally occurring trees and the rights to timber trees[7] is different from non-timber species. First, there is a distinction between non-timber and timber trees. In the case of non-timber trees, the nature of the rights depends on whether the tree has commercial value (e.g., kola, raffia palm, oil palm) or is for subsistence use only (e.g., fruit trees). Ownership of naturally occurring trees is interpreted to run with the land, which is vested in either the President or Stool as trustee. While rights to land can be passed down to farmers, the government has retained rights to naturally occurring timber trees with the trustee responsibilities exercised by the Forestry Commission and its agencies. Although smallholder cocoa farmers are able to freely fell trees when clearing the forest to farm, neither landowners nor migrant cocoa farmers have any legal rights to harvest trees for, or receive revenue from, commercial timber. Tree tenure is further complicated depending on whether the trees occur on family, communal/stool, or rented/leased land, with tree tenure rights evolving over the years (Marfo, 2004; Acheampong et al., 2014; Roth et al., 2017).

The distinction between naturally occurring and planted trees is scattered throughout Ghana's legislation. It can be traced back to the 1962 Concessions Act, which continues to shape rights to trees in Ghana. Section 16 of the Act vests forest reserves and timber and forest concessions in the President, and also vests "all rights with respect to timber or trees on any [other] land" in "the President in trust for stools concerned" (See Sections 16 (1),(2),(3)). Oduro et al. (2011) note that "[w]ith the passing of the Concessions Act (Act 124) and the Administration of Lands Act (Act 123) the State gained control over administration and allocation of all timber resources and forest reserves" (p. 23). This state control and distinction between natural occurring and planted trees evolved and was reinforced in the 1974

[7] In this document timber trees refers to a variety of tree species extracted by loggers for commercial purposes.

Trees and Timber Act, 1997 Timber Resources Management Act, and 2002 Plantations Development Fund Act (which amended the Timber Resources Management Act).

2.2.1.1 EVOLVING POLICY AND CALLS FOR REFORM

The 2012 Forest and Wildlife Policy was the first government policy that raised the prospect of tree tenure reform. The policy was referred to as a paradigm shift from past policies as it placed an emphasis on the non-consumptive values of the forest (Republic of Ghana-MLNR, 2012). The policy addresses key issues related to tree tenure and community participation in forest management. The European Union's (EU's) Forest Law Enforcement, Governance and Trade (FLEGT)-Voluntary Partnership Agreement (VPA) process is often credited with prompting these significant policy changes (Tropenbos International-Ghana, 2018).

According to the policy, the government's strategy is to:

> *[E]nact the legislation that will enable communities and individuals to benefit from trees on their farms and fallow lands, provide off-reserve tree tenure security, authority to legally dispose of resources and allocate a greater proportion of benefits accruing from resource management to community members individually or collectively* (Republic of Ghana-MLNR, 2012, p. 27).

The policy takes a significant leap forward by giving landowners and land users full ownership of trees on their farms. Furthermore, the new policy gives landowners the *bona fide* rights to the trees in secondary forests. However, the distinction between planted and naturally growing trees remains, and these new tree tenure arrangements still need to be legally defined and harmonized with existing legislation.

Four years after the 2012 policy, a series of further policies and plans were released by the government that pushed the tree tenure reform agenda forward further. In 2016 the Ministry of Land and Natural Resources launched a new Forestry Development Master Plan for 2016 – 2036. The master plan accompanied the 2012 Forest and Wildlife Policy and recognized that tree tenure and the lack of benefit sharing of proceeds from naturally occurring trees contributed to loss of trees off-reserve. The master plan included provisions to establish a legal framework for naturally occurring trees and regime for tree tenure and carbon rights by 2020, with the latter work on tree tenure funded by the Forest Investment Program (Republic of Ghana-MLNR, 2016b).

In 2016, the Forestry Commission also unveiled a more explicit tree tenure policy that aimed to create a firmer legal basis for improved benefit sharing arrangements and tree tenure security for communities and individual farmers. The 2016 draft Tree Tenure and Benefit Sharing Framework in Ghana was driven by Ghana's engagement in international efforts to reduce deforestation.[8] It acknowledged that tree tenure issues are a major cause of tree loss off-reserve, and that there is overwhelming support from farmers to reform tree tenure policy in their favor:

> *There is a ground swell with forest communities that is in favor of rights related to decentralize land and tree tenure governance that gives more right to land owners and farmers who invest resources in the creation of the forest. Communities do not favour the right of government to dispose of trees off-reserve across the country. This means that for sustainable management and strengthening rights of communities, right to own, manage and dispose of naturally occurring trees should be given to forest communities (landowners and farmers)* (Republic of Ghana-MNLR, 2016a, p. 83).

The framework goes on to recommend, with respect to naturally occurring tress on farms that:

[8] The report cites the European Union's Forest Law Enforcement, Governance and Trade's Voluntary Partnership Agreement along with the Forest Carbon Partnership Facility. Donor involvement in policy reform is discussed further in Chapter 4 of this paper.

> *…since the state does not play any key management role, the state should only be compensated for the regulatory role it plays in the allocation of the resources, for which a fee should be charged. Thus farmers and landowners would have full ownership of the trees on farm and will enter benefit sharing arrangements based on the traditional agricultural sharing systems pertaining in their areas* (Republic of Ghana-MNLR, 2016a, p. 86).

The framework recommends giving landowners full ownership of trees on their farms, and under many *abunu* arrangement gives *abunu* land users at least partial rights to the trees, thus enabling cocoa smallholders to enter into benefit sharing arrangements based on the traditional/historical agricultural sharing system pertaining to their land. The framework recommends assigning *bona fide* rights to landowners for trees growing on fallow land/secondary forests but allows for the respect of the terms of pre-existing land agreements if/when they exist.

While the framework makes recommendations, it does not actually revise the tenure statutory regime. The government argues that revising the tree tenure regime would require revisions at multiple levels, including at the constitutional level, and notes that:

> *To be pragmatic, the analyses and drafting processes for tree tenure reform and broader forest regulatory framework reform will need to run in parallel, with very close coordination and communication between the two* (Republic of Ghana-MNLR, 2016a, v).

The *Final Benefit Sharing Plan* for the Ghana Cocoa Forest REDD+ program was released in 2020 (Forestry Commission, 2020). The final plan also acknowledges challenges with tree tenure but does not go as far in its recommendations to recognize farmers' and landowners' full ownership of trees on their farms. Rather, the *Final Benefit Sharing Plan* notes various law reform processes underway regarding tree tenure that focus on either benefit sharing with farmers or proposals to "Vest trees in off-reserve in the communities/stools, fringing the resource or based on the underlying land tenure systems and managed by the Forestry Commission" (Forestry Commission, 2020, p. 11 – 12).[9] The final plan also lists improved tree tenure security through tree registration as a high priority non-monetary benefit farmers can expect from the benefit sharing plan (Forestry Commission, 2020 at 25).

At the same time the draft framework was released, the MNLR released an accompanying legislative reform proposal drafted by a consultant, the Framework on Tree Tenure and Benefit Sharing Scheme (Legal Reform Proposals) (Akapme, 2016). This document sets out one possible argument for legislative reform that does not require a constitutional amendment, but subsequently comes to a similar conclusion as the framework and concludes a constitutional amendment *may* be necessary to reform tree rights off-reserve.[10] The Legal Reform Proposals document contains five main proposals for legislative reforms (p. 13 – 17):

1. Vest trees off-reserve in the communities/Stools fringing the resource or based on the underlying land tenure systems and managed by the Forestry Commission;

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[9] It should be noted that between the draft and final benefit sharing plan the scope of Ghana reference level for forest emissions (FREL) expanded to include enhancements – i.e. increases in forest carbon stocks. The FREL sets out how emission reductions or removals will be generated under the GCFRP. These reductions are then sold to the Forest Carbon Partnership Facility (FCPF), and the sale and purchase contract required the government to demonstrate it has the ability to transfer title to the credits "free of any interest, Encumbrance or claim of a Third Party" (see Carbon Fund ERPA, 2019, Schedule 1 clause (3)). If carbon stock enhancements on cocoa farms are included in the program, the FCPF requires the government to own and transfer the carbon rights associated with these trees to the Carbon Fund, which may complicate devolution of tree tenure. See section 4.4 for more discussion on this point.

[10] Note the consultant's report finds: "Changing the current tree tenure regime requires revisions at many levels. The proposed revisions will be virtually impossible to treat alone because they may include revisions to the Constitution and many other components of the forest legislative framework"(p. 18). The government-prepared report does not use "may" and implies a Constitutional amendment is needed: "Changing the current tree tenure regime requires revisions at many levels, including the Constitution and has fundamental knock-on effects on many other components of the forest legislative framework, so will be virtually impossible to treat alone"(p. v). See the section on the Constitution above for further discussion.

2. Give farmers the right to adequately negotiate benefit sharing arrangements for planted or nurtured trees with the landowner;

3. Decentralize land title registration to enable farmers to demarcate and register lands and trees on their farms to secure their ownership of trees off-reserve;

4. Standardize benefit sharing options for on-reserve (naturally occurring), on-reserve (planted), off-reserve (naturally occurring) and off-reserve (planted); and

5. Reserve areas for forest plantations in district assembly land use plans.

2.2.2 GHANA'S EVOLVING POLICY AND PRACTICE OF TREE REGISTRATION

Tree registration for farmers was introduced in Ghana in 2003 as a feature of the modified taungya system (MTS) being implemented in reserves. The enactment of the Forest Plantations Fund Act, 2000 (Act 83), which vests ownership of planted trees in the farmer who planted the trees, made it possible to implement MTS in Ghana's degraded reserve lands. According to the Plantations Act, farmers were required to register MTS plot boundaries, as well as a full description of all the trees planted on their tree farms, using a template created by the Forest Services Division specifically for these plantations (see an example of the registration form in Annex 2). The Ghana Forestry Commission first referenced off-reserve tree registration in an administrative directive dated August 3, 2006 specifically addressing private plantations located outside forest reserves (Nyame et al., 2012; Fisher et al., 2012). It is not entirely clear from the information available if the 2006 directive required an inventory and mapping of individual trees, or refers to the registration of the land area or plot that was planted, but it is clear that the administrative directive applied only to planted trees and not to naturally occurring trees on private land (Proven Ag Solutions, 2012).

Policy changes that began in 2000 and 2002 and were reinforced in 2012 contributed to increased stakeholder engagement in forest management and tree plantation developments. The Timber Resources Management Act (Amendment) 2002 (Act 617) disallowed the issuance of timber rights on farmland in the absence of a written authorization from the individual or group of owners. The combined effect of the 2000 and 2002 statutory changes is that timber tree species planted by farmers for economic benefit could be owned privately. These policy changes acknowledge not only the right for the farmers to own the trees they plant, but also to economically benefit from the trees, including the right to harvest or sell the trees. Although the 2002 policy gave rise to the notion of establishing a national tree registrar, the tree registration process was never fully defined and finalized by the Ghana Forestry Commission.

The 2016 Framework for Tree Tenure and Benefit Sharing Scheme in Ghana is the first official document that specifically identifies tree registration as a recommended policy and legislative reform, proposing "a decentralized system of identification and registration of trees on farms and their ownership development" (Republic of Ghana-MNLR, 2016a, p. 74). However, ambiguity is introduced elsewhere in the same document by linking the tree registration mechanism to land registration: "There should be a decentralized land title registration that allows farmers to demarcate and register their lands in the community/district and also register trees on their farms in order to ensure that at the time of benefit sharing, ownership of trees would not be in dispute" (Republic of Ghana-MNLR, 2016a, p. 90).

According to Boakye (2016), the policy and legislative issues that must be resolved before tree registration can be legalized include: 1) the farmer must have the right to adequately negotiate benefit sharing arrangements with the landowner for trees that he/she plants/nurtures; 2) the farmer must have the right to freely exploit, including felling the trees for personal use or arranging with a timber harvester to harvest, the trees that he/she nurtures; and 3) there must be a decentralized land

registration system that allows farmers to demarcate and register their land and trees in the community/district. Boakye (2016) recommends that tree and tree tenure registration should be linked.

In contrast, the approach proposed by the MLNR does not bundle land and tree tenure. The government maintains that changing the current tree tenure regime would require revisions at many levels, including amending the 1992 Constitution, making it an untenable policy reform pathway to pursue (Republic of Ghana-MNLR, 2016a). As a result, tree registration as is being implemented in Ghana today does not confer legal title to planted trees to individuals or communities (Boakye, 2016).

Even in the absence of a legal framework, a standard protocol, and well-articulated guidance, the Forestry Commission, as well as a number of donors and implementing partners, have implemented tree registration pilots over a period that spans nearly two decades and summarized in Table 1.

TABLE 1. TREE REGISTRATION PILOTS IN GHANA

ORGANIZATION	PROGRAM	OBJECTIVE	RESULTS
Forestry Commission	MTS farmer registration (2002 – 2005)	Establish plantations on degraded forest reserve land to produce food crops and establish tree plantations.	• As of 2005, a total of 7,394 hectares had been registered to 2,558 farmers. • 95 percent were comprised of exotic species, primarily teak and cedrella.
United Nations Food and Agriculture Organization	MTS plantation establishment and registration (2005 – 2010) under Ghana's national forest plantation program	Improve plantation development by consolidating the benefits to farmers involved in MTS plantation establishment.	• Supported 6,769 farmers that had registered for the MTS program in the Central and Western regions between 2002 – 2009.
International Union for Conservation of Nature	Livelihoods and Landscapes Strategy program (2008 – 2010)	Address tree planting incentives focused on the CREMA.	• Yielded positive results in Ghana, with a rapid increase in the number of trees planted between 2008 and 2010. • Simple and low cost. • Designed a registration form which included a copy of registration details to be kept by farmers. • The program helped to initiate a discussion about customary and official land and tree tenure.
Forest Research Institute of Ghana (FORIG)	Trans-Frontier Conservation Area at Bia Project Site	Build the understanding and capacity of targeted CREMAs to register trees.	• The registration exercise was executed in eleven communities. • 337 farms belonging to 236 individual farmers were documented. • A tree registration certificate form was developed in collaboration with the Forest Service Division, but the certificates were not fully executed under the project.
FORIG/International Tropical Timber Organization (ITTO)	Reducing emissions from deforestation and forest	Secure ownership through tree inventory and registration for the	• In total 8,766 trees were registered, belonging to 129 farmers.

	degradation through collaborative management with local communities	farmers who planted the trees, as most of these farmers were migrants (ITTO, 2017).	
United Nations Development Programme /Cocobod/ Mondelez Cocoa Life	Environmental Sustainability Project (ESP-II) in Cocoa Landscapes (2016 – 2020)	Mainstream environmentally sustainable and climate change resilient cocoa production practices and conserve ecosystems and natural resources in cocoa landscapes; goal to register 1.6 million trees.	• Tree registration was initiated during ESP-I but the exercise was not completed due to lack of a Green Climate Fund-approved tree registration mechanism. • Tree registration is to continue under ESP-II but no progress on this activity has been reported to date.
World Cocoa Foundation (WCF)/ Sustainable Food Lab/Agro Eco-Louis Bolk Institute/ Meridia	WCF consortium activity (2018) – USAID Feed the Future funding	End deforestation and forest degradation in the cocoa supply chain.	• 150 farmers registered the trees planted on their cocoa farms near Asankrangwa, in Ghana's Western Region. • The Ghana Forestry Commission approved the tree registration, and the certificates were fully executed. • Cost estimate range from GHS 150 ($33) for parcel and tree mapping to GHS 500 ($111) for full legal documentation and tree mapping.
USAID TGCC	USAID Supporting Deforestation-Free Cocoa in Ghana (2017 – 2018)	Assess tenure constraints and improve tenure security to support sustainable cocoa.	• Included a tree registration activity in its initial design, but after evaluating the feasibility of a national tree registry, canceled this activity.
USAID ILRG	USAID Supporting Deforestation-Free Cocoa in Ghana (2019 – 2021)	Pilot tree registration through the Forestry Commission in four communities in Asankrangwa Stool.	• Currently testing a tree registration program on 749 parcels owned by 473 farmers and with 3,031 planted and 4,352 naturally occurring trees. Average cost of registration was approximately $27 per parcel.

In 2018, the Ghana Forestry Commission developed new procedures and a new tree registration form as part of a WCF tree registration pilot. In addition to the new procedures, the Ghana Forestry Commission drafted a new tree registration policy that officially recognizes the registration of naturally occurring trees on farms (Dohmen et al., 2018).[11] The USAID TGCC project originally planned to pilot the Ghana Forestry Commission's new regulation for devolving tree tenure through a tree registry but decided against proceeding when it recognized the impracticalities and high costs of establishing and administering a national tree registry. In the program's final report, USAID TGCC recommended that a more effective policy would be to bundle full devolution of tree tenure rights with land rights (Sommerville & Guthe, 2018).

[11] Although mentioned in the Dohmen et al. document, none of the authors have been able to obtain a copy of the Ghana Forestry Commission's new tree registration policy for review and analysis.

The follow-on USAID ILRG project is piloting a tree registration initiative linked to the offering of LandSeal land documentation services. At the time of publication of this report, the project was assisting 473 farmers in four communities to register 3,031 planted and 4,352 naturally occurring trees through the Forestry Commission on land parcels mapped for farmers interested in registering land rights with the Asankgranwa Stool chief. The average cost of tree registration was approximately US$27 per parcel. Based on field work from ILRG and other projects, it is estimated that it would cost between US$47.5 million and US$86.4 million to register all the trees in Ghana's cocoa farms.[12] This does not take into account the Forestry Commission's costs to process 1.7 million to 2.1 million individual records, the costs to establish and maintain the registry over time, or the logistical challenges of mapping every tree on that many individual farm plots. It also does not consider the cost of farmers' time to work with someone to map their farm, participate in an audit, or follow up to maintain their registration over time. Costs to maintain the registry especially for inter-generational succession would far outweigh the costs of initial first-generation registration.

With MLNR and the Ghana Forestry Commission moving forward with tree registration, it will be increasingly difficult for farmers to assert their newly acquired tree rights if they do not officially register their trees. Without clear guidelines and monitoring systems in place there is a risk that any tree, regardless of registration, could potentially be considered "naturally occurring," which means it would belong to the state under current law (Dohmen et al., 2018). According to the ministry's recently published Field Guide to Tree Registration, both landowners and farmers (including foreigners) who cultivate land under a customary land agreement, such as *abunu* or *abusa* agreements for cocoa farmers for at least one year, are allowed to register and own trees. According to the field guide, "even if the land would return to the landowner at one moment in time, the registered trees will remain officially under the ownership of the farmer" per the terms of the previously negotiated land agreement (Dohmen et al., 2018, p. 28; see also Box 3 next page). As noted earlier, the tenure of trees in cocoa farms were rarely part of negotiated agreements nor were tree rights separated from land rights under customary practice. This policy shift that gives *abunu* or *abusa* farmers rights to trees that may extend beyond their rights to land could give rise to new tensions between landowners, *abunu* and *abusa* farmers regarding tree planting, existing land agreements and any new agreements.

The Ghana Forestry Commission's 2012 Forest and Wildlife Policy and MLNR's 2016 Tree Tenure and Benefit Sharing Framework attempt to address this benefit sharing issue between landowners and land users as it identifies the benefits of tree registration (for planted trees):

1. Landowners and smallholder farmers, per negotiated benefit sharing arrangements with the landowner, can take the decision to cut trees on the farm for personal use;
2. Landowners and smallholder farmers, per negotiated benefit sharing arrangements with the landowner, are entitled to compensation for any damage caused by the felling of any trees on the farm; and
3. Landowners and smallholder farmers, per negotiated benefit sharing arrangements with the landowner, are entitled to full payment/compensation for the felling of any trees on the farm.

[12] ILRG tested tree registration in four communities in Asankrangwa. The project prepared registration documents for 3,031 planted and 4,352 naturally occurring trees on 749 parcels owned by 473 farmers, which cost on average approximately US$27 per farm. This included costs for i) personnel (field and office); ii) transport, accommodation, materials, shipping; iii) Forestry Commission field audit; iv) coordination of Forestry Commission approval; and v) use of hardware and vehicles. Meridia considered this a conservative cost, with cost estimates from other projects up to $40 per farm (personal communication with Meridia). The higher cost of almost US$90 per farm recorded in the 2018 WCF pilot was not included as it is unclear if this cost included land title documentation in addition to tree registration. Ghana's cocoa marketing board estimates Ghana has 800,000 cocoa farmers. Field work in Asankrangwa estimates farmers have on average 2.7 farms each (Persha et al., 2019), with field work in other areas of Ghana found lower averages of 2.2 farm parcels per farmer (Asamoah & Owusu-Ansah, 2017). The low and high range estimates represent the low and high point costs when extrapolating US$27 and US$40 per parcel across 2.2 and 2.7 parcels per farmer for 800,000 farmers.

Boakye (2016) notes that landowners are considered to have *bona fide* ownership and management rights over trees in fallowed land.

According to Dohmen et al. (2018), another proposed policy change – the "forest timber tending toll" – is currently being finalized by the government. Under this arrangement farmers/landowners will receive a payment directly from the timber operator for naturally occurring trees that are harvested. The Forestry Commission is proposing the "tending toll" as an alternative to splitting the stumpage fee currently paid by the timber operator (Sekyere & Asumang-Yeboah, 2018). The forest timber tending toll was first proposed by the Forestry Department in 1994 to control illegal timber harvesting outside forest reserves. At that time the Forestry Department proposed direct payments to farmers for trees harvested from their farms (Mayers et al., 1996).

Box 3: Excerpt from the Forestry Commission's Field Guide to Tree Registration

The following persons can register trees provided that there is an agreement with the landowner:

- Landowners;
- Farmer groups, cooperatives, and companies; and
- Individual farmers (including migrants) who work on the farm under a customary land agreement, including *abunu* and *abusa* for at least one year.

The ***conditions*** for registration are as follows:

- Only trees that occur in off-reserve areas can be registered. Trees in forest reserves or protected areas cannot be registered.
- The trees should have been planted at least one year ago by the person who would like to register them. Registration can happen any time after that.
- All naturally occurring trees should be registered too.
- In the case of planted trees, the landowner has given his/her approval to plant the trees.
- Trees that are dead or have been cut cannot be registered.
- Trees must be indigenous species. Cocoa trees cannot be registered because cocoa is not indigenous to West Africa and therefore the government considers them a crop rather than a tree.
- Any farm qualifies, not only cocoa farms.

Administrative steps required to register trees:

- Informing the Forestry Commission – the district-level Forestry Services Division of the Forestry Commission should be informed and the office will provide the necessary registration forms and instructions.
- Completing and submitting the registration forms – The person wishing to register must submit personal data, information on next of kin, group/company details, location of farm, tree information, including species, size of the tree, year planted or year nurturing commenced, and the tree location (GPS coordinates). The Forestry Commission does not require recording the land tenure arrangements. Mapping of the land boundaries and trees must be witnessed.
- Verification by the Forestry Commission – The district-level office will verify the information on the submitted forms within a three month delay.
- Information is entered into a national database.

Procedures for harvesting naturally occurring and planted trees that are registered:

- For naturally occurring trees the new "forest timber tending toll" (once approved) will apply and be paid by the private timber operators, along with the procedures established by the Forestry Commission.
- When a farmer or landowner cuts trees to sell, he/she must apply for a permit. With an authority note from the Forestry Commission the farmer can negotiate directly with the timber company. The tree owner will receive full payment from the timber company.

Source: Dohman et al., 2018

A recent study interviewed farmers about tree registration. The majority of farmers responded that they would register trees if they had the opportunity to do so for two primary reasons: 1) registration

would decrease their vulnerability to unauthorized felling; and 2) formal registration would increase their claim to both land and tree ownership. But respondents also acknowledged the high costs of registration[13] and expressed genuine concerns about corruption and rent-seeking behavior that could result from the process. Even the Forestry Commission's Director of Plantations and Community Land expressed doubts about the farmers' ability to navigate the registration process (Gaither et al., 2019). But the Forestry Commission and the MLNR are continuing their efforts to roll out the tree registration policy and develop a National Tree Registration Master Database.[14]

Tree registration in Ghana remains ambiguous and ill-defined, with no legal backing and little practical guidance in place. According to several CSO representatives, the Forestry Commission could not respond to basic questions from farmers about Ghana's tree registration policy at a recent stakeholder meeting on tree registration. Farmers expressed concern about the government's distinction between planted and naturally occurring trees and questioned why GPS coordinates are required when registering naturally occurring trees but not for planted trees. CSO stakeholders believe there is a strong likelihood that tree registration will be co-opted by elites due to the high costs and administrative demands of registration. Finally, in the absence of a new tree tenure law, including the repeal or amendment of the Concessions Act 1962 (Act 124), along with a change in the benefit sharing formula stipulated in the 1992 Constitution that the government maintains needs to be revised, many are skeptical of the government's intentions. Farmers have expressed fear that the government will cancel or alter the proposed policy and thereby deny them the promise of tenurial reform.

In Ghana, where the tree registration system is still new and is only being piloted in very limited geographical areas (see Table 1 above) it is far too early to determine whether tree registration, and the accompanying policy revision that transfers rights of tree planting and protection to farmers, will result in increased reforestation. Under the donor-funded pilot activities, farmers are indeed planting and registering trees, and preliminary reports indicate that farmers are interested in registering the trees on their farms to gain rights to these trees when others bear the costs. Without donor support, which covers the costs of the trees and the registration process, their enthusiasm is likely to evaporate quickly.

The tree registration pilots in Ghana are likely to confront myriad tenure disputes, elite capture, and the administrative glitches similar to the first generation of land registration programs. While it may be possible to put in place a mechanism and the modalities to complete the initial tree registration process, many significant potential challenges exist. There are clear downsides to instituting a national tree registry, whereby each and every tree needs to be identified and recorded. Unlike land registration, which records the tenure arrangement and boundaries of a resource that is fixed in space, the trees in a healthy agroforestry system are dynamic and are in a continual state of change, with the number and variety of trees growing on a given plot of land changing from year to year. Tree registration provides participating farmers with only a static "snapshot" record of the trees on their farm at one moment in time. The snapshot is likely to become outdated quickly if the farmer is actively practicing agroforestry and continues to nurture and plant trees. Even if farmers are motivated to participate in the well-funded tree registration pilots, the results will be obsolete within a few years. Tree registration is likely to quickly become a disincentive to plant and protect trees when farmers realize tree registration is too costly and/or administratively cumbersome. Finally, maintaining the distinction between planted and naturally occurring trees in Ghana will continue to disincentivize farmers and open the registration system to abuses since the failure to register trees may result in state expropriation (O'Sullivan et al., 2019).

[13] CSO representatives were tasked with costing out tree registration but had not completed this exercise at the time of this report.

[14] https://www.idhsustainabletrade.com/news/stakeholder-dialogue-on-tree-registration-in-cocoa-farms/

In recent years, efforts to devolve tree tenure to landowners, land users, and communities have been intertwined with externally driven policies such as EU's FLEGT, the Programme for the Endorsement of Forest Certification (PEFC), multinational REDD+ programs, and more recently, the cocoa industry's commitment to deforestation-free sustainable cocoa production systems. Ghana is heavily reliant on foreign donor funds for forest management and conservation and the donors have exerted pressure on the government of Ghana to address issues of tenure and property rights, and the recent policy reforms that grant cocoa farmers rights over all trees growing on their farms are a significant and positive outcome. But linking more secure tree tenure rights for cocoa farmers to mandatory tree registration jeopardizes the positive impact of these tree tenure policy reforms, especially since the reforms have not yet been promulgated into law.

2.3 DEEP DIVE INTO THE 1992 CONSTITUTION

Government policy that calls for tree tenure reform is stymied by government analysis that also justifies the distinction between naturally occurring and planted trees (with government ownership of the former) on a particular interpretation of the 1992 Constitution. As a result, the government argues that tree tenure can only be formed with a constitutional amendment. This argument warrants further analysis.

2.3.1 KEY PROVISIONS OF THE 1992 CONSTITUTION

Ghana's 1992 Constitution (Chapter 5, Article 18(1)) guarantees the right to own property: "Every person has the right to own property either alone or in associations with others." The right to "ownership of property and the right of inheritance" is further guaranteed under Chapter 6, Article 36(7), but subsequently limited with respect to land in Article 36(8) which states:

> *The State shall recognise that ownership and possession of land carry a social obligation to serve the larger community and, in particular, the State shall recognise that the managers of public, stool, skin and family lands are fiduciaries charged with the obligation to discharge their functions for the benefit respectively of the people of Ghana, of the stool, skin, or family concerned and are accountable as fiduciaries in this regard.*

Chapter 21 prescribes the legal framework for the ownership of land and natural resources. All public lands are "vested in the President on behalf of, and in trust for, the people of Ghana" (Article 257(1)), and all stool lands "shall vest in the appropriate stool on behalf of, and in trust for the subjects of the stool in accordance with customary law and usage" (Article 267(1)). The Constitution goes on to limit interests that can be created on stool land: "Subject to the provisions of this Constitution, no interest in, or right over, any stool land in Ghana shall be created which vests in any person or body of persons a freehold interest howsoever described" (Article 267(5)), and stipulates who is responsible for development and management of stool land: "The Lands Commission and the Administrator of the Stool Lands shall co-ordinate with all relevant public agencies and traditional authorities and stools in preparing a policy framework for the rational and productive development and management of stool lands." (Article 267(8)).

Article 267(6) regulates how "revenue accruing from stool lands" is divided, with 10 percent going to the Office of the Administrator of Stool Lands (OASL) to cover administrative expense, and the remainder divided between the stool (25 percent), traditional authorities (20 percent), and the district assembly (55 percent). It should be noted that communities and individuals are excluded from this list.

Article 268(1) vests in Parliament the responsibility to ratify any agreement that involves granting rights to or concessions for the exploitation of minerals and natural resources. It also gives Parliament the authority to exempt a class of transactions from this provision and to delegate the authority to the

relevant state bodies (Article 268(2)). In the case of forestry, Article 269(1) provides for the creation of the Forestry Commission, which has the overall responsibility to manage forestry resources.

The 1992 Constitution clearly establishes government ownership over minerals "in their natural state" but there have been conflicting interpretations as to what the 1992 Constitution says or does not say regarding the ownership of other natural resources such as trees. Derkyi (2012) maintains that the right to exploit all naturally occurring trees, irrespective of their location, have always been vested in the state, basing her analysis more on Section 16(4) of the 1962 Concession Act than on the 1992 Constitution. The government has claimed in several documents that government rights over naturally occurring trees and the benefit sharing of this timber revenue is traced back to the Constitution, but also acknowledges in its National REDD+ Strategy and elsewhere that this same tree tenure policy creates perverse incentives to remove timber trees off-reserve and that:

> *At its core, the problem with the existing benefit-sharing arrangement is that tree tenure and timber benefit sharing regimes have been structured to only recognize the rights of the Forestry Commission, the stools, the district assemblies, the traditional authorities, and office of the administrator of stool land (OASL) without recognizing the rights and key roles of the land users and de facto managers of the trees.* (Republic of Ghana, 2015, p. 48)

How the 1992 Constitution is interpreted to support the government's position, along with alternative constitutional interpretations is unpacked below.

2.3.2 CONSTITUTIONAL INTERPRETATIONS THAT SUPPORT GOVERNMENT RIGHTS TO NATURALLY OCCURRING TREES

The government has claimed reform to tree tenure and benefit sharing requires constitutional amendments in several documents, such as the Ghana investment plan for the Forest Investment Program (FIP) (Republic of Ghana-Ministry of Lands and Natural Resources [MLNR], 2012), Framework on Tree Tenure and Benefit Sharing Scheme (Legal Reform Proposals) (Akapme, 2016), and Tree Tenure and Benefit Sharing Framework in Ghana (Republic of Ghana-MLNR, 2016a). Several other documents refer to the constitutional basis for government rights over naturally occurring trees and benefit sharing, e.g. the Benefit Sharing Mechanism for REDD+ (Dumenu et al., 2014) and the Ghana National REDD+ Strategy (Republic of Ghana, 2015). The interpretations of constitutional law are not always consistent between these documents, but there seem to be two main constitutional law issues raised. The first relates to rights to naturally occurring trees and the second relates to benefit sharing.

2.3.2.1 RIGHTS TO NATURALLY OCCURRING TREES

The Tree Tenure and Benefit Sharing Framework in Ghana (Republic of Ghana-MLNR, 2016a) contains the most thorough review and explanation of how rights to naturally occurring trees are claimed by the government under the 1992 Constitution. The report found that:

> *Reading the Constitution the following emerges:*
>
> *a. Public lands are vested in the President on behalf of and in trust for the People of Ghana. The Lands Commission will manage public lands and other lands vested in the President. In other words; the people own, the state controls and the Land Commission manages, all for the benefit of the People of Ghana.*
>
> *b. All minerals in their natural state are also vested in the President on behalf of and in trust for the People of Ghana. Similarly; the people own and the state controls for the benefit of the people (the management tasks of the Minerals Commission are however not included in the Constitution).*

c. *All stool lands are vested in the appropriate stools on behalf of and in trust for the subjects of the stool in accordance with customary law and usage. Any disposition or development of any stool land must be approved by the regional Lands Commission. So other words; communities own and the stool controls these lands and their resources with some oversight by the regional Lands Commission.*

It is instructive to note that the 1992 Constitution does not mention who owns natural resources other than minerals in their natural state, nor does it mention who owns family lands and how these relate to Stool and Skin lands (p. 23).

Later, when discussing rights of stakeholders, the report goes on to find:

Ownership of naturally occurring trees is not separated from the ownership of land by the Constitution or any of its implementing acts and regulations. Therefore, the ownership of natural trees (even if stripped from any control over it) coincides with the ownership of the land on which the trees occur.

Ownership and use rights of land and resources are intimately linked to the right to share the benefits that arise from these resources. Ownership includes but is not limited to the control and management of the said resource. Currently, the majority of the timber which is harvested from Ghana's forests stems from naturally occurring trees. The rights to naturally occurring trees are vested in the State in trust for and on behalf of the stools concerned regardless of their on- or off-reserve status.

….

Ownership rights to naturally occurring economic timber trees in off-reserve forests rests with the government, but access to other forest and tree resources depends on the prevailing land ownership and inheritance system.

….

Ownership of planted trees does not by default coincide with the ownership of the land, they are planted on in the same way as a farmer owns his crops even if not planted on his own land, a planter owns the trees he has planted even if it was not on his own land.

….

Planted timber is not intended to be included in the vesting of trusteeship by the Concessions Act. Ownership, control, management and use rights therefore lie 100% with the landowner if he was also the planter (p. 68 – 69).

The report contains a useful table to explain stakeholder's rights to trees that flow from this (Table 2 below).[15] The analysis recognizes ownership of naturally occurring trees runs with the land, but strips important ownership and decision-making authority over these "natural resources" away from the farmers who also have customary rights to the land. This then leads to the second constitutional law issue – benefit sharing.

TABLE 2. STAKEHOLDERS RIGHTS TO TREES

ARRANGEMENT IN PLACE	COMMUNITY	FORESTRY COMMISSION	FARMER	TRADITIONAL AUTHORITY
Right to plant trees	x	X	x	X
Right of access to the trees	x	X	x	X

[15] Note: The government report does not explain why some cells received a lower-case x and others a capital X. It should be noted, however, that the capital X corresponds to government or Stool held rights.

Right to own the trees				X
Right to the usage of trees	x		x	X
Right to the disposal of trees		X		
Right to prevent others from use of trees in your farm	x	X	x	X

Source: Republic of Ghana-MLNR, 2016a, p. 68

2.3.2.2 BENEFIT SHARING

The determination that naturally occurring trees are part of the land and owned by the stool as trustee triggers Article 267(6) of the 1992 Constitution which regulates how "revenue accruing from stool lands" is divided. This allocation has been modified by a Forestry Commission Memorandum of Understanding to produce the revenue sharing allocation in Table 3. The absence of farmers, landowners, and forest-dependent communities from the list of beneficiaries cannot go unnoticed. Applying the benefit sharing arrangements dictated by Article 267(6) of the Constitution to timber poses a major challenge to incentivizing farmers and communities to protect and nurture the country's forest resources.

TABLE 3. TIMBER REVENUE BENEFIT SHARING FOR NATURALLY OCCURING TREES ON AND OFF RESERVE

STAKEHOLDERS	PERCENT SHARE	BASIS
Forestry Commission	50%	Management responsibilities
District Assembly	25%	Community development
Stool	11%	Maintenance of the Stool in keeping with its status
Traditional Authority	9%	Not states, but may be consistent with that of the Stool
Office Administrator of Stool Lands	5%	Cover administrative expenses

Source: Dumenu et al., 2014, p. 4

As ownership of planted trees is separated from the land, revenue from these trees is not subject to Article 267(6). Benefit sharing of commercial tree plantations is quite different. If a landowner establishes a commercial tree plantation, they reap all the benefits. A landowner will also benefit if they enter allow a third party private entity plant commercial timber trees on their land (see Table 4 below).

TABLE 4. TIMBER REVENUE BENEFIT SHARING FROM COMMERCIALLY PLANTED TREES

STAKEHOLDERS	FOREST RESERVE	OFF-RESERVE	
		Sole landowner	*Developer not a landowner*
Private entity	90%	100%	67%
Landowner	6%	-	33%
Forestry Commission	2%	-	-
Local Community	2%	-	-

Source: Dumenu et al., 2014, p. 6

The Tree Tenure and Benefit Sharing Framework ultimately finds that:

Changing the current tree tenure regime requires revisions at many levels, including the Constitution and has fundamental knock-on effects on many other components of the forest legislative framework, so will be virtually impossible to treat alone (Republic of Ghana-MLNR, 2016a, p. v).

The prevailing interpretation above supports entrenched interests and creates significant barriers to planting more trees on cocoa farms. The authors propose a more sensible interpretation of the1992 Constitution that is consistent with customary tenure practices[16] and reflects currently prevailing circumstances. This alternative interpretation results in eliminating the distinction between naturally occurring and planted trees on usufruct, *asideɛ,* and *abunu* land with all rights to all trees flowing with these family or individual rights to the land. It also removes the need to register trees and allows tree tenure policy reform to move ahead without a constitutional amendment.

2.3.3 ALTERNATIVE INTERPRETATION OF THE 1992 CONSTITUTION AND WHO OWNS TREES

The authors analyzed the 1992 Constitution, customary tenure practices in the cocoa growing regions, and literature on tree tenure in Ghana and propose an alternative interpretation. The alternative interpretation has two parts:

- First, the main customary land rights of usufructs, *asideɛ,* and *abunu* that support rural farmland holdings are created by clearing the natural resource of the primary forest. As a result, there is no remaining natural resource on usufruct, *asideɛ,* or *abunu* farmland.
- Second, all trees that are currently considered "naturally occurring" (and therefore argued to be a natural resource owned by the stool) are more correctly understood as farmed trees. As a result, they should be treated the same as planted trees and owned by the landowner.

Each of these are analyzed in turn.

2.3.3.1 EXTINGUISHMENT OF THE NATURAL RESOURCE

Primary forest can be readily defined as a natural resource originally owned in common and held in trust by the stool for its subjects. However, under customary tenure practices, stool subjects have the right to carve out portions of the commonly owned natural forests into their "private holdings" by clearing the forest and farming the land. This practice created usufruct or customary freehold interests for stool subjects. Similarly, *asideɛ* rights were obtained by migrants through a purchase or performing customary rights, and developed the stool land by clearing the primary forest. Either of these rights holders may subsequently create *abunu* rights over their usufruct or *asideɛ* holdings (see Box 2 at the start of this section).

Because the naturally occurring forest is cleared when the family or individual obtains customary tenure, the creation of usufruct, *asideɛ,* or *abunu* rights on any stool land extinguishes this natural resource owned by the stool.[17] The result of all three customary tenure holdings was the same: the primary

[16] Customary tenure fits within the spectrum of laws, practices, and norms that make up customary law and usage. We use customary tenure in this document to be precise about which aspects of customary law and usage we refer to.

[17] There are some differences in how customary tenure was obtained through forest clearing. Usufruct was only created or claimed by clearing primary forest. Similarly, *abunu* is created by the act of clearing secondary forest (*mfofo*), or in some cases clearing old cocoa farmland that is on previously cleared land. *Asideɛ* is more nuanced. This is a de-facto transfer of rights from commonly held stool forest to a non-indigene individual or family, at which point it becomes a privately held forest and the owners had the right to clear the primary forest. The transfer of forest land therefore occurred before it was cleared. However, because these early transactions were not recorded, *asideɛ* owners subsequently cleared the primary forest as quickly as possible to solidify their possession and *asideɛ* ownership rights over the land.

forest was cleared to make way for cocoa or other farming and the pre-existing natural resource was extinguished from the land.

2.3.3.2 ANALYSIS OF "NATURALLY OCCURRING" TREES

The authors identified three categories of trees that the current government policy regime considers to be "naturally occurring" outside forest reserves. Each of these are analyzed to understand if they should be considered a "natural resource" or a farmed resource.

Who owns me? Naturally occurring crabs from a swampy area on a cocoa farm
ROBERT O'SULLIVAN

1. **Trees grown from buried seeds or stumps.** These trees grew in the cocoa or food crop farms after the primary forest was cleared are the result of active decisions and farm management practices of the farmer. It is up to the farmers to allow – or not allow – these trees to grow to maturity. As such, these trees are properly considered to be farmed and owned by the usufruct, *asideɛ,* or *abunu* farmer. It is irrelevant whether the farmer put the seed in the ground or if the seed was already there. This is no different to farmers that allow cocoa-yam, crabs, snails, or a myriad of other natural resources to grow on a farm that neither the stool nor state claim rights to.
2. ***Mfofo* or secondary forests.** These exist when the families with usufruct or *asideɛ* actively decide to leave the land fallow to regenerate into forest before re-clearing for farming (or preserving as forest into the future). Again, it is the landowner's or farmer's active land management practices and decisions that allow (or prevent) the trees to mature. As such, these trees should be considered farmed and owned by the usufruct or *asideɛ* farmer. When an *abunu* farmer lets their cocoa farm revert to secondary forest it is considered abandoned and the land returns to the landlord – not the stool.
3. **Trees that were not cleared when the farm was originally created.** Most of the remaining high value timber trees left by the original cocoa farmers have already been logged by concessionaires under license from the Forestry Commission. However, some of the original trees may remain on some farms. These still exist due to active decisions by farmers to not fell the trees when the primary forest was cleared, and to let them continue to grow on their farm. When the customary land rights were established, the holder of these rights was given absolute control and decision-making power over all trees on the land, and decided which trees were felled and which were kept. With the loss of primary forest and transition to farmland the trees the farmer decided to leave standing should also be considered farmed trees.

2.3.4 DISCUSSION OF THE ALTERNATIVE INTERPRETATION

2.3.4.1 TITLE TO TREES

Analysis of customary tenure practices does not find any basis to recognize any continuation of rights trees as a natural resource when the land is transferred from a commonly held customary right to family

or individual usufruct, *asideɛ,* or *abunu.* Furthermore, there is no basis to differentiate between planted and naturally occurring trees. The analysis finds all trees on usufruct, *asideɛ,* or *abunu* land should be private property and not owned by the state. The government or Stool is therefore not obliged (or empowered) to hold back any rights to own, manage, or control a selection of trees off-reserve on trust for the subjects of the stool or people.

This analysis is most relevant for those lands that have trees that may be classified as "naturally occurring." In all three forms of "naturally occurring" trees, the farming decisions and associated efforts of the farmers are no different from those decisions they would make regarding "planted trees." All these trees should be considered farmed. To create an artificial distinction between different types of farmed trees and consider one set a "naturally occurring" resource owned by the state and the other a private resource owned by the farmer is incorrect. Once this distinction between naturally occurring and planted is removed on usufruct, *asideɛ,* and *abunu* land, all rights to all trees flows with the customary owner of the land. Devolution should not cause any issues for usufruct and *asideɛ* farmers who have a type of customary freehold rights, but how this change in law may affect existing or new *abunu* relationships needs further analysis.

As noted in the section on customary tenure above, in some areas tree planting can be viewed as an effort by tenant farmers to claim longer tenure rights over the land than they otherwise have. This is not the case for *abunu* cocoa farmers where *abunu* farmers gain rights to farm the land in perpetuity, subject to the land being maintained as a cocoa farm. Under current *abunu* arrangements, *abunu* farmers automatically hold rights to all trees on the land that have not been claimed by the government. This includes *abunu* farmers possessing rights to cocoa trees, fruit trees, and non-timber shade trees. If tenure to all trees is divested to landowners it seems logical that timber trees should be treated the same as other trees, and flow to *abunu* farmers without the need to renegotiate existing or new *abunu* relationships. While this is the most logical approach, this assumption needs to be tested.

The approach recommended in this paper differs from the recent Forestry Commission tree registration guide that states that registered trees would "remain officially under the ownership of the farmer who planted [the trees]" (Dohmen et al., 2018, p. 6) and includes the *abunu* farmer's rights to sell and bequeath the trees even if the rights to the land have reverted back to the landowner. If the act of tree planting is interpreted as a covert measure to assert permanent rights to the land by *abunu* or *abusa* farmers that extend beyond farming the land for cocoa, this will create conflict and impede efforts to develop cocoa-based agroforestry. This is because *abunu* farmers only have rights to all on-farm trees while they are cultivating cocoa, and *abusa* farmers do not have any land tenure rights. Changing this to permanent rights to *abunu* or *abusa* farmers may give rise to more friction between landowners and these farmers, particularly when renegotiating rights to replant old or diseased cocoa farms or if a cocoa farmer abandons their farm and it reverts back to the landlord.

The proposed recognition of farmers' rights should incentivize farmers to cultivate more, and more valuable, timber and shade trees on their lands as they are the legal and beneficial owners of these trees. This proposal also eliminates the need to register trees to demonstrate ownership, and eliminates the need for a land registry as a condition to hold these rights since customary land rights already exist. A rural land registry is still important and valuable to help improve tenure security and documentation, but it is not a prerequisite to reform tree tenure.

The analysis does not apply to any forested lands still held by a stool and not yet divested as usufruct, *asideɛ,* or *abunu,* or lands within forest reserve areas. These forests could be properly considered to be a natural resource owned by the state or Stool on trust for the people. See section 4.4 for a discussion on rights associated with REDD+ emission reductions, and how any government claims to these rights should not hamper the proposed devolution of tree tenure.

2.3.4.2 BENEFIT SHARING

The interpretation above treats all trees as farmed and indistinguishable from planted trees. As a result, the benefit sharing arrangement for all trees on usufruct, *asideɛ,* or *abunu* land trees should follow the benefit sharing arrangement for planted trees. The Office of the Administrator of Stool Lands is empowered to collect "revenue accruing from stool lands" under Article 267(6) of the 1992 Constitution. This refers to land rents and the revenue extracted from classifying certain trees as naturally occurring. Current law does not apply this article to farm proceeds, commercial tree plantations, or proceeds from cocoa farming. All the benefits of these farm products go to the farmer.

Therefore, under the alternative interpretation, all trees on usufruct, *asideɛ,* and *abunu* land holdings should be treated the same and placed under the current policy regime of planted trees regarding benefit sharing.

2.4 CONCLUSION

There is general agreement that land and tree tenure ambiguities and complexities contribute to unsustainable forest management practices globally (Yin et al., 2014; Seymour et al., 2014; Lawry et al., 2014; Robinson et al., 2014). The United States Government's Interagency Land Tenure Working Group identified tenure insecurity as a binding constraint on economic growth in Ghana (USAID, 2012). USAID recognizes land tenure in the cocoa sector is critical although "politically tricky," and recommends "proactive, evidence-based advocacy" (USAID & World Cocoa Foundation, 2015) to address both the land and tree tenure issues.

The government of Ghana recognizes the problems caused by the current laws regulating tree tenure and advocated for reform. However, forest resources represent an important source of income for the government, which has long been reluctant to devolve resources and management responsibilities to local resource users, including cocoa farmers. As a result, tenure reform meets with strong resistance, and several innovative policies and laws have been proposed but not implemented. This resistance extends to more recent movements toward devolution of tree tenure to enhance sustainable forest management and improve forest governance.

Bold government action is, however, needed. Years, even decades, of tweaking and modifying the legal and policy frameworks to address illegal logging and destruction of forest resources on cocoa farms have been ineffective because the focus has been on enforcing and adjusting an inherently unenforceable and unfair legislative framework (Hansen & Treue, 2008).

Government inertia to bold reform is tied up with a constitutional justification that maintains the status quo. This constitutional justification simultaneously throws up legislative hurdles to deeper reform and supports entrenched and vested interests. Detailed analysis of the 1992 Constitution and customary norms and practices reveals an alternative interpretation of the 1992 Constitution that removes this as a barrier to bold reform. To help inform tenure reform in Ghana examples from other countries are reviewed in Section 3 below.

3.0 INCENTIVIZING ON-FARM TREE PLANTING AND PROTECTION – ARE FOREST CODE REFORMS EFFECTIVE?

Establishing a cause and effect relationship between tenure systems and sustainable forest systems is a knotty problem. Early gaps in our understanding of this cause and effect relationship were identified by Cernea (1991), who wrote in *Putting People First*: "The most challenging issue…is to determine how… different incentive and constraint structures operate in specific sociocultural areas" (p. 322). A recent literature review completed under USAID's TGCC program found that "common standards for evaluating causality were absent, making it impossible to draw definitive conclusions about the relationship between devolved tenure and forest condition" (Yin et al., 2014, p. 2).

Despite challenges in untangling cause and effect relationships some evidence is emerging. Robinson, Holland, and Naughton-Reeves (2014) found that clearly articulated land tenure rights are associated with lower deforestation, irrespective of the form of land tenure, and in sub-Saharan Africa land tenure insecurity is viewed as a key underlying driver of deforestation (Persha & Protik, 2019). The general consensus in the literature for is that the lack of clear resource rights for the farmers, resource users, and landowners in Ghana has been a disincentive for migrants to reinvest in the rehabilitation of the unproductive farms (Acheampong, et al., 2014; Akrofi-Atitianti et al., 2018) and for individuals to maintain trees on their land (Boateng et al., 2009; Asare, 2010; Acheampong & Marfo, 2011; Acheampong et al., 2014; Kroeger et al., 2017b). This can also be linked to state ownership/control over naturally occurring trees, which is considered a strong disincentive for all landowners and smallholders, regardless of land tenure, to nurture trees on the land (Roth et al., 2018).

But the inverse hypothesis – that giving farmers and landowners clear, unambiguous tree resource rights will result in increased on-farm tree planting and managed regeneration of naturally growing trees – is more difficult to claim conclusively. Meinzen-Dick and Mwangi (2008) point out that resource ownership is less about people's relationship to a thing (e.g., trees) than it is about their relationships to each other. This section digs into the literature on tree tenure reform and tree registries to help inform policy making in Ghana.

A detailed literature search revealed few case studies that are closely analogous to the complex land and tree tenure realities in Ghana's cocoa agroforestry production landscape. The cases most instructive for Ghana are perhaps the innovative and very impactful policy reforms that have been implemented in Sahelian West Africa that brought about the regreening of the Sahel through farmer-managed natural regeneration, and policy changes that resulted in significant increased forest cover in northern China. Several examples from countries that have facilitated private smallholder plantation developments by devolving tree tenure rights are also explored. Finally, two examples from countries that have pursued tree registration programs, Thailand and the Philippines. are examined.

3.1 LESSONS FROM THE EVIDENCE ON THE GROUND

In the section below we present relevant examples from the field that provide evidence that supports the hypothesis that giving resource users clear tree tenure rights will increase on-farm tree planting. Devolution of rights can take many forms, including individual management of private property, co-management of jointly held forest resources, and local municipal management. The literature to date has focused on co-management or community-based forest management and private plantations, with few

examples about the impact of the devolution of trees rights to individuals managing agroforestry systems.

3.1.1 GREENING OF THE SAHEL

The approach known as farmer-managed natural regeneration (FMNR) was developed and disseminated in Niger in the 1980s as an alternative to the conventional methods of reforestation. The FMNR approach differed substantially from the "clean field" agriculture that had been encouraged in the 1970s, when extension agents encouraged farmers to reduce field trees so that modern agricultural equipment could access the fields more efficiently (Stickler, 2012). Rather than replanting new trees, the FMNR innovation focuses on farmer training and outreach to regenerate tree stumps of indigenous tree species to restore croplands, grazing lands, and degraded forests. FMNR is an easy, low-cost way for farmers to increase the number of trees in the fields.

Benefits accruing from the method include poverty reduction, enhanced food security, environmental stability, enhanced community resilience climate change impacts, and contributions to climate change mitigation (Stickler, 2012; Akamani & Holzmueller, 2017). Reij and Winterbottom (2015) found that since 1985, more than one million rural households in Niger have protected and managed trees across five million hectares (12.3 million acres) in the densely populated parts of Maradi and Zinder. The United States Geological Survey's Earth Resource Observation and Science data center reported in 2009 that the areas re-greened by farmers was closer to 12 million hectares and farmers have protected and managed at least 200 million new trees over the past two decades. This has been estimated to have sequestered at least 30 million tons of carbon over the prior 30 years (Stevens et al., 2014), or 110.1 million tCO_2e.[18] The trees helped increase cereal production by 500,000 tons a year, raised incomes by two to three times from sale of products such as edible leaves and honey, and sequestered an average of five tons of carbon per hectare of restored land (Reij, 2013). The successes of the FMNR program were made possible by policy changes that devolved rural tree tenure in 1993 and granted local communities the authority to devise and enforce local rules to protect their individual property which also contributed to local empowerment (Akamani & Holzmueller, 2017). FMNR is being implemented across much of the Sahel today, extending well beyond Niger to include Burkina Faso, Mali, Senegal, and Ghana.

Before the 1980s, trees and tree products belonged to the state in Niger. Although the 1974 Forest Code focused primarily on the tenure and management of the forest domain, the state had established lists of protected tree species without reference to geographical boundaries which extended its authority beyond forests and into agricultural areas (Elbow & Rochegude, 1990). After a decade (1982 – 1993) of discussions about rural land and natural resource tenure issues, a framework ordinance was drafted in 1993. The principles protected and strengthened the local rights to protect, manage, harvest, and benefit from on-farm trees (McGahuey, 2017). The 2004 Forest Code formally recognized people's rights to use forest resources located in areas held by local communities. This empowered farmers to make their own decisions about tree management on their land and ensured that their efforts to restore the land by nurturing naturally occurring trees benefitted them. As a result, the regreening experiences in Niger and elsewhere in the Sahel have largely occurred because of the actions of farmers who have protected and managed the natural regeneration of trees, especially in highly populated areas where there is little or no fallow land. In a study on the economics of agroforestry systems in the Sahel (Place & Binam, 2013), the researchers found that fertilizer trees increased crop yields by 15 to 30 percent. The study also estimated that basic fruit, pod, leaf, and wood tree products harvested by households are valued at about US$200 per year per household. Unfortunately, most economic studies of agroforestry systems fail to quantify the full range of benefits of regreening/forest restoration.

[18] One tonne of carbon is equal to 3.67 tonnes of CO2e, the base unit used in most greenhouse gas reporting and accounting.

3.1.2 CHINA'S TRANSITION OF FOREST CONTROL FROM COLLECTIVES TO INDIVIDUALS

Currently, 22 percent of China is under forest, with an annual growth of about 1.4 percent (FAO/RECOFTC, 2016). China has made significant strides to promote private investment in forest management and has transferred over 102 million hectares of forestland to more than 72 million households (Yin et al., 2014). The rapid spread of de-collectivization, the introduction of longer-term and more secure forest use rights, and the liberalization of timber markets have had a big impact on the forestry sector. While the government in China owns most large-scale plantations, smaller woodlots and individual trees are often owned by individuals. Private tree ownership has been permitted since 1956 and tree owners have the right to sell and bequeath trees when they die. Private tree planting has been strongly supported since the 1970s through a variety of national campaigns and market-based incentives. Taken as a whole, China's reform program amounts to a dramatic shift in stakeholder rights and responsibilities in the forestry sector (Lu et al., 2002).

Starting in 2000, China implemented several new initiatives to reverse forest loss including reform of tenure policies. China's forest sector reforms consisted of two fundamental components: i) land tenure and production organizational changes brought on by the household responsibility system to replace the collective regime; and ii) the introduction of market mechanisms through the gradual shift from compulsory quotas and planned prices to market-based transactions and commodities (Yin et al., 2002). This led to the devolution of management and use rights of as much as 90 percent of formerly collectively controlled forestland to individual or small groups of families (Yin et al., 2014). Household tenure rights were expanded to include transferring, inheriting, and mortgaging forest land.

Lu et al. (2002) reported these initiatives produced successes and failures, noting "in many areas contracting out of forestlands to private households has been widely praised for raising productivity, increasing forest stocks and improving welfare. In others, it is blamed for increasing deforestation and worsening social inequalities" (p. 41). The successful cases included the adoption of more attractive benefit sharing terms in contracts, the promotion of contract transferability, the introduction of auctions to allocate plots, and the lengthening of contract periods. Similarly, Yin, Xu, and Li (2002) maintain that the impact of China's forestry reforms has hinged on how the reforms were bundled in implementation. If farmers are granted land use rights and liberalized market access, the incentive structure improves, resulting in increased forest production. However, where reforms were implemented without the right to access a free and fair market, the incentive structure resulted in negligible changes in forest management practices. The researchers concluded that China must address the harvesting regulation and market distortion problems associated with timber production as well as the tenure issue.

China's restoration programs have focused on forest plantations and restoration of farmland. Evidence from northern China shows that agroforestry activities rapidly produced approximately 10 percent increases in agricultural productivity (Yin et al., 2014). Since the Ghana case is one of individual management of private property, China's recent forest initiatives may be one of the more relevant cases for Ghana's cocoa growing areas. China has delegated responsibility for and benefits from forestry directly to individual operators, bundling land and tree tenure. The process has involved signing legal contracts and issuing usufruct certificates, expanding and securing private rights. These tenure changes were combined with other policy measures that are consistent with a market economy and sustainable forestry. "The initial response, as shown in people's increased interest in and actions of tree planting, forest management, and/or timber harvesting, seems positive" (Yin et al., 2014, p. 22). Policy uncertainties and inconsistencies are cited as the key factors for the regional variations in the success of China's reforms in the forest sector.

3.1.3 LIMITED LESSONS FROM COMMUNITY-BASED FORESTRY REFORMS

Forest management reforms in much of West Africa during the 1980s and 1990s included the devolution and distribution of rights to local communities living near and dependent on forest resources. These reforms were based on the belief that forest-dependent communities would be more effective resource managers than the state. The modalities of these reforms vary widely, in terms of the bundle of rights extended to communities – the legal basis of the rights, the roles of national and local actors in forest management, and the benefit sharing arrangements. Over the subsequent decades there have been efforts to evaluate the effectiveness of these reforms and to identify the elements that resulted in the most successful community-based forest management efforts. In a review of devolved forest management in sub-Saharan Africa, Ribot et al. (2010) found very few of the cases were successful, primarily because democratic decentralization was often not established. Forest co-management assumes an honest state and an equitable balance of power between local resources users and the state, a combination that remains rare in many of the countries that have attempted co-management.

Devolving rights to individual cocoa farmers and landowners to encourage agroforestry is a very different form of devolution than co-management of forests or community forestry. Community-based forest management initiatives targeted management of the commons or collectively held forested spaces. Ghana's adaptation of the community-based forest management model is the community resource management area (CREMA). The CREMA system was originally developed for community-based wildlife management and habitat protection in northern Ghana and can be adapted for managing forests. This has been proposed as part of Ghana's national REDD+ strategy (see Roth et al., 2017 for a review). Very few, such community forests exist today in the cocoa production landscape in Ghana so this approach to forest management has not yet provided many insights into the individual tree tenure on cocoa farms. The required bundle of rights, governance structures, and legal reforms are different for these distinct forest management models.

3.2 TREE REGISTRATION IN THAILAND AND THE PHILIPPINES

3.2.1 THAILAND'S TREE BANK

The government-owned[19] Bank for Agriculture and Agricultural Cooperatives (BAAC) formally launched the Tree Bank Project in 2009 as a corporate responsibility initiative with a US$1 billion investment. Thailand's tree bank is a new financial model to help farmers access two types of financial services: loans and income. Trees can be used as security to get low interest rate loans or trees can be deposited with the tree banks to earn interest on the monetary value of the tree.

In 2011, 984 tree bank branches were opened in 33 provinces (Searchlight Process, 2012). In 2015 there were over 3,000 branches of Thailand's Tree Bank Foundation and more than 300,000 volunteers across Thailand planted millions of trees on their farms (Macqueen, 2016). In 2018, 6,000 communities with 150,000 farmer members were growing more than 11 million trees (Chantanusornsiri, 2018). Members keep detailed records of every tree that is planted, its volume, the standing value (based on 2010 prices per species), and the carbon sequestered in each tree. This detailed record keeping has some advantages:

1. The records help farmers calculate the value of their standing trees and provides them with option for the future;
2. It can connect large numbers of farmers to climate finance; and

[19] The bank's website states that 99.78% of shares are owned by the Ministry of Finance. The next largest shareholder are cooperatives, that own 0.18% of shares. See https://www.baac.or.th/baac_en/content-about.php?content_group_sub=0024

3. It enables farmers to use trees as collateral to secure loans from banks for their businesses.

Tree bank volunteers are currently lobbying for a new law that would channel a proportion of tax revenue from the timber, cut wood, and furniture industries to grants to further incentivize tree growers. Under the proposal the growers would receive five percent of the value of the tree every year for 20 years, at which time the tree is considered mature.

For trees to be registered in the tree bank, the tree owner must plant a minimum number of trees per land area and the bank excludes farmers with landholdings smaller than 0.4 acres. The tree bank has an upper limit of 1,000 trees that can be registered to a single person. During the first 10 years, the registered trees cannot be sold and their valuation includes planting costs. After 10 years, the valuation is based on the market value of trees. Although not required, the focus has been on indigenous species (Searchlight Process, 2012) and farmers have planted a diverse range of native species (Macqueen, 2016). Farmers with a variety of land tenure rights are eligible to participate in the program, including full ownership/title, a confirmed right of possession, and a "notification of possession" (Yonariza & Singzon, 2012).

In 2018 the Royal Forestry Department of Thailand launched an online app, e-Tree,[20] enabling private landowners to register their trees online (The Nation Thailand, 2019). The benefits of the online system include expediated permission to harvest, transport, and sell timber trees. The national Forestry Department is also in the process of revising a forestry law that bans felling high-value species. This was originally intended to curb illegal logging from reserves and government-owned plantations, but the revisions would allow smallholders to grow and exploit high-value trees.

The tree bank provides farmers with small landholdings, as well as those with mortgaged farmland, the opportunity to access loans in the formal sector. This could reduce their dependency on high interest rate loans from the informal sector. In the next few years, BAAC plans to sell carbon credits from the trees registered with the tree bank and give the amount earned to the registered smallholders, further increasing their income.

One objective of regreening efforts such as Thailand's tree bank is to enhance the multi-purpose benefits of forests. A minimum set of preconditions for the tree bank to be a viable business model have been identified, none of which are considered optional (Macqueen, 2016):

1. Rights to secure tenure.
2. Sustainable forest and farm management.
3. Sustainable livelihoods through market access.
4. Significant participation in governance structures.
5. Associations to defend the interests of forest and farm producers.

Many of these conditions are currently absent in Ghana. Farmers do not have secure tenure rights, do not receive meaningful revenue or access to markets for timber from naturally occurring trees on their land, and are not involved in governance structures or associations associated with these trees. That said, with strong political commitment for meaningful policy reform and similar support structures, something akin to a tree bank could be considered in Ghana.

[20] See https://nsw.forest.go.th/rfdportal/Home.aspx to access Thailand's e-Tree portal.

3.2.2 PHILIPPINES TREE REGISTRATION

The Philippines saw significant deforestation from the 1950s onward with timber an important export in the 1960s and 1970s. Most of the national forests were cleared by the 1970's and converted to agriculture in the late 1970s and 1980s (Guiang, 2001). In response to this deforestation, large-scale reforestation efforts have occurred, with approximately 1.7 million hectares planted between 1960 and 2002, with an estimated survival rate of 50 percent (US Forest Service, 2011). A ban on cutting and harvesting in natural and residual forests was imposed in 2011 to protect the remaining areas of native forest, initiate a National Greening Program to replant trees, and create an anti-illegal logging task force (Executive Order No. 23, s. 2011). The government aims to produce timber outside forest areas by allowing private individuals and entities to plant timber trees. However, over half of the land officially classified as forestland is cleared and now farmland (Herbohn et al., 2004). All trees in public forestland areas belong to the state and their harvest is illegal even if they have been planted by private individuals (Mangaoang et al., 2003). Despite efforts to promote tree planting relatively few landowners responded to the ban by planting trees on their farm. Lack of secure land tenure has been cited as an impediment to the development of sustainable land management including tree planting (Herbohn et al., 2004). Land tenure arrangements are described as weak in the Philippines, with the state retaining official ownership of forestland, which represents 60 percent of all land in the Philippines.

Secure tree tenure – the ability to register, harvest, transport, and market trees – has been identified as a critical ingredient to develop the forestry industry in the Philippines (Herbohn et al., 2004). The Department of Natural Resources Memorandum 99-20 requires that all trees on private land must be registered before any of the trees can be harvested with an additional certificate required to transport timber. The government's express objective for establishing a national tree registration system is to be able to distinguish between planted/plantation trees and naturally occurring trees in natural forests (Yonariza & Singzon, 2012). Registered tree growers in the Philippines are issued a certificate of tree plantation ownership. Tree registration is a lengthy process that requires time, effort, and financial resources, giving rise to a form of corruption called the *Lagay* or "under the table" system to facilitate the completion of the tree registration process. The cost of registration has been estimated at between US$7.08 and US$11.80 for the farmer to covering legal fees and municipal certification and the issuance certificate. The only external cost that the owner has to shoulder is the inspection of the area to be done by government personnel, which is estimated at around US$23.60 to US$70.80 to "cover" their gasoline and food expenses (Pulhin & Ramirez, 2016). The banning of tree harvesting from native forests, together with the complex regulation and permit systems used to control timber harvesting and transport, provides multiple entry points for rent-seeking officials (Herbohn et al., 2004).

Tree registration has long been a requirement to market tree plantation products in the Philippines but only a small portion of farmers have successfully completed registration. Smallholders evade regulations, partly by not registering their trees but also by not investing in planting or nurturing trees beyond their immediate household needs. People prefer to grow crops since this activity can be pursued without regulations and state intervention. Whereas some tenants expressed concern about being prosecuted or evicted by landowners if they grew trees, lack of financing was identified by landowners as the most important constraint on establishing tree plantations (Herbohn et al., 2004).

To improve registration, one project trialed localized tree registration where local government entities were given the responsibility to coordinate and process tree registration (Mangaoang et al., 2007). Tree farmers were found to be willing to register their trees when they were well-informed, had a positive relationship with the government agencies involved, and could register their trees for free. In a more recent assessment, it was found that farmers had not registered their trees because registration was costly and required substantial time and effort, the process was laborious, and government agencies and personnel were inaccessible (Mangaoang, 2014). Harrison et al. (2011) question whether tree

registration in the Philippines could be dispensed with altogether if effective land management plans or other sustainable management mechanisms could be devised.

3.3 LESSONS FROM GHANA

The limited number of relevant case studies makes it difficult to establish the relationship between devolution, tree tenure, and forest condition. Most analysts agree that a linkage between forest tenure and forest condition exists. For example, Yin et al. (2014) conclude "forest tenure reform and institutional change can lead to improved forest condition as reflected in slowing down deforestation and forest degradation or accelerating reforestation" (p. 29), even if the linkages are not clearly understood. In the case of the condition of Ghana's cocoa agroforestry system, Leach and Fairhead (2000) concluded that farmers who are landowners and have tenure rights are more likely to preserve and protect a variety of tree species in their fields and that tenant farmers in the community were less apt to plant and protect trees on their farmland due to their insecure tenure rights. Similarly, Damnyang et al. (2012) argue that sharecropping and leases do not provide farmers with sufficiently secure tenure for them to undertake long-term investments such as tree planting. However, others have found that a relatively large percentage of cocoa farmers have timber and shade trees growing on their fields even though they neither own the land nor do not have any clear rights to the trees on their farms (Asare & Anders, 2017; Anglaaere et al., 2011). The willingness of cocoa farmers to plant and nurture trees, regardless of the land tenure arrangement under which they cultivate their farm, may be due in large part to cocoa's need for shade.

Cocoa seedlings
ROBERT O'SULLIVAN

Clearly, there are many factors influencing a farmer's decision whether or not to plant and/or protect trees. Weak forest governance, including a lack of law enforcement and a corrupt timber industry, as well as advice from extension agents, have all had an impact on the management of off-reserve forest resources in Ghana. International and market factors both within and beyond the cocoa sector play a role in how Ghana's cocoa farmers manage their land, including on-farm tree harvesting. The non-forestry productive uses of the land on which cocoa is growing also have an impact on forest and farm management options. Most significantly, population growth and growing land pressures in Ghana's HFZ are causing rapid growth in the demand for increased food production, and the high demand for timber and high value *galamsey* gold mining activities put added pressures on the on-farm forest resources.

In Ghana's cocoa growing regions, where a frontier approach to land management still exists and farmers are more likely to clear new land rather than replace their aging cocoa trees, secure tree tenure may not be sufficient to incentivize cocoa farmers to plant and protect trees on their farms. Cocoa farmers will need to be convinced that cocoa agroforestry is financially beneficial to them. This may include ensuring shade trees have long term financial value and that farmers will be able to access timber markets and benefit meaningfully from the timber grown on their land.

3.4 LESSONS FROM CÔTE D'IVOIRE

Côte d'Ivoire has a different colonial, legal, and migration history to Ghana, but given other similarities there are some relevant lessons for Ghana. The text below is extracted from the ILRG brief *Tree and land tenure nexus in Côte d'Ivoire* (DeJong, 2020), prepared to inform ILRG's research on tree tenure in Ghana.

3.4.1 CÔTE D'IVOIRE CONTEXT

Côte d'Ivoire's forests have decreased from 16 million hectares in 1900 to 7.8 million hectares in 1990 and to 3.4 million hectares in 2015 (GoCI, 2018). Agriculture – especially cocoa – has been the primary driver of deforestation in Côte d'Ivoire in recent decades (World Bank, 2019). There are an estimated 3.5 million hectares of cocoa plantations – more than remaining forests – of which 750,000 hectares are located in gazetted areas (GoCI, 2019b). Farms are all smallholder (i.e. under five hectares) and produce on average 40 percent of the world's cocoa supply, with annual exports exceeding two million tons in 2018 (World Bank, 2019). A fifth of the population depends on cocoa for a living. As land availability in rural areas has diminished, farmers have moved into gazetted forests and protected areas, which today account for a quarter of national production (RFI, 2019).

Two important features differentiate Côte d'Ivoire's tenure arrangements for cocoa compared to Ghana. First, Côte d'Ivoire's farms have a different settlement history, with the vast majority established during migrations to forest zones by outsider ethnic groups, mainly the Baoulé ethnic group as well as foreigners, mainly from Burkina Faso (OFPRA, 2017). These migrations picked up in the 1940s as part of colonial policy and administrative strategies to attract labor (USAID, 2016) but they intensified after independence to a point where migrants outnumbered locals in many areas (Ruf, 2020).

Migration in the 1970s was driven by President Houphouët Boigny's slogan "the land is owned by whoever puts it to use" ("*la terre appartient à celui qui la met en valeur*"). Clearing forest helped secure access to land (Bymolt et al., 2018), and along with a government policy favoring full-sun cocoa varieties (Schulte et al., 2020), migrants had a strong incentive to clear natural forests. Customary arrangements varied and evolved, with most initially governed by the *tutorat* system of integrating outsiders through sharing of production and gifts with a representative of the land-owning family (Chauveau, 2007).

These arrangements became more monetized as land pressure increased (Chauveau, 2007) and in some instances transitioned to outright land sales from the 1950s (Wily, 2015) but especially the 1970s and 1980s (Chauveau, 2007). In the 1990s and 2000s, new tenure arrangements called *planter-partager* (plant and share, which is similar to *abunu* in Ghana) took hold whereby outsiders would clear forests and build a farm and then half of the farm would revert to the landowner upon crop maturity. The new paradigm could be explained by land-owning groups becoming more aware of the value of holding onto land while "financing" the labor needed to establish a viable plantation (Colin & Ruf, 2011). Specific tenure agreements are diverse, with as many as 15 typologies (Wily, 2015). While some of these arrangements resemble those found in Ghana, Côte d'Ivoire differs in the preponderance of migrant farmers and also the violence and politicization of cocoa belt land disputes in the 1990s and 2000s (Chauveau, 2000).

A second distinguishing feature of Côte d'Ivoire is the history of centralized state-driven approaches to land and forest management in disregard of customary practices. This has led to legal pluralism (Lamarche, 2019) and a schism between laws and what is done in practice (OFPRA, 2017). While Ghana has similar features, there is no equivalent of recognized "stool lands" in Côte d'Ivoire despite the existence of parallel customary systems. Instead the rural land law recognizes customary rights only as a temporary stepping stone towards a national titling system controlled by the central government (GoCI,

2017; OFPRA, 2017). This leads to considerable challenges in securing land tenure despite over US$100 million in donor support in recent years (Dagrou & Loroux, 2017; Wily, 2015).

Against this backdrop, the issue of tree tenure has gained increasing attention from several fronts. First, difficulties implementing tree cover and tree planting requirements under standards like the Rainforest Alliance's Cocoa Certification Program drew attention to misaligned tenure incentives (Ruf & Varlet, 2017). Meanwhile the current government has embraced the concept of "zero-deforestation cocoa" as part of its broader commitment to increasing the country's forest cover from 11 percent to 20 percent by 2030 (GoCI, 2018). The new forest code of 2019 explicitly addresses tree tenure for the first time and gives primacy to the underlying landowner (GoCI, 2019a). The logic underlying such reforms is as follows: just as secure land tenure is a key predictor of higher cocoa productivity (Schulte et al., 2020), secure tree tenure can incentivize agroforestry. However, Côte d'Ivoire shows that this is not straightforward in practice.

3.4.2 TREE OWNERSHIP

The majority of Côte d'Ivoire's post-independence period was marked by state control of forests with unfettered logging and agricultural expansion. Cocoa farmers had every incentive to clear forests as quickly as possible since the government undermined customary authority and moreover could at any point claim natural trees for logging companies. To avoid problems or damage to new plantations, farmers had every interest to clear natural trees.

A new forest code adopted in 2014 (*loi N°2014-427 du 14 Juillet 2014*) made several reforms in the definition of rights and tenure. The 2014 forest code implicitly recognized customary land rights but only if registered per the 1998 rural land law. The code also asserted the link between land rights and tree rights, with the latter deriving from the former, while noting that the state was a type of "private" owner for certain categories of forests. The 2014 code also allowed local government (*collectivités territoriales*) to have public or private ownership of forests, and also explicitly created a category of private ownership of forests, which included trees in a village or forests on duly registered rural land per the 1998 rural land law. The 2014 code was criticized for setting the bar quite high for individual ownership of trees in practice (Wily, 2015) and for ambiguity around customary ownership (Client Earth, 2020).

The current 2019 forest law (*loi N°2019-675 du 23 Juillet 2019*) retains the basic ownership classifications (state-owned public, state-owned private, and fully private) but adds "agro-forests" as a new sub-category of the state-owned private domain. Per implementing regulations, agro-forests can be up to 20 percent plantations, but they are still owned by the government. As such, none of the plantation owners can claim ownership over natural or even planted trees.

Importantly, the rationale for creating the agro-forest category was not necessarily to incentivize agroforestry per se but to deal with the fact that so many gazetted forests have been encroached upon by cocoa planters. Instead of degazetting these areas to become rural land, the government aims to "normalize" the conversion to agriculture while retaining state ownership (GoCI, 2019b). The aim is also to allow the other 80 percent to regenerate and thereby increase forest cover.

The 2019 forest code makes more explicit the private ownership of trees, including by customary owners, in the case of rural land. Article 25 notes that both natural forests and plantations can be included in the private domain, including those owned under customary control. This gives customary owners in rural areas the status of private owners. In addition, Article 27 explicitly states that the property of a natural forest or natural tree belongs to the landowner, and the property of a planted forest or a planted tree belongs to the landowner *or* the planter if the landowner agrees in writing to

cede those rights. Therefore, any tree located on rural land, whether cocoa or another species, belongs to the underlying landowner or the migrant farmer if authorized by the underlying landowner.

Article 27 is a key innovation as it explicitly ties underlying land rights to the tree rights, including planted trees of all types, potentially creating an incentive for cocoa farmers with secure rights to plant and preserve shade trees. The code also reduces the bar to prove private ownership, as one has only to prove customary ownership, defined as continuous and peaceful occupation of the land, rather than show a land certificate. However, there is still the caveat that per the 1998 land law, unregistered land can become state property if not registered by 2023, at least theoretically (IDEF, 2020).

There are also concerns about how to apply Article 27 in practice, as none of the implementing regulations have clarified its implementation. Article 27 could exacerbate conflicts by giving the "upper hand" to the original customary owner. Moreover, the way logging has been practiced since independence will not change overnight, and many farmers will be skeptical that their planted trees or remaining natural trees will be automatically protected, especially if the loggers skip the tenant farmer and pay a local chief representing the original customary owner. In other words, the new code will not in and of itself "sort out" the conflicts, paradigms and ambiguities that exist in practice. Finally, because the 1998 rural land law defines the rules of rural land ownership, and rural land ownership per the 2019 forest code is the key to determining tree tenure, the numerous problems with the 1998 rural land law could spill over and further muddy the waters (see the full text of DeJong, 2020 for additional discussion on the 1998 rural land law).

3.4.3 TREE REGISTRATION

Faced with a lack of implementing regulations regarding Article 27 and challenges with rural land certification, at least one academic paper (Ruf & Varlet, 2017) and an international non-governmental organization (NGO) consortium (see below) have suggested parallel tree registration. The rationale for separate documentation for trees is that certifying land is not always possible due to conflict and bureaucratic challenges, and because loggers may not respect landowner rights even if certified. The prospect of certifying the trees instead of the land or the plantation has also been advanced as a way to address shortcomings in cocoa certification programs (Ruf & Varlet, 2017). Tree registration could also be used to secure tree rights in the case of farms located in the government's private domain, such as agro-forests, where land certification by farmers is prohibited because the land belongs to the government.

There is only one recent example of a tree registry pilot in Côte d'Ivoire run by the NGO Impactum in collaboration with Meridia, WCF, GIZ, and the Rainforest Alliance. The pilot involved 100 farmers in the Cavally region and tested three methods of registration: by estimation, by counting and by direct measurement. Impactum was motivated initially by the fact that the number of shade trees per hectare required by certification programs was not respected. The objective was to provide material proof of ownership of natural trees which can be complementary to land certification and contract formalization. Impactum is set to present preliminary results by the end of 2020.

While tree registration in Côte d'Ivoire is being piloted in a different context of land tenure insecurity, tree registration in Côte d'Ivoire will likely face similar challenges as tree registration in Ghana; i.e., tree registration efforts will be costly to implement and maintain over time as trees die and ownership of land or trees change, and it will be difficult and costly to establish and maintain a function tree registry, especially in the absence of a land registry. Additionally, tree registration in Côte d'Ivoire will not address underlying land tenure issues, and it is possible that efforts to implement parallel (and potentially conflicting) tenure registration systems may lead to more confusion and conflicts rather than less.

Policy discussions are also underway on how to implement Article 27 and harmonize the land and forest codes, including some consultations and a planned workshop (IDEF, 2020). One idea under debate is to add tree tenure clarification as a part of the 10 official contract models proposed by the rural land agency, *Agence Foncière Rurale*. Another proposal by Impactum is to allow a tree certificate as an addendum to land certificates or contracts. The latter would be coherent with the forest code which allows tenant farmers to own planted trees of any type (including shade trees) with the written permission of the landowner.

3.4.4 CÔTE D'IVOIRE CONCLUSIONS

The case of Côte d'Ivoire illustrates a long transition from state ownership of forests and to the attribution of tree tenure rights to landowners. The new 2019 forest code went a long way from the 1965 state-owned system by giving a full place to individual landowners alongside the government. However, by vesting both planted and natural trees with the landowner, tree tenure clarification efforts are inevitably tied to the risks, challenges and conflicts around rural land certification. This entails deep and complex issues around national identity and politics which in recent decades have been marked by violent conflicts. Moreover, the large number of plantations on government-owned land, which individuals cannot own, remain a challenge despite the new category of "agro-forest."

In addition, enforcing tree tenure provisions of the 2019 forest code will be challenging unless communities, farmers and timber companies become aware of landowner rights and respect them. Indeed, the case of Côte d'Ivoire shows the dangers of a disconnect between official laws and realities on the ground. This gap has led over the years to complementary instruments that are constantly evolving, such as cooperative databases, tree registration pilots, and farm certificates. The key lesson is therefore the imperative of designing the land and tree tenure governance framework around the needs and motivations of end users. Because these end users and their needs are diverse, the framework needs to be flexible enough to respond to most of them, all while satisfying different government, industry and community priorities. This is no easy task but is the only way for tenure security to bring about its promised positive impact on the cocoa sector and contribute more broadly to sustainable development.

4.0 THE INFLUENCE OF INTERNATIONAL INTERESTS AND DONOR FUNDING ON CURRENT FOREST REFORMS IN GHANA

Over the decades, international actors have used funding conditionalities to increase pressure on governments to ratify global conventions and align national forest management systems to global objectives (Kansanga et al., 2017; Parrotta et al., 2016). There is ample evidence of the strong influence funding opportunities have had on the Ghana Forestry Commission's recent forest policy revisions, including the introduction of individual tree registration on private lands including cocoa farms. This can be seen in the first paragraph of the Ghana Forestry Commission's 2016 Tree Tenure and Benefit Sharing Strategy that notes the influence of donor-funded forest sector initiatives on Ghana's forest management policies and practices.

4.1 DONOR INFLUENCE ON THE FOREST SECTOR, 1980 – 2003

Ghana's timber industry was identified and targeted for World Bank assistance in the early 1980s because timber exports were considered the best opportunity to generate foreign exchange quickly. This short-term economic perspective dominated and forest inventory and forest management planning received heavy investment. The World Bank led a 10-year investment program – the Natural Resources Management Program – following Ghana's finalization of its 1996 Forestry Development Master Plan. Throughout this period, illegal logging was rampant, both on- and off-reserve, and the realities on the ground "proved to be an issue which the donor community was unable to influence in the short-term" (Bird et al., 2006, p. 5). The Natural Resources Management Program was prematurely terminated in 2003 due to implementation shortcomings that led to reduced donor confidence.

4.2 EUROPEAN UNION'S (EU) FOREST LAW ENFORCEMENT, GOVERNANCE AND TRADE (FLEGT) AND VOLUNTARY PARTNERSHIP AGREEMENT (VPA)

Donor interest shifted by 2000 to focus on supporting improved governance within the forest sector. The EU's FLEGT initiative and associated VPA process have had the greatest influence on improving governance in Ghana's forest sector. Over the last decade, FLEGT has become an extremely important channel for development assistance to the country's forestry sector. Between 2003 – 2014 Ghana received EUR62 million to support the forest sector, with much of it directed toward creating timber production and export control measures.

Under Ghana's VPA, farmers and communities are granted procedural rights via mechanisms such as the right of refusal to harvest on-farm timber, compensation for damage to cocoa crops and an improved approach to the SRAs communities negotiate with private timber companies. The VPA process is also credited with getting a new law (LI 2254) passed, which cleared up a number of inconsistencies in the sector, brought old social and environmental standards up to date, and passed key reforms on public access to forestry information (Tropenbos International-Ghana, 2018). According to a number of civil society organizations (CSOs), the FLEGT process has had a positive influence by opening up the political space for CSO participation in the governance and management of forest resources in Ghana (FERN, 2018; Solidaridad Ghana, 2018). However, the Ghana-EU VPA has yet to demonstrate effectiveness in ensuring legal compliance, maintaining trade access, and making the sector more transparent, interactive, and accountable, since the FLEGT licensing system for Ghana is not yet operational due to vast number of procedural, legal, and technical steps that must be completed first.

Bura Forest Reserve boundary seen from a cocoa farm, Wassa Amenfi West
RENE DOGBE

Under the VPA, timber operators are required to obtain written consent from landowners and affirm the local forest tenure and rights of different stakeholder in an effort to develop and exploit forest resources sustainably in Ghana. However, the FLEGT-VPA does not directly address the forest-to-farm conversion issue (Tropenbos International-Ghana, 2018), nor does it require Ghana to legally address the enduring off-reserve tree tenure and benefit sharing issues. Rather, the VPA aims to eradicate informal on-farm timber production. This threatens the only benefits many farmers receive today – the money they get from negotiated agreements with chainsaw operators – and diminishes even further the incentive to plant and nurture trees on farms (Hirons et al., 2018b).

4.3 INTERNATIONAL CONSERVATION ORGANIZATIONS' FOCUS ON TIMBER/FOREST CERTIFICATION

Forest certification was explored in Ghana in the 1990s in an effort to implement sustainable forest management and to maintain and/or regain market access with key trading partners in Europe. Certification was promoted as a market-based approach that could create the economic signals to modify behavior. In 1995, the Ministry of Lands and Forestry concluded that certification was 'inevitable' and should be supported provided there would be no government expense involved (Kotey et al., 1998). The most well-known and credible certification scheme, the Forest Stewardship Council (FSC), was created in 1993 to halt deforestation and safeguard forest ecosystems using the power of the marketplace. There are several other schemes and most certification schemes set voluntary standards by which forests are independently certified. Because they are voluntary, certification schemes cannot replace scientifically sound regulations and legislation.

Ghana established a National Working Group in 2003 and four years later the working group finalized the national standard for forest management certification. Even before the national standard had been finalized, the Worldwide Fund for Nature and Friends of the Earth signed an agreement in 2005 with the largest Ghanaian timber companies to reignite the certification process by promoting FSC certification. Similarly, the Rainforest Alliance and UTZ developed certification systems for cocoa farms that included criteria to increase the percentage of shade cover on cocoa farms. But the process to complete a National Forest Certification System did not progress and these early efforts were stifled.

More recently, Ghana and international partners have been exploring migrating from the FLEGT VPA to the PEFC. While both approaches aim to improve forest management and combat illegal logging, forest certification focuses on communicating forest products' sustainable origins throughout supply chains on a voluntary basis which requires timber companies take direct responsibility for fulfilling the certification requirements. PEFC National Standard Principle (NSP) 2 includes additional requirements on tenure: "Tenure and use rights and responsibilities: Long term tenure and use rights to land and forest

resources shall be clearly defined, documented and legally established." There are several VPA provisions that are relevant to PEFC NSP 2:

- VPA principle 1 requires that timber originated from prescribed sources and concerned individuals, groups, and owners gave their written consent to the land being subjected to the grant of timber rights;
- VPA principle 3 requires the fulfillment of SRAs and compensation paid to affected farmers in respect of crop damage;
- VPA article 8 requires Ghana to implement systems and procedures to verify the legality of timber and timber products; and
- VPA annex V section 5.5 outlines a complaints procedure for setting grievances, complaints, conflicts, etc.

The VPA requirements cited above are consistent with the PEFC NSP 2 requirements. However, the PEFC NSP 2 establishes additional requirements that timber companies must comply with before obtaining PEFC certification. A key requirement is for timber companies to keep records of land ownership and tenure including a list of traditional tenure, communities, and maps; document traditional uses, rights, and customs in the area; document rights and responsibilities of the owners and stakeholders as required under the SRA; implement appropriate procedures to enforce domestic use rights of local communities for subsistence on non-timber forest products; and implement their own internal complaints and grievance procedures known to the communities for resolving conflicts (Working Group on Forest Certification Ghana, 2017).

4.4 REDD+ IN GHANA

Forest management and tree tenure are central to Ghana's climate change policies and programs. Ghana's Readiness Preparation Proposal (R-PP) to the Forest Carbon Partnership Facility (FCPF)[21] (Ghana Forestry Commission, 2010), which was developed as an early step in the REDD+ process, states "tree tenure reform is widely viewed as a necessary precondition for the reinvigoration of the off-reserve stock" and must be addressed in the REDD+ strategy, noting tree and land tenure regimes merit urgent review (Ghana Forestry Commission, 2010, p. 37). The R-PP states the National REDD+ Strategy development process should consider the need to directly incentivize farmers and landowners to conserve trees on their land for both timber production and carbon stock enhancement (see section 2.2 above). But, as noted elsewhere, the government considers ceding control of off-reserve trees to the farmers and landowners as an infeasible option because of the dual regulatory and management role that the government is unwilling to cede (Ghana Forestry Commission, 2010).

Tenure challenges continued to arise and be pushed by the United Nations Framework Convention on Climate Change (UNFCCC) and Forest Carbon Partnership Facility's REDD+ readiness process. This process pushed the tree tenure benefit sharing policy discussed in section 2.2, and the Ghana National REDD+ Strategy noted:

> *Land and tree tenure issues, especially in off-reserve areas and challenges associated with the development and implementation of an equitable benefit sharing scheme pose major challenges to Ghana's REDD+ process.* (Republic of Ghana, 2015, p. 16)

[21] The FCPF is a multi-donor trust fund managed by the World Bank as trustee. The facility has two tranches – a Readiness Fund that supports countries to get "ready" for REDD+ and a Carbon Fund which purchases REDD+ offsets from a smaller number of countries. Ghana is participating in both tranches. See https://www.forestcarbonpartnership.org/

> *At its core, the problem with the existing benefit-sharing arrangement is that tree tenure and timber benefit sharing regimes have been structured to only recognize the rights of the Forestry Commission, the stools, the district assemblies, the traditional authorities, and office of the administrator of stool land (OASL) without recognizing the rights and key roles of the land users and de facto managers of the trees.* (Republic of Ghana, 2015, p. 48)

The program is expected to influence how Ghana addresses tree tenure reform (see section 2.2), but the sale of carbon credits to the FCPF may complicate this reform. The government plans to sell REDD+ emission reductions to the FCPF, and the FCPF's contract to purchase emission reductions from Ghana (IBRD General Conditions, 2014; Carbon Fund ERPA, 2019) requires the government of Ghana to "transfer Title to ERs to the Trustee, free of any interest, Encumbrance or claim of a Third Party" (IBRD General Conditions, 2014, Section15.01(a)). The government had to produce evidence of this as a condition precedent to the Carbon Fund ERPA with Ghana becoming effective (Carbon Fund ERPA, 2019, Schedule 1 clause (3)). This evidence has been provided to the FCPF but was not publicly accessible for review. If tree planting on cocoa farms off-reserve is included the program and contract, the government will therefore need to assert title to emission reductions associated with all trees – including naturally occurring and planted trees on privately held cocoa farms.

The initial Forest Reference Emission Level (FREL) submitted to the FCPF only included emissions from deforestation and forest degradation – it did not include emissions or removals associated with off-reserve trees on cocoa farms. An updated FREL submitted to the FCPF expands the scope of the FREL to include enhancements in forest carbon stocks off-reserve. The updated FREL was not available for review at the time of publication of this report, but if the FCPF FREL includes enhancement of carbon stocks on cocoa farms, the government will need to show it has title to these emission reductions. While the scope of the FCPF FREL is currently unclear, the Government of Ghana also submitted a FREL to the UNFCCC in January 2021 that included enhancements of forest carbon stock (Ghana Forestry Commission, 2021). The UNFCCC FREL claims emission removals associated with the conversion of "crop land" (which includes cocoa farms) to "forest land" but does not include enhancements of carbon stocks on crop land that remain crop land – i.e., it does not capture increased shade tree planting on cocoa farms that remain classified as crop land. This means that under the UNFCCC FREL the government is not reporting on any emissions (e.g., loss of trees) or removals (i.e., new trees) on cocoa farms that remain classified as "crop land" in the national greenhouse gas (GHG) inventory. If the FCPF FREL has the same scope as the UNFCCC FREL the issue of whether the government has claimed title to emission reductions to trees off-reserve may be a moot point as the government would not need to demonstrate title to these credits to comply with their contractual obligations to the FCPF. While it is likely that the UNFCCC and FCPF FRELs have the same scope, this issue of title to emission reductions off-reserve should still be kept in mind and explored as it will affect any farmers who let their cocoa farm go fallow and revert to secondary forest that could be re-classified as "forest land," and may affect the government's approach to devolution of tree tenure to farmers – especially if the government plans to expand its FREL further at some point to include these enhancements.

It generally accepted that emission rights created under public international law such as the Kyoto Protocol are *prima facie* sovereign rights, whereas title to rights created in voluntary markets are determined by domestic law (Streck & O'Sullivan, 2007; Freestone & Streck, 2009). The rules governing REDD+ under the UNFCCC and Paris Agreement do not currently create a new type of tradable REDD+ credit under public international law (O'Sullivan, 2020; Streck, 2020), so any examination of rights to emission reductions related to REDD+ must focus on domestic law. Streck (Streck, 2020) reviews ten countries and groups them into four different approaches to address carbon rights and benefit sharing for REDD+. She identifies a range of responses from nationalization of carbon rights with the possibility of government transfer of rights or benefits to local beneficiaries to decentralized or no

regulation whereby existing landowner's rights prevail. Ghana was not reviewed, but it is important to emphasize that government ownership of the legal title to emission reductions does not need to be equated with ownership of the trees. If needed these rights can be separated, though any government "taking" of carbon rights should be accompanied by either a process to reclaim this right from the government (e.g. to participate in the voluntary market as is the case in Australia and being contemplated in Cambodia) and/or a right for landholders that own the underlying trees to benefit from this emission reduction if the government imposes any restrictions or other loss of enjoyment of the land or trees in order to preserve or claim this right.

Separate to the FCPF, the Forest Investment Program (FIP) in Ghana aims to address the underlying drivers of deforestation, focusing on the HFZ of Western and Brong Ahafo Regions, and catalyzing long-term transformational change and legal reforms with the ultimate objective of reducing greenhouse gas emissions (Hajjar, 2015). Similar to the R-PP, the FIP-related documents and Ghana's 2014 Emission Reductions Program Idea Note all maintain that Ghana must reform tree tenure and benefit sharing regimes to incentivize sustainable tree planting, nurturing, and management. However, the FIP notes that major aspects of tree tenure, including formulas for benefit sharing expressed in the Constitution, are likely to be difficult to change in the short term. Perhaps as a result the FIP seems to be supporting tree registration efforts as part of Ghana's REDD+ Benefit Sharing Plan (Forestry Commission, 2020). Similar to issues confronted under the FLEGT-VPA process, the government's steadfast unwillingness to institute laws that reform tree tenure and incentivize reforestation brings into question the ability of these donor-driven efforts to transform a country's laws, policies, and approaches.

Currently, Ghana aims to reduce deforestation and increase cocoa yields through its Ghana Cocoa Forest REDD+ Program. The approach leverages private sector investment in cocoa and government funding and proposes payments from emission reductions under the Forest Carbon Partnership Facility (Antwi et al., 2018).

4.5 COCOA AND FORESTS INITIATIVE

In response to cocoa commodity-driven deforestation, the cocoa industry is making efforts to reduce and eventually eliminate deforestation from the cocoa supply chain. A regional initiative, the Cocoa and Forests Initiative (CFI), targeted at Ghana and Cote d'Ivoire, brings together two top cocoa-producing countries and leading chocolate and cocoa companies. CFI aims to address the significant impact of smallholder cocoa farming on West Africa's forests. Its objective is to eliminate deforestation and forest degradation in the cocoa supply chain and restore degraded lands and forests. Land and tree tenure have been identified as top policy priorities by the CFI Agroforestry Taskforce. According to the taskforce, insecure land tenure is both an important underlying cause of deforestation and an impediment for investments in sustainable landscapes (Kroeger et al., 2017b). USAID's TGCC program partnered with Hershey and its supplier Ecom Agroindustrial Corp. to assess, document, and map land tenure rights of cocoa farmers.

5.0 CULTIVATING A NEW COCOA PRODUCTION PARADIGM IN GHANA

Agricultural commodities are a major cause of deforestation globally and have historically been the leading cause of deforestation in Ghana (Republic of Ghana, 2017). The government of Ghana and the cocoa industry recognize the important role an improved cocoa production system can have on mitigating climate change, maintaining biodiversity, conserving and enhancing ecosystem services, and improving the livelihoods of cocoa farmers and their families. Improving forest governance and devolving tree tenure are important prerequisites for promoting sustainable forest management and reducing deforestation and forest degradation. While the need to improve forest governance in Ghana has long been acknowledged, divergent and competing interests and unequal power relations between the state and the rural cocoa producers have stifled change. In the Ghana cocoa forest landscape, the legal and regulatory frameworks lag behind the policy reforms that have been implemented in the commercial timber sector in recent years. The FLEGT-VPA and REDD+ processes have helped drive some recent policy reforms in the sector, but these have not yet translated into changes to legislation. The cocoa industry is also starting to catch up with the Cocoa and Forests Initiative and chocolate companies' increased attention on sustainability, but it is easier for chocolate companies to subsidize tree registration efforts than it is to prioritize advocacy for difficult legislative changes on tree tenure.

In recent years, the government of Ghana, with support from bilateral and multinational donors and the cocoa industry, has promoted plans to plant millions of trees on cocoa farms under a wide array of initiatives. But the legal framework dictating off-reserve tree tenure and benefit-sharing arrangements has yet to be changed. To incentivize Ghana's cocoa farmers to practice sustainable farming practices, which includes vastly increasing the number of high value timber species planted and protected on their farms, outstanding tree and land tenure issues and benefit-sharing arrangements must be addressed coherently, completely, and effectively.

As explored in previous sections, several interconnected variables have driven changes in the quantity and quality of forests and the number of trees maintained on cocoa farms in Ghana. Most analysts agree that forest tenure and forest condition are linked, even though it can be challenging to unravel neat causal connections. In the case of Ghana's cocoa landscape, a farmer's management of trees, including both the quality and quantity of trees maintained on the cocoa farm, is influenced as least in part by the lack of secure tree tenure. Although shade trees have always been part of the cocoa production system, with cocoa farmers planting and felling trees as a farm management strategy, tree tenure insecurities have loomed large due to the state's claim to all naturally occurring trees growing off-reserve.

With the state claiming ownership of all naturally occurring off-reserve trees, most land use arrangements negotiated between landowners and cocoa farmers do not explicitly address rights to timber trees. The Ghana Forestry Commission's recent tree registration policy, however, is not a solution to tree tenure and is likely to generate more challenges and conflicts rather than resolve existing legislative flaws. Continuing to separate trees from the land in which they are rooted is likely to exacerbate and complicate the use and rehabilitation of natural resources in the cocoa regions and hamper the renaissance of cocoa-based agroforestry in Ghana.

5.1 BUNDLING TREE AND LAND RIGHTS

To effectively create a balanced and sustainable cocoa sector, Ghana's tree tenure policy needs to be simplified and re-aligned to protect and balance the interests of landowners and land users. The government of Ghana has in practice separated land tenure and tree tenure for many years and

continues to do so with the proposed tree registration mechanism. But there are strong arguments for bundling land and tree rights in the evolving cocoa-based agroforestry model.

As discussed above, the lack of legal rights over the trees both planted and naturally growing on agricultural land has been cited as a major disincentive for farmers to nurture and protect trees. For years, landowners, land users, CSOs, international donors, and some government actors have argued that farmers and landowners should have the right to economically benefit from both the planted and naturally occurring trees in off-reserve areas and, in particular, from on-farm trees. In its 2012 Forest and Wildlife Policy, the Forestry Commission proposed policy to devolve tree tenure, which helped cocoa farmers by extending them the right to directly benefit from the trees they plant on their farms. And in the 2016 Tree Tenure and Benefit Sharing Framework, the government proposed that tenure rights be devolved further to include naturally occurring trees. In addition, the 2016 policy framework closely bundles tree and land rights, proposing that 1) farmers and landowners should have the right to negotiate their rights to own both planted and naturally growing trees and share benefits, and 2) decentralized land titling and registration,[22] which allows farmers to register not only their land but also the trees on their farms, should be legalized and implemented (Republic of Ghana-MNLR, 2016a). However, the reforms do not go far enough to address the longstanding disincentives in Ghana's forest law, and tree registration policy veers off in the wrong direction as it continues to separate tree rights from land rights.

The enduring distinction between planted trees and naturally occurring trees demonstrates the Forestry Commission's interest in and commitment to maintaining control over commercial timber revenue. Ghana's current approach to tree registration treats off-reserve tree management similarly to industrial or plantation forestry by simply replacing the requirement of a forest management plan with a national tree registry. But a smallholder-based cocoa-based agroforestry system cannot be managed like a forest plantation. A better approach is to ensure the rights to all trees – including commercially valuable shade trees – are vested in customary usufruct, *asideɛ,* or *abunu* landowners. This can be achieved independently of any government claim to carbon rights associated with these trees. *Abunu* farmers should gain rights to all trees for the duration of their tenure in the same way they have customary rights to the cocoa and non-timber shade trees under current *abunu* arrangements. With clear and unambiguous rights to the trees on the land they farm, cocoa farmers would be more motivated to both plant and protect trees.

The approach recommended in this paper differs from the tree registration guide that states registered trees would "remain officially under the ownership of the farmer who planted [the trees]". If the act of tree planting is interpreted as a covert measure to assert permanent rights to the land by abunu or abusa farmers beyond farming the land for cocoa, this will create conflict and impede efforts to develop cocoa-based agroforestry.

Bundling tree rights with the local, bottom-up land documentation process could result in one unified, lower-cost administrative system, tied to one parcel map (Antwi et al., 2018). Operating land and tree registration systems separately is inefficient. Two registers compete for scarce resources and increase the cost of transacting land and property. For the sake of efficiency, transparency, access, and oversight, it would be far more effective to include both land and tree rights in one document, linked to one parcel map, and stored in one registry (Roth et al., 2017).

[22] It is unclear how the land/tree registration in the 2016 policy would be implemented but per the current land law, the Stool would be the repository of land and tree tenure rights. There is bound to be strong resistance to shifting control of tree tenure and management away from the Forestry Commission.

Rather than establishing dual land and tree registries, resources should be invested into a rural land tenure registration process similar to that piloted under the USAID TGCC and currently being expanded by the USAID ILRG program in four communities in the Asankrangwa Stool of Wassa Amenfi West District. The approach piloted under the TGCC activity focused on developing a well-defined process, engaging with key stakeholders, and documenting the existing customary tenure arrangements on the ground (O'Sullivan et al., 2019). This would need to be accompanied by a registry system where customary documents can be stored, retrieved, and updated over time. Clarifying and documenting resource rights and tenure arrangements by bundling land and tree rights is critical to the success of the cocoa agroforestry production system.

The approach recommended in this paper differs from the recent tree registration guide that states that registered trees would "remain officially under the ownership of the farmer who planted [the trees]" (Dohmen et al., 2018, p. 6) and includes the *abunu* farmer's rights to sell and bequeath the trees even if the rights to the land have reverted back to the landowner. If the act of tree planting is interpreted as a covert measure to assert permanent rights to the land by *abunu* or *abusa* farmers that extend beyond farming the land for cocoa, this will create conflict and impede efforts to develop cocoa-based agroforestry. This is because *abunu* farmers only have rights to all on-farm trees while they are cultivating cocoa, and *abusa* farmers do not have any land tenure rights. Changing this to permanent rights to *abunu* or *abusa* farmers may give rise to more friction between landowners and these farmers, particularly when renegotiating rights to replant old or diseased cocoa farms or if a cocoa farmer abandons their farm and it reverts back to the landlord.

Jiekak and Freudenberger (2019) argue that unless landowners can capture economic benefits and retain their control over the land, the policy agenda to restore the landscape through cocoa-based agroforestry systems will not be successful. They note: "with appropriate incentives the Wassa may impose conditionalities on tenants to… encourage planting of more shade and timber trees" (p. 58). Publicly acknowledging and documenting land and tree rights can go a long way to curbing and circumventing conflicts between land users and landowners. Although some of the necessary policy and legal changes required to bundle and devolve land and tree rights have been articulated, bundling land and tree rights to incentivize both farmers and landowners to commit to and invest in the cocoa agroforestry production system requires further research, reflection, and legal reform. An approach to land rights documentation that starts with trust and confidence-building rather than focusing on administrative practices could be highly effective (Antwi et al., 2018). With government as well as multiple international and national stakeholders already invested in tree registration activities, influencing the debate will require a robust long-term commitment to support policy, regulatory, and legal reforms.

5.2 POLICY ISSUES AND PRACTICAL OPTIONS

Based on this review, there are two main policy/legal tenure-related issues that must be addressed in order to eliminate a key disincentive for cocoa farmers to practice sustainable cocoa agroforestry. First and foremost, tree rights must be devolved to individuals. Following devolution of rights, the central issue is how to administer and manage these devolved rights – do the devolved rights to trees need to be documented? Should tree rights be separate from land rights? Or should land and tree rights be bundled?

5.2.1 DEVOLUTION OF TREE RIGHTS

The most significant policy and legal issue that must be addressed is the devolution of tree rights from the government to individuals to grant ownership and management rights to all naturally occurring and planted off-reserve trees – without distinction – to customary landowners and *abunu* farmers. This can be achieved independently of any government claim to carbon rights associated with these trees.

Devolving tree rights in the cocoa production zones requires determining how ownership and benefit sharing will be divided between landowners and *abunu* farmers, and what fees will be paid to the Forestry Commission when trees are harvested.

For the devolution of tree rights to be an incentive to plant and nurture trees, the party that controls the land and makes land use decisions over land management needs to be the primary beneficiary. Landowners will need to be assured that if an *abunu* farmer gains rights to timber trees, this does not constitute a claim to the land that exceeds the life of *abunu* tenure. To finalize tree devolution policy and legislation in Ghana, the following tasks are required:

1. Further review of existing policies and laws by Ghanaian legal counsel to:
    i. Identify legal contradictions and conflicts and
    ii. Draft new laws/amendments that take into account the devolution of tree rights and how to address carbon rights;
2. Detailed review of all other forest policy reform programs (e.g., FLEGT-VPA, REDD+, etc.) and discussions with donors who support these programs to align tree devolution law with other policy and legal reforms;
3. Determination of how timber revenues, licenses, and fees from the exploitation of private tree holdings will be managed and how to link these to support the implementation of a cocoa-based agroforestry system; and
4. Design of enforcement and compliance mechanisms to build credibility.

5.2.2 ADMINISTRATION OF RIGHTS

Once tree rights are devolved, the next question is how to administer and enforce these rights. In Table 5 below, we highlight the pros and cons of developing a tree registry vs. bundling land and tree rights in a single land registry, and identify the main issues that need to be addressed for each.

TABLE 5. POLICY OPTIONS FOR ADMINISTRATION AND MANAGEMENT OF INDIVIDUAL TREE RIGHTS: PROS AND CONS

PROS	CONS
Institute a separate national tree registrar	
• Clarifies rights to trees, including harvesting, sale, and inheritance of trees. • Facilitates the management of established benefit sharing arrangements. • Trees could be used as collateral, especially if Ghana implemented a model similar to Thailand's tree bank.	• Difficult to design, implement, and administer, especially at scale and over time. • Will require significant and long-term donor/industry support. • Keeping tree rights separate from land rights will likely increase tensions and disputes between landowners and tenants if tree rights extend further than land rights. • May require renegotiating rights to land and trees or require separate negotiations for land and trees. • The costs of establishing and maintaining the registry are likely to be very high. • Likely to act as a disincentive to tree planting once donor and government support for pilot projects ends.
PROS	**CONS**
Bundle land and tree rights and register land rights under a rural registration system	

• Simpler to design, implement, and more cost-efficient to administer than administering land and tree rights separately. • Promising avenue to bring greater clarity and transparency to the customary system. • Devolution of tree rights that relies on customary rules to ascertain tree ownership may not require additional documentation or registration of land rights to be enforceable.	• Implications of devolving all tree rights to customary land rights holders including *abunu* farmers needs to be tested. If tree rights run with the land and expire when land rights expire the potential for conflict should be assessed and mitigated. • Establishing a rural land registry is not simple and has been challenging in the past through Customary Land Secretariats. New mapping and database technology may make a repeated effort more likely to succeed. • Registering customary land rights will require additional engagement with the Lands Commission and revisions to their requirements for recording title.

5.3 RECOMMENDATIONS FOR KEY STAKEHOLDERS

National and international forest management agendas, donor funding, and the private sector's growing commitment to deforestation-free cocoa have all influenced Ghana's forest policy toward the devolution of tree rights. However, action to date has not gone far enough and there is a risk that failure to address underlying tree tenure issues will lock in poor policy for many years to come.

The challenge for the government, donors, and private sector partners is how to prioritize limited resources and collaborate strategically to achieve positive outcomes. The authors propose several recommendations based on the findings of this review. The recommendations are tailored for four key groups: 1) Government of Ghana, 2) the cocoa industry, 3) the donor community, and 4) civil society.

5.3.1 RECOMMENDATIONS FOR THE GOVERNMENT OF GHANA

The rapid deforestation and degradation of forest resources in Ghana exposes the failure of the current legislation, policies, and regulations to effectively address tree tenure issues in the country. The global and national evidence examined in this review demonstrated:

1. Devolution of tree tenure can result in improved forest management.
2. Distinguishing naturally growing trees from planted trees creates a strong disincentive for landowners and smallholder cocoa farmers to plant and nurture trees on farms and fallow land.
3. A national tree registry will be costly and administratively infeasible.
4. Devolution of tree tenure can be separated from emission rights and benefit sharing from the sale of these rights.

Although the government has moved toward devolution, especially in the 2012 Resources Management (Legality Licensing) Regulation (LI 2184), the existing legal regime places an emphasis on the rights of the government to manage and profit from forest resources. To ensure that farming and forest-based communities are incentivized to be stewards of trees and timber resources, the government must overhaul the tree tenure and benefit sharing regime to expand landowners' rights and benefits. Incremental changes will not address the underlying issue of tree tenure that must be addressed to drive change.

RECOMMENDATION 1. LAW REFORM TO DEVOLVE ALL TREE RIGHTS TO LANDOWNERS

New legislation should be drafted to vest communities and individuals with the clear right to own and dispose of the trees they plant or nurture, without distinction between naturally occurring and planted and without the need to register tree ownership. The law should be clear that all rights to all trees

derive from rights to the land and this applies to customary rights holders. This will ensure *asideɛ*, usufruct, and *abunu* rights holders also gain all rights to trees on land they have tenure to. As *abusa* farmers are share-croppers without rights to the land, rights to trees would remain with the landowner in this arrangement. Rights to emission reductions or removals can be separated from tree tenure and should not be a barrier to devolution.

Further legal analysis is needed to confirm which specific sections of existing legislation need to be updated, but the authors' analysis has identified that the 1962 Concessions Act, 1974 Trees and Timber Act, 1997 Timber Resources Management Act, and 2002 Plantations Development Fund Act (including its amendments to the Timber Resources Management Act) may need to be revised.

RECOMMENDATION 2. IMPLEMENT EXISTING PERMIT REGIMES TO GENERATE INCOME

The proposed reforms do not need to cripple the Forestry Commission's budget. The existing timber industry permit and social responsibility agreement regimes should be updated to take into account the proposed divestment in Recommendation 1 and then implemented to provide the Forestry Commission with a sustainable revenue stream from the exploitation of the country's timber resources. This includes enforcing the permits regime established by the 1998 Timber Resources Management Act and ensuring the timber industry meets it statutory obligations to the state and the public by paying the mandated timber rights fees, stumpage fees, and income taxes. There is ample evidence that the forest industry's compliance with these mandates and permits is minimal or nonexistent. The government could greatly increase revenues by ensuring timber concessionaires comply with regulations mandating forestry payments. A focus on licensing and policing loggers would also be effective strategies to decrease illegal logging.

Concessionaires should be responsible for paying stumpage and Stool fees and negotiating with farmers the price farmers receive for the timber they fell on farmer's land based on fair market prices. More research may be needed on this point to better understand and demonstrate the revenue the Forestry Commission could generate through increased tree planting and harvesting off-reserve that could result from divestment of tree tenure to landowners.

RECOMMENDATION 3. ESTABLISH A FIT-FOR-PURPOSE RURAL LAND REGISTRY

The government should stop implementing the national tree registry and focus on establishing a simple, sustainable, and affordable land administration system for customary land registration that is legal under Ghanaian law. The development of such a land registration system should be based on electronic record keeping and build on prior experiences with customary land secretariats.

RECOMMENDATION 4. PUBLIC OUTREACH AND COMMUNICATION ON REFORM

The proposed changes in law need to be accompanied by a strong public consultation during their development. This could include pro-active consultation to minimize any potential conflicts between landlords and *abunu* farmers from devolution. Once enacted a comprehensive information campaign will be important to ensure cocoa farmers are aware of the new laws.

5.3.2 RECOMMENDATIONS FOR THE COCOA SECTOR

The cocoa sector's commercial interests in cocoa sustainability, extensive seedling distribution projects, logistics infrastructure, and farmer relationships make them ideally positioned to scale up efforts to re-plant shade and timber trees on cocoa farms.

RECOMMENDATION 1. RE-DIRECT FUNDS AWAY FROM TREE REGISTRATION ACTIVITIES

The cocoa industry should use their resources to increase tree planting programs if tree tenure policy is reformed (see recommendation 2 below) and/or support registration of land title (see recommendation 3 below). If tree tenure is not reformed and tree registration programs continue, the cocoa industry should engage with cocoa farmers to ensure programming trade-offs and farmers' priorities are aligned.

RECOMMENDATION 2. EXPAND TREE PLANTING PROGRAMS

Planting more trees helps improve productivity and resilience of cocoa farms, sequester carbon, and restore forest cover. The cocoa industry should expand their tree planting programs and incentivize restoration of shade trees and forest cover. Industry could consider two ideas to help expand existing tree planting programs:

1. The cocoa industry could implement a payment for ecosystem service (PES) scheme to monitor tree planting, funneling payments to farmers who maintain trees. The PES scheme could be linked to carbon sequestered in planted trees, which could be used to help industry meet corporate commitments along with national GHG reduction commitments under the Paris Agreement.
2. Industry could work with the financial sector to pilot the creation of a tree bank to invest in tree planting. The tree bank could provide farmers with a form of collateral to receive credit to purchase improved inputs and access other professional farm services.

RECOMMENDATION 3. SUPPORT CUSTOMARY LAND RIGHTS REGISTRATION

If the government establishes a fit-for-purpose rural land registry, the cocoa industry should ensure existing farm mapping efforts meet these requirements and support formal registration of customary title documents.

RECOMMENDATION 4. WORK WITH INDUSTRY ASSOCIATIONS TO SUPPORT TREE TENURE REFORM INCLUDING OUTREACH TO COCOA FARMERS

It is difficult for individual companies in the sector to advocate for specific policy reform. Companies should work through industry associations such as the World Cocoa Foundation and platforms or initiatives such as the Cocoa and Forests Initiative and the Ghana Cocoa Forest REDD+ Program to support devolution of tree tenure. The cocoa industry should also use its existing outreach channels to help with consultation and publicity campaigns to explain the new tree tenure law and what it means for cocoa farmers.

5.3.3 RECOMMENDATIONS FOR DONORS

Donors can play an important role to help the government research, develop, and implement tree tenure policy form.

RECOMMENDATION 1. DEVELOP A UNIFIED RESPONSE TO GHANA'S TREE REGISTRATION POLICY

Key donor agencies need to coordinate on how best to support tree tenure reform in Ghana. This should include alignment on the types of reform that are needed and what types of programs are supported.

RECOMMENDATION 2. SUPPORT GHANA TO FINALIZE THE NECESSARY LEGAL AND POLICY REFORMS TO DEVOLVE TREE TENURE

Donors should support coordination between government agencies, including the Ministry of Land and Natural Resource Management, Ghana Cocoa Board, Lands Commission, and Forestry Commission to

discuss, agree on, and map out how to address the competing national priorities around increased cocoa production and improved forest protection.

Donors should also support a national discussion with government, private sector, cocoa farmers, landowners, citizens, and national civil society to set long-term sustainable objectives for Ghana's cocoa sector, including a discussion of tree tenure.

RECOMMENDATION 3. SUPPORT ADDITIONAL RESEARCH ON DEVOLUTION OF TREE TENURE

Donors could support further research on how the devolution of tree rights might impact holders of statutory and customary rights to land, and how carbon rights can be separated from tree tenure – particularly for the sale of emission reductions to the FCPF. If conflicts between landlords and *abunu* farmers arise as a result of devolution, donors should support additional training and implementation of dispute resolution tools.

Donors should also support research on any reform or enforcement of timber licensing and stumpage fee collection to support Forestry Commission operations.

RECOMMENDATION 4. SUPPORT CUSTOMARY LAND RIGHTS REGISTRATION

Donors should support the government to establish a fit-for-purpose rural land registry. This should include supporting use of cost-effective technology for mapping and registry services and promotion of social safeguards and social inclusion in those processes.

RECOMMENDATION 5. SUPPORT PUBLIC OUTREACH ON TREE TENURE

Donors should support stakeholder consultation during law reform and then public outreach campaigns that educate civil society on the new tree tenure law and implications for farmers.

5.3.4 RECOMMENDATIONS FOR CIVIL SOCIETY

There is an opportunity for Ghanaian civil society to help raise the profile of tree tenure reform and implications for Ghana's cocoa farmers. Civil society organizations are well positioned to support research, analysis, outreach, and engagement on policy reform and work with all stakeholders to help plant more trees.

RECOMMENDATION 1. CONDUCT OUTREACH AND ENGAGEMENT

Local civil society should carry out a multi-stakeholder deliberative process to raise awareness and address the outstanding issues related to devolving tree rights to individuals. This includes completing and disseminating research on specific legislative amendments that are needed to devolve tree tenure, engaging farmers and other stakeholders on the reform process to build awareness and support for reform, economic or financial analysis of the implications of reform on government budgets, and engaging government and elected officials on reform options.

RECOMMENDATION 2. SUPPORT TREE PLANTING

Once tree tenure policy has been reformed, civil society should help develop tree planting programs and help monitor their implementation.

ANNEX 1: SUMMARY OF LEGISLATION AND POLICY RELATED TO TREE TENURE

A1.1 1948 FORESTRY POLICY AND THE TREES AND TIMBER ORDINANCE NO. 20 OF 1949

Prior to 1948, Ghana's forest policy consisted of a single paragraph that focused on conserving sufficient forest throughout Ghana to protect water supplies, prevent erosion, and maintain suitable climatic environments for the cultivation of cocoa, kola, and other crops. Productive uses were not a priority as timber trade was only starting to develop. The 1948 Forest Policy was developed with the backdrop of a growing timber industry and provided for a progressive utilization of the off-reserve timber resources. It strengthened state control over local governance and natural resources with a focus on maximum productivity and value on the basis of sustained yield, without any guidance for or requirements to replace these resources. World War II created significant demand for timber from British colonies in West Africa and helped establish enduring export markets for West African wood (Oduro et al., 2011). Deforestation was also encouraged under the 1948 policy to make way for agricultural development. The period is referred to as Ghana's "timberization" era (Gyampoh, 2011) during which unbridled harvesting occurred, with more than 70 percent of the off-reserve forests converted for agricultural activities (Derkyi, 2012). The 1949 Timber Ordinance No. 20 was enacted to respond to the regulatory needs of the fast-growing timber industry and regulated the cutting and removal of trees for export. Under the ordinance the royalties given to landowners were reduced from 70 percent to 40 percent, shifting the burden of increased costs of reserve management to the landowners (Appiah-Opoku, 2005).

A1.2 1962 CONCESSIONS ACT (ACT 124)

The 1962 Concessions Act was a significant law that continues to shape rights to trees in Ghana. Section 16 of the Act vests forest reserves and timber and forest concessions in the President (Sections 16 (1),(2),(3)), and also vests "all rights with respect to timber or trees on any [other] land" in "the President in trust for stools concerned." Oduro et al. (2011) note that "[w]ith the passing of the Concessions Act (Act 124) and the Administration of Lands Act (Act 123) the State gained control over administration and allocation of all timber resources and forest reserves" (p. 23).

During this period, the timber exploited on off-reserve lands was controlled by the Lands Commission (Boateng et al., 2009). However, according to Treue (2001), the Lands Commission was unable to produce any account for timber royalties collected from 1962 – 1994, a period during which the off-reserve timber harvest significantly exceeded the on-reserve harvest. Heavy exploitation of the off-reserve stock was pursued through the 1980s and hence contributed significantly to the primary forest fragmentation (Hansen, 2011; Adom, 2017).

A1.3 1974 TREES AND TIMBER ACT (NATIONAL REDEMPTION COUNCIL DECREE 273)

The 1974 Trees and Timber Act extended management and commercial rights to high value timber species to the State beyond the reserves to include off-reserve areas. The purpose of the act was "to provide for the registration of locality marks, the felling for export and for related matters"; in effect, directly serving the interests of the timber industry (Derkyi, 2012). The changes included in the act severely limited forest management rights of traditional authorities and tree tenure rights of farmers (Lawry et al., 2012b). The act was also the first step towards establishing a chain of custody for felled

timber, requiring timber exporting companies to register a "property mark" or "locality mark" (Articles 1-11) with the Forestry Department.

A1.4 1979 ECONOMIC PLANTS PROTECTION DECREE

The 1979 Economic Plants Protection Decree stated: "no felling rights with respect to timber shall be granted where such timber trees stand in farms where specific crops like cocoa are cultivated" (Section 4(1), in Lawry et al., 2012b, p. 57). The decree is an important example of under-implemented laws in Ghana that could be used to improve tree tenure security on cocoa farms.

A1.5 1994 FOREST AND WILDLIFE POLICY AND FORESTY DEVELOPMENT MASTER PLANS

The 1994 Forest and Wildlife Policy replaced the 1948 Forest Policy. For the first time, Ghana's forestry policy encouraged sustainable management of tree resources in on- and off-reserve areas (Articles 3.2.12 - 3.3) and "maintain the ecological balance and the diversity of the natural environment" (Oduro et al., 2011). These articles concerned the:

- Provision of incentives to encourage more rational and less wasteful utilization, including the introduction of market forces particularly to increase production of value-added wood products for export (3.2.9);
- Transformation of the timber industry from a high volume, low value business to a low volume, high value trade based on sustainable forest management (3.2.10);
- Need to improve the state of the environment (3.2.12);
- Importance of appropriate and efficient land use and security of land tenure for sustainable development of forest and wildlife resources (3.2.13);
- Need to encourage competitive industries based on local raw materials and to pay close attention to international trade (3.2.14);
- Need to develop a decentralized participatory democracy by involving local people in matters concerning their welfare (3.2.15);
- Urgent need for addressing unemployment and supporting the role of women in development (3.2.16); and
- Government proposals to place particular emphasis on the concept of participatory management and protection of forest and wildlife resources and seek to develop appropriate strategies, modalities and programs in consultation with relevant agencies, rural communities and individuals (3.3).

The new policy aimed to develop a national forest estate and timber industry that: is ecologically sustainable; conserves the environment, wildlife, and communities; and promotes public participation in forest management. The 1994 policy stated "the success of sustainable resource management is directly related to continued political support at the highest levels, as well as provision of strong incentives to encourage responsible use, e.g. long-term concessions, equitable access, appropriate fees" (3.2.3), "the need for economic and development incentives to stimulate private enterprise and encourage respect for regulations" (3.2.4), and "the need to incorporate traditional methods of resource management in national strategies where appropriate" (3.2.6).

The policy continued to restrict the rights of farmers and limited their share of any financial benefits accrued from the exploitation of tree resources. The log export ban, first introduced in 1979 for high value species, was extended to all species in 1994. However, the policy to raise stumpage fees was not implemented and nothing was done about Ghana's underpricing of timber and the government's policy of administratively allocating concessions.

In 1996, the Ministry of Lands and Natural Resources (MLNR) launched the Forestry Development Master Plan 1996 – 2020 to implement the 1994 Forest and Wildlife Policy. The master plan focused on ensuring legality of timber, consolidating the timber industry, timber processing and commercial plantations (Oduro et al., 2011).

A1.6 1997 TIMBER RESOURCES MANAGEMENT ACT (TRMA) 547

The legal reform of the concession system was introduced through the Timber Resources Management Act (TRMA) of 1997 and the accompanying Timber Resources Management Regulations of 1998 on both forest reserve and off-reserve areas. The act aimed to ensure that timber harvesting is consistent with the sustainable management and utilization of the timber resources in Ghana. The TRMA made it illegal for farmers off-reserve to harvest any naturally occurring trees for commercial or domestic purposes, even if it is growing on their land. It also prohibited logging off-reserve without prior authorization from those who owned the land (Republic of Ghana-MLNR, 2012).

The TRMA also made it clear that farmers and landowners have rights to planted trees, and stated that no timber rights shall be granted in respect to land with private forest plantations or land with any timber grown or owned by any individual or group of individuals. This indicated that planted timber is not meant to be included in the vesting of trusteeship in the Concessions Act.

The TRMA also established a new category of timber right – the TUC – and all timber harvesting was to be carried out under these contracts. Although the date of the assent of the TRMA was March 17, 1998, pre-existing timber rights have endured, bringing the forest law into disrepute (Bird et al., 2006).

A1.7 1999 FORESTRY COMMISSION ACT 571

This act subsumed four previously separate public entities and civil service departments involved in the regulation of Ghana's forestry and wildlife as divisions under the Ghana Forestry Commission. Establishment of the umbrella Forestry Commission in 1999 resolved the conflict between the proposed Forest Authority to replace the old Forestry Department, with the mandate to regulate and manage Ghana's forest resources, and Ghana's 1992 Constitution, which mandated a Forestry Commission take charge of the responsibility of protecting, managing, and developing Ghana's forests and wildlife resources (Bird et al., 2006).

A1.8 2002 PLANTATIONS DEVELOPMENT FUND ACT (ACT 617), WITH AMENDMENTS TO THE 1997 TRMA 547

The legal changes introduced by this act included: 1) competitive bidding in the allocation and utilization of timber resources; 2) implementation of SRAs; and 3) the Ministry of Lands and Forestry to regulate new investments in the forest sector. The 2002 Amendment also provided farmers with the right to participate in inspection prior to logging and to veto felling for reasons that include, but are not limited to, damage to crops or soil conservation/erosion concerns (Asare, 2010). The amendment changed Section 4 of Act 547 as follows: "(2) No timber rights shall be granted in respect of (a) land subject to alienation holding; or (b) land with farms without the written authorization of the individual, group or owners concerned" and "(3) No timber rights shall be granted in respect of (a) land with private forest plantation; or (b) land with any timber grown or owned by any individual or group of individuals."

Subsequent clauses address the issues of benefits and incentives for any person who invests in a forestry or wildlife enterprise (14A and 14D), including guarantees against expropriation (14E). The amendment prohibited the state from granting timber rights on privately held forest plantations or land with trees owned by private persons without the written authorization of the individuals, groups or owners concerned (Osafo, 2010) and stipulated compensation for crop damage when timber trees were exploited on farmland.

As part of its forest plantations development program, Ghana reintroduced the traditional taungya system[23] as the modified taungya system (MTS). In its revived form, MTS was an attempt to restore degraded forest reserves. The benefit sharing formula implemented under MTS takes into account all stakeholders involved and transferred ownership of the trees from a single owner (the government) to multiple landowners (farmers, local communities, government, and landowners) (Fobissie et al., 2011). MTS benefits are divided as follows: 40 percent to farmers; 40 percent to the Forestry Department; 15 percent to landowners; and 5 percent to the local community. This approach also creates new access to subsistence farming land and much-needed income in the short term (Derkyi et al., 2013).

Even with these important changes, MTS has been largely unsuccessful in Ghana. Famers' inability to undertake maintenance of the plantations for the lengthy period required (30+ years) has been identified as one of the major constraints of the program (Osafo, 2010; Ghana Forestry Commission, 2014). The lack of signed legal contractual agreements between the MTS farmers and the government and general lack of transparency on MTS's benefit sharing scheme has also contributed to the farmers' disinterest (Acheampong et al., 2016).

A1.9 2012 FOREST AND WILDLIFE POLICY AND 2012 TREE TENURE BENEFIT SHARING POLICY

The 2012 Forest and Wildlife Policy replaced the 1994 Forest and Wildlife Policy. The 2012 policy is referred to as a paradigm shift from past policies by placing an emphasis on the non-consumptive values of the forest (Republic of Ghana-MLNR, 2012). The policy addresses key issues related to tree tenure and community participation in forest management. The European Union's (EU's) Forest Law Enforcement, Governance and Trade (FLEGT)-Voluntary Partnership Agreement (VPA) process is often credited with prompting these significant policy changes (Tropenbos International-Ghana, 2018).

Among other things, the policy seeks to consolidate good governance through accountability and transparency and enhance active participation of communities and landowners in resource management and addressing issues on tree tenure and benefit sharing. Support for participatory forestry is also more explicit in the 2012 Forest and Wildlife Policy.

According to the policy, the government's strategy is to "enact the legislation that will enable communities and individuals to benefit from trees on their farms and fallow lands, provide off-reserve tree tenure security, authority to legally dispose of resources and allocate a greater proportion of benefits accruing from resource management to community members individually or collectively" (Republic of Ghana-MLNR, 2012, p. 27). The policy takes a significant leap forward by giving landowners and land users full ownership of trees on their farms; furthermore, the new policy gives landowners the *bona fide* rights to the trees in secondary forests. However, the distinction between planted and naturally growing trees remains, and these new tree tenure arrangements still need to be legally defined and harmonized with existing legislation.

[23] The taungya system, originally devised in Burma, was introduced in Ghana in the 1930s. Taungya is an agroforestry system in which farmers are given parcels of degraded forest reserves to produce food crops and to help establish and maintain timber trees. The intention was to produce a mature crop of commercial timber in a relatively short time, while also addressing the shortage of farmland in communities bordering forest reserves (Agyeman et al., 2003).

Another significant change made in 2012 is that Ghana's developing decentralized land registration system will allow farmers to demarcate and register their lands and trees in the community/district to prove title (Antwi et al., 2018). These recent changes in forest policy and decentralized land management have contributed to increased interest in tree registration, which is further examined in Section 4.

In 2016 the Ministry launched a new Forestry Development Master Plan for 2016 – 2036 to accompany the new policy. The master plan recognized that tree tenure and the lack of benefit sharing of proceeds from naturally occurring trees contributed to loss of trees off-reserve. The updated plan included provisions to establish a legal framework for naturally occurring trees and regime for tree tenure and carbon rights by 2020, with the latter work on tree tenure funded by the Forest Investment Program (Republic of Ghana-MLNR, 2016b).

A1.10 2016 TREE TENURE AND BENEFIT SHARING FRAMEWORK AND LEGAL REFORM PROPOSALS

Four years after the changes proposed in the 2012 policies, the Forestry Commission unveiled a more explicit tree tenure policy (Ghana News Agency, 2017) that aims to create a firmer legal basis for improved benefit sharing arrangements and tree tenure security for communities and individual farmers. The Tree Tenure and Benefit Sharing Framework in Ghana acknowledges tree tenure issues are a major cause of tree loss off-reserve, and that there is overwhelming support from farmers to reform tree tenure policy in their favor:

> *There is a ground swell with forest communities that is in favor of rights related to decentralize land and tree tenure governance that gives more right to land owners and farmers who invest resources in the creation of the forest. Communities do not favour the right of government to dispose of trees off-reserve across the country. This means that for sustainable management and strengthening rights of communities, right to own, manage and dispose of naturally occurring trees should be given to forest communities (landowners and farmers)* (Republic of Ghana-MNLR, 2016a, p. 83).

The framework goes on to recommend, with respect to naturally occurring tress on farms that:

> *…since the state does not play any key management role, the state should only be compensated for the regulatory role it plays in the allocation of the resources, for which a fee should be charged. Thus farmers and landowners would have full ownership of the trees on farm and will enter benefit sharing arrangements based on the traditional agricultural sharing systems pertaining in their areas* (Republic of Ghana-MNLR, 2016a, p. 86).

The framework recommends giving landowners full ownership of trees on their farms, and under many *abunu* arrangement gives *abunu* land users at least partial rights to the trees, thus enabling cocoa smallholders to enter into benefit sharing arrangements based on the traditional/historical agricultural sharing system pertaining to their land. The framework assigns *bona fid*e rights to landowners for trees growing on fallow land/secondary forests but allows for the respect of the terms of pre-existing land agreements if/when they exist.

While the framework makes recommendations, it does not actually revise the tenure regime. The government argues that revising the tree tenure regime would require revisions at multiple levels, including at the constitutional level, and notes that:

> *To be pragmatic, the analyses and drafting processes for tree tenure reform and broader forest regulatory framework reform will need to run in parallel, with very close coordination and communication between the two* (Republic of Ghana-MNLR, 2016a, v).

At the same time the framework was released, the MNLR released an accompanying legislative reform proposal drafted by a consultant, the Framework on Tree Tenure and Benefit Sharing Scheme (Legal Reform Proposals) (Akapme, 2016). This document sets out one possible argument for legislative reform that does not require a constitutional amendment, but subsequently comes to a similar conclusion as the Framework and concludes a constitutional amendment *may* be necessary to reform tree rights off-reserve.[24] The Legal Reform Proposals document contains five main proposals for legislative reforms (p. 13 – 17):

1. Vest trees off-reserve in the communities/Stools fringing the resource or based on the underlying land tenure systems and managed by the Forestry Commission;
2. Give farmers the right to adequately negotiate benefit sharing arrangements for planted or nurtured trees with the landowner;
3. Decentralize land title registration to enable farmers to demarcate and register lands and trees on their farms to secure their ownership of trees off reserve;
4. Standardize benefit sharing options for on-reserve (naturally occurring), on-reserve (planted), off-reserve (naturally occurring) and off-reserve (planted); and
5. Reserve areas for forest plantations in district assembly land use plans.

A1.11 TIMBER RESOURCE MANAGEMENT AND LEGALITY LICENSING REGULATIONS, 2017 (LI 2254)

The 2017 regulations reform the law in Ghana with respect to granting timber rights and related matters. They regulate the identification of land suitable for the granting of timber rights, regulate the terms and conditions for small and large scale timber rights, regulate other sources of timber, and provide for a legality licensing scheme.[25] The law clears up some of the inconsistencies in the sector, brought old social and environmental standards up to date, and passed key reforms on public access/transparency to forestry-related information.

As a requirement of the VPA between Ghana and the EU, Ghana has, through stakeholder consultation, developed a legal standard to underpin the implementation of this agreement. The legal standard is linked to the legality assurance system through the legality matrix. This document presents the legal definition, a legality matrix, a summary of relevant laws and regulations governing the forest sector, as well as describing the processes through which Ghana will reform and consolidate laws in the forestry sector. The VPA is seen as instrumental in moving Ghana toward tree tenure reform but the changes made under the agreement will need to be reevaluated as and when the Government of Ghana revises laws affecting tree tenure.

[24] Note the consultant's report finds: "Changing the current tree tenure regime requires revisions at many levels. The proposed revisions will be virtually impossible to treat alone because they may include revisions to the Constitution and many other components of the forest legislative framework"(p. 18). The government-prepared report does not use "may" and implies a Constitutional amendment is needed: "Changing the current tree tenure regime requires revisions at many levels, including the Constitution and has fundamental knock-on effects on many other components of the forest legislative framework, so will be virtually impossible to treat alone"(p. v). See the section on the Constitution above for further discussion.

[25] https://landportal.org/library/resources/lex-faoc173919/timber-resource-management-and-legality-licensing-regulations-2017

ANNEX 2: EXAMPLES OF TREE REGISTRATION FORMS

Tree certificate registration form, Ghana Forestry Commission-Forest Services Division (Boakye, 2016)

FORESTRY COMMISSION					
PRIVATE PLANTATIONS LOCATED OUTSIDE FOREST RESERVE					
REGISTRATION FORM					
I					
REGION			DISTRICT:		
PERSONAL INFORMATION					
Title	Dr./Mr./Mrs/Miss		Registration No		Affix two passport Photos
First Name					
Other Name					
Surname					
Address/contact details					
Postal Address:					
Housing Address:			Telephone		
E-mail:					
Name of Next of Kin:					
GPS coordinates	N: W:	N: W:	N: W:	N: W:	N: W:
N: W:	N: W:	N: W:	Site plan Attached	YES	NO
Location of the Plantation:					
LAND TENURE AND BENEFIT SHARING AGREEMENT					
Name of Landowner					
Name of Farmer (if different from landowner)					
Type of and name/title of land owner (stool, family or private land)					
Type of Land Tenure agreement					
Duration covered by the land tenure agreement					
Benefit sharing agreement between landowner and farmer on planted trees					

Is a land tenure and benefit sharing agreement signed (attach copy)?					
INFORMATION ON THE PLANTATION					
	Species	Spacing (m x m)	Year of Establishment	Stocking	Area (ha)
1					
2					
3					
4					
5					
6					
7					
Date			Registered by.....		

Community-level registration form, Ghana Forestry Commission-Forest Services Division (Boakye, 2016)

Community Level – Community Based Land Agreement Template for Shared Tenancy (benefit sharing and documentation)

This has to reflect the agreement reached between the landowner and the planter in terms of land tenure and benefit sharing on the planted trees.

The agreement is made this day .....

Between

Mr/Madam/Nana.....

of .....

as the tenant.

And

Nana.....

(Chief/Tufuhene/Queen Mother/Abusua Panin) of Boinzain stool land, in the Juaboso District of the Western Region of Ghana acting as the landlord.

That Nana .....

has given a piece of land situated at .....
and covering an area of.....acres
and sharing boundary with:

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....

to Mr./Madam.....for a period of fifty (50) years which is ending on.....

1. The tenant will, every year, respectively pay the appropriate rent and customary payments agreed on by all stakeholders to the:

    a. Administrator of Stool Lands and

    b. The Stool

3. The land would be used for .....

4. The tenant farmer:
    a. Has planted a total of ..... Trees on the land cultivated.
    b. That Customary payments and rent to the OASL would be done not later than the end of December each year.
    c. Tenant farmers have the right to sublet for sharecropping (but not the sharecropper) but should inform the stool (land) owners.
    d. The tenant farmer can only sublet secondary forest with the consent of the stool (landowner).
    e. Tenant farmers have to prepare separate agreements with sharecroppers indicating the size of land and exact location of the plot for the sharecropper on their master plan
    f. Where the lessee plants trees, the proceeds from the harvested trees would be shared as follows:
        i. .....
        ii. .....
        iii. .....

5. The Landowner can take over the land if the lessee fails to comply with any part of this agreement.

6. The lease is subject to renewal for a period not less than twenty-five (25) years after the expiration of the current lease

Signatures:

.....

( ) ( )

Lessee Stool/Landlord

Tree registration form from *Field Guide to Tree Registration* (Dohmen, Muilerman, & Toose, 2018)

Forestry Commission

Farmer /Group /Company Code:

REGISTRATION OF TREES ON OFF RESERVE LANDS

(A) Beneficiary Details

(A1) Farmer/Developer /Individual Details

*Type of ID*_____ *ID Number:*_____ 3.5cm

First Name: _____ Surname: _____ Other Names:_____

Gender: ☐M ☐F Date of Birth (dd/mm/yyyy): _____ Age: _____ 4.5cm

Picture

Address: (Postal / Residential):_____

Phone Number: _____ Email Address (if any): _____

Next of Kin: _____ Relationship: _____ Date of Birth:_____

Age: _____ Gender: ☐Male ☐Female Phone Number: _____

Address (postal/Residential):_____

(A2) Group/Company Detail (A2.1) attachment

Group/Company Name: _____ Reg. Number(RG) if any:_____

Group (President & Secretary/ _____/_____

Company(Directors): _____/_____

Group/ Company Address: (Postal / Residential):_____

Phone #: _____/_____ Email Address (if any): _____

(B) Location/ site

Region: _____ Forest District: _____ TA/Stool/Skin/Family:_____

District Assembly: _____ Community: _____

Type of establishment : ☐ *Woodlot* ☐ *Commercial plantation* ☐ *Others (Specify):*_____

☐ *Planted trees on farm* ☐ *Naturally Occurring Trees* ☐ *Fallow* ☐ *Sacred Grove*

(C) Tree Farm Information

(C1) Farm Information (C1.1) attachment Farm ID:

Tree Farm Area (Ha): _____

coordinates of the Plantation plot/ Farm (for the Development of Maps):

Date	Point ID	Latitude	Longitude	Way Point No.	Remarks

(C2) Tree Information on Plantation (Woodlot, Commercial plantations, others) (C2.1) attachment

No.	Species Planted	No. of Trees *(Stocking)*	Planting Distance *(Spacing)*	Year of Establishment	Remarks
1.					*E.g. Planting Completed*

(C3) Tree Information (Planted Trees on agricultural Landscape, Naturally occurring trees others)

(Applicable only for Trees on farms (C3.1) attachment

Tree No	Species	*Size of tree (dbh)*	Year planted	Year Nurturing started	*Tree Location*		
					Point ID	*Latitude*	*Longitude*
1.							

(D) Declaration

Farmer/ Group/ Company rep. Signature (Thumbprint): Date:

Witness Signature/Thumbprint

Name:

Date:

Phone #:

(E) Endorsement

FOR OFFICIAL USE ONLY

District Forestry Manager's Signature & Stamp

Name:

Date:

Phone #:

Comments:

This form is not an indenture.

No.	Name	Gender (M/F)	Age	Residential Address	Phone #
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

(C) Tree Farm Information (attachment)

(C1.1) Farm information

Tree Farm Area (Ha): _____ Development of Maps coordinates of the Plantation plot/ Farm (GPS coordinates):

Date	Point ID	Latitude	Longitude	Way Point	Remarks

Note: Readings of Latitude & Longitude are in degree, minutes and seconds

(C2.1) Tree Information on Planted Species (Woodlot, Commercial plantations, others) (attachment)

No.	Species Planted	No. of Trees *(Stocking)*	Planting Distance *(Spacing)*	Year of Establishment	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

(C3) Tree Information on Planted Trees on Agricultural Landscape & Naturally occurring trees
(Applicable only for Trees on farms , Fallow Lands Sacred, Groves and Others) (C3.1) attachment

Trees *No.*	Species	*Size of tree (dbh)*	Year planted	Year Nurturing started	*Tree Location*		
					Point ID	*Latitude*	*Longitude*
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							

Note: Readings of Latitude & Longitude are in degree, minutes and seconds

ANNEX 3: EXAMPLES OF CONFIRMATION OF CUSTOMARY LAND AGREEMENT TEMPLATE

Example of an *abunu* land tenure confirmation template (Roth et al., 2018)

ASANKRANGWA TRADITIONAL AREA

WESTERN REGION

CONFIRMATION OF STANDARD FORM OF CUSTOMARY TENANCY (ABUNU)

I, …… Divisional Chief of Asankrangwa in the Wassa Amenfi Traditional Area in the Amenfi West District in the Western Region of the Republic of Ghana with the concurrence of the principal elders of the Asankrangwa stool as the custodians of the tradition, customs and culture of the Asankrangwa Traditional Area in the Amenfi West District in the Western Region of the Republic of Ghana and in recognition of our customary law right afforded us in the 1992 Constitution,

CONFIRM as follows:

1. Abunu Land Rights in Nyame Nnae is an interest in land at custom acquired through an oral land agreement whereby a stranger, a migrant or an indigene (hereinafter referred to as the "Farmer") acquires land from a customary freehold or Asideɛ title holder (hereinafter referred to as "Landowner") for farming purposes only.
2. The Landowner is to provide a vacant or uncultivated land to the Farmer to grow agreed cash crops, which are to be shared between the parties at a given agreed time.
3. Land given for an Abunu Agreement in the Nyame Nnae community is often for cocoa farming.
4. The stages for its creation are:
    a. The Farmer identifies a suitable land for farming
    b. The Farmer then approaches the Landowner, agrees on terms and pays a token for the use of land for farming in the presence of witnesses from both parties.
    c. The Farmer then goes into occupation and cultivates the land.
    d. The Farmer is entitled to harvest and keep all the farm harvest before the farm is shared.
    e. The farm is then shared equally (split in two) after a period of time as determined by the parties in the presence of witnesses.
    f. Until farm is shared, any cocoa that is produced is shared in three equal parts as follows: one third is for the Landowner, one third is for the Farmer, and one third is sold by a designated party (usually the farmer) and the proceeds of the sale are used to maintain the farm before the farm is split.

Example of an *asideɛ* land tenure confirmation template (Roth et al., 2018)

ASANKRANGWA TRADITIONAL AREA

WESTERN REGION, GHANA

CONFIRMATION OF STANDARD FORM OF CUSTOMARY TENANCY (*ASIDEɛ*) IN THE ASANKRANGWA TRADITIONAL AREA

I, …….. Divisional Chief of Asankrangwa in the Wassa Amenfi Traditional Area in the Amenfi West District in the Western Region of the Republic of Ghana with the concurrence of the principal elders of the of Asankrangwa stool as the custodians of the tradition, customs and culture of the Asankrangwa Traditional Area in the Amenfi West District in the Western Region of the Republic of Ghana and in recognition of our customary Law right afforded us in the 1992 Constitution,

CONFIRM as follows:

1. Asideɛ is an interest in land at custom in the Asankrangwa Traditional Area where migrants to the Area acquire/acquired tracts of land (hereinafter referred to as the "Land") directly from the Asankrangwa stool (hereinafter referred to as the "Allodial") after performing all the requirements in custom.
2. The interest was acquired through the migrant performing the necessary obligations to the Allodial.
3. The Allodial creates Asideɛ and it is legitimate and recognized under our customs in Asankrangwa.
4. The right to the land is lost where the holder refuses to pay the annual A*fahyɛtoɔ* payments to the Allodial.
5. That no successors, heirs, and/or other representatives of both parties shall have the right to terminate this agreement when all conditions agreed upon have been fulfilled, even in the absence of the original parties.

RIGHTS OF THE HOLDER OF ASIDEɛ

1. The Holder has perpetual rights in the allocated land.
2. The Holder may alienate his/her interest in the land with the prior approval of the Allodial.
3. The Holder may create abunu rights in the land with the prior approval of the Allodial.
4. The Holder may establish a charge over the land with the prior approval of the Allodial.
5. The Holder may demise the land to his/her successors.
6. In return for the Holder paying the annual A*fahyɛtoɔ* and having performed the requirements for the grant, the Allodial allows the Holder to peaceably hold and enjoy the Land.
7. The Allodial refrains from impeding the Holder from exercising his or her Asideɛ rights over the Land.
8. All non-timber forest products shall vest in the farmer or landowner subject to compliance with the customary usages in the Asankrangwa.

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1300 Pennsylvania Avenue, NW
Washington, DC 20523
Tel: (202) 712-0000
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