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JULY 2018

This publication was produced for review by the United States Agency for International Development. It was prepared by Tetra Tech.

Prepared for the United States Agency for International Development (USAID) contract number AID-OAA-I-13-00058/AID-OAA-TO-14-00050, Productive Landscapes (ProLand), under the Restoring the Environment through Prosperity, Livelihoods, and Conserving Ecosystems (REPLACE) Indefinite Delivery Indefinite Quantity Contract. This report was produced by ProLand team member David Miller, and consultants Eric Derks, Leon Zabiti, and Dominique Bikaba.

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COVER PHOTO: Sacks of Charcoal Waiting for Transport on the Congo River, DRC. Courtesy of David Miller.

PRODUCTIVE LANDSCAPES (PROLAND)

ASSESSMENT OF PRIVATE SECTOR APPROACHES TO ACHIEVING CONSERVATION OBJECTIVES IN CARPE—USAID/DRC

JULY 2018

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ACRONYMS AND ABBREVIATIONS

ACEFA	Artisanal Logging Association
AfDB	African Development Bank
AWF	Africa Wildlife Foundation
CAFI	Central Africa Forest Initiative
CARPE	Central Africa Regional Program for the Environment
CBFF	Congo Basin Forest Fund
CBP	Congo Basin Program
CERERK	Center of Studies and Research on Renewable Energy
CCAFS	Climate Change, Agriculture, and Food Security
CGIAR	Consultative Group for International Agricultural Research
COMIFAC	Commission des Forêts d'Afrique Centrale
DFID	Department for International Development
DRC	Democratic Republic of Congo
EU	European Union
FCPF	Forest Carbon Partnership Facility
FGMC	Forests Governance Markets and Climate
FIP	Forestry Investment Program
FLEGT	Forest Law Enforcement Governance and Trade
GHG	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoDRC	Government of the DRC
HCV	High Conservation Value
ICS	Improved Cookstoves
IDA	International Development Association
IP	Implementing Partner
ISTA	Higher Institute of Applied Technique

KfW	Kreditanstalt für Wiederaufbau
LPG	Liquid Petroleum Gas (LPG)
MW	Megawatt
NTFP	Non-Timber Forest Product
OCC	*Office Congolaise de Contrôle*
PES	Payment for Ecosystem Services
PGAPF	Projet de gestion améliorée des paysages forestiers
PPP	Public-Private Partnership
RIL	Reduced Impact Logging
SADC	Southern African Development Community
SNEL	*Société Nationale d'Electricité*
SOW	Scope of Work
USAID	United States Agency for International Development
USG	United States Government
VPA	Voluntary Partnership Agreements
WCS	Wildlife Conservation Society
WRI	World Resources Institute
WWC	Wildlife Works Carbon
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

In the last months of 2017, the USAID Sustainable Landscapes Office and the USAID/Democratic Republic of the Congo (DRC) Mission provided the Productive Landscapes (ProLand) project with a Statement of Work (SOW) for an assessment to identify new approaches to achieve the conservation objectives of the Central Africa Regional Program for the Environment (CARPE), a long-term initiative of the United States government (USG) to promote biodiversity conservation and climate change mitigation in the Congo Basin. ProLand was to assess which private sector actors, activities, and public-private partnerships (PPPs) could contribute to rural economic growth and conservation at meaningfully large scales in the CARPE landscapes. The SOW also specifically requested recommendations regarding the generation of income through the management of community forest concessions.

ProLand assembled a four-member assessment team to implement the SOW. Team members participated in briefings with USAID Washington and USAID/DRC, reviewed relevant literature, and conducted interviews with over 100 key informants in the cities of Kinshasa, Mbandaka, and Goma, as well as in the World Wildlife Fund (WWF) sites to the east of Lac Tumba. Interviewees included representatives of donor organizations, implementing partners, national and provincial government offices, civil society, and the private sector working in timber, charcoal, gas, construction, cocoa, coffee, furniture, and transportation sectors.

USAID implements CARPE in a challenging context that inhibits forms of business development seen in countries with greater stability and less predatory, more equitable and effective governance systems. In urban and rural settings in the DRC, people tend to manage their enterprises informally, often as discreetly as possible. They invest capital opportunistically across broad and varied portfolios of activity. Market system actors connect through poorly developed, unstable networks that rely on cash transactions to generate short-term gains. Together, this context and these practices undercut the growth of market systems and reinforce extractive behaviors that do not add value to products. They undermine the practices and institutions that would otherwise promote the sustainable management of natural resources.

Private sector opportunities differ based on their potential to mitigate impacts on forests, attain greater scale, and counterbalance the extractive tendencies of current economic behavior by adding value:

> **Potential to mitigate**: the likelihood that an investment will dampen demand for unsustainably harvested forest products, discourage practices detrimental to forests, create incentives to improve forest management, or improve forest management systems.
>
> **Potential to scale**: a supportive commercial, social, and institutional context, and the presence of emerging innovations and technologies, and influential actors.
>
> **Potential to add value**: the likelihood that actors will collaborate to upgrade value chain performance through common grades and standards; and the potential or presence of clear and transparent trading practices, openness to new actors, and investments in business systems.

Given the unregulated extractive nature of DRC's economy, growth in the private sector will drive greater deforestation unless it also dampens demand for unsustainably harvested forest products through substitution, or the introduction of new institutions to manage the impacts of growth. The four strongest opportunities for sustainable growth through products that substitute for timber and wood-fuel are (1) liquid petroleum gas, (2) large-scale production of high quality fuel-efficient cook stoves, (3) reusable and durable construction materials, and (4) commercial tree plantations for wood-fuel and

construction materials. In all four cases, increased sales volume could mitigate deforestation and/or forest degradation through the reduction of demand on wood harvested from natural forests. Each could also be scaled up—although all present distinct challenges to doing so. These opportunities could be used to upgrade value chains to be less extractive through support for innovative marketing strategies or payment methods, complementary service providers, and a demand for quality standards. Upgrades could also result from investments in technical quality or processing facilities, or mobilization of constituencies for reform.

Four types of interventions could be used to catalyze growth in these sectors: (1) *PPPs* to perform new or currently underserved functions; (2) *challenge grants* that create incentives for existing businesses to invest in upgrades; (3) *accelerators* that attract more entrepreneurs or enable existing businesses to add services or products through financing or capacity development; and (4) *enabling environment platforms* that engage civil society and public and private sector actors to collaboratively advance policy and improve its implementation.

Employing these approaches in urban settings to dampen demand for forest products will do little to improve rural incomes, an objective of this assessment. In the DRC, the government and donor community employ four main approaches to increase rural incomes in ways that manage impact on forests: conservation enterprises, certification, jurisdictional approaches, and community forestry. The assessment considers the application of these approaches to six economic sectors. To identify opportunities for USAID investment, the assessment applies the criteria described above to each. What is the potential to mitigate, to scale, and to add value?

> *Ecotourism*: Challenges to reaching scale hamper any potential for this sector to mitigate forest impacts. Poor infrastructure and insecurity currently place clear constraints on the potential for expansion. Ecotourism, where successful, may drive some economic development and introduce improved practices in a variety of value chains.
>
> *Planted wood-fuel*: Wood-fuel plantations dampen demand when located on degraded lands. Unlike urban investments, they generate rural incomes. However, the sale of wood-fuel from planted trees competes with wood-fuel that does not entail the same, sometimes significant, investment and management costs. The Payment for Ecosystem Services (PES) approach now used to create wood-fuel plantations does not constitute a market transaction. It is a costly approach to scale, and not an opportunity that taps market forces to drive larger economic development.
>
> *Cocoa*: Managing the expansion of cocoa cultivation into forests has proven to be a challenge in DRC. Certification has not succeeded, and management by community forest concessions has yet to be tested. The sector's strong potential for growth, and to generate income for rural households, contributes to this challenge. Expansion would be more market-driven in the east of the country; in the west it would follow substantial donor investment. Private sector investments in the cocoa sector have been demonstrated to drive improvements in the value chain.
>
> *Non-timber forest products (NTFPs)*: Strengthening market systems for NTFPs is likely to increase community appreciation of the value of their forests if the NTFPs are harvested in the wild, and not domesticated. The majority of NTFPs currently being commercialized in the DRC are sold in domestic markets, and are unknown outside of the region. The sector consists principally of low-value products and no individual NTFPs have been identified that have the potential to generate significant incomes. NTFP value chains are smaller than either timber or wood-fuel and substantial investment in market development would be necessary to develop unknown NTFPs to the point that they sell on international markets and generate significant income.

Wood-fuel from forests: The greatest driver of forest degradation in DRC, improvements in managing this sector could result in significant improvements in forest health. Wood-fuel from natural growth has attained scale; it currently generates income relied upon by households across the country. There are many opportunities to upgrade the value chain: new technologies, better regulation and enforcement, and improved infrastructure. Within their forest concessions, communities may adopt harvesting plans to sustainably harvest wood-fuel for sale. However, application of market system approaches upstream will be difficult to apply to this diffuse and low-value sector.

Small-scale logging: The damage to forests in the DRC caused by wood-fuel harvesting far surpasses the impact of small-scale logging. Nevertheless, improved management of the methods used in this growing sector could contribute to forest health. It is also more likely that investments in this sector would influence practice and policy within and beyond the communities themselves, in a way that investments in the more diffuse and less intensive wood-fuel would not. Engagement in logging also provides an opportunity for communities to generate income for the community to support community forest management.

The Government of the DRC (GoDRC) currently considers community forestry to be an experiment. USAID should support the government and partners to encourage continuation of this effort—critical to sustainably generating rural incomes in the DRC. Efforts should begin with the most promising activity for each location, which across much of the DRC will be small-scale logging or charcoal production, as a lead activity, and introduce additional products and services over time.

Diversification not only reduces market risk and supports a greater distribution of benefits, it also enables a more efficient exploitation of forest resources. Harvesting various timber, wood-fuel, and NTFP products should strengthen the long-term health and productivity of forests through silvicultural practices, as opposed to the current artisanal approach of simply targeting of the largest trees of specific species.

To sustainably increase rural incomes, the assessment recommends an approach that focuses on the interaction between communities and the private sector in the context of community forest concessions. Interventions would resemble those employed in product-substitution sectors in urban settings:

- PPPs could establish a consulting firm to provide technical support to community concessions in such areas as product inventories, development of harvesting plans, and ongoing monitoring.
- Challenge grants to domestic logging firms could help establish a protocol and standard for logging contracts between community concessions and a domestic logging partner.
- Enabling environment platforms for ongoing engagement between government authorities, private sector actors, and community concession holders to monitor the evolution of activities in their areas and shepherd a process of crafting and reviewing regulations to alleviate pressures on community concessions from expanding sectors.

Resolving the fundamental question of green growth of DRC's economy will be an ongoing process of evolution and discovery. This assessment has indicated directions for exploration. Important additional topics for research remain.

1.0 BACKGROUND AND PURPOSE OF THE ASSESSMENT

1.1 CARPE AND PROLAND

The Central Africa Regional Program for the Environment (CARPE) is a long-term initiative of the United States government (USG) to promote biodiversity conservation and climate change mitigation in the Congo Basin through increased local, national and regional capacity for natural resources management, conservation of critical habitat, and protection of globally significant forest carbon stocks. The current phase is implemented largely in nine forest landscapes of high conservation importance and focuses on strengthening and implementing the conservation and monitoring approaches developed over 20 years.

Like many development initiatives with land conservation objectives, CARPE's multifaceted approach to conservation and climate change includes investment in conservation enterprises as a way of reducing pressure on forests, and hence on biodiversity and carbon stocks. (For a recent discussion of the use of conservation enterprises in USAID, see Boshoven, J., 2017.) Conservation enterprises as practiced in CARPE III include the introduction of improved crop varieties, crop substitution, honey production, small livestock husbandry, fish farming, and cultivation of cacao and crafts. Despite its widespread use, many development practitioners question the effectiveness of this approach, and although some of these CARPE activities have potential to grow to a scale where they can achieve significant impact, most do not. Several initiatives are locally successful; however, they are almost uniformly small-scale, raising questions about the influence of these activities on biodiversity and climate change mitigation benefits that depend on large-scale landscape conservation. Even where an activity has been able to reach scale, the linkage between the activity and positive conservation or reduced forest conversion has not always been clear (Integra, 2017).

1.2 PURPOSE

CARPE needs fresh ideas and new partnerships if rural livelihood improvements are to help conserve biodiversity and forest carbon storage in CARPE landscapes. Despite the clear need for enterprises that can engage the rural poor in activities that do not lead to unsustainable extraction of the natural resources upon which they depend, USAID lacks a roadmap to private sector activity in CARPE landscapes. USAID also lacks a clear idea of related analysis or activities that other donors may have completed or in which they may currently be engaged, although we know other donors are active in DRC. Such a roadmap would identify potential avenues for connecting smallholders with value chains, opportunities for public-private partnerships, and/or the extent of private sector resources in Corporate Social Responsibility programs for which CARPE objectives and frameworks might provide attractive opportunities.

As a first step in developing this roadmap for CARPE, on September 20, 2017, USAID transmitted a draft Statement of Work to the management of the Productive Landscapes (ProLand) project, attached here as Annex I. ProLand is implemented by Tetra Tech, WRI, and ACDI/VOCA under USAID's Office of Global Climate Change in USAID's Bureau for Economic Growth, Education, and Environment

(E3/GCC) through the Restoring the Environment through Prosperity, Livelihoods and Conserving Ecosystems (REPLACE) Indefinite Quantity Contract IDIQ. USAID developed ProLand to develop guidance on approaches that catalyze change in land management systems so that people and institutions in developing countries can make informed, actionable, and effective development decisions. The goal of ProLand is to develop tools and evidence that demonstrates that by sustainably intensifying land uses with best management practices, it is possible to achieve multiple gains simultaneously including increasing food production, reducing biodiversity loss, reducing greenhouse gas emissions (mitigating climate change), enhancing adaptation to climate change, and increasing inclusive broad-based economic growth.

As USAID intends to use this review to identify opportunities for greater emphasis in technical areas relevant to ProLand's mandate. Follow-on research and guidance by ProLand regarding these topics may be an additional outcome of this activity.

2.0 INTRODUCTION

2.1 STATEMENT OF THE RESEARCH CHALLENGE

Briefly stated, the research challenge for this assessment is as follows:

Provide guidance to USAID regarding interventions to strengthen the private sector in the DRC at scale and in ways that increase incomes to rural smallholders and result in a positive impact on the conservation of biodiversity and reduction of greenhouse gasses (GHGs) in target areas.

To identify approaches that can be adopted to achieve CARPE's livelihood and conservation objectives, this assessment must: (1) investigate approaches, models and systems that successfully provide sustainable livelihood and economic growth opportunities to rural communities in the DRC/Congo Basin, and that also protect the natural capital; (2) identify conditions that enable and constrain such practices and enterprises; and (3) building on the first two elements, identify potential activities that would plausibly contribute to rural economic growth and conservation at meaningfully large scales in the CARPE landscapes, as well as private sector actors and potential public-private partnerships that could offer promising opportunities for leverage and integration between economic growth and landscape conservation.

The SOW also specifically requested recommendations regarding the generation of income through the management of community forest concessions.

2.2 REVIEW OF CURRENT STATE OF KNOWLEDGE

Governments and their partners in the development community have employed a variety of approaches to create incentives to improve the management and conservation of forests and the biodiversity they contain. Four approaches dominate such efforts in the DRC: conservation enterprises; community forests; certification schemes; and, more recently, Payments for Ecosystem Services (PES) schemes embedded within jurisdictional projects. Each has its strengths and weaknesses.

Conservation Enterprises. Since the 1980s, conservation practitioners have employed income-based strategies to reduce environmental degradation and provide viable livelihood options for natural resource-dependent communities. The hypothesis is that if participant income is increased, then that increased income provides the motivation and ability for participants to discontinue unsustainable activities and exclude others from uses that result in threats to biodiversity (Baker & Boshoven, 2017). Despite multiple decades of practice, little is known about the necessary steps and conditions to use this approach effectively (Roe et al., 2015). It is nevertheless clear that conservation enterprise efforts often fall short of delivering the intended outcomes. Target populations do not always adopt the practices promoted, and when they do, the newly adopted occupations often turn out to be either economically or environmentally unsustainable.

Community forestry: The fundamental rational undergirding the community forest management approach mirrors that of the conservation enterprise approach. Supporters of community forestry also cite the twin goals of conservation and rural income generation. Yet community forestry, tightly bound with questions of governance and tenure, has its own history.

In theory, communities can commercially exploit forests, even log them, and cause little reduction in biodiversity. Reduced impact logging (RIL) in tropical forests has negligible impact on species diversity

(Chaudhary, et al., 2016)[1]. However, in actual application, establishing sustainable community forest is not so easy. The variety of biophysical and social-economic contexts in which communities manage their forests, and the wide range of institutional relationships between communities and forests -- joined with limitations in the evidence gathered -- have precluded the formulation of reliable models, or even consistent and specific guidelines for supporting community forestry. (See, for example Yin, et al., 2014, reporting "tremendous" gaps in evidence.) Essential components for success have, however, been identified. Most recently, Baynes et al. (2015), conducted a systematic analysis of 45 empirically based case studies and ten broader reviews. They identify five factors associated with successful community forestry projects. Briefly stated, these factors are:

- Tenure: secure tree and land property rights;
- National government: support for the community forest group in the form of legislation, capacity building, and an absence of patronage and corruption;
- Status: avoiding conflict over socioeconomic and gender status;
- Group governance: democratic and equitable community governance institutions; and
- Benefits: material benefits from the forest, through sale of forest products, rights, or services.

Most critical to our assessment, research supports the conclusion that for a community forestry scheme to succeed it must generate benefits to members. How they should best do this is not obvious; a multitude of options and configurations exists. Communities establish and participate in a wide array of arrangements, each with its own set of challenges. They may sell the right to exploit products or sell the products themselves; they establish various forms of contracts with companies, agreements with the government, and relationships with consumers; and they engage at different points in value chains (Gilmour, 2015). Governmental promulgation of regulations opening the door to any of these approaches launches a long process of learning and growth by the communities and their partners. Competitive, sustainable community-based commercialization of forest products requires the transformation of all actors in the market, not only community members, through a process that builds governance, technical and business capacity, often from a very low starting point.[2]

The amount and nature of benefits, and the manner they are distributed, can determine the long-term viability of community forestry schemes. Benefits must be sufficient to support the institutions needed to manage the community forest and distributed in a way that creates incentives for community managers to back and invest in the community forest scheme (Ostrom, 2000). Continued international donor funding, and support from implementing partners, often necessitates that elites not monopolize investments, funds are managed transparently, and that vulnerable or marginalized populations also benefit. In the end, the creation of community forest schemes often exposes tradeoffs among growth, equity, and forest health. A recent systematic review (Samii, Cyrus, and L Paler, 2014), posits that community forest benefits that reduce poverty correlate with declines in forest health. The generation of benefits may be a necessary element, and equity an important goal, but neither automatically leads to sustainable forest management.

Certification. Nor does current literature suggest that cocoa certification programs—a third approach employed in the DRC -- present a challenge-free path towards the creation of incentives for conservation through rural income generation. For one thing, it may not increase rural incomes. A systematic review of rigorous and high-quality studies on the socioeconomic impacts of certification schemes found that they are not generally associated with higher household income and wealth (Oya, C.

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[1] The Chaudhary et al. global meta-analysis found RIL to have less impact on species richness than conventional forms of selective logging (13% reduction), and clear cutting (22% reduction) , and much less than conversion of natural forest to agroforestry (32% reduction), timber plantations and fuelwood plantations (both 40% reduction), and non-timber plantations and swidden agriculture (both 54% reduction), (Chaudhary, et al., 2016).

[2] See Gilmore, 2015, for a more detailed list of the typical hurdles communities face, specifically in the commercialization of timber.

et al., 2017; Kroeger et al., 2017). Research has also questioned the impact of the approach on deforestation. Actors tend to employ certification schemes where deforestation has already occurred, or is unlikely for other reasons. Farmers who have cleared forest for their fields, and do not enter certification programs, simply sell to other buyers. Although results vary by location and scheme, for these and other reasons, the approach "does not remove deforestation from the commodity overall" (Kroeger et al., 2017; Ruf, F. & Varlet, F. 2017).

Given this variation in how certification schemes play out, and the absence of universally proven approaches, any specific implementation of certification requires regular and rigorous monitoring of impacts. Continued engagement by the development community has proven necessary to achieving objectives (Oya, C. et al., 2017).

Jurisdictional approaches: A "jurisdictional approach" contrasts with geographically limited sectoral projects that are not integrated into the government and private sector. As they evolve, these approaches include different types of multi-sectoral landscape planning initiatives that align interventions with administrative jurisdictions. They may include public-private collaboration and integrate conservation goals with strengthened sustainable value chains. Components typically include policy reform and land use planning, support to agricultural production, and market incentives.

The approach is neither complete nor proven. Its strength -- that it recognizes the complex tradeoffs of the conservation/production dynamic—also creates challenges of implementation. Jurisdictional programs attempt to integrate multiple factors and actors over the long term, but the approach, still more of a framework, does not present solutions to the underlying challenges of effective policy reform, stakeholder engagement, certification impact, impact evaluation, and, preventing the incursion of agricultural intensification on forest land (Kroeger et al., 2017; Fishman, A., et al., 2016; Sembres, T., et al., 2017; Meyer & Lujan, 2017).

Jurisdictional approaches are also sometimes joined to climate finance. Jurisdictional programs often leverage corporate climate and zero deforestation pledges or government green economic development objectives. The Mai Ndombe Emission Reductions program takes a jurisdictional approach (World Bank, 2016b). Projects preparing for the Emissions Reductions program have employed a Payment for Ecosystems Approach to promote planting of trees for the wood-fuel market. A recent systematic review of the literature on PES approaches was unable to find rigorous research addressing the impact of PES policies on either conservation or incomes (Samii et al., 2014). We explore DRC experience with PES in greater depth below.

The Congo Basin Program (CBP), which ended in 2015, also took a large-scale landscape private-public approach. CBP targeted Forest Stewardship Council Certification, and assisted concession holders to gain certification and obtain better market position. Outside the DRC, CBP strengthened the performance of previously certified companies and enabled additional companies to become certified. The landscape activities in the DRC collapsed under allegations of violence and human rights violations in the concession intended to serve as a model for certification. The company involved, Danzer, soon sold the concession, terminating its investments in the country. CBP abandoned the large-scale approach in favor of working with WWF on "micro-zoning" with communities.[3] Jurisdictional approaches depend on effective, transparent participation by local governments. In the DRC, this has proven to be a challenge for both the CBP, and the World Bank's projects in the Mai Ndombe (interviews: Valiergue, Capdejell).

[3] The Congo Basin Achievements Congo Basin Program. http://www.forminternational.nl/wp-content/uploads/2016/02/Key-achievements-CBP-160129.pdf. The Congo Basin. Our activities in DRC. http://www.congobasinprogram.com/en/our-activities-in-drc

2.3 DESCRIPTION OF THE RESEARCH AND ANALYTICAL FRAMEWORK

2.3.1 Approach to the assessment of market systems

This assessment has taken a broad perspective of market activity in the DRC to identify opportunities for large scale impact that have not so far been explored through CARPE. This included a scan of sectors to identify market trends and hotspots of current and potential economic growth. The analysis explored market systems, both formal and informal, that significantly impact smallholders and the value chains in which they are engaged.

The team also studied conditions that enable and constrain the growth of identified sectors, communities, and value chains, including factors such as prices and competition, and constraints and opportunities resulting from the policy and regulatory context. We considered the fact that government regulation and obstruction pushes much commercial activity underground. This assessment also explored factors that constrain investment in rural economies, such as conflict, energy and communication, transportation costs, and formal and informal fees and taxation. Research under this topic included social control mechanisms (e.g., accusations of sorcery) that inhibit local elites. The impact of demographics, and migration were also considered.

Through the literature review and fieldwork, the team developed an understanding of factors that create positive and negative incentives for biodiversity conservation and GHG mitigation along market channels. The factors assessed included networks, institutions, roles, and norms that are strictly commercial -- end-market opportunities; business growth strategies; current scope of social or commercial networks; sources of information -- as well as cultural and social factors that influence commercial behavior. Factors influencing incentives were considered at local, regional and national levels. The objective was to identify leverage points, means through which incentives may be created to support actors, organizations, and activities that currently positively benefit biodiversity and GHG mitigation, or to dampen negative incentives.

Given the DRC context, and the scope of the assignment, the assessment employed a narrow definition of public-private partnerships (PPP) to mean potential partnerships between USAID, or its implementing partner, and a lead firm capable of pulling other actors—competitors and service providers—into a new market or sector. The duration of the PPP would be limited to a timeframe agreed upon by partners to achieve a combination of development and commercial objectives.

In the context of this assignment, potential PPPs were assessed based on the following parameters:

- Alignment of commercial and developmental interests;
- Commercial and other incentives of the potential private sector partner; and
- Absence of other private sector actors already operating in the targeted environment: A PPP tends to confer a competitive advantage over other actors as it involves a certain amount of subsidized activity. If other actors exist in the target sector, then other intervention tactics become more appropriate and more likely to generate sustainable outcomes.

The assessment had neither the mandate nor the resources to conduct a detailed analysis and mapping of value chains. Nevertheless, a handful of "focal" value chains were selected to serve to illustrate principles, conclusions, guidance and potential interventions presented in this analysis. Among these, and in discussion with USAID, the timber and wood-fuel sectors were selected for more emphasis. These key products drive deforestation and forest degradation, have established value chains, and respond to significant demand.

Analytical Framework: To answer the main research question, the team evaluated economic opportunities of the private sector and community forest concessions against three parameters, namely, their potential to:

- Mitigate forest impacts,
- Scale up, and
- Add value.

Mitigate forest impacts

The team assessed how economic opportunities might:

- Dampen the demand for products like charcoal.
- Constrain the expansion of practices that unsustainably deplete forest resources.
- Shift unsustainable practices to more sustainable ones.

Scale-up

The more an economic opportunity is likely to emerge, attract more new entrants and investors, draw in financial and other support services, and build lasting infrastructure, the more likely it will be sustainable and continue to grow. For economic opportunities to also mitigate deforestation, this growing assembly of actors and market forces must also play a long-term conservation role, well beyond initial donor involvement. To gauge an opportunity's potential to scale-up, the team looked at the following:

- Commercial incentives: the strength of the business case for actors along the value chain to generate revenues and be profitable;
- Social and institutional incentives: prestige, influence, desirable social or political connections, risk to social standing (negative incentive);
- The presence of actors already in the market or with the intention to enter who have tested the viability of an opportunity with practical investments and operations; and
- The emergence of innovations or new technologies that might increase actors' chances of success such as innovations that save labor, reduce transaction costs, or improve productivity.

Introduce strategies that add value to the political, social, and economic environment

As explained in detail below, commercial practices generally take an extractive approach in the DRC. This approach, and the forces that reinforce it, impede growth, development, and the sustainable management of resources. For an economic opportunity to thrive, it must both invest in its own growth and collaborate with, and support the development of, its network of partners and other market system actors.

The team gauged the potential and incentives for businesses to adopt growth-oriented, inclusive practices. Indicators included:

- Cooperative relationships between buyers and sellers along the value chain where actors have incentives to invest in developing relationships to ensure, for example, product quality, reliable supplies, or access to customers;
- Clear grades and standards and transparent trade practices between buyers and sellers to ensure an alignment of incentives and inclusion of anyone capable of meeting market requirements; and
- Regular investments or upgrades in business systems to, for example, develop markets, reduce inefficiencies, and be more competitive.

2.3.2 Approach to the assessment of rural forest-based enterprises

The team also studied the sectors that dominate rural market systems and generate incomes to rural populations. We applied the three parameters described above -- potential to mitigate forest impacts, scale-up, and improve the general economic environment—to six sectors important to forest communities across the country. These sectors differ significantly in their potential to contribute to rural economic growth at meaningfully large scales in the CARPE landscapes. One is primarily a non-extractive service—ecotourism. Two are based on products usually produced outside of or in place of natural forest –planted wood-fuel and cocoa. Three are based on the extraction of forest products – NTFPs, managed wood-fuel harvesting from natural forests and small-scale logging. Because of the absence of effective management systems for the last four of these -- cocoa, NTFPs, natural wood-fuel, and small-scale logging -- investment in these sectors increases deforestation or forest degradation unless they are accompanied by effective incentives.[4] We assess the strengths and weaknesses of management efforts by government, traditional systems, and PES and certification approaches. The recent evaluation of CARPE III identified a strategy of reinforcing community forestry concessions as the "best prospect" for incentivizing stewardship and achieving "large scale" reductions in deforestation.[5] We reach this same conclusion. USAID investments in these sectors are best undertaken in the context of community forest concessions. To address the requirement of the SOW to provide recommendations regarding the generation of income through the management of community forest concessions, the team studied recent investment in community forest concessions in the DRC, focusing on the parameters for income generation established in law, and the progress of communities and their partners in identifying and creating enterprises. We assessed the range of private sector approaches to generating rural incomes and achieving conservation objectives, yet focused on community forest concessions as the most promising.

[4] Based on an initial review of literature artisanal mining was not included as a focal sector of the assessment due to its comparatively limited role in deforestation. Subsequent inquiry in the field revealed that demand, financing and inputs in artisanal mining in the DRC are largely organized by actors in the regional and global markets outside of the country. Further, armed militia control of mining in forested areas would constrain USAID investment. Field agriculture was also excluded, although it is the country's primary driver of deforestation. Cocoa has been included as an example of tree crop agriculture nevertheless. ProLand recently addressed the relationship between investment in agriculture and deforestation in the DRC in Miller & Hagan, 2016.

[5] The evaluation also identifies three management challenges to this approach:
- CARPE IP staff lack relevant training/experience,
- CARPE IP staff lack trust in this approach, and
- Limited time remains in the CARPE project.

3.0 METHODS AND IMPLEMENTATION

ProLand assembled a team of four researchers to conduct the assessment. Team members were:

- Dr. David Miller, Natural Resources Management Specialist and Team Lead. ProLand (ACDI/VOCA);
- Eric Derks, Private Sector Specialist, The Canopy Lab;
- Dominique Bikaba, Conservation Specialist, Strong Roots Congo; and
- Leon Zabiti, Private sector development and business consultant.[6]

Literature review and preliminary interviews: Over several weeks prior to departure to the DRC on March 10, 2018, Dr. Miller and Mr. Derks conducted an initial review of literature and a series of telephone interviews to provide background and orient the assessment. During this time, they gained an understanding of the national and regional contexts of economic growth, and formed preliminary descriptions of the context for private sector activities and the market systems targeted in this analysis. Value chains relative to this analysis were identified, and overviews of their functioning developed. They identified potential opportunities for income generation by forest concessions in the DRC, drawing also on the experiences in other countries of the Congo Basin and elsewhere in Africa. Based on this review they developed an initial list of key questions (Annex II). And, in discussion with USAID, decided to focus on timber and wood-fuel sectors, key products driving deforestation and forest degradation. They included cocoa as an additional relevant product to review.

Fieldwork: From March 11 to March 16, following an in-brief with the USAID Mission, Miller, Derks, and Bikaba interviewed key informants in Kinshasa. From the 17th to the 21st, Miller traveled to Mbandaka, and visited WWF sites in the Lac Tumba region and interviewed market actors in Mbandaka itself, while Derks and Bikaba continued interviews in Kinshasa. From March 25 to March 31, the four team members conducted interviews in and around the city of Goma, where Zabiti had been conducting interviews from early March. Over all, the team spoke with over 100 representatives of donors and their implementing partners, NGOs, National and Provincial government, civil society, and the private sector working in timber, charcoal, gas, construction, cocoa, coffee, furniture, and transportation. Annex III summarizes the team itinerary and interviews, and Annex IV lists all persons interviewed.

Debriefs: On April 10, the team conducted an informal debrief with Noel Gurwick (USAID Global Climate Change Office) and Diane Russell (USAID Forestry and Biodiversity Office); and on the 16th they debriefed additional USAID/Washington staff and members of the USAID Mission.

Report production: A first draft of the report was submitted to USAID on May 14, 2018. The ProLand team received comments on May 22, and submitted a revised version of the report on June 6, 2018.

[6] See Annex V for brief bios of team members.

4.0 OVERVIEW OF THE DRC AND CARPE CONTEXT

4.1 STATUS AND LOCATION OF CRITICAL NATURAL CAPITAL

The Democratic Republic of the Congo spans 2.3 million square kilometers, making it the second largest country in Africa. With an estimated 80 million hectares of arable land and over a thousand minerals and precious metals, over half of Africa's freshwater and forest resources, and the greatest biodiversity on the continent, the DRC is one of the wealthiest countries in natural capital in the world. The country's natural resources are distributed across three agro-ecological zones: a sparsely populated alluvial basin of equatorial forests and marshes covers the central third of the country; more densely populated plateau savannah borders this central basin to the north and south; densely populated volcanic mountains rise to the east and northeast.

Tree cover extends over approximately 70% of DRC's land area, most densely in Congo's central basin, a vast reservoir of native trees and plants providing timber, fiber, oil, rubber, copal and traditional medicines. The Orientale and Equateur regions of central basin contain more tree cover than others, and this region's peatlands has been found in recent years to store almost a third of the world's tropical peatland carbon (Dargie, et al., 2017). (For images of forest cover in the DRC from 2001 to 2016 see the CARPE website interactive map here: http://carpe.umd.edu/carpemaps/#.)

The DRC's dense hydrographic network channels over half of Africa's freshwater resources in more than 30 large rivers and twenty thousand kilometers of riverbanks. The unexploited hydropower potential is immense. Of the country's potential of 100,000 megawatts (MW) of hydropower capacity, currently 2,500 MW have been installed (Power Africa, n.d.). A series of four dams have been proposed for the Congo River in the DRC. Progress has not been without setbacks. In 2016, the Mwadingusha hydropower plant, originally commissioned in 1930, came online and began supplying 11 MW of power to the national grid (Poindexter, 2017). The $13 billion Inga 3 project, the world's largest proposed hydropower scheme, was announced to great fanfare in 2014, and lost its World Bank support in 2016. The start date has since been pushed back from 2020 to 2025 (Poindexter, 2017, and International Rivers). Other projects in the works include the Busanga project (170 MW), awarded to a Chinese consortium in 2016 after 10 years of negotiation (Poindexter, 2016); and the 13.8 MW Buffett Foundation financed project in Matebe in eastern DRC (Harris, 2015).

The DRC has the highest number of species in Africa for all groups of organisms except plants, in which it is second to South Africa. Globally, DRC is fifth globally in the importance of its megafauna biodiversity. The Congo river basin has the highest fish diversity of any African river and supports the largest inland fisheries on the continent. The country's biodiverse and wooded savannahs provide extensive arable land for farming. Adding to its biological capital, the country has extraordinary mineral wealth. Untapped reserves are estimated to be worth $24 trillion. Mining currently takes place largely in the highlands of the country's eastern and southern provinces.

4.2 OVERVIEW OF THE STUDY POLITICAL AND ECONOMIC CONTEXT[7]

Decades of poor governance, chronic corruption and civil war, in conjunction with vast natural resources, have resulted in an economy based largely on the unmanaged extraction and export of natural wealth. As evidence, a drop in global demand for raw materials drove a steep decline in the DRC's national GDP growth between 2013 (9%) and 2016 (2.4%).[8] Along with poor governance, and corruption, perennial conflict also deters foreign investment. The illegal exploitation of minerals and timber exacerbates this conflict by financing armed groups and corrupt state security forces. All business must deal with market systems rife with ubiquitous formal and "informal" taxes, dysfunctional state agencies, and a legal system unable to enforce contracts. Oligopolies, bribery, and vested political interests delay transit of inputs and raise prices of produce. Formal credit, savings, and other financial services are virtually unavailable to rural communities and small-scale enterprises.

In addition to conflict and institutional weaknesses, commerce must confront the decrepit status of the country's infrastructure up and down the value chain. The shipping options on the country's extensive network of rivers and limited rail transport are neither efficient nor reliable. Most rural produce travels, at least at one point, by bicycle or is carried by head. Less than one half of one percent of the rural population, and fourteen percent of the total population had access to electricity in 2014.[9] The country's few agro-industrial enterprises find it necessary to build and maintain the roads they need and generate their own power. They also provide processing facilities for their own produce, and in many cases, process produce of local small producers.

Governmental performance also significantly impacts the country's trade relations. The time and cost to export and import goods far surpasses averages elsewhere in Sub-Saharan Africa (World Bank, 2018). Although the DRC is a member of the Southern African Development Community (SADC), an organization committed to regional integration, the country conducts the vast majority of its trade with partners outside of Africa.[10] While the value of formal exports, dominated by minerals, dwarfs that of un-reported commerce to neighboring countries, dominated by agricultural produce and forest products, such cross-border trade plays a critical role in the livelihoods of rural and more vulnerable populations.[11]

In accordance with the constitution (2006) and the land law (Loi n° 73-021, as amended by Loi n° 52-83), all land and natural resources in the DRC are the exclusive and inalienable property of the State. Individuals and entities do not have private property in land but gain use rights from the State. However, the government's inability to complete and implement a coherent legal framework results in a poorly adjudicated regime of unclear, unrecorded, and ill-administered rights which facilitates and enables perpetual conflict and unsustainable resource extraction. Particularly in the eastern portion of the country, this absence of laws, transparency, and equitably enforced rights has often turned violent, with damage to forests only one of many negative impacts. Despite the State's claim of ownership, in a practical sense, virtually all rural land is subject to customary tenure regimes and decision made by the political and economic elite.

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7 For a more detailed discussion of the business environment and forestry sector, with citations, see Miller & Hagan, 2016, from which this discussion was largely drawn.

8 World Bank Country Overview, DRC: http://www.worldbank.org/en/country/drc/overview

9 World Bank Data. Accessed 5/7/2018. https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=CD

10 China purchases forty five percent of exports, followed by Saudi Arabia (11%), South Korea (10%) and Belgium-Luxembourg (6.2%). Imports originate from China (23%), South Africa (20%), Belgium-Luxembourg (9.2%), Tanzania (6.8%) and France (6.1%). Neighboring countries Rwanda and Uganda import 4.6% and 4.1%, respectively. (UN Comtrade Data website: https://comtrade.un.org/ as presented on the Observatory of Economic Complexity: https://atlas.media.mit.edu/en/profile/country/cod. Accessed 7/9/2018.)

11 The country's porous borders and/or the importance of this trade was presented as common knowledge during multiple interviews for this assessment.

The economic sectors that engage rural populations must submit to these same forces. As a result, they also perform as opportunistic extractive enterprises adding little value. After smallholder agriculture, overharvesting of wood for fuel and timber are the leading drivers of forest loss. They significantly surpass mining, plantations, and infrastructure in that regard. Wood-fuel harvesting clearly outpaces harvesting for saw timber—more than 200 times as much wood is harvested for fuel use than for industrial saw timber. Mining operations, plantations, and roads permanently destroy forest, and convert lands for extended periods of time, yet their direct impacts are largely limited to a specific and relatively small "footprint." Despite the number of people participating in artisanal mining--an estimated 10 million--the principle threat from this type of mining stems from its location rather than its overall surface area. Mining, along with plantations and roads, also influences population dynamics and thus, in turn, forest clearing by smallholders. Many people associated with or employed by mining operations clear land to farm. Plantation agriculture also results in clearing of fields by sharecropping farmers or employees and, in the long run, clearing of land for plantations may pose a greater threat of forest loss than mining. However, very little, if any, forest is being cleared for plantations in the DRC currently, and the impact of this largely abandoned sector remains relatively small.

While land cleared for roads in the DRC represents a very small fraction of total forest loss, road construction and river clearing for navigation may grow dramatically in coming years due to international investment, and thus significantly increase the rate and extent of forest loss. Smallholder farmers and small-scale loggers have little control over transport infrastructure and strongly focus their economic activities around available transport routes. Transport infrastructure is one of the most robust predictors of tropical deforestation. Even upgrading roads from very poor to good condition can produce near-complete deforestation alongside those roads (World Bank, 2016). As changes in infrastructure shape distribution and rate of forest product harvest, growing demand from urban markets increases value of those products. Rapid growth of urban markets for domestic and export sale accelerates forest loss from overcutting for wood-fuels and from artisanal logging. Although these supply zones for wood products are unmapped and only roughly quantified, they clearly spread out in increasingly large radiating patterns following the transportation infrastructure.

The 2002 Forest Code defines three legal categories of forest: Protected Forest, Classified Forest, and Permanent Production Forests. (Forests attributed to communities as concessions under the new forest law fall under the third of these.) Not only is the legal and regulatory framework incomplete and at times contradictory, the government's forestry service has limited financing and a very low level of human resources. Beyond not managing the sector, the government adds to the uncertainty and instability: the army, police, and other governmental and nongovernmental actors create and tax forest products without legal or regulatory bases. The Forest Code mandates distribution of 40 percent of area taxes to provinces (25 percent) and territories (15 percent), but very little reaches these local government bodies. Years of effort and multiple investments to increase institutional capacity in the forest sector and to improve forest governance have had little impact. (For a more detailed discussion of the business environment and forestry sector, with citations, see Miller & Hagan, 2016, from which this discussion was largely drawn.)

4.3 SUMMARY OF RELATED DONOR EFFORTS

The government of DRC quickly progressed through the stages of REDD+ preparation and strategic planning, and its Investment Plan was the first in Africa approved by the World Bank Forest Investment Program. Funding for pilot and investment projects has followed. Donors now coordinate a large portion of international development funding through the DRC REDD+ initiative framework. Funding sources have included the Congo Basin Forest Fund (CBFF), the Forest Carbon Partnership Facility (FCPF), the UN-REDD Programme, the European Union (EU), and the Forest Investment Program (FIP). Wildlife Works Carbon and Novacel have provided private sector funding (Johns, T. 2015). The most

significant recent funding has come from Norway, which provided $200 million through the Central Africa Forest Initiative (CAFI), which supports implementation of the Investment Plan.

The DRC REDD+ investment strategy includes seven integrated pillars that relate to governance, land tenure, energy, demography, forests, agriculture, and spatial planning. The French cooperation (AFD) leads policy support to the Ministry of Environment in the forestry pillar; while World Bank and AfDB implement FIP field-level programs. These CAFI initiatives take an integrated approach to agriculture and deforestation. In addition to national level support for broad policy reform, at the province level it finances integrated rural development activities. These primarily target slash and burn agriculture and charcoal production. CAFI selected eight priority provinces for implementation of contract-based land use and development plans for perennial crops, and participatory land protection and rehabilitation of tree cover. It also supports efforts to combat illegal logging and charcoal production, government capacity building, and investment in rural infrastructure. The Investment Plan strategy prioritizes approaches by geography: areas to reduce deforestation, biodiversity hotspots to be conserved, and non-forested areas where agriculture and sustainable wood exploitation schemes will be promoted. Plan approaches also include community-based forestry associated with stock management plans, small enterprises development, and the strengthening value chains in forest products (CAFI, n.d.).

Much early REDD+ piloting took place in the Mai Ndombe Province, developing approaches to achieve the objective of green development through "agricultural investments that are forest-friendly." In Mai Ndombe, 2017 Norway CAFI funding enabled expansion from individual pilots to a scaled "jurisdictional" approach incorporating the entire province. The integrated Improved Forested Landscape Management Project (PIREDD II), in the Mai Ndombe adds support for family planning and transportation infrastructure to the initial agroforestry and sustainable energy activities.

Based on lessons learned in the Mai Ndombe, in this sector the World Bank pilots activities in a specific geographic location while also working on enabling conditions. Recent investment in Mai Ndombe is an example of this "demonstrate, then scale-up" approach. Also, in the current strategy, investments do not focus on forest communities; they reduce urban demand (through improved cookstoves, for example), and increase supply on savanna, through community and private production of wood-fuel. Experience has also reinforced the importance of implementing through a non-governmental partner, and rigorous ongoing monitoring by an external party (Interviews: Valiergue, Capdejell). While press accounts report World Bank representatives to have been, "pleasantly surprised" by the results of the February 2018 mid-term evaluation,[12] a contemporaneously released report by the Rights and Resources Initiative asked that REDD+ funding be paused and identifies gaps in the strategies of programs acting in Mai Ndombe. These concern: incomplete plans for governance and coordination among investments in the province; insufficient attention to land tenure; poor integration of indigenous people, and inadequate mechanisms for natural resource revenue sharing. Nor does the project address all the drivers of deforestation, logging in particular (Gauthier, 2018).[13] An Aide-Memoire to the World Bank evaluation (Valiergue, 2018), identified a disjunct between community land use plans being developed, and the PES schemes. One lesson learned: co-location in large landscape projects needs to be managed. Planning land use must be coordinated with the income generating "use" activities. The more experimental component, grants to private sector actors to catalyze investment in agroforestry woodlots for fuel-wood production advances slowly. In March, World Bank representatives highlighted land tenure conflict as an important constraint on private sector investment in sustainable wood production, which

[12] PIF-RDC. La Banque Mondiale Se Dit Satisfaite Des Résultats À Mi-Parcours Du PGAPF. Accessed 5/30/2018. http://www.pifrdc.org/la_banque_mondiale_se_dit_satisfaite_des_resultats_a_mi-parcours_du_pgapf?post=105

[13] Look to the Gauthier RRI assessment for a more thorough presentation and critical examination of 20 REDD+ efforts in the Mai Ndombe. Also see WWF responses: WWF-DRC comments on RRI report: Mai-Ndombe: Will REDD+ laboratory benefit Indigenous People or Local Communities? http://wwf.panda.org/?328643/WWF-DRC-comments-on-RRI--report---Mai-Ndombe-Will-REDD-laboratory-benefit-Indigenous-People-or-Local-Communities.

had resulted in conflict between communities and private sector actors (Interviews: Valiergue, Capdejell).

Despite the DRC's early success in developing an Investment Plan, and the large amounts of funding dedicated to REDD+ -- over $260 million between 2009 and 2014[14] -- so far only the WWC conservation concession has been certified to sell carbon credits. This isolated case has not demonstrated scalable results, and has been the locus of conflict over land use and the distribution of benefits (Gauthier, 2018).

In addition to multi-sectoral projects integrating agriculture, livelihoods, and forests, donors also finance projects in the forestry sector. The EU Forest Law Enforcement Governance and Trade (FLEGT) Facility has been developing a Voluntary Partnership Agreement (VPA) with the Government of DRC since 2010. The process supports legal and governance reforms to strengthen the timber legality assurance system. On the ground, EUFLEGT and FAO have funded analysis and training for legal timber production in eastern DRC under the brief DURAFOR-EST project (2016-2017). FLEGT also supports small forest enterprises and promotes their cooperation with larger forestry industry actors. Funding currently provides training of trainers through the Artisanal Logging Association (ACEFA). The UK Forests Governance Markets and Climate (FGMC) program also combats illegal logging through support for international civil society partners to promote policy and legal reforms that reduce illegal logging and strengthen the rights of local populations and indigenous populations. The challenges and setbacks experienced under these efforts serve to underline the importance of political context that supports transparency and rule of law in the governance of natural resources.

Several donors also support protected areas, in addition to CARPE efforts. The EU will continue support for protected areas through the recently signed ECOFAC 6 (*Programme d'appui pour la préservation de la biodiversité et les écosystèmes fragiles d'Afrique centrale*). Managed by the Economic Community of Central African States, this program supports protected areas across the Congo Basin. The recently closed AfDB funded Multinational Congo Basin Ecosystems Conservation Support Program (PACEBCo) supported protected areas in the Congo Basin through collaborative work with national governments and civil society institutions. World Bank funds the National Parks Network Rehabilitation Project to enhance the capacity of the Congolese Institute for Nature Conservation (ICCN) for management of targeted protected areas, ending in 2018. KfW is providing significant support to the management of six protected areas, three of which are UNESCO World Heritage sites. KfW finances the introduction of effective management methods as well as the building of necessary infrastructure. KfW is also involved in setting up a conservation trust fund.

Donor funds also target vulnerable forest dependent people in the context of REDD+. While various projects have components supporting indigenous and vulnerable people, the largest standalone funding comes from the World Bank's Forest Dependent Communities Support Project designed to reinforce the capacity of indigenous peoples to formalize rights, undertake climate adaptation and sustainable management activities and otherwise engage in in REDD+. If USAID intends to support vulnerable populations in forestry activities, potential partners include Tropenbos International, a Dutch NGO that works in eastern DRC with artisanal loggers and communities creating forest concessions. Tropenbos has conducted ethnographic studies of customary forest management highlighting the complex relationships between migrants and indigenous populations. The *Programme d'intégration et de développement des peuples pygmies (*PIDP), currently supports three indigenous communities developing community forest concessions, in North and South Kivu. PIDP has collaborated with WWF and the International Land Coalition.

[14] Mbot'ekola, G. K. & Michel, B. 2016.

The DRC also receives funding for activities that support the private sector more generally, not specifically targeting forest related products. ÉLAN RDC, funded by UKAID and implemented by Adam Smith International works to diversify the investment and risk, starting with larger actors and first movers to support smaller players, and strengthening support functions in markets and reforming the rules regulating markets. The project has developed more than 60 partnerships with private sector actors in the DRC, providing technical advice, leveraging funds and fostering networks to change business practices. Among the sectors are non-perennial agriculture, and renewable energy. Similarly, the Private Sector Development Programme implemented by the World Bank with DFID funding seeks to provide poor people with access to financial services, well-functioning markets, and an enabling business environment. The GoDRC implements the *Projet D'appui au Développement du Secteur Privé Et à la Creation de L'emploi* (PADSP-CE) which seeks to improve business enabling conditions through support to single-service window (*guichet unique*) capabilities and the creation of new client services in provinces and other forms of government capacity building. The project also funds pilot incubator-generators of enterprises through business associations and the training women entrepreneurs.

Several road and energy projects funded by AfDB and the World Bank will also have an impact on the country's forests. In 2016, the World Bank approved an International Development Association (IDA) credit of $125 million as a second additional financing for the High Priority Roads Reopening and Maintenance (ProRoutes) Project. (Annex VI contains additional detail on relevant efforts.)

4.4 OVERVIEW OF CARPE CONSERVATION ENTERPRISE EFFORTS AND LESSONS LEARNED

In recent years few CARPE III activities have attempted to leverage the private sector to achieve biodiversity and sustainable landscapes objectives. The CARPE III midterm evaluation characterizes much of this limited engagement with market systems as small-scale, "under-conceptualized" and ineffective in reducing deforestation (Integra, 2017).

In CARPE III, implementing partners invested in conservation enterprise schemes of the following types:

- improved crop varieties,
- crop substitution,
- honey production,
- small livestock husbandry,
- fish farming,
- wood crafts,
- palm oil, and
- crafts.

The midterm evaluation reports that some of these initiatives have been successfully adopted, but only at a small-scale, and that they have not demonstrated the hoped-for conservation impact. In line with research findings on conservation enterprises in other countries, households in the CARPE landscapes often adopt these activities as a supplement to detrimental activities, rather than as a substitute (Integra, 2017). To preclude this response, some CARPE livelihood interventions include agreements linking incomes with improved conservation practices. The midterm evaluation did not find evidence that the approach was effective, even with these agreements (Integra, 2017).

Of the various conservation enterprise interventions supported under CARPE, the midterm evaluation found that only cocoa production in the Ituri Landscape has the potential to grow significantly.[15] CARPE

[15] Regarding the activities the evaluation concluded were destined to remain small-scale, the mid-term evaluation includes little analysis, explanation, qualification or justification for this conclusion. Although challenges exist the argument could be made that palm oil, animal husbandry, and improved crop varieties, could become (or regaining status as) significant economic activities on a national scale over time.

partners have supported cocoa cultivation because it offers the potential for broad-based economic growth and reduced impact on forest health. Cocoa in the DRC is cultivated by family farms, and, when produced under shade, retains many of the ecosystem functions of natural forests, including diversity of some species, water regulation, and partial carbon storage. (Experience with cocoa systems across the world suggests, however, that farmers eventually shift towards full-sun production of cocoa.) Cultivated alongside intact forests, with sufficient local and external support, shaded cacao cultivation can also reinforce buffer zones, reducing forest edge effects and increasing connectivity among forested habitats. Some CARPE IPs have adopted the promotion of cocoa cultivation for these reasons and because they see it as a means of slowing the rate of land conversion to agriculture and promoting a transition from shifting cultivation towards continuous cropping.

A 2014 field study for the Consultative Group for International Agricultural Research (CGIAR) research program CCAFS (Climate Change, Agriculture, and Food Security)[16] identifies areas surrounding Mambasa in Ituri Province as having greatest potential for the expansion of cocoa cultivation, due to in-migration from the Butembo–Lubero region, quality of the road network, presence of a buyer who provides extension services, and support for the distribution of planting materials by CARPE IP the Wildlife Conservation Society (WCS). While some migrants to this area provide only labor, others are businessmen who buy, clear, and plant forested lands. These investments in cocoa production in Ituri reinforce the influx of migrants, which increases local pressure on land for cultivation. WCS has established conditions for its support, requiring that cocoa farmers not open fields in primary forest, and cultivate under shade, intercropped with food crops. WCS carefully monitors the impacts of its support, when not prevented from doing so by insecurity.[17] Nevertheless, clearing for new planting in the area has occurred in the Ituri forest. The CCAFS study suggests that the support WCS provides to cocoa cultivation reinforces a process that is resulting in deforestation. For their part, the authors of the CARPE midterm evaluation argue that increased cocoa production may result in a slower rate of deforestation than agricultural systems without cocoa, but that it may also promote forest degradation, and concludes that "an impact assessment will be required to clarify the benefits of this approach."

Further research, and perhaps further experimentation under more stable conditions, may be necessary to decide which of these two paths the region follows. However, as noted in the introduction, research tends to support the more pessimistic position. Without effective incentives provided by buyers, traditional leaders, or the government, increased investment in any crop that can be grown on forestland will increase pressure to clear forest. WCS staff interviewed for this assessment report that neither government nor local chiefs can stem these forces currently. They themselves have been forced to stop implementation in some areas due to insecurity. This absence of institutional capacity to develop and effectively enforce regulations and laws will hinder both private sector and civil society capacity to create and enforce incentives to mitigate the growing pressure on forestlands.

The midterm evaluation presents a final lesson learned from CARPE, one that was observed in the field during this assessment. To be effectively implemented, conservation enterprise approaches must successfully exploit and integrate three technical areas—conservation, market systems, and the technical area of the specific product. CARPE partners certainly have the conservation backgrounds necessary and, in some activities, they demonstrated a strong capacity in agriculture, but project implementing agents have rarely taken a market driven, business-oriented approach. Very few organizations integrate these three specializations effectively.

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[16] De Beule, Jassogne, and van Asten, 2014

[17] WCS recently called off a community forest inventory exercise in Ituri because the team conducting the assessment was attacked and robbed, (Interview: Tshombe).

5.0 PRIVATE SECTOR OPPORTUNITIES TO MITIGATE DEFORESTATION AND PROMOTE GROWTH

5.1 PRIVATE SECTOR OVERVIEW: BUSINESS ENVIRONMENT, AND CHARACTERISTICS OF CURRENT ENTERPRISES.

As noted in section 4.2, the behaviors and practices of current enterprises in the DRC reflect what it takes to succeed in the challenging political, social, and economic context. The environment is not hospitable. Its bureaucrats and regulators, according to *The Economist*, are predatory, levying illegal taxes, fees, and fines on all sized businesses, particularly preying on the most profitable sectors, such as minerals and logging.[18]

Furthermore, years of inter-clan violence and armed militias in eastern DRC, Katanga and the Kasais create additional uncertainty and vulnerability as it displaces communities and disrupts the flow of people and goods, which effectively further isolates those in rural areas. The World Bank has consistently ranked the DRC near the bottom of its ease of doing business indicators; in 2018 the country ranked 182 out of 190.[19]

When economic actors—large and small businesses as well as individuals and households— confront a high-risk, unstable context they tend to channel what they earn into diverse pursuits. They keep their capital mobile and spread it across a portfolio of activities or use it to satisfy the more immediate needs of their family and friends. This aversion to the reinvestment of capital undercuts the growth of economic activities whether of businesses, farmers, groups, or individuals.

Another reason actors tend not to invest in growth or upgrades relates to social pressures to not get too far ahead of their peers or rise above their perceived social station. People use social leveling practices to pull back down peers who advance. Common leveling tactics include accusations of sorcery or crime and collusion with groups or individuals seen as undesirable. Economic actors may also limit enterprise growth and remain unobtrusive to avoid the attention of political or regulatory officials who exploit opportunities for rent. Social and economic elites also erect barriers against newcomers.

Extractive strategies and uncertainty affect trust among actors negatively. The focus on short-term gains works against cooperation and encourages cash transactions, which is the case of nearly all agricultural

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[18] *The Economist*, "Congo is sliding back to bloodshed", 15 Feb 2018. https://www.economist.com/leaders/2018/02/15/congo-is-sliding-back-to-bloodshed

[19] World Bank. (2018). Doing Business 2018: Reforming to Create Jobs. Economy Profile. Congo, Dem Rep. Doing Business 2015. World Bank Group. Washington, DC. http://www.doingbusiness.org/~/media/WBG/DoingBusiness/Documents/Profiles/Country/ZAR.pdf

and forest products. In such markets, actors focus on getting the best price at the moment rather than building lasting networks of relationships.

This pattern of economic behavior impedes development. In many sectors, the small and mostly informal actors work in weak networks that are largely ineffective at attracting investment, accessing new markets, spurring infrastructure improvements, generating innovations, or connecting with service providers like financial institutions. This pattern of economic behavior also reinforces the unsustainable depletion of forest resources and degradation of critical landscapes. Extractive strategies maximize short-term gains. Medium or long-term investments are necessary to erect governance structures, align incentives of stakeholders, and strengthen capacity to sustainably manage shared resources. In the current DRC business context, extractive pressures conflict with and put stress on efforts toward establishing the institutions necessary for sustainable resource management.

5.2 ASSESSMENT OF OPPORTUNITIES

This section examines the economic opportunities that best respond to the three key parameters of this analysis: potential to mitigate deforestation, to scale-up, and to introduce strategies that add value. All the opportunities recommended for intervention derive their potential to mitigate deforestation by dampening the demand for wood-fuel and wood for construction in urban centers and thereby curbing the unmanageable spread of informal timber and wood-fuel supply chains.

Urban population growth, household demand for wood-fuel, construction and the steady depletion of wood in proximate degraded areas will drive the spread of forest product supply chains deeper into the forests of the Congo river basin. The following recommended commercial opportunities, provided they scale-up, have the potential to dampen these demands and curb supply chain spread. The opportunities could be pursued alone or in conjunction with policy reform efforts but their potential to dampen demand is not contingent upon policy reforms. We present these opportunities in order of estimated magnitude of impact on forest wood supply chains, from highest to lowest. However, it is important to note that, given the complex dynamics of these supply chains, outcomes are extremely unpredictable.

- Shifting the demand of urban consumers (households and small businesses) from charcoal to Liquid Petroleum Gas (LPG),
- Reducing household consumption of charcoal through greater use of high-quality improved cookstoves,
- Reducing reliance on forest wood for construction by expanding the use of construction materials that are either reusable or from sustainably managed sources, and
- Increasing the supply of commercially grown and sustainably managed wood products for charcoal and construction.

5.2.1 Liquid Petroleum Gas

Mitigate deforestation: Liquid Petroleum Gas represents a direct replacement for charcoal or wood as a cooking fuel although researchers have concluded that the replacement is seldom 100%, at least initially. Many households that adopt LPG still use charcoal to cook certain meals or as a supplemental cooking surface. Furthermore, the expansion of the LPG market, according to existing LPG-providers interviewed for this assessment, will likely initially target only well-off households as clients, because they can afford the equipment and gas canisters before LPG becomes affordable to lower economic groups.

Scale up: Existing LPG providers such as DAP GAZ in Goma and potential providers like SAFRIGAZ in a Kinshasa (a member of the Blattner Group's SAFRICAS company) and other potential investors[20] noted

[20] Jean-Michel Ghonda, entrepreneur and owner of NSM, hydroelectric engineering firm

strong incentives for investing in LPG import and distribution but were also realistic about several significant challenges. The incentives include:

- A previous history of widespread LPG distribution and use in the DRC although LPG use faded significantly between 30 and 40 years ago;
- Perceived status of households who use LPG, which can be leveraged as an entry point into the market; and
- Perception of charcoal as dirty and smoky.

The perceived challenges of LPG import and distribution and achieving economies of scale, include:

- The current cost of LPG is higher than charcoal, although costs would likely drop as importers and distributors achieve economies of scale.
- Most potential consumers have very limited household cash-flow and would need to put aside money to afford the amount of LPG in one canister, let alone the cost of purchasing a canister. A hard-to-overcome advantage of charcoal is that households can purchase a day's or week's supply with the cash they have on hand.
- The substantial initial investment and working capital costs of a distribution network. These include purchasing gas bottles and distribution vehicles, renting sales outlets, marketing and promotion, hiring staff, and making advance payments on LPG to import.
- End-consumers perceive LPG as potentially dangerous and some believe food prepared using LPG does not taste as good as when prepared using charcoal.
- The DRC government will likely increase taxes and fees on any LPG provider that attracts official's attention as source of revenue.

The biggest challenge among the above is achieving sufficient economies of scale to bring the price of LPG to where it competes with charcoal. To grow and overcome these challenges, the strategies of companies like Bboxx[21] and DAP GAZ in North Kivu and PRIMAGAZ in Lubumbashi center around two things:

- Experiential marketing to allay consumer fears and promote the advantages of cooking on LPG: This type of marketing is participatory and engages consumers to, in this case, use LPG cookstoves and discover the features and benefits directly.
- Pay-as-you go technologies that enable consumers to purchase the LPG they need for a day or week, depending on their cash on hand. These technologies are currently being tested by two companies in North Kivu, BBoxx and Alteca, in their distribution of solar electricity to poorer customers. The technology is also expected to be introduced into the Kinshasa electricity market to align actual household demand with the erratic supply of DRC's *Société Nationale d'Electricité* (SNEL).

Introducing practices that add value: An appealing aspect of LPG distribution and consumption is the numerous incentives and possibilities for public and private sector actors to push against predominantly extractive practices. For example, and most importantly, for distributors to succeed and achieve economies of scale, they will need to employ value-added strategies like experiential marketing and pay-as-you-go technologies. These strategies are departures from existing supplier-consumer relationships where suppliers are largely unresponsive and indifferent to consumer issues and needs and have more of a "take-it-or-leave-it" attitude. The potential scale and visibility of LPG distribution has the capacity to redefine consumers' expectations of service providers.

[21] From their website: BBOXX is a venture backed company developing solutions to provide affordable, clean energy to off-grid communities in the developing world. http://www.bboxx.co.uk

In addition, this economic opportunity, because of the sizable investments needed and value-added strategies of LPG providers, has the potential to attract and positively affect the practices of a range of service providers. Possible service providers include financial institutions, marketing firms, transportation companies, human resource firms, and ICT firms. In a similar manner, this opportunity has the potential to attract equity, impact, and/or conservation investments that would likely bring in technical assistance to upgrade management skills and operations.

Lastly, there are incentives for public officials to support the emergence of the LPG market by, for example, lowering import tariffs on LPG and equipment or offering tax breaks for an initial start-up period. The DRC government, however, has seldom found these incentives as strong as those to tax and regulate growing businesses.

5.2.2 Improved cook stoves (ICS)

The ICS has been around for many years, so this economic opportunity is not new. This recommendation, however suggests there is an opportunity for ICS production and distribution in the DRC to take an evolutionary step forward into larger-scale production processes and marketing operations.

For the most part, since its initial popularization, manufacturers and distributors of ICS have been heavily subsidized, and they have benefited from expert technical support from donor-funded programs. Although the demand for ICS has solidified, very few manufacturers have evolved past artisanal production methods and small-scale business operations. As a result, the sector has not benefited from the economies of scale and quality control of larger-scale production processes nor have competitive forces pushed businesses to be more efficient at or aggressive in developing market share. On the contrary, competitive forces seem to have opened the door for more artisanal manufacturers with ICS of variable quality and performance, which risk diluting the appeal of ICS.

This recommendation, therefore, is for a donor intervention to catalyze the emergence of larger-scale operations, independent quality control mechanisms, and ongoing research and development. This recommendation paves the way for donor interventions to exit effectively and let the industry move forward on its own. Examples of scaling ICS production elsewhere in the region include the Burn Manufacturing company, which assembles stoves produced in China for commercialization in Kenya as well as DRC. Impactcarbon sells carbon credits created by strengthening ICS distribution networks in Uganda.[22]

Mitigate deforestation: The capacity of ICS to reduce a user's consumption of charcoal varies considerably depending on the ICS model and how it is used. There are also indications that some households that use an ICS may use their cookstoves more frequently, thereby not reducing charcoal consumption by as much as expected. In general, however, conservative estimates place efficiency gains in charcoal consumption at around 30%.[23]

In the effort to lessen the demand for charcoal, ICS have a role to play and a potential that is not yet fully realized. This potential appears to be held back by two factors:

- A lack of large-scale production processes with advanced quality control systems and research and development units, and
- The absence of recognized standards and quality certifications for ICS and quality control regimes.

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[22] For more information on global ICS market systems see the website for the PPP Global Alliance for Clean Cookstoves: http://cleancookstoves.org/home/index.html

[23] Hoffmann, Harry & Brüntrup, Michael & Dewes, Clara. (2016). Wood Energy in Sub-Saharan Africa: How to Make a Shadow Business Sustainable.

Scale-up: Unlike LPG, a market for ICS exists, which is due in large part to the activities of numerous NGOs supporting artisanal producers. For example, it appears that over half of households in Goma have at least one ICS. In addition to an existing demand and proven market, the potential to scale-up large-scale production and distribution rests with the following:

The Higher Institute of Applied Technique (ISTA) and Center of Studies and Researches on Renewable Energy (CERERK) are both equipped for quality assurance testing of ICS. However, they still need to align testing procedures, results, and standards with Office Congolaise de Controle (OCC) before being officially recognized.

- The initial penetration of the DRC market by large-scale manufactured ICS like Bino na Bana and BURN. The latter is assembled in Kenya and imported by distributors in Goma. The ELAN RDC project has facilitated these connections and has been working with BURN to invest in a manufacturing facility in Kinshasa.[24]
- The presumed feasibility and profitability of producing and marketing a high-quality ICS at lower price points than at present using batch processing technologies and independent distribution networks.[25]

The perceivable challenges to larger-scale manufacturing include:

- Investments to startup operations or to expand and systematize existing ones;
- Testing and developing experiential marketing and distribution models that reach wider numbers of potential consumers (Possible models that have proven effective in similar contexts include commission agents, consumer ambassadors, and loyalty groups.);
- Overcoming the cash limitations of large consumer segments with rent-to-own, layaway, and other schemes. For example, one distributor in Goma is already experimenting with a plan to sell ICS on credit and then sell charcoal to its ICS customers at marked-up prices until they pay off their debt. This company expects to reduce its risk by buying truckloads of charcoal at wholesale prices.

Introducing practices that add value: In a manner similar to the potential for LPG importers and distributors to shift the enabling environment, larger-scale ICS manufacturers with a network of independent distributors can improve the environment by:

- Expanding experiential marketing strategies such as commission agents, consumer ambassadors, and loyalty groups, to reach more consumers;
- Introducing innovative payment methods that make ICS accessible to cash-poor households;
- Attracting investors to finance new manufacturing facilities;
- Creating opportunities for financial and other business services to support the manufacturing, marketing and customer relationship management systems that enable the more innovative payment and marketing methods that bring ICS to a wider market; and
- Developing the quality standards and certification systems necessary to prevent poor-quality ICS from eroding consumer confidence.

5.2.3 Reusable and durable construction materials

In addition to forest wood for furniture, which tends to be higher value wood varieties, artisanal logging also supplies wood materials for the construction of houses and commercial buildings. Forest wood gets used as worksite materials for cement forms, scaffolding, and supports for adding floors to multilevel buildings. It also gets used structurally as, for example, roof and wall framing.

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[24] The remaining time of the ELAN RDC project may be insufficient to help complete the deal.

[25] We are unaware of any specific market analyses, but we assume Burn, following common practice, has decided to invest in a local manufacturing facility based on its experience elsewhere on the continent and assessment of initial sales and distribution in the DRC.

This economic opportunity relates to the possibility of reusable or durable construction materials increasingly replacing forest wood. These materials include plywood for use as cement forms, metal for scaffolding, and metal supports for erecting multi-level buildings. It also includes using prefabricated aluminum frames for roof and wall construction.

Mitigate deforestation: It is unclear what percentage of artisanally logged wood ends up as scaffolding or as roof frames, but the volume of wood in urban markets destined for the construction sector is not insubstantial. Dampening this demand can be expected to contribute to curbing the growth and reach of logging and forest wood supply chains.

Scale-up: Many alternative materials exist in urban centers and are available to building contractors. For instance, in addition to imported plywood there is a local manufacturer of plywood appropriate for cement forms in Kinshasa. Furthermore, some materials like aluminum frames for roofs and walls cost less and are more structurally sound than all but the more expensive local hardwoods.

However, many contractors prefer local forest wood for several reasons, some of which include:

- Forest wood generally costs less, at least upfront. More durable materials like plywood and metal scaffolding only become cost-effective after multiple uses but the limited cash flows of most contractors and the unattractive interest rates of banks make it difficult for most contractors to make these investments.
- Contractors can resell wood scaffolding or supports, which sometimes have two or three alternate uses before being sold or used as wood-fuel. This is an especially attractive prospect if the costs of scaffolding and supports can be passed on to the client.
- Contractors are disinclined to recommend lower-cost materials like aluminum frames as they are typically paid a percentage of the overall cost of materials.

Understandably, the risk of theft also likely makes investment in more durable, reusable materials less attractive. Nevertheless, these are not insurmountable challenges. In large part they can be solved by attracting more manufacturers (i.e., plywood makers) and suppliers of durable scaffolding and support materials to enter the robust and expanding construction market and to find innovative ways of making products more accessible, if not more affordable, to building contractors.

Introducing practices that add value: The shift to more reusable and durable materials likely depends on several things, each of which offers opportunities to shift the enabling environment through:

- Aligning incentives between building contractors and owners to create higher demand and utilization of durable, reusable materials;
- Greater provision of financial and non-financial services to building contractors enabling them to improve management systems and financial capacity; and
- Building contractors with more robust operations capable of investing in reusable materials that increase overall profitability.

5.2.4 Commercial tree plantations

There are opportunities for growth in investments of commercial tree production, or plantations, in non-forested areas. This includes the production of trees for, among other things, wood-fuel, electrical poles, scaffolding, and construction materials. This opportunity is distinct from community forestry efforts that attempt to mobilize village-level smallholders to plant and maintain a community-owned stand of trees. Instead, this opportunity looks at mobilizing larger-scale investments in more commercial, growth-oriented operations.

PGAPF TREE GRANTS

PGAPF Component II awarded 25 grants to actors to launch commercial tree production on between 50 and 600 Ha of degraded or savannah lands. Grants covered approximately 40% to 50% of the start-up costs and PGAPF provided technical support over the first couple years. Most plantations were of wood-fuel trees like acacias but also included inter-cropping of, for example, grains and vegetables in the initial years before shade overtook the spaces in between trees. Investors also mixed fruit trees with harvestable trees to ensure more regular revenue streams. Others integrated tree production with apiculture and animal husbandry.

Such investments may resemble the monoculture of eucalyptus trees currently produced in eastern DRC, much of which gets used as scaffolding or other construction materials.[26] Investments may also more closely resemble the agroforestry plantations of many of the investors benefiting from grants from Component II of the World Bank's Mai Ndombe Improved Forest Landscape Management Program (*Projet de gestion améliorée des paysages forestiers*, PGAPF).

Mitigate deforestation: The benefits of dampening the demand of forest wood for wood-fuel and construction materials were outlined above. Commercial tree plantations have the potential to contribute to this dampening effect directly by supplying wood-fuel or construction materials. In addition, and unlike the other opportunities, commercial tree plantations have the potential to rehabilitate or stanch the deterioration of degraded landscapes.

Scale up: The growth potential of commercial tree production is seemingly enormous given the expected continued growth in demand for wood products. The market demand for specific products or types of trees will likely shift over time but the global demand for wood is expected to continue to grow for at least the next half century.[27]

In the DRC, the potential for scaling up rests with the following factors:

- Strong, immediate market demand for a range of primary wood products like wood-fuel, charcoal, and construction materials;
- The potential for on-site processing of wood products (e.g., charcoal and lumber milling) to add value to products;
- The diverse number of commercial tree production models to suit a wide range of contexts and parameters (mono and polyculture models);
- Availability of suitable land (although see below for challenges related to land tenure) with the potential for commercial tree production to improve the productivity of degraded lands; and
- Technical capacity of DRC forestry services and universities to provide technical support to investors and long-term research and development in the sector. For instance, professors and students at the University of Lubumbashi are presently experimenting with commercial production models of different indigenous trees in both mono and polyculture settings. The researchers hope to learn more about how to commercially grow such trees effectively and which combinations provide the best yields.

Critical and persistent challenges to the emergence of commercial tree production as an industry of national scale include:

- Absence of models that allows owners to both generate sufficient revenues through the time until the first trees are harvested and maintain sufficiently steady revenue streams thereafter to provide attractive returns, cover the costs of maintenance, and enable growth and reinvestment (No approaches developed in other countries can be readily adapted to DRC's challenging context.);
- Overcoming land tenure issues to land purchases or long-term leases; and

[26] Debate surrounds the use of eucalyptus. Recent research in Rwanda suggests that the benefits may outweigh environmental impacts, given the right management practices and avoidance of major catchment areas, riparian and wetland zones (Mugunga, 2016, Grossman, 2015).

[27] Union of Concerned Scientists, (2014), Planting for the Future: How Demand for Wood Products Could Be Friendly to Tropical Forests

- Managing community relations in areas where commercial production is near villages and other community sites (graveyards, religious sites, etc.) to ensure long-term community support.

Introducing practices that add value: Promoting the emergence of commercial tree production has the potential to interrelate multiple public and private sector actors in more inclusive, value-added approaches and sow the seeds of a national industry that builds off DRC's forestry expertise and experience. Among private sector actors, tree production has the potential to:

- Enable the DRC diaspora to invest in domestic economic opportunities through such vehicles as investment forums, and participate in the local economy through diaspora community organizations.[28]
- Attract external and internal investments that improve land management and productivity.
- Develop local labor markets in plantation management.
- Attract financial and non-financial services to areas outside urban centers.

Within the public sector, commercial tree production as an industry has the potential to:

- Mobilize stakeholders to address land tenure issues.
- Energize and connect with universities and technical schools for research and development and technical assistance to, for example, improve productivity.

5.3 RECOMMENDED INTERVENTIONS TO CATALYZE THE EMERGENCE OF THE STRONGEST OPPORTUNITIES

The following outlines four intervention tactics potentially useful to catalyze the emergence of the recommended opportunities using illustrative examples gleaned from interviews and analysis. To succeed, a combination of these and other tactics are likely necessary to spur the desired investments, new business entrants, operational upgrades, cooperative relationships, and policy improvements described above. The four tactics include:

- Public-Private Partnerships (PPP): partnerships between USAID, or its implementing partner, and lead firms capable of pulling together a critical mass of private and/or public-sector actors into productive collaborations and trade relationships.
- Challenge Grants: Financial enticements to market actors to invest, upgrade, or innovate within prescribed parameters.
- Accelerators: A workshop/seminar-like environment over multiple months that brings together select entrepreneurs in a common industry and/or function to, for example, create a learning network, transfer business skills and practical experiences, and get participants credit-ready and into relationships with investors and financial institutions.
- Enabling Environment Platforms: Opportunities for public and private sector actors to advance enabling environment agendas and improvements in a transparent, collaborative, and productive manner.

It is important to note that these tactics are not prescriptions for success. Instead they figure in this report to illustrate the sorts of market development tools that practitioners have found effective elsewhere and that could be tailored to the current context as USAID pursues these economic opportunities.

Public-Private Partnerships: The goal of the following illustrative PPP is mainly to establish a key actor in a function that is currently absent or underserved. Private sector partners ought to be expected to

[28] Recipients of two of the PGAPF grants included members of the Diaspora, children of local landholders who studied and resided abroad, who returned to assist with local investments.

continually demonstrate their commitment by meeting agreed upon milestones and contributions. USAID or its implementing partner will likely be expected to share costs of risky investments or upgrades and support the key actor with access to technical expertise and financial and non-financial service providers. Potential PPP identified during analysis include:

- To launch a large-scale, ICS manufacturing facility in Kinshasa, BURN, a Kenyan manufacturer of ICS;
- To import LPG and develop a pilot distribution network several PPP candidates exist: SAFRIGAZ, a subsidiary of SAFRICAS; DAPGAZ in Goma, PRIMAGAZ in Lubumbashi; and
- To experiment and demonstrate the viability commercial tree production, CGT, an industrial logging company that has already invested in a arboretum-like facility near Kisangani; Gecamines or other mining companies that have invested in tree production near Lubumbashi; and other major commercial actors interested in high-profile projects capable of influencing follow-on investments by other actors.

Challenge Grants: Challenge grants are useful where there already exists a pool of viable businesses or entrepreneurs. The following challenge grant opportunities were identified:

- Existing or potential distributors of LPG gas and/or ICS receive grants and/or TA if they upgrade customer relationship management practices and invest in experiential marketing strategies to develop and serve a growing customer base.
- ICT firms receive grants and/or TA if they develop a client-base for pay-as-you-go systems among distributors of LPG, ICS, and other businesses relevant to the above opportunities.
- Marketing firms receive grants and/or TA if they develop a client-base for experiential marketing strategies among LPG, ICS and other relevant businesses.
- Investors in commercial tree production receive grants and/or TA if they invest and/or upgrade a commercial tree plantation.
- Suppliers of reusable construction materials receive grants and/or TA if they invest in expanding leasing arrangements for metal scaffolding and supports.
- Suppliers of reusable or durable construction materials receive grants and/or TA if they invest in experiential marketing to building contractors and actors commissioning construction projects.
- Financial service providers receive grants and/or TA if they develop products tailored to help distributors of LPG and/or ICS, building contractors, or tree plantation owners overcome working capital shortfalls.

Accelerators: Accelerators are useful where there are gaps or scarcity of actors filling important roles in a value chain or where there are only small-scale actors with difficulty growing[29]. The general purpose of using an accelerator related to the recommendations would be to attract more entrepreneurs to the sectors, make them attractive to financial institutions, and set them on a growth trajectory with better management skill sets. The following accelerator possibilities reflect groups of existing and potential businesses to fill specific functions in targeted market opportunities. However, there are pros and cons to having homogenous groups of actors which would have to be evaluated against other considerations like geographic proximity of actors, shared challenges, and the potential for post-accelerator networking. Potential accelerator themes identified target entrepreneurs to:

- Distribute LPG and/or ICS in urban settings.
- Supply and/or lease reusable and durable building materials to building contractors.
- Build houses and office buildings using reusable and durable materials.
- Invest in and manage commercial tree production operations.

[29] USAID currently supports an accelerator to bolster entrepreneurship in Goma through Texas A&M University

Enabling Environment Platforms: In an iterative, participatory policy cycle of policy development, enactment, enforcement, and review, there are roles for the public sector, private sector, and civil society. An enabling environment platform can take many forms depending on its utility in developing and improving the policy cycle. Such platforms are, however, often useful mechanisms for elevating issues in a transparent way and for ensuring that input from stakeholders is considered throughout the cycle. Possible policy themes and actions for enabling environment platforms to address related to the above recommendations include:

- LPG import and distribution:
  - Tax relief and reduced import tariffs during a ramping-up phase of LPG suppliers, and
  - Any missing or out-of-date certifications and standards for LPG distribution;
- ICS manufacture and distribution: product standards and certification of manufacturers; and
- Commercial tree production: streamlining land tenure issues and claims.

6.0 THE GENERATION OF RURAL INCOMES THROUGH COMMUNITY FOREST CONCESSIONS

6.1 COMMUNITY FORESTRY OVERVIEW: EXPERIMENTATION IN SUSTAINABLE COMMUNITY CONCESSIONS

The Forest Code passed in 2002 allowed the creation of community forest concessions, and energized efforts to work with communities to help them claim and manage their forests. In anticipation of the eventual enactment of enabling regulations, NGOs quickly began taking steps to organize communities and define and assess their forests. As a result, NGOs were well into the process at the time of the promulgation of the February 9, 2016 Ministerial Order[30] that articulates the provisions for creating, managing, and exploiting community forest concessions. CARPE partners Africa Wildlife Foundation (AWF) and WWF had identified and delimited over 20 communities by the time the Ministerial Order came out. The government granted the first seven concessions only 13 months later, in March of 2017.[31] By December of 2017, 35 concessions had been approved.[32] At the time of this assessment, at least 31 additional concessions were in the works.

Although the government considers income generation to be the primary purpose of community concessions[33] -- the Ministerial Order establishes conditions for it -- for the most part, conservation objectives have thus far driven the process of concession creation. Conservation NGOs WWF and AWF submitted 34 of the applications that have been approved so far and have reportedly identified the purpose of the concessions to be "conservation" in the applications themselves. Of the other concessions under development, members of the Network for Conservation and Forest Ecosystem Restoration (*Réseau pour la Conservation et la Réhabilitation des Ecosystèmes Forestiers*) support 21, and members of the Natural Resources Network (*Réseau Ressources Naturelles*) support eight. Understandably, the NGOs have been working with communities in their zones of influence, chosen for their conservation importance. Often conceived of as buffer zones to protected areas, many of the approved and proposed concessions occupy the most remote areas of the country. In some cases, NGOs appear to have developed concessions to "claim" the land, and fend off other uses, such as artisanal logging, rather than explicitly to enable communities to generate incomes (Interviews: Mudodosi, Nsenga).

The conservation community engaged heavily in the development of the 2016 Ministerial Order. While the final text allows for the conservation of forests, its stated purpose is to fix the conditions for their

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[30] Arrête Ministériel No 25 Portant Dispositions Spécifiques Relatives a la Gestion et a l'Exploitation de la Concession Forestière des Communautés Locales. 9/2/16.

[31] Ndungy, G. "Making forest concessions work for local communities" in AWF blog. https://www.awf.org/blog/making-forest-concessions-work-local-communities

[32] This number comes from Blaise Mudodosi of RRN. A government representative reported "about" 28 had been approved.

[33] Interview with Abraham Itshudi of the Community Forestry Department of the Ministry of the Environment.

sustainable exploitation. Communities may exploit their concessions for ecotourism, logging, hunting, fishing, reforestation, and harvesting wood-fuel and NTFPs. The Ministerial Order also relaxes or omits conditions found to constrain community logging in other countries.[34] Concessions may be up to 50 thousand hectares, a size suitable to sustainable commercial logging.[35] Concessions have no fixed end-date, which strengthens community tenure and the incentives to sustainably manage forests. Forest management plans need only be "simple," and therefore less technically challenging for communities inexperienced in silviculture.

On the other hand, the Order also contains exacting constraints on exploitation, the most specific of which concern logging. The Order specifies tools harvesters may use: chainsaws, two-man saws, and winches.[36]Despite that remarkable specificity, given the context, bureaucratic constraints may prove to be the most formidable. Artisanal loggers that communities employ must be officially recognized, under contract approved by the forestry service, and follow a harvesting permit issued by the forestry service. Each tree harvested must be registered. The authors of the Order clearly recognized that the approval process could constitute a barrier; the text provides specific turnaround times for each. In an effort to relieve the administrative burden on communities and those assisting them, civil society actors, facilitated by the World Resources Institute (WRI), have developed 40 tools—example permits, contracts, and approval letters -- a collection which in itself suggests the complexity of the process, and the formidable barrier confronting the members of communities, many of which contain populations that are largely illiterate. These explicit and structural constraints put community concessions at a great disadvantage relative to other logging outfits in the country, in particular the small-scale ones, both formal and informal. (For additional discussion of the potential for community concessions given the Ministerial Order, and the distance yet to be traveled, see Vermeulen & Karsenty, 2017.)

At the time of this assessment, it is impossible to assess the challenges posed by the administrative process, as well as other potential socioeconomic and biophysical barriers, as no community has yet worked its way to the end. Despite years of investment in concessions, the representatives of the NGOs interviewed for this assessment were unable to articulate clear intentions, plans, or concrete steps towards the sustainable exploitation of the concessions. The most advanced have only recently completed zoning, and in some cases, rough resource inventories.

While the NGOs supporting the concessions see conservation as a principle objective, the traditional chiefs briefly interviewed for this assessment articulated more pragmatic goals. In the heavily logged area of Lac Tumba, traditional chiefs look forward to the opportunity of their communities to assert control over, and exploit, the forests that have been logged by others in the past.

The one current project that has prioritized income generation is the Biodiversity and Forest Program (*Programme de Biodiversité et Forêts,* PBF) being implemented by *Deutsche Gesellschaft für Inernationale Zusammenarbeit* (GIZ) in Kailo, the province of Maniema. This project, too, is far from having established community managed enterprises. PBF has worked with community members to form a cooperative for the commercialization of timber harvested from the concession. PBF was designed with the goal of adding value to the process by using a portable saw mill -- which produces a higher quality product, and much less waste –as an upgrade to compensate for the additional administrative costs to artisanal loggers (van de Rijt, 2015). Although a few trees have been harvested, and a clinic constructed with the income, the specification of tools in the Ministerial Order has brought this experiment to an abrupt stop. The project is currently proceeding with more simple technologies, while the mill is "under lock and key on project property."

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[34] The experience of Cameroon, in particular, is cited by participants as a demonstration of characteristics to avoid.

[35] Indeed, a mere 1,000ha suffices for profitable semi-industrial logging, (Lescuyer, 2014).

[36] The same restrictions are imposed on Artisanal loggers.

Communities engaged in community forestry in the DRC are far from owning the process. Given the heavy role played by external organizations in assisting communities, the question is not whether the necessarily heavy role they play creates dependency– it clearly does—but how to best play that role in a way that will empower communities to eventually take over the process themselves. Stronger collaboration with the private sector, described below, may be part of the solution.

6.2 ASSESSMENT OF OPPORTUNITIES IN THE RURAL CONTEXT

The low priority NGOs have given thus far to income generating activities in community forest concessions does not reflect the dynamic nature of the country's extractive forest industries. Small-scale entrepreneurs, many of them rural, gain important revenue from the sale of timber and charcoal, and to a lesser extent tree crops, NTFPs, ecotourism, and fuelwood woodlots.[37] The current scale of these activities will influence the ability of communities to adopt them at scale, while the status and capacity of institutions established to manage their impact on the country's forests will influence the ability of communities to regulate them. The sectors with the greatest potential are: small-scale logging, wood-fuel, sustainable wood-fuel production, cocoa cultivation, ecotourism and NTFPs.

In contrast to the urban opportunities presented above that mitigate forest impacts by reducing demand, investment in activities that take place in forests and rural communities will intensify drivers of deforestation. USAID efforts in this sector to increase rural incomes by strengthening or upgrading the value chain or increasing market demand—unaccompanied by improved forest management through community forestry or another similarly effective approach—would only drive greater deforestation and forest degradation.

6.2.1 Ecotourism

Potential to mitigate deforestation and forest degradation: Although it is primarily a non-extractive service, in other contexts ecotourism has not been shown to consistently draw rural investment and labor away from agriculture and livelihoods dependent on extraction of forest products. In one study, different types of engagement—employment vs selling products to tourists—exhibit contrasting impacts. Employees discontinued farming, while persons selling products to tourists reinvested their income in forest extraction practices (Stronza, 2007). So, while the expansion of the ecotourism industry may have less direct impact on forests, it may not be an effective alternative livelihood, and on balance not have a positive impact on forest health.

Potential to be scaled-up: Successful ecotourism requires a unique attraction, significant initial investment in infrastructure and capacity building, and a supportive business enabling environment. The DRC has the attractions. In addition to the Virunga and Kahuzi-Biega National Parks, attractions include the Zongo, Boyoma and Tshopo falls, and Idjwi Island in lake Kivu. The sector nevertheless currently operates on a very small scale. A handful of private sector operators and conservation NGOs support, or plan to support, the country's ecotourism efforts. The NGOs include Bou-Mon-Tour in Mai-Ndombe; UGADEC and PIDP in North Kivu; and Strong Roots in South Kivu. Two of these, UGADEC and PIDP, have yet to begin activities. Mbou-Mon-Tour has received 30 visitors during the two years they have been active, while Strong Roots, in its ninth year of activities works primarily Kahuzi-Biega National Park and brings thirty or so visitors a year. The NGO network based in Goma, Réseau CREF (Réseau pour la Conservation et la Réhabilitation des Ecosystèmes Forestiers), has identified potential locations for ecotourism that could be developed on community concessions. However, they have not yet been able to find funding for the various necessary preliminary studies. Clearly, the sector does not yet live up to its potential.

[37] While the sale of carbon credits may one day be a viable and common source of revenue for rural communities in the DRC, despite decades predicting its imminent arrival, to date only the private WWC concession has been certified.

The CARPE midterm evaluation catalogues the various challenges project IPs have had supporting ecotourism (Integra, 2017). Conflict constitutes a significant current constraint on the expansion of all tourism in the DRC, and not just in eastern DRC. Due to political unrest, a French private sector tour operation recently discontinued work with Mbou-Mon-Tour, which provides tours to the western edge of the bonobo range in Mai Ndombe. The quality of transportation and other infrastructure hamper investments, as do the constraints to business noted elsewhere in this document.

Potential to introduce practices that add value: The expansion of ecotourism in the DRC could build local business capacity and support improvement of the management and regulation of the sector. Standards could be introduced and enforced, on client services, or foods produced for clients. Experience elsewhere suggests however, that the impacts tend to be relatively constrained to the business itself. For example, in Botswana, seen to be one of Africa's success cases in tourism, direct employment tends to be small, with international professionals taking the most senior, best paid positions (Stone, et al., 2017).

Ecotourism Summary

Ecotourism's potential as an alternative livelihood has been questioned in other contexts. Challenges to reaching scale hamper any potential for this sector to mitigate forest impacts. Poor infrastructure and insecurity currently place very clear constraints on the potential for expansion. Ecotourism, where successful, may drive some economic development and introduce improved practices in a variety of value chains.

6.2.2 Planted wood-fuel

Potential to mitigate deforestation and forest degradation: The mitigation potential of this approach is strong, because cultivating trees on anthropogenic savanna or other degraded lands for sale as charcoal produces a net increase in the wood-fuel available, and reduces the drive behind the overharvesting of wood grown in natural forests. [38]

Potential to be scaled-up: Managed tree production by communities thus far represents an insignificant contribution to the wood-fuel market. Its growth is not yet market driven, and has so far only taken place when subsidized by external organizations. Projects around Kinshasa, site of the largest investments, serve only one percent of the city's demand (FAO, 2017).

In recent years, following numerous learning experiences -- these include Ibi Village, and the Mampu, Ntsio, Gungu, and EcoMakala projects -- donors now most often use a Payment for Ecosystem Services (PES) approach to promote community fuel-woodlots on non-forested lands. WWF has employed a PES approach in the projects it implements in Mai Ndombe Province and on CARPE activities in the Lac Tele - Lac Tumba Landscape. The approach uses conditional payments for tree production on savanna to produce tangible short-term results; the supported communities plant and tend seemingly large numbers of trees. So far, PIREDD+ Plateau, implemented by WWF ($14.2 million), has supported small agroforestry lots in 107 communities that include 6,105 households (Valiergue, L., 2018). There are nevertheless limitations to the approach in the short-term, and uncertainty concerning its long-term impact and sustainability. On top of project costs, WWF currently pays community participants a series of tranches totaling $150 a hectare. In addition to being costly, the approach risks creating project dependency.

As has occurred in woodlot projects across history, farmers may adopt an expectation that tree planting itself is a form of income generation, a sort of task labor for the government or NGOs. Although they referred to potential future sales of wood, farmers interviewed for this assessment clearly saw these

[38] The story is different for field agriculture, where exploitation of DRC's savanna does entail carbon and biodiversity loss, and poor soil quality minimizes potential benefits from their use for agriculture. For a discussion, see "Savanna: Potential for Intensive Agriculture on Non-Forested Lands" in Miller & Hagan, 2016.

payments as an important immediate source of income in themselves. Because the payments are "induced" transactions, not market transactions (Hiedanpää & Bromley, 2016), the approach may undermine the autonomous adoption and spread of the practice of tree production for sale. Further, the payments to individuals and groups do not provide incentives for certain important community management practices; PES does not incentivize communities to cut fire breaks and other measures to protect from fire or theft. At the outset, this innovative arrangement can cause conflict between project staff and the communities, as happened under WWF's Carbon Map and Models project (Gauthier, 2018). Further down the line, other issues may arise as the trees become valuable, such as the resurgence of latent land tenure claims, and increased formal and informal taxes. Long-term sustainability of the approach will require proven models, continued donor funding, and functioning carbon credit markets. And, as the CARPE midterm evaluation notes, unlike Mai Ndombe, CARPE Landscapes, for the most part, do not "coincide with the highest emission regions required by REDD+," because of their low rates of deforestation (Integra, 2017). This is also the case for many of the community forest concessions now being supported.

Potential to introduce practices that add value: Because the private sector does not currently drive the creation of wood-fuel produced through tree plantations, the approach will result in market system improvements primarily through associated development activities. For example, PIREDD+ provides substantial support for the creation of local community development committees, land use planning, and technical assistance as an enabling environment for the agroforestry plantations the project targets (Valiergue, 2018). The CARPE midterm evaluation argues that PES schemes implemented in the context of community forest concessions would be on a "firmer foundation" (Integra, 2017). This is true; investments necessary to establish community forests would address some of the constraints that have hampered the promotion PES schemes in the DRC, such as land tenure conflict. However, the implementation of PES schemes in the context of community forest concessions would not bring the PES schemes closer to being market based, and thus would not tap market incentives to drive improvements in the value chain.

Planted wood-fuel summary

Wood-fuel plantations dampen demand when located on degraded lands. And, unlike urban investments, they generate rural incomes. However, the sale of wood-fuel from planted trees compete with wood-fuel that does not entail the same, sometimes significant, investment and management costs. The PES approach now used to create wood-fuel plantations does not constitute a market transaction. It's a costly approach to scale, and not an opportunity that taps market forces to drive larger economic development.

6.2.3 Cocoa Agroforestry

Potential to mitigate deforestation and forest degradation: Whether cultivation of cocoa in the DRC will have the same long-term impact on forests as it has had in Cote d'Ivoire and Ghana,[39] where it has been a major driver of deforestation, will be a function of how this future growth is managed.

The common argument regarding tree crops and deforestation—found, for example, in DRC's REDD+ strategy—posits that when farmers adopt tree crop cultivation they take the first step away from swidden

COCOA: BEYOND AGRONOMY

While many of the current programs in cocoa focus on technical solutions around improving farming practices, the underlying problems at the root of the issues deal with power and political economy; how the market defines price, the lack of bargaining power farmers, market concentration of multinationals, and a lack of transparency and accountability of both governments and companies. (Cocoa Barometer, 2018).

[39] See "Chocolate's Dark Secret" for a recent and influential report on cocoa's devastating impact on forests, and especially protected areas, in the Cote d'Ivoire, (Higonnet & Hurowitz, 2017)

agriculture, and towards permanent fields (Government of DRC, n.d.). However, farmers have historically integrated cacao into swidden systems. Like other crops, farmers across West Africa abandon tree crops once the soil has become exhausted, and fallow the land. Tree crops drain nutrients from soil more slowly than annuals, and may be cultivated for 40 years in the same location, but without regular soil improvements, such as fertilizer, they cannot be cultivated otherwise.[40] Fertilizer and soil amendments, despite potential environmental impacts, are the key to the intensification of land use, not the crop cultivated.

Even if farmers cultivate cacao "permanently," that does not impede the conversion of forest to cocoa cultivation in a context of growing investment in the sector. To significantly increase production, new trees must be planted. There are three basic options: savanna, old plantations, and forest (secondary and primary). For the farmer, each has its drawbacks. Soil is less fertile on DRC's anthropogenic savannas; reviving old plantations is costly (as described below); and clearing forest requires labor. Forest, however, covers fertile soil, and trees and wood removed can often be sold. Given the DRC context, sector growth of a significant scale will clearly require both private sector investment, and support from the government and the development community. Investments and incentives such as improved infrastructure, effective supply chains, and easier access to markets may influence the general region in which cocoa is planted, however, a small-scale approach is necessary to provide smallholders incentives to rejuvenate old plantations or plant in savanna, rather than clear forest.

ON TREE CROPS

"If they do not currently contribute significantly to deforestation, without robust upstream management (zoning, sustainable production practices, land tenure security for local communities, etc.) it is likely that perennial crops will become major deforestation engine in the coming years. "

Stratégie-Cadre Nationale REDD+

The options for managing this growth differ by region. Eastern Congo has seen the greatest growth in cocoa cultivation in recent decades. Here, certification has been the principle tool used to mitigate the crop's impact on forests. It is a method particularly compatible with a private sector approach.[41] In recent years large trader/grinder companies and chocolate producers have made substantial commitments to reduce deforestation in the area. More than half of DRC's cocoa is both organic and UTZ certified (Downie R., 2018).[42] Theo Chocolate is Fair Trade certified. Both certification schemes take a High Conservation Value (HCV) approach which protects primary forests but allows conversion (and thus deforestation) of secondary forests—any forest that has been logged or farmed in the past (Kroeger et al., 2017). This allows for a lot of deforestation as about one third of the country's forest are secondary.[43]

In Eastern Congo, interviews conducted for this study suggest weaknesses in certification schemes, similar to those found in research elsewhere. Monitoring—both by external auditors and by purchasing agents themselves— has been one issue, and cocoa has been planted in forests, even in regions where certification schemes have been an option for farmers. Insecurity has not been the only constraint on effectively tracing produce origins. Indiscriminate demand and fierce competition between exporters drive purchasers to buy quickly, asking few questions. Thus, farmers who do not adhere to certification schemes have been able to sell through farmers affiliated with certification schemes. According to field

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[40] In fact, Ghana, where the government effectively subsidizes fertilizer use, appears to be the only country in Africa where farmers cultivate cocoa intensively, (De Beule, Jassogne, and van Asten, 2014).

[41] As noted, CARPE IP WCS has employed the conditional provision of technical assistance, a "buffer zone" strategy, and support for forest guards.

[42] In January 2018, UTZ merged with Rainforest Alliance. They are developing a new system and new standards.

[43] The figures as of 2015 were: 49.8Mha Naturally Regenerated vs 103Mha Primary Forest. WRI Global Forest Watch/DRC/Land Cover tab. Accessed 6/5/18.https://www.globalforestwatch.org/dashboards/country/COD?category=land-cover

interviews, this occurred so frequently in recent years that exporters have agreed to set a standard price for all farmgate purchases of cocoa, erasing the certification prime to farmers. A recent assessment of the growth potential of cocoa production in Eastern DRC makes it clear that, while the possibility of profits is there, more needs to be done to understand the dynamics of local market systems to develop effective approaches to limiting the impact of cocoa plantations on forests (Downie, 2018).

In other parts of the country, where cocoa used to be cultivated, reviving existing plantations could present an approach to divert agricultural expansion away from forests. However, rejuvenation is a costly exercise. Even when intercropped with plants that mature quickly (farmers often select bananas in the DRC) farmers need to be prepared to wait four years before making an income from cocoa sales (Cocoa Barometer, 2018). Other barriers to reviving old plantations include overlapping tenure claims, and the state of the country's infrastructure, which significantly reduces access of much of the DRC's old cocoa cultivation zones. In these areas farmers do not have access to new variety seedlings, technical assistance, long term credit, and fertilizer.

Considerable cross-sectoral investment would be required to revive the sector in the west of the country. WWF has supported cocoa agroforestry in the Pilot Farms in the Lac Tele - Lac Tumba landscape visited for this assessment. There, pilot farmers have created highly subsidized integrated farms dependent on the project, not markets.[44] The WWF Forest Agriculture Coordinator recognizes that investments in cocoa must be large enough to produce sufficient volume to take advantage of economies of scale. His goal would be well over a million hectares. Pilot farmers would diffuse technical knowhow and inputs in hundreds of communities with cocoa zoned for—and constrained to -- savanna area through management by community forest institutions. For transport, production would have to take place within 5 km of the river. International buyers committed to zero deforestation would be targeted for investment, and sales. Ongoing projects contain many of these elements that together would achieve the vision (Interview: Huart). Of the many questions that will need to be resolved to achieve this vision, the one most pertinent to this assessment, will be the capacity of community forest institutions to enforce land use zones and limit cultivation to the poorer soils of the savanna.

Of the six sectors considered in this assessment, cocoa presents a distinct set of management challenges. On a practical level, current regulations allow, but do not provide guidance on, the management of cocoa plantations by community forest concessions. Cocoa cultivation, like planted wood-fuel, takes place outside of the natural forest; profits from cocoa do not increase the value of the forest itself. Unlike natural forest products, cocoa trees, from their origin, are individually owned. This creates a tension between cocoa cultivation and community forests, as has been noted in Cameroon (Sonwa, 2001). In fact, the success of individuals planting cocoa may threaten community owned forests. So, while each of the six sectors has the potential to mitigate deforestation and forest degradation, it will be more difficult for communities to integrate cocoa cultivation into the management of their concessions, and practices promoted to improve cocoa cultivation will not directly improve how people understand and work with their forests. The nature of the risk is also different; the conversion of forests to cocoa cultivation constitutes a virtual irreversible loss of forest.[45]

Potential to be scaled-up: Although cocoa currently represents less than a half of a percent of total exports from the DRC,[46] the country's farmers are rapidly increasing cocoa production, with exports

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[44] For example, one pilot farmer unable to answer simple questions about his investments and farm-gate prices of his produce. His request was that WWF keep supporting him.

[45] As noted in footnote 5, cocoa agroforestry has a greater impact on biodiversity. Conversion of natural forest may reduce species diversity over 30%, even more than clear cutting for timber, at 22%, (Chaudhary, et al., 2016).

[46] DRC visualizations page on the Observatory of Economic Complexity website. Accessed 6/1/2018. https://atlas.media.mit.edu/en/profile/country/cod/

climbing from 660 tons in 2000, to 11,000 tons in 2015. They are expected to surpass 17,500 tons in 2018 (Downie, 2018). In 2010, smallholder activities were generally concentrated in the old core production regions of Bas-Congo, northern Equateur, and Orientale, while limited production came from Bandundu, Maniema, northern Kasaï, and South and North Kivu (GDRC, 2010). Most recently, however, the greatest growth in cocoa cultivation has come from North Kivu and Ituri. This expansion is in part due to international investment from companies like Seattle's Theo Chocolate.

While this increase in volume constitutes a significant expansion—by a factor of 26 across 17 years!—current exports represent a small fraction of the country's potential. The DRC has proven agroecological suitability across many of the country's provinces. Nevertheless, households face enormous challenges establishing cocoa cultivation as a stable revenue source. Farm level challenges include exhausted soil, low-productivity plant material, and limited technical assistance. Higher in the value chain, scattered production combined with inefficient transportation increase the expense of aggregating the produce while sub-standard processing and phytosanitary systems lower quality and value.[47] Taxes (formal and informal) eat into returns, while insecurity creates uncertainty. There are very few opportunities for financing or loan products tailored to the agriculture sector. Beyond these domestic challenges, global cocoa prices are not stable—the 30% drop in the world market price at the end of 2016 being a recent example.

Potential to introduce practices that add value: Once producers successfully produce and market cocoa in a location, market forces may drive improvements to the value chain. For example, the growing cocoa sector in eastern DRC, has attracted international investors and producers have been exposed to, and are in some cases, adopting new quality standards, practices, and technologies.

Cocoa Summary

Managing the expansion of cocoa cultivation into forests has proven to be a challenge in DRC. Certification has not succeeded, and management by community forest concessions has yet to be tested. The sector's strong potential for growth, and to generate income for rural households, contributes to this challenge. Expansion would be more market-driven in the east of the country; in the west it would follow substantial donor investment. Private sector investments in the cocoa sector have been demonstrated to drive improvements in the value chain.

6.2.4 Non-Timber Forest Products

Potential to mitigate deforestation and forest degradation: Experience across the globe has demonstrated that NTFPs may play a considerable role in justifying the importance of healthy forests by rural populations. The term NTFP covers a broad range of forest products, some of which grow exclusively in a natural forest environment, while others emerge in disturbed forests, or can be domesticated and cultivated outside of the forest.[48] Successful sustainable exploitation of forest dependent NTFPs may require protection of their habitat, and thus contribute strongly to conservation objectives (Russell, 2002). Commercial exploitation of NTFPs through their cultivation outside of forests, on the other hand, may do less to mitigate deforestation and forest degradation, and, at scale, could contribute to deforestation.

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[47] While cocoa from eastern Congo "has a story to tell", to build market share, it will also need to justify its touted reputation for quality. The trees themselves are not exceptional. The majority are Forastero, the most common "bulk" variety. Genetic testing by Mars also found the presence of some trees of the higher quality Trintario variety. Criollo trees, the highest quality of cocoa, is not cultivated in the DRC. Improvements in how producers and value chain actors handle and process cocoa constitute the greatest opportunity to raise DRC's cocoa bean quality. For this reason, much recent investment has been in training in agronomic and processing practices, (Nieburg, 2017; Downie, 2018).

[48] Although animals are technically NTFPs, we are limiting the scope of our discussion here to plants and fungi.

The Government of DRC has thus far done little to promote the sustainable management of NTFPs. The relevant legislation, the Forestry Code of 2002, which is primarily dedicated to timber, grants harvest rights to members of local communities for domestic use on non-classified forest, and requires permits for harvest on protected areas and for commercial use (Mutambwe, 2010). In 2015, the government began to develop a National Strategy for improved policies regarding the sustainable management of NTFPs (COMIFAC, 2015). At that time, and perhaps into the present, there is no specific office in the Ministry of the Environment for NTFPs.[49] The 2016 Ministerial Order regarding community forest concessions mentions the exploitation of NTFPs alongside timber with very little detail.

The development of policy regarding the sustainable management of NTFPs is constrained by the diversity of species that falls under this NTFP rubric, and our limited knowledge on such topics as their distribution and quantity, sustainable offtake and cultivation, and appropriate transformation methods (Mutambwe, 2010). Although it varies by product, as a group, little research exists regarding the sustainable cultivation and commercialization of NTFPs.

Community Forest concessions may improve management of the harvesting of NTFPs simply by prohibiting persons from outside the community from harvesting, and by enforcing existing rules, some of which would also limit forest degradation. Local rules reported in some DRC communities, include:

- The creation and maintenance of sacred forests,
- Seasonal limits on harvesting,
- Fallow periods,
- Domestication, and
- Interdiction on felling trees that support NTFPs (Mutambwe, 2010).[50]

Potential to be scaled up: The production potential, and current scale of this sector, need to be measured more accurately. Case studies indicate that some of the more important plant NTFPs attain regional significance in DRC. One study estimates an annual harvest of 200 tons of m'fumbwa (Gnetum) from Mbandaka, that 80% of the population of Kinshasa consume this leaf at least once a week, and the value chain employs as many as 1,500 people (Ingram, 2012). M'fumbwa, caterpillars, and mushrooms are likely the most widely commercialized NTFPs in the DRC. No one knows the scale of the vast majority, however. One study identified 169 plant NTFPs on the Bateke Plateau alone (Mtuambwe, 2010). We know non-timber forest products play a critical role in rural livelihoods, relied on for medication, food, and fiber. They can be an essential component of food security in times of scarcity, and they represent an important source of income for some households. Yet it is currently impossible to accurately calculate the national economic value of NTFPs. The income they generate varies widely by product, season, and market. Both domestic and export markets are largely informal and unregulated. Although they are taxed in markets, official records of taxes collected do not exist. There are no national level statistics regarding their volume or value. (This is not to say no information exists. Mutambwe (2010), presents a thorough, though dated, review of research on these products and their commercialization in the DRC.)

The absence of information on supply and sustainable harvesting must constrain investment in the sector. Reportedly, 40% of the Gnetum spp and 70% of the Prunus Africana are harvested through unsustainable practices. In 2007, international marketing of the latter was suspended, in response to

[49] In 2016 a "National Draft Silvicultural Prescriptions for Community Based Management in Cameroon Coordinator" for NTFPs was interviewed in support of a cooperative for NTFPs. https://www.radiookapi.net/2016/11/03/emissions/echos-deconomie/kinshasa-difficulte-de-la-commercialisation-des-produits

[50] For more information on managing NTFPs in the context of community forest concessions, Annex VII includes an excerpt from Russell (2002), "Draft Silvicultural Prescriptions for Community Based Management in Cameroon".

evidence that it was being over-harvested in the wild (Ingram, 2012). The absence of knowledge, the complexity dependence of many NTFPs on habitat, and the difficulty in monitoring harvest, reinforce the recommendation that a private sector approach to these forest products should be undertaken in a controlled management context, such as a community forest concession.

Potential to introduce practices that add value: Some associations for the aggregation and sale of some NTFPs have been formed, but on the whole investment in NTFP commercialization has been limited. The sector consists of diffuse, inefficient value chains, with no market information, appropriate financing, or institutional support. Proper harvesting, sorting, drying, and storing can markedly increase the value of various NTFPs. But in DRC, value chain actors add little to these products in the form of processing or transformation (Mutambwe, 2010; Ingram, 2012). Successive community forestry projects in Liberia have invested in upgrading NTFP value chains, with little impact on the market to date. Critical challenges include: the low-value of the product limits investment; the diffuse production and aggregation through a pyramid of agents is costly and allows for side-selling; difficulty raising quality standards for transformation, such as drying in a humid climate. It has also been difficult to determine and monitor sustainable offtake amounts. In the DRC, the Elan project has discontinued support for quinine due to a declining international market. Without a high-value product and international demand, NTFPs represent limited opportunities for income incentives to drive upgrading.

NTFP Summary

Strengthening market systems for NTFPs is likely to increase community appreciation of the value of their forests if the NTFPs are harvested in the wild, and not domesticated. The majority of NTFPs currently being commercialized in the DRC are sold on domestic markets, and unknown outside of the region. The sector consists of mostly low-value products and no individual NTFPs have been identified that have the potential to generate significant incomes. NTFP value chains are smaller than either timber or wood-fuel and substantial investment in market development would be necessary to develop unknown NTFPs to the point that they sell on international markets and generate significant income.

6.2.5 Wood-fuel sustainably harvested from natural forests

Potential to mitigate deforestation and forest degradation: Two thirds of the wood-fuel sold in Kinshasa is sourced from woodlands newly cleared for agriculture; one-third comes from forests (FAO, 2017). Farther into the rural areas, much of the wood harvested is dead, or produced as a byproduct of clearing fallows for farming. The supply chain spans every available tree species. This includes young trees of varieties suitable for saw timber for the export market. Permits cover only a small percentage of the harvesting process; government control occurs primarily in the form of taxes, both formal and informal, after harvest, and on wood being transported. Interviewed for this assessment, boat owners who transport charcoal to Kinshasa from Mbandaka quickly named seven different offices that tax wood cargo, although they were not able to name rates or amounts of these taxes, as they change frequently and often can be negotiated. Interviews conducted for this assessment in Goma illustrate how regulation, while omnipresent, may not be effective. While government collects higher fees for certain higher value species, transporters simply mix these species with others to be taxed at a lower rate. Harvesters in rural areas generally extract wood from land in which they have rights. For commercial operations, access is commonly gained through customary land rights, by renting land, or by buying trees from the landowner or village chief. In areas not controlled by the government in eastern DRC, "negative forces" and organized crime control harvests; and have vested interests. They profit from the sector, to an estimated annual net value of USD 12-35 million (UNEP-MONUSCO-OSESG, 2015). In short, no institutions assert effective control over this massive raking of wood-fuel from DRC's countryside. Nothing regulates the harvest of wood-fuel other than transportation and the proximity of demand.

In the context of community forest management, local institutions could base harvesting policies on the protocols that have been developed regarding sustainable harvesting for wood-fuel (FAO, 2017). However, in larger concessions, communities would be challenged to monitor illicit harvesting of wood-fuel.

Potential to be scaled-up: Wood-fuel supply channels extend deeply into the countryside. Over the decades, this removal of wood, combined with shortened fallows and uncontrolled burning, has deforested much of the land surrounding Kinshasa (Doetinchem et al., 2016). Wood available for fuel in the Kinshasa supply zone fell by more than half between 2000 and 2012 (Gond, et al., 2016). In a village on the shores of Lac Tumba over 300 miles upstream from Kinshasa, three children, selected at random during this assessment were asked the price to send a sack of charcoal to the capital; they each independently and unthinkingly repeated the same, correct, price. Sacks of charcoal can be seen stacked all along the shores of the Congo river to the capital; it brings charcoal from over 1,000 kilometers away. On the opposite side of the country from Kinshasa, the roads into Goma are charged with a stream of charcoal sacks loaded onto trucks, cars, bicycles, and the heads of pedestrians. The expanding supply basins surrounding each of the country's urban drive expanding zones of forest degradation.

Ninety percent of energy consumed by households in the DRC arrives in the form of wood. Using this statistic as a basis of calculation, wood-fuel constitutes over ninety percent of the total wood volume harvested in the country (CAFI, n.d.). Businesses such as bakeries, breweries, restaurants, brickmakers, and aluminum and iron forgers also depend on fuelwood or charcoal for their daily operations. Demand is rising rapidly, but even in 2011, harvesting, carbonizing for charcoal, aggregating, storing, transporting, and reselling, wood-fuel was estimated to engage more than 300,000 people to supply Kinshasa alone, where, in some cases, it contributes three quarters of the incomes of households engaged in the value chain actors (Schure et al., 2011). The sector contributes strongly to the economy and rural livelihoods, but the objective, of course, would not be to scale it up.

Potential to introduce practices that add value: Managed investment in this sector could catalyze private sector forces to upgrade this value chain. A recent, thorough, and valuable, review of the charcoal sector (FAO, 2017), presents four "green" upgrades to the value chain: sustainable production; improved carbonization; more fuel-efficient transport; efficient stoves. The adoption of improved technologies could eventually drive improvements across the sector. However, as with NTFPs, the diffuse, low value nature of the sector presents challenges. As one example, appropriate efficient kilns would exist and their adoption would add value. SNV introduced a model in their Sustainable Charcoal project (Martin, n.d.). Yet, because wood for charcoal is harvested in small, low value, batches, the intermediary actors in the value chain—aggregators, processors -- have few incentives to invest in better production technologies because it is easier to transform wood on site, and improved technologies are not mobile. The FAO study identified the management costs of formalization and price impact of improved technologies as constraints that donor investment would need to support, at least initially, to catalyze the process of upgrades to the value chain.

Wood-fuel from forests summary

As the greatest driver of forest degradation in DRC, improvements in managing this sector could result in substantial improvements in forest health. Wood-fuel from natural growth has attained scale; it currently generates income relied upon by households across the country. There are many opportunities to upgrade the value chain: new technologies, better regulation and enforcement, and improved infrastructure. Within their concessions, communities may adopt harvesting plans to sustainably harvest wood-fuel for sale. However, application of market system approaches up-stream will be difficult to apply to this diffuse and low-value sector.

6.2.6 Small-scale logging

Potential to mitigate deforestation and forest degradation: State inability to effectively manage this sector is well known. The regulations governing the sector are neither complete nor clear, and—even if they were -- the Forestry Department lacks the resources to effectively enforce them or monitor the sector and its impact.[51] Officials at various levels deliver permits illegally, and loggers sell timber illegally through legally accorded permits. At the extreme, larger "semi-industrial" loggers produce for export, working under false permits, sometimes in unused commercial concessions, profiting from the infrastructure, and using large equipment. Artisanal logging even penetrates where the government does not; loggers continue to exploit, for a fee, forests under the control of armed groups. Permits have been granted to log protected species at both industrial and artisanal scales. (Greenpeace, 2013; Global Witness, 2013 and Global Witness 2012). [52]

Traditional authorities also do not present much of a constraint on small-scale logging, either in terms of where and how they log, or the cost of the timber they extract. Regionally based small-scale artisanal loggers typically negotiate with traditional chiefs for rights to harvest, often paying an in-kind fee on the agreement, complemented with additional payments calculated by stump or plank. While a traditional chief can refuse access, he or she is at a significant disadvantage in negotiations, and underpaid. Chiefs do not know the commercial value of trees, and loggers can always look elsewhere. Artisanal loggers working in their home territories also rely on kin ties to gain a better rate (Lescuyer, 2014; interviews with loggers and chiefs). Infrastructure and resources currently constitute the greatest determinant of how small-scale logging impacts forest health. Artisanal loggers do not build access roads, and—except for the "semi-industrial" loggers—do not use heavy equipment. Because planks must be headed to the road or river, artisanal logging correlates strongly with access. Manual transport of planks is an expensive and limited form of transportation and constrains this form of logging to around three kilometers from the road or water transport. Although they harvest a relatively small number of trees at a time, they target high-demand species of large diameter. This "high-grading" leaves trees of lower value, a form of forest degradation.[53] Foresters have developed methods for low-impact logging and sustainable silviculture that USAID could promote in community forest concessions.

Potential to be scaled-up: This sector has attained significant scale in the DRC. The sector includes village-based loggers cutting informally, better financed, regionally-based teams who may or may not have permits, and larger enterprises with a dozen or more regular employees, some of whom work at a "semi-industrial" level, often under permits of questionable origin. Small-scale logging in DRC serves primarily to supply the construction and domestic furniture industries, and, particularly in the east, to produce timber exported to neighboring countries. Artisanal loggers produce ten times the volume of industrial-scale production; the sector supports at least twenty-five thousand part and full-time jobs. Small-scale logging generates a net annual revenue of about US $111 million, divided among rural populations, private sector, administrators, and urban populations. Almost 90 percent of this income, split relatively equally, goes to rural populations and the private sector (Lescuyer et al., 2014; Miller & Hagan, 2016).

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[51] For example, forest service staff of the Ministry of the Environment (Ministère de l'Environnement et du Développement Durable) interviewed for this assessment in Goma reported that the forest guards in North Kivu have not transportation to monitor harvesting permits other than on foot.

[52] Although these references are dated, we have no reason to believe the abuses have been discontinued. They were referred to as common knowledge by several of our interviewees. Recent reporting regarding logging from Global Witness and other conservation and human rights organizations has been dominated by news of the government's recent allocation of commercial concessions to two Chinese logging companies in violation of its 2002 moratorium on new logging licenses.

[53] High-grading also impacts biodiversity. However, selective logging reduces diversity less than clear cutting, and much less than conversion to agroforestry, timber plantations, fuelwood plantations, non-timber plantations, and swidden agriculture. Reduced impact selective logging, which USAID would support in community concessions, has been found to have negligible impact on the biodiversity of tropical forests, (Chaudhary, et al., 2016).

Potential to introduce practices that add value: Logging is the most valuable, most capital intensive, most concentrated in fewer actors, and most highly regulated forest enterprise; may have the greatest potential to drive market system improvements. Donor investment into this sector will necessarily introduce new standards and practices to conform with government, donor, and international policy. They may also introduce technical upgrades. The German PBF project introduced a portable saw mill an upgrade to compensate for the additional administrative costs to artisanal loggers. Other upgrades may not require donor investment in expensive equipment. One example: current law requires that forest management plans be developed before government officials issue artisanal permits. This does not happen; artisanal loggers do not have the capacity, and the government does not verify their plans. The development of simple management plans in community concessions could serve to pilot and introduce this practice, and the skills required, creating appropriate models, and raising the bar for loggers outside of community concessions. A similar evolution could be imagined for relationships between loggers and the communities whose forests they work in. The parties now negotiate each agreement regarding reimbursement for trees harvested, the "*cahier des charges.*" With assistance from NGOs, community forest concessions are likely to develop more specific agreements that more detailed and clear. They will also likely follow a more transparent process of negotiation and payment. In fact, the promotion of logging in community concessions would entail many of the steps that have been proposed in the formalization of the sector as a whole (Lescuyer, et al., 2014).

Small-scale logging summary

The damage to forests in the DRC caused by wood-fuel harvesting far surpasses the impact of small-scale logging. Nevertheless, improved management of the methods used in this growing sector could contribute to forest health. It is also more likely that investments in this sector would influence practice and policy within and beyond the communities themselves, in a way that investments in the more diffuse and less intensive wood-fuel would not. Engagement in logging also provides an opportunity for communities to generate income for the community to support community forest management.

6.3 RECOMMENDATIONS ON WORKING IN COMMUNITY FOREST CONCESSIONS

This assessment supports the conclusion of the CARPE midterm evaluation that community forestry is the most promising approach to generating rural incomes in the DRC while managing the impact of the health of the country's forests. Yet the success, and even the continuation, of the effort cannot be assumed. People in the government and private sector doubt the capacity of communities to sustainably manage their forests. The DRC government considers the next two years to be a pilot phase for community forestry. USAID should work with partners to encourage the government and partners to continue this effort. Our assessment supports the following suggestions to do so:

Apply market system approaches Global experience in community forestry demonstrates the difficulty of forming enterprises in rural forest landscapes that are not dependent on continued external support. Given the technical, business, and governance growth required among stakeholders -- and the constraints of project timelines—tapping into and leveraging existing value chains presents much more potential than introducing and fostering unknown or marginal enterprises. From this perspective, logging and harvesting wood-fuel stand out, as they have extensive market systems across the country. A sustainable approach to generating rural incomes through concessions must focus on the interaction between communities and the private sector, rather than an insular approach exclusively building out from communities. Three of the private sector approaches presented above may be adapted and used to leverage private sector incentives to finance community forest concessions:

- Public-Private Partnerships (PPP): To establish a consulting firm to provide technical support to community concessions in such areas as product inventories, developing harvesting plans, and

ongoing monitoring. USAID IPs could also work with lead logging companies or artisanal loggers to provide similar services to community forest concessions. USAID IP ACDI/VOCA is exploring this option with a local logging company in Liberia.

- Challenge Grants: To domestic logging firms to establish a protocol and standard for logging contracts between community concessions and a domestic logging partner. Logging companies would be expected to provide technical support to communities in conduct inventories, develop harvest plans, practice reduced-impact logging practices and meet legal requirements for logging.

- Enabling Environment Platforms: Provincial platforms for ongoing engagement between government authorities, private sector actors, and community concession holders to monitor the evolution of activities in their areas and shepherd a process of crafting and reviewing regulations to alleviate pressures on community concessions from expanding sectors (e.g., logging, mining, charcoal production, tree crops, etc.). Experience in Cameroon has found that horizontal communication among community forest institutions improved forest governance and the behavior of government officials (Beauchamp, 2011).

Use a lead enterprise, but diversify over time Small-scale logging has the greatest potential to drive economic and institutional development in the greatest number of rural communities. Engagement with the private sector in logging could generate incomes, and foster improvements in management practices. The development gained could create the systems and understanding for communities to eventually diversify to additional sectors. Diversification not only reduces market risk and supports a greater distribution of benefits, it also enables a more efficient exploitation of forest resources. For example, a zone harvested for timber will not only produce various timber products (sawn wood, poles) but also wood for fuel or charcoal, and a variety of NTFPs. Diversification should take place through a holistic approach also includes practices that strengthen the long-term health and productivity of forests through reduced impact logging, silviculture, and enrichment planting, as opposed to current artisanal approach of simply targeting of the largest trees of specific species.

Continue the experiment with intention Many fundamental questions regarding the roles and relationships among stakeholders cannot be resolved *a priori* or based on experience in other countries. The satisfactory resolution of these questions through an intentional process of exploration, such as the USAID CLA approach,[54] will be critical to long-term success:

- Government/Private Sector. Funding concession management in a way that resolves the inherent conflict between income generation and sustainable harvesting. In small communities, concession governance representatives are likely to have interest in the enterprises generating income from forest products. Community leaders need incentives that will not drive overharvesting. The literature does not propose any easy solutions. The most direct approaches—including governance officials in enterprises, or taxing sales—raise potential conflicts of interest. Community forest groups in Liberia found that the system of permits and fines they established did not generate sufficient revenue to support the cost of the administering the system itself.[55] Communities in that country have since proposed zoning a portion of their land for a community-owned cocoa plantation to support community forest governance.

- Concession/Non-concession forest. Community forest concessions rarely include all forested land traditionally exploited by communities. Whether primary forest, old regrowth, or recent fallow covers the remaining land, the more individualized exploitation of excluded land may

[54] For information on the Collaborate, Learn, and Adapt (CLA) approach see the Learning Lab website at: https://usaidlearninglab.org/lab-notes

[55] Personal interview of community members in 2016, by the author, Miller.

conflict with concessions management plans. For example, the presence of the same forest products on both parts of the landscape may undercut attempts to commercialize forest products within concessions. Some forest products emerge more rapidly in secondary forests. Where concessions are selected for their conservation value, they may be more remote from markets. Rules regarding the use of concession forests may also drive increased exploitation elsewhere. It will constrain or divert agricultural expansion. This dynamic has driven community forest management institutions in Liberia to request that they integrate the entire territory in their land use planning and management. That is one solution; resolutions to this unavoidable dynamic will need to be negotiated for each of DRC's community forests.

- Community/Village. Concessions spanning thousands of hectares across multiple villages at several days' travel from each other pose considerable challenges to manage and monitor. Experimentation will be necessary to determine the most effective division of roles and responsibilities at these different levels.[56] A two-tiered approach has apparently been effectively employed in Burkina Faso's community-based wood-fuel management systems for 30 years (Roy Hagan, personal communication).[57] Individual villages would be allocated certain roles and responsibilities, such as guarding forest near the village, or managing a sub-unit of product harvesting or transformation. The community governance structures, meeting less frequently, would play more of a communication role, represent the community to the government and other outside parties, and engage in the development and management of new and critical activities, such as managing inventories and developing land-use plans. Fortunately, in the DRC, as in Liberia, community forest concessions generally coincide with existing clans and their governance institutions.

- Equity/Growth. Market system development requires leaders and concentrated vertical investment while equity may require investment across different value chains. Experience with the community forestry in Africa presents a rich variety of examples of inequitable distribution of benefits (Hagan, 2014). New wealth creates new stressors. Communities and local institutions that manage new sources of income confront new or exacerbated governance challenges. These may include weak accountability of politicians to their constituents; limited support from the formal government; and ineffective monitoring and enforcement institutions (Ribot, 2003b). The resulting inequitable distribution of income may undermine a community's bonds of cohesion and engender conflict (Baynes et al., 2015). And while the infusion of new resources may reinforce existing inequality, strict conditions for the distribution of new income may disrupt existing relations of power and undermine cooperation in forest governance and may in some cases create conflict.

Clearly, inclusion is a complex goal, not unique to community forestry, and one often achieved only over the long term. In community forestry schemes, it has been achieved through the diversification of income streams and sources of employment, and the addition of multiple enterprises such as NTFPs and ecotourism (Molnar et al., 2011). Income from community forestry invested in improving public goods—a new clinic or road -- may also benefit a broader population (McDermott and Schreckenberg, 2009).

Continue to explore and find solutions to trade-offs between simplicity and sustainability: Community forest concessions contain the tension between conservation and development that exists on a national scale in DRC. It is not unreasonable to fear that community governance institutions will not be able to

[56] Donors and Implementing Partners will also need to adapt. Most of the approaches now employed in development community employ households in villages as the model for analysis and implementation. PRA tools, for example, assume a household/village model, not a community of interdependent villages. Sampling frames, and technology diffusion approaches need to be adapted to the community forest context.

[57] For a brief description of how this might work in a community forest in West Africa, see Hagan, 2016.

manage the market forces unleashed to exploit forest products in community concessions. On the other hand, the global experience of community forestry suggests that the imposition of high standards on communities may be their greatest constraint. Finding simple yet effective technical, governance, and business solutions will be an ongoing, evolving challenge.

The development community should not "make the best the enemy of the good." The creation of concessions itself constitutes a transfer of forest management rights to communities, whether the communities effectively exploit the forests or not. The transfer in itself is an important step towards the local generation of income and local control. It prevents, or at least renders more difficult, the allocation of other forms of concessions in those forests. Even if communities do not establish and manage forest-based enterprises, they will be empowered to exclude others from extracting resources from their forests.

The development community in the DRC should take full advantage of this opportunity, and not wait for perfect models before supporting other communities to establish their own concessions. Decades of effort have been invested in the 28 concessions so far authorized -- a snail's pace compared to the drivers of deforestation. The objective should not be to develop the most sophisticated models, but the most adapted, those that can be most quickly turned over to communities themselves. Accept reasonable technical standards and test stripped-down models; elaborate hand-held examples will not scale.

Exploit resources developed elsewhere Annex VII presents tools for working commercially at a small-scale with timber and charcoal, and value chains.

7.0 CONCLUSION

USAID implements CARPE in a challenging context that inhibits forms of business development seen in countries with greater stability and less predatory, more equitable and effective governance systems. This context and the business practices they foster undercut the growth of market systems and reinforce extractive behaviors that do not add value to products; they undermine the behaviors and institutions that would otherwise promote the sustainable management of natural resources and generate increased incomes.

USAID could assist certain businesses to grow in ways that both improve the business environment and reduce demand on wood harvested from natural forests. These include liquid petroleum gas, the large-scale production of high quality fuel-efficient cook stoves, reusable and durable construction materials, and commercial tree plantations for wood-fuel and construction materials. Interventions informed by market-system approaches could catalyze this growth. Approaches include PPPs, challenge grants, accelerators, and enabling environment platforms.

Although these opportunities would dampen demand and show potential for growth, they would not increase rural incomes. Investment that increases rural incomes would need to be made within a strategy that also improves natural resource management. These strategies used in the DRC include conservation enterprises, jurisdictional approaches, certification schemes, and community forestry. Private sector interventions, combined with these strategies, could sustainably catalyze growth in ecotourism, sustainable wood-fuel, cocoa, NTFPS, wood-fuel, and timber.

If USAID continues to support the government and partners in promoting community forestry, it should begin with the most promising activity for the forest and location. Across much of the DRC this will be small-scale logging or charcoal production. Responsibly leveraging the resources and incentives of private sector actors for the extraction of forest products raises certain risks. However, it also creates the potential for the more rapid and sustainable formation of functioning community forest concessions, in addition to sectoral improvements that add value to the current extractive process.

Resolving the fundamental question of green growth of DRC's economy will be an ongoing process of evolution and discovery. This assessment has indicated directions for exploration. Important additional topics for research that fall in the ProLand mandate include:

- Case studies exploring the use of proposed interventions within specific sectors and the impact of their growth on forest health and GHG;
- Location-specific assessments of specific value chains in the context of community forestry—especially wood products—and catalyzing their sustainable growth (in particular, ongoing ProLand research on the charcoal value chain could inform a case study of that sector in DRC);
- Analysis of market system opportunities to dampen the demand for and/or improve regulation of wood from the DRC in East Africa regional markets;
- Approaches to dampening demand for bushmeat and improving management by communities;
- The integration of agroforestry in community forest concessions: catalyzing and managing climate smart growth; and
- The equitable distribution of the benefits of community forestry: creating inclusive concessions, and broad engagement in income generation.

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ANNEX I: STATEMENT OF WORK (DRAFT)

Analytical Review of Conservation-Based Livelihoods and Private Sector Engagement in the Central Africa Regional Program for the Environment - USAID/DRC

I. Background

1. CARPE

The Central Africa Regional Program for the Environment (CARPE) is a long-term initiative of the United States Government to promote biodiversity conservation and climate change mitigation in the Congo Basin through increased local, national and regional capacity for natural resources management, conservation of critical habitat, and protection of globally significant forest carbon stocks. The current phase is implemented largely in 9 forest landscapes of high conservation importance, and focuses on strengthening and implementing the conservation and monitoring approaches developed over twenty years and fostering community resilience and sustainable co-management of biodiversity and natural resources.

2. Geographic and Development Context

The forests and savannas of Central Africa contain critically important biodiversity and store vast amounts of carbon that otherwise would accumulate as carbon dioxide in the atmosphere, further accelerating global climate change. However, both the biodiversity and climate change mitigation benefits that these landscapes deliver face severe threats.

Two sets of core objectives point to the need to identify and support activities that focus on how rural smallholders earn a living and produce the goods they need, including food. First, this approach is necessary to address biodiversity and climate change objectives. Much evidence to date, including the spatial patterns of forest degradation and deforestation, suggests that smallholder activity drives degradation in CARPE landscapes. Absent alternative enterprises or livelihood options that employ a critical mass of the population, formally or informally, extractive activities such as artisanal mining, chainsaw logging, hunting or low return, activities such as shifting cultivation for cassava or maize remain the most viable options for many people, particularly those most dependent upon natural resources.

Second, core development considerations like the imperative to alleviate poverty also require working with these populations to address their well-being, for example by identifying and supporting opportunities for income, food, access to markets, health care, and education. Large portions of the region experience dire poverty and food insecurity as well as conflict and poor governance, including armed conflict in some areas. Underlying conditions like very poor infrastructure constrain the actions of many institutions, further limiting productive investment and limiting options for rural development.

These two objectives need to be addressed in concert. In their current impoverished condition, populations engaging in extractive and low-productivity activities have very weak capacity to engage in sustainable land management that protects the natural resource base, because these activities are likely to be illegal or controlled, and because they lack investment capital for collective action. Finally, they lack political agency to fight land-grabbing, corruption and mismanagement, which undermine

conservation. Identifying and supporting enterprises and industries that could support and stabilize a rural population plays a critical role in conservation.

Several more nuanced observations inform decisions about how to identify solutions to these challenges. First, few development, much less conservation, projects work with local traders and merchants. Thus there is little understanding of how both formal and informal local markets work, including margins, modes of credit and investment pathways.

Second, the majority of development activity that incorporates conservation objectives has worked in a narrow range of sectors, whereas opportunities for economic growth that also protect the natural capital upon which human well-being depends may occur throughout the economy.

Third, migration poses challenges. Internal migration leads to population growth in communities where migrants arrive, increasing pressure on resources and leading, for example, to land conflicts. In addition, as youth depart, responding to limited opportunities, they take with them vitality and fresh ideas.

Fourth, a new community forest law has created opportunities for communities to strengthen tenure of forest resources, and there has been a flurry of largely uncoordinated activity among CARPE partners to support stakeholder engagement and bureaucratic process, apparently with little focus on feasible plans for economic return from management.

Additional factors that have impeded productive investment in rural areas include:

- The history of a strong "underground economy" in the region for trade in valuable products such as minerals and wildlife and to avoid taxation, fees, fines and other impositions (*tracasseries*) by military and state authorities.
- Past or continuing prohibition or control of many of the most lucrative activities, such as artisanal mining, chainsaw logging, hunting, and alcohol distilling.
- Low purchasing power and lack of competition in trade, which engender low farmgate prices, which can lead people to move into extractive activities or petty trade despite the dangers involved in those professions.
- Social control mechanisms (e.g., accusations of sorcery) that inhibit local elites, including people with education and resources, from reinvesting in their home areas out of fear that they or their families will be targeted. Some communities have tackled this issue in innovative ways (e.g., Isangi community in Tshopo Province that has invested over many years in university education for its students with the stipulation that they return to the community).

All these factors that constrain investment and explain smallholder choices need to be considered in: (1) identifying interventions that can plausibly alleviate poverty while also achieving biodiversity and climate change mitigation objectives at scale; and (2) clarifying situations in the DRC/Congo Basin where market solutions (formal or informal) are not realistic objectives in the near-term and where stop-gap approaches like cash transfers might merit consideration.

In considering opportunities to address the multiple challenges that impinge on conservation and development in the CARPE landscapes, it is critical to consider that the region is highly diverse with respect to human populations, infrastructure, markets, biodiversity, carbon density, and degree of threats. Some areas have dense populations and good to fair market access, while others have low population densities and weak market access. Some areas have an active small to medium scale private sector while others have little economic activity aside from petty trade.

3. CARPE's Approach to Addressing Biodiversity and Climate Change

Like many development initiatives with land conservation objectives, CARPE's multifaceted approach to conservation and climate change includes investment in "alternative livelihoods," as a way of reducing

pressure on forests, and hence on biodiversity and carbon stocks. Alternative livelihoods as practiced in CARPE III include the introduction of improved crop varieties, crop substitution, honey production, small livestock husbandry, fish farming, and cultivation of cacao and crafts. Despite their widespread use, many development practitioners question the effectiveness of this approach, and although some of these CARPE activities have potential to grow to a scale where they can achieve significant impact, most do not. Several initiatives are locally successful; however, they are almost uniformly small-scale (with one or two notable exceptions such as cocoa growing in Ituri), raising questions about the influence of these activities on biodiversity and climate change mitigation benefits that depend on large-scale landscape conservation. Even where an activity has been able to reach scale, the linkage between the activity and positive conservation or reduced forest conversion may not be clear. Considered within the framework of traditional activities that smallholders undertake, these activities seem reasonably diverse. However, they tap only a narrow slice of the many sectors that comprise the DRC economy.

Purpose

USAID's CARPE recently completed a midterm evaluation that confirmed that livelihood approaches promoted by implementing partners and supported by USAID/CARPE are "too limited in scope, under-conceptualized, and too poorly executed to be effective in reducing deforestation and forest degradation [with the attendant loss of carbon to the atmosphere], as well as defaunation driven by high levels of bushmeat consumption and trade." In short, while some interventions are promising--and these need to be further investigated--the approaches currently being applied are often not having the desired impact.

CARPE therefore needs fresh ideas and new partnerships if rural livelihood improvements are to help conserve biodiversity and forest carbon storage in CARPE landscapes. The recent evaluation reflects current and past practice within the Program and the work proposed in this statement of work (SOW) aims to identify what the future direction and livelihood strategies should include in order to have the desired effect.

Despite the clear need for enterprises that can engage the rural poor in activities that do not lead to unsustainable extraction of the natural resources upon which they depend, we lack a roadmap to private sector activity in CARPE landscapes. We also lack a clear idea of related analysis or activities that other donors may have completed or in which they may currently be engaged, although we know other donors are active in DRC. (For example, Norway has somewhat controversially been working on increasing sustainable forest management for timber in the region.) Such a roadmap would identify potential avenues for connecting smallholders with value chains, opportunities for public-private partnerships, and/or the extent of private sector resources in Corporate Social Responsibility programs for which CARPE objectives and frameworks might provide attractive opportunities.

Therefore, with this SOW, CARPE seeks to: (1) investigate approaches, models and systems that successfully provide sustainable livelihood and economic growth opportunities to rural communities in the DRC/Congo Basin, and that also protect the natural capital ; (2) identify conditions that enable and constrain such practices and enterprises; and (3) building on the first two elements, identify potential activities that would plausibly contribute to rural economic growth and conservation at meaningfully large scales in the CARPE landscapes, as well as private sector actors and potential public-private-partnerships that could offer promising opportunities for leverage and integration between economic growth and landscape conservation.

This work will <u>not</u> assess or evaluate CARPE's existing livelihood activities. Rather, this analysis will consider a much broader perspective than defined by CARPE's current activities, although it will consider lessons learned from CARPE. In particular, it will draw on work to identify and implement sustainable livelihoods activities, or activities with the potential to replace practices that cause environmental degradation.

II. Statement of work

The analysis will identify value chains with high potential for widespread adoption (scalability) and attendant protection of natural capital by mapping factors such as market linkages and access to private sector partners and finance. It will clarify where the foundation for meaningful private sector participation and engagement exists, where it does not, where it is now emerging, and where this foundation intersects landscapes that harbor critical natural capital. The study will specifically consider private sector partnerships that can be developed or scaled up to address both development and conservation objectives. For example, it could ask: where market linkages (or the potential to develop market linkages) coincide with landscapes that still harbor the potential for large-scale conservation. Although the focus will be on enterprises that can be self-sustaining and expand in scale, this study may map private sector resources in Corporate Social Responsibility programs for which CARPE objectives and frameworks might provide attractive opportunities, because used strategically, CSR resources could help jump-start sustainable, scalable enterprises. Since this study will only collect information on the ground in a minority of the CARPE landscapes, the final report will include guidelines for conducting similar analysis in the remainder of the landscapes.

The analysis should identify models and approaches that have the potential for impact at a broad scale. Small-scale enterprises, microcredit schemes and "alternative livelihood" activities may have potential to contribute to local well being but cannot substantially alleviate rural poverty (i.e., improve well-being of whole populations across large areas). They also cannot provide enough people sufficient incentive to forgo profitable but environmentally destructive activities, which therefore renders them unable to achieve CARPE's biodiversity and climate change objectives. Factors that influence the potential for interventions to achieve impact across large spatial areas and populations include: the market importance of a value chain and the size of a private sector entity or the population that could potentially be engaged in the value chain (e.g., as producer, processor, intermediary), the social and technical feasibility of the intervention in the particular context of the landscape concerned, and the clarity of the linkage to biodiversity conservation and/or reduced deforestation objectives.

The study will also include an explicit analysis of risks of increased land use conversion and unsustainable land management that accompany approaches to alleviating poverty at broad scales. The analysis will also identify those risks and provide analysis and recommendations about how to mitigate them.

The study will provide USAID and partners with a better understanding of private sector operations (and informal economies) in rural areas, their modes of investment, incentives for partnership and constraints. The analysis could include sectors such as mining, agro-industry, transport, energy, technology, manufacture (e.g., furniture, housing), beverages, forestry and infrastructure as well as sustainable business processes such as Extractive Industry Transparency Initiatives (EITI). Aligning and partnering with the private sector is one avenue to sustainability. It also provides an opportunity to influence private sector practices toward more positive social and environmental engagement.

The study will identify how to work with communities on identifying useful economic activities linked to applications submitted to manage community forests, in accord with the new community forest law. This analysis will include suggestions for feasible plans to generate economic return from management.

The contractor will select a team of three persons to undertake a review of literature and project documents and carry out fieldwork in at least four sites, at least two within the CARPE landscapes, their associated major towns or cities, as well as Kinshasa and Brazzaville. This analysis will commence in [October or November 2017. Fieldwork should be completed by the end of [Please Fill In], 2018 and final report should be completed no later than [Please Fill In], 2018.

This analysis will include a summary of related work in which other donors are engaged - completed, ongoing, or planned.

In addition to deep engagement from the core team, identified below, once ProLand has completed its literature review and fieldwork but prior to solidifying thinking and findings, results and ideas will be shared with a group that includes a wider set of skills and perspectives, to elicit and incorporate feedback."

The team shall consist of:

Team Leader. At least ten years experience studying and evaluating conservation enterprises, sustainable livelihoods and/or economic development activities in the context of conservation. Master's degree and fluency in French required. Africa, preferably francophone Africa, experience required.

Private Sector Expert: At least ten years experience understanding and analyzing private sector operations in Africa, preferably Central Africa. Able to interface well with diverse private sector actors and understand social and economic context of private sector operations. Familiarity with corporate social responsibility and sustainable value chain initiatives. Master's degree and fluency in French required.

Rural Development Expert: At least ten years experience working in and analyzing sustainable rural development in Africa, including models of community engagement, self-development and private sector partnerships. Deep understanding of gender and engagement of indigenous peoples required. Fluency in French and Lingala required, Swahili preferred.

III. Deliverables

1. Work Plan, including logistical plan and initial findings from literature and document review 15%
2. In-brief or workshop to review and validate workplan and confirm logistics
3. Meeting of experts from additional members of the ProLand partners (TT, ACDI/VOCA) to refine analysis and recommendations ("peer review") with brief summary report.
4. Out-brief to present initial findings
5. First draft of report 25%
6. Final draft with clear executive summary and PowerPoint of findings 60%
7. French translation

ANNEX II: KEY INTERVIEW QUESTIONS

Regarding Market Systems

In general, we're exploring how market dynamics can be leveraged to either

- enhance the sustainable management of forests, or
- dampen the demand for forest products in order to curtail the expansion of extractive supply chains into forested areas

In particular, we're focusing on the wood for construction and energy sectors. Here are the main questions were asking.

- What are key domestic end-markets for forest wood? (e.g., construction, furniture, energy) What are important market trends and drivers behind them?
- What are pressure/leverage points in domestic wood supply chain to get actors to adopt more sustainable harvesting practices? (e.g., financing, consumer requirements, community forestry, concession management)
- What are existing and potential opportunities for alternative products to compete with domestic forest wood? (e.g., bricks, LPG for cooking, imported furniture)
- What are existing and potential opportunities to intensify wood production on a commercial basis? (e.g., agro-forestry)

Regarding Community Forestry

I. What is the status regarding Key Factors to successful CFs?

- Tenure: Secure tree and land property rights
- National Government: Government support for the Community Forest Group (CFG) (legislation, capacity building. Absence of patronage and corruption.)
- Group Governance: Democratic and equitable CFG governance
- Status: Equality of socio-economic and gender status
- Benefits: Material benefits from the forest—product sales, or timber rights.

II. What means to generate revenue from CFs is being considered?

- Harvesting forest products, or elsewhere on the value chain. Including value added—certified harvesting for investment
- Selling rights to harvest trees, animals, plants.
- Protecting forests (PES)
- Cultivating Forest products
- Ecotourism

III. What is the market potential for forest products at various locations?

- Where are forest products harvested and sold, in general, across the country? By whom, how often, at what volumes, for sale where, with what processing, etc.?
- Is there the potential for complementary diverse sources of income?

- Is there the possibility of moving up the value chain for the existing enterprises?
- Are there lead companies involved in the value chain?

IV. Equitable Benefit Distribution

- Are communities relatively homogenous? What kinds of elite and marginalized populations?
- Will the planned form of income generation or livelihood development generate income on the basis of household labor, or community decisions and actions?
- How capital-intensive is the proposed means of income generation?
- Are there currently means of generating income in the community that are relatively equitable? What evidence is there of inequitable distribution of wealth and power?

V. Governance

- What challenges does the formal legal and institutional context present in establishing functioning community concessions?
- What requirements of the Arête 25/09 Feb2016 are likely to present the greatest challenges for communities?
    - Governance (including size of 50k ha)
    - Technical
    - Business

- What requirements of the Arête have been shown to be (or are expected to be) hardest for the Forest Service to implement?

    - Developing written guidance (Article 75)?
    - Providing support to communities?
    - Enforcing laws and regulations?

Additional themes to explore recommended by USAID/DRC

- Add a social organization that includes different clans from the group exploiting the community forest. having many clan groups in the same CF could create conflicts or disputes. Given the size of CF in the DRC, in several cases, you will have many different clans in the same site.

- The money saving system; explore the saving system in place in areas surveyed and check if various stakeholders trust them, this may include informal traditional saving system such as "Tontines"

- The money transfer system commonly used. I remember I have asked you to also explore the system via phone companies.

- Do not focus on questions regarding the national government only; local government entities will play a key role for CF.

- Explore the capacity of local stakeholders for wood transformation, example handicraft.

ANNEX III: SUMMARY OF ITINERARY AND INTERVIEWS

Prior to departure: 6 phone interviews.

In country: (11th to the 31st, three weeks.)

Week one:

David, Eric, Dominique: Kinshasa.
Well attended in-brief—11 USAID staff.
WCS, WWF, WRI, WB
2 Community Forestry Network NGOs (impressive*)
Ministry of Environment Community Forestry representative
Federations for Enterprises in Congo, and Industrial Logging Companies
Began interviews with private sector folks.

Leon: Goma.
Charcoal Sellers
Lumber merchants
Artisanal Loggers
Ministry of the Environment
LNG suppliers
Eco-brick makers
Construction contractors / builders
Tree plantation owners

Week two:

David: Mbandaka, and Lac Tumba landscape (17th—21st)
WWF Staff
Traditional Chiefs of 7 CFs
Charcoal sellers and producers; cocoa farmers; artisanal loggers; farmers practicing agroforestry; transporters.
Provencal Coordinator of Ministry of Environment, Equateur
Presidents of FEC and Artisanal Loggers, Equateur

Eric, Dominique: Kinshasa
Sellers of wood, construction materials,
SAFGAZ: seller of gas products for industrial use, possible investor in LNG import/distribution
Construction company
Commercial tree plantation owners
Forest Resource Management: Forestry services firm, providing concession management plans, environmental/social impact assessments and mitigation plans, etc. serving the industrial logging companies
Industrial logging firms: CFT and SODEFOR
NSM: Hydroelectric contractor and project manager as well as potentially interested in LNG gas distribution

National REDD Fund Representative
Artisanal Loggers Association

David, Eric, Dominique
Giz community forestry project managers
Elan Project

Leon: Goma.
Continued meeting actors in the timber and fuel sectors

Week three:

All in Goma:
Ministry of Environment Provincial Representatives
Company producing Eco-Bricks
Actors in value chains for furniture, gas, timber, and coffee
Association of Artisanal Loggers
NGOs supporting community forestry

ANNEX IV: LIST OF PERSONS INTERVIEWED

Name	Title	Date of Interview	Contact Information
Catherine Picard Ph.D. |	Chief of Party, Capacity Building for a Responsible Minerals Trade (CBRMT)	2-8-2018	Mobile: +243 821 058 854 Skype. cubpicard catherine.picard@tetratech.com
Ken Creighton	G. Ken Creighton, Ph.D. PRINCIPAL FOREST & CLIMATE ADVISOR, Woods Hole	2-16-2018	Phone 508-444-1555 Email kcreighton@whrc.org
Cary Farley	Central Africa Forest Ecosystem Conservation (CAFEC) Program—DRC COP WWF	2-16-2018	Cary.Farley@wwfus.org
John Waugh	Vice President, Climate and Environment. Integra Government Services International	2-24-18	jwaugh@integrallc.com
Nate Hulley	ELAN-RDC Team Leader (DFID funded market development project)	2-20-2018	Nathan.Hulley@elanrdc.com
Laurent Valiergue	Senior Forestry Specialist World Bank	3-8-18	T +33 (0)1 40 69 30 73 D 5780-3073 M +1 202 255 1680 E lvaliergue@worldbank.org A 66 Avenue d'Iéna, 75116 Paris
TRAVEL TO DRC			
Antoine Eyebe	CARPE program specialist, USAID/DRC	3-12-18	aeyebe@usaid.gov
Robert Layng	CARPE Director, USAID/DRC	3-12-18	rlayng@usaid.gov
Elodie Nsamba	CARPE communication officer, USAID/DRC , USAID/DRC	3-12-18	ensamba@usaid.gov
Toussaint Molenge	CARPE program specialist, USAID/DRC	3-12-18	tmolenge@usaid.gov
Alastair McNeilage	CARPE Senior Technical Advisor, USAID/DRC	3-12-18	amcneilage@usaid.gov
Mariealice Ariens	Food for Peace Officer, USAID/DRC	3-12-18	mariens@usaid.gov
Carrie Teiken	Economic Growth Agricultural Officer, USAID/DRC	3-12-18	cteiken@usaid.gov
Sara Calvert	Economic Growth Agricultural Officer, USAID/DRC	3-12-18	scalvert@usaid.gov
Augustin Ngelaka	Economic Growth Agricultural Development Specialist, USAID/DRC	3-12-18	angeleka@usaid.gov
Anne Bisso	Economic Growth Private Enterprise Officer, USAID/DRC	3-12-18	abisso@usaid.gov
Mario Mondele	Program Management Specialist, USAID/DRC	3-12-18	mmondele@usaid.gov
Richard Tshombe	Country Director, WCS DRC	3-12-18	rtshombe@wcs.org
Jean-Paul Kibambe	GIS and Climate Change Coordinator, WCS DRC	3-12-18	jpkibambe@wcs.org
Laurent Nsenga	Lac Tele/Lac Tumba Landscape Leader/WWF	3-17-18- 3-21-18	
Alain Huart	Forest Agriculture Coordinator, WWF	3-13-18	ahuart@wwfdrc.org
Lauren Williams	Project Director, WRI	3-13-18	LWilliams@wri.org

Name	Title	Date of Interview	Contact Information
Abraham Itshudu	Charge de Normalisation et Octroi des Titres Forestiers Division Foresterie Communautaire (Responsible for the standardization and granting of Community forestry titles), Ministry of the Environment	3-14-18	+243 810615305 abraitshudu@hotmail.fr
Constantin KABADIENDEDI LOMBE	Directeur Commercial, Fédération des Entreprises du Congo	3-14-18	Tel: 243 81 51 35 875 email: c.kaba@fec-rdc.com
Blaise MUDODOSI	Chargée de Plaidoyer, Chef de Projet Forêts Communautaire (Advocacy Officer, Chief of the Community Forestry Project) Réseau Ressources Naturelles (RRN)	3-15-18	0993500006 0816334282
Gabriel MOLA MOTYA	President Federation des Industriels du Bois	3-15-18	+243 81 075 30 21
Debo Botwa	Carpenter, Artisanal logger ; Coordinateur Artisanat et développement	3-16-18	+243 810 061 511 artisandevelop@yahoo.com
Vincent CAPDEJELL	Assistant Technique International UC-PIF	3-16-18	+243 8273 46565 vincent.capdejelle@icloud.com
Theophile GATA DIKULUKILA	Consultant et Directeur Exécutif, Centre d'Appui à la Gestion Durable des Forêts Tropicales (CAGDFT)	3-16-18	+243 81 696 3768
Prof. KIFUKNTO MANZ'A Carmel	Charge de Programmes, Centre d'Appui à la Gestion Durable des Forêts Tropicales (CAGDFT)	3-16-18	+243 81 520 3973
Victor Kangela	Chef de Projet de la Foresterie Com., CAGDEF		
3 market women	Wood market of Samba Zakiti	3-17-18	
Karim Ammacha	CEO, SODEFROI CFT Industrial logging company	3-16-18	+243 854 000 005 karim@cft-drc.com www.cft-drc.com
Sylvie Boldrini	Agriculture Intervention Lead South Region Elan RDC	3-18-18	+243 822 93 99 93. Sylvie.Boldrini@elanrdc.com
Theophile Kalonji	CEO Cration Architecture and Techniques (bureaux d'etudes, construction)	3-17-18	+243 819 934 743 kcreatech@gmail.com
Kevin Wilkins	Technical Lead, Coffee and Cocoa, ELAN RDC	3-19-18	kerwilkins@gmail.com +1 302.588.4485 (US/WhatsApp) +243 (0)853 838 341 (DRC)
Henri Mubi	FIP grantee with 250 Ha tree farm	3-19-18	Tél: (+243) 811 658 666/817 236 666 Email: fermehetrin@yahoo.fr, fwala@hotmail.com
Antoine Nghonda	FIP grantee with 250 Ha tree farm	3-19-18	Tél: (+243) 818125661 Email: antoine.ghonda@hotmail.com ; claireghonda@hothmail.com
Mr NKUNKU MALEWO Robert	FIP grantee with 270 Ha tree farm	3-19-18	Tél: (+243) 819 933 409 Email: cta115@yahoo.fr , robertmalewo@yahoo.fr
Marc Rodriguez	Fond National REDD+ (gas and agro-forestry)	3-20-18	+243 810 939 983 marcjrdrgz@gmail.com

Name	Title	Date of Interview	Contact Information
Mixia	Ets. Mamie Kankonde Zhang, Chez la Chinoise seller of construction material	3-20-18	+243 854 865 999 Av. Commerce No. 40 C/Gombe
Nicolas Bayol, Directeur d'études	Forest Resource Management: étude et gestion foresterie	3-20-18	nbayol@frm-france.com +33 467 200 809 Imm Ecole, No 132 Av de l'Ecole
Jean-Gaël Jourget, Ingénieur	Forest Resource Management: étude et gestion foresterie	3-20-18	+243 810 544 462 jgjourget@frm-france.com Imm Ecole, No 132 Av de l'Ecole
Emmanuel Zola Mvibudulu	Administrateur Général SIFORCO	3-20-18	emmanuel.zolam@gmail.com +243 998 635 215
Rozy Kalinda	Coffeelac, encadrement de producteurs	3-29-18	+243 990 545 712
Thomas Kubuya	KBY Agency, Managing Director	3-28-18	+243 990 014 671 tkubuya@gmail.com
Floribert Kabeya	Directeur Technique, Eco-Habitat	3-27-18	+243 997 704 529, +243 895 506 865
Eve Thompson	COP, Solutions for Peace and Recovery,	3-30-18	+243 990 607 712 ethompson@msi-drc.com
Charles Vinywasiki	Chef d'Agence DAP GAZ	3-27-18	+243 997 724 055
Alphonse Munjeri	Foresterie Communautaire, Coordination Provinciale de l'Environment, Nord Kivu	3-27-18	
Dieudoné Kabuyaya	Administration & Finances, Cood. Provinciale de l'Environnement Nord Kivu	3-27-18	
Gabrielle Munduku	Responsable Gestion durable des Forets, GIZ,	3-23-18	+243 815 094 969 Garielle.munduku@giz.de
Elie Bahizi	Conseiller Technique en Zonage Forestier, GIZ	3-23-18	+243 816 313 357, Elie.bahizi@giz.de
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Joseph Itongwa	Directeur Itongwa de PIDP	3-27-18	+243 822 335 206
Egide Bohuma	Président des dépot	3-27-18	
Muliro Adolphe	Président des Exploitants forestiers	3-27-18	
Kasai Nkulu	Président de l'Association d'Exploitants artisanaux et Vendeurs du bois	3-27-18	
François Biloko	Directeur Technique du Réseau CREF	3-30-18	+243 998 605 665
Isaac Mumbere	Droits humains & Gouvernance des RN du Réseau CREF	3-30-18	
Faustin Ngulu	Technicien GIS du Réseau CREF	3-30-18	
Dieudonné Busanga	Directeur Technique, UGADEC	3-30-18	+243 991 702 922
Omer Paluku	Administration & Logistiques, UGADEC	3-30-18	
Alain Mitondo	Financier, UGADEC	3-30-18	
Samy Kibengo	Comptable, UGADEC	3-30-18	

ANNEX V: BRIEF BIOS OF TEAM MEMBERS

Team Leader. Dr. David Miller. As Senior Climate Change Advisor for ADCI/VOCA, and a member of the ACDI/VOCA Climate Smart Agriculture team, Dr. Miller provides technical guidance on the design, implementation, and evaluation of agriculture and forestry projects. Dr. Miller also dedicates half of his time to the USAID Productive Landscapes project, where as Technical Advisor for Agricultural Intensification, he develops tools and evidence demonstrating that by sustainably intensifying land use with best management practices, USAID can simultaneously achieve the objectives of increased food production, reduced biodiversity loss, reduced greenhouse gas emissions, enhanced adaptation to climate changes, and increased inclusive broad-based economic growth. Dr. Miller brings 25+ years of experience in natural resource management, agricultural development, land tenure, and forestry. Dr. Miller holds a Ph. D. in Development Anthropology from the African Studies Center of Boston University, with his dissertation focusing on land tenure in Senegal. He is fluent in English and French.

Private Sector Expert: Mr. Eric Derks. Mr. Derks has over 20 years' experience grounded in market systems and M4P frameworks and iterative and adaptive approaches for achieving sustainable results. He is a proven senior manager of large, complex projects, with experience intervening in a broad range of agriculture and non-agriculture market systems throughout East and West Africa, the Middle East and Asia. He has molded high-performance teams and organizational structures that have robust knowledge management systems and agile operations capable of reacting quickly to change and new opportunities. He is a strong coach, mentor, trainer, and strategic advisor and evaluator of systemic change initiatives.

Conservation Expert: Dominique Bikaba is a dynamic and dedicated professional with over twenty years of field experience managing and supporting conservation and sustainable development programs that balance the needs of local and indigenous communities with those of forests and wildlife in the Democratic Republic of Congo and across the region of Congo Basin Forests. Detaining degrees in both forestry & environmental studies and in rural development, where he specialized in ecosystem conservation & management and in regional planning, with extensive research and on ground project implementation in artisanal mining, primatology, biodiversity conservation, conservation science, forest governance, reforestation, health and conservation, socioeconomics, political ecology and political economy; M. Bikaba provides capacity building of community-level and government actors in conflict and post-conflict regions and context, to promote human rights, peace and resilience opportunities for stakeholders to maintain biodiversity intact while developing infrastructural and development projects. His field of experience includes also environmental and social impact assessment, and monitoring & evaluation of national and regional infrastructural development projects, including roads and electrical interconnections between DRC and Angola, Burundi, Central African Republic, Rwanda and Uganda; including Gabon for great apes conservation programs. This includes working with host government officials, regional conservation bodies (CARPE, CEEAC, Nile Basin Initiative, CEPGL, African Development Bank) and many other local and national partners of the civil society and private sector. Languages: Mashi (mother tongue), Swahili (local language), French (fluent), English (proficient).

Market Systems Expert: ZABITI KIKUNI LEON, Private sector development and business consultant. Ingénieur Agronome Phytotechnicien, conseiller technique et économique pour le développement des secteurs privés ; beaucoup d'expertise dans l'analyse du marché et le développement de la chaine de valeur agricole ainsi que le renforcement de capacité institutionnelle et technique des organisations locales ; Expérience approuvée dans le développement du système de la contractualisation (outgrower

scheme), facilitation pour l'accès aux marchés (business improvement), amélioration de la qualité et de la quantité de la production agricole (agricultural production quality improvement) ; développement des plans de gestion et d'atténuation environnementale en faveur des organisations privées; Formateur des formateurs sur les Bonnes Pratiques Agricoles et la certification internationale (Organique, Fair Trade, UTZ, Rain Forest,…). Bonne connaissance de l'approche M4P et P4P.

Rigoureux, méthodique. Capable de travailler sans supervision, dans un consortium de plusieurs organisations. Ayant une connaissance professionnelle du contexte sociopolitique de l'Est de l'Afrique avec plusieurs échanges professionnelle au Brésil, en Côte d'Ivoire, en Ouganda, en Tanzanie, au Rwanda et Burundi.

ANNEX VI: RELEVANT SECTOR DEVELOPMENT PROGRAMS IN THE DRC

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
Sustainable Landscapes	FIP	World Bank	Improved Forest Landscape Management (Projet de gestion améliorée des paysages forestiers (PGAPF)	The Project Development Objective (PDO) is to test new approaches to improve community living conditions and forest landscape management to reduce greenhouse gas emissions from deforestation and forest degradation. The PGAPF totals funding of US $ 36.9 million and is broken down into the following components: - Component 1 (US $ 14.2 million): this is the Plateau Integrated REDD + Project implemented since 2016 by the World Wildlife Fund (WWF). Component 2 (US $ 20.1 million): supports the private sector to reduce wood fuel emissions through the following two sub-components: 2a (US $ 5.9 million): concerns agroforestry plantation in savannas (50 to 500 ha) and co-finances private sector project promoters; 2b (US $ 2.1 million): targets the consumption of wood energy by urban households, particularly in Kinshasa, in support of private entrepreneurs engaged in the diffusion of improved stoves with certified performances; - Component 3 (US $ 15 million): Supports seven Local Implementing Agencies (LRAs), mainly located in Central Kongo Province but also on the Bateke Plateau and part of the Kenge Territory (Bukanga Lonzo), to disseminate community and private agroforestry on a small scale (from 1 to 50 ha) in savannah; Component 4 (US $ 4.2 million): relates to project management by the PIF Coordination Unit (UC-PIF) which also coordinates the PIREDD MBKIS.
Sustainable Landscapes	AfDB/FIP	Ministère de L'environnement, Conservation de la Nature et Du Tourisme &	PIREDD/MBKIS. Integrated REDD+ Project in the Mbuji-	Focused in the Mbuji-Mayi basins (Kasaï-Oriental), Kananga (Kasaï-Occidental) and Kisangani (Orientale Province). The project aims to: (i) reduce the rate of deforestation and forest degradation; (ii) promote sustainable development of the wood energy sector and (iii) land security and promotion of alternatives to slash and burn. Support for sustainable forest management comprises four

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
			Mayi/Kananga and Kisangani Basins.	activities: (i) rehabilitation of degraded forests; (ii) realization of forest plantations; (iii) supervision of the wood energy sector; and (iv) strengthening of capabilities. Support for sustainable agriculture and land tenure security comprises four activities: (i) promotion of sustainable agricultural practices; (ii) promotion local land use plans; (iii) support to the land security mechanism; and (iv) accompanying measures. US $ 22.3 million.
Supply Chains	GoDRC, TFA 2020 Partners, WWF DRC, DFID, GEF	Proforest Initiative	Africa Palm Oil Initiative	The Tropical Forest Alliance 2020 Africa Palm Oil Initiative is working with stakeholders at both national and regional levels to develop acceptable principles for responsible oil palm development in Central and West Africa. The Initiative is engaging with nine palm oil producing countries: Cameroon, Côte d'Ivoire, Democratic Republic of Congo, Gabon, Ghana, Liberia, Nigeria and Sierra Leone. The Tropical Forest Alliance 2020 (TFA 2020) is a public–private partnership that aims to reduce deforestation in supply chains linked to key global commodities (palm oil, soy, beef and pulp and paper) in order to protect the tropical forests that provide food and livelihoods for millions of people. The Africa Palm Oil Initiative (APOI) is the first signature initiative of TFA 2020.
Small-Scale Logging	EU FLEGT/FAO	ACS-DRC and Etifor	DURAFOR-EST	A pilot project to support the forestry sector in eastern DRC (North Kivu and Ituri province) to promote legal timber production. It to encourages cooperation and partnerships between small-scale local forestry enterprises and the ENRA—the only industrial company holding forestry concessions in the area. The project supports organization of small forest enterprises, to facilitate the collaboration with the local forestry industry and to support the creation of opportunities and market outlets for timber of legal origin while meeting the defined quality standards. 2016-2017. http://www.fao.org/in-action/eu-fao-flegt-programme/where-we-work/en/#/web/project/5670238a9f77e1e4302a1609
Small-Scale Logging	EU FLEGT/FAO	ACEFA (Association Congolaise des Exploitants Forestiers Artisanaux)	Training of trainers in forestry legislation and logging standards	One year pilot project. http://www.fao.org/in-action/eu-fao-flegt-programme/where-we-work/en/#/web/project/57e10f2aea29ed08a8530418
REDD+			Mai Ndombe	For a detailed presentation of the many projects and initiatives in the Mai Ndombe, along with graphics, see Gauthier, M. 2018. Mai-NDombe: Will the REDD+ Laboratory Benefit Indigenous Peoples and Local Communities? Rights and Resources Initiative. https://rightsandresources.org/wp-content/uploads/2018/03/EN_Mai-Ndombe-Report_RRI_Mar-2018.pdf

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
Protected Areas	World Bank/GEF		National Parks Rehabilitation Project	The objective of the National Parks Network Rehabilitation Project for the Democratic Republic of Congo is to enhance the capacity of the Congolese Institute for Nature Conservation (ICCN) for management of targeted protected areas. End date: 2018. http://projects.worldbank.org/P083813/support-rehabilitation-protected-areas-system?lang=en&tab=overview
Protected Area	AfDB/CBFF	WCS	Working With Communities To Reduce Deforestation And Alleviate Poverty In The Virunga-Hoyo Region	This project aims to reduce deforestation and forest degradation in the Virunga-Hoyo region of DRC's North Kivu whilst simultaneously alleviating poverty by creating economic incentives for poor local people through reduced deforestation and building capacity of park authorities to conserve the forest. The project has four (4) components based on CBFF's thematic areas of intervention: (i) forest management and sustainable practice (ii) livelihoods and economic development (iii) ecological and socio-economic monitoring and baselines, and (iv) benefits from carbon markets and payment for ecosystem services. https://www.afdb.org/en/projects-and-operations/project-portfolio/p-cd-c00-037/
Private Sector	AfDB	GoDRC	Projet D'appui Au Developpement Du Secteur Prive Et A La Creation De L'emploi (PADSP-CE)	An integrated and structured approach will help the country to more effectively exploit its potential economic growth for inclusive growth and sustainable employment. Signal activities include: Single window (guichet unique) capabilities and creation of new counters in provinces; capacity building of ANAPI, FPI, OPEC, Ministry of SMEs Ministry of Industry. Implementation of incubators and pilot generators of enterprises through the FEC, training women entrepreneurs FEC-Women, support at the PROCER, at the INPP at the ONEM. UA 39,264,332 million, for the period from June 2015 to June 2019,
Market Development	World Bank	DFID	Private Sector Development Programme	To foster economic opportunities for poor people in the Democratic Republic of Congo by providing them with access to financial services, well-functioning markets, and an enabling business environment. Start 2012 End 2024. https://devtracker.dfid.gov.uk/projects/GB-1-203161
Market Development	UKAID	Adam Smith International	ELAN RDC	ÉLAN RDC aims to reduce poverty in the DRC by increasing the incomes of over 1 million poor smallholders producers, entrepreneurs and consumers by the end of 2020. Elan works to tackle the root causes of market failures and constraints. "We work with the private sector to design and spread new economic models that increase income, create jobs and lower prices for the poorest." ÉLAN RDC works across four geographical areas and six sectors of the economy, with more than 60 partnerships with private sector actors in the DRC, providing technical advice, leveraging funds and fostering networks to change business practices. http://www.elanrdc.com/#welcome
Infrastructure	World	GoDRC	Pro-Routes	x

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
	Bank		Project	
Infrastructure	AfDB	GoDRC	Government and Electric Sector Support Project (Projet D'appui A La Gouvernance et A l'Amelioration du Secteur Electrique (PAGASE)	Micro-central hydro and associated networks (Kasai Oriental & Kasai Occidental); Road Improvements Batshamba-Tshikapa; Periurban and rural electrification project.
Indigenous People	World Bank		Forest Dependent Communities Support Project	To strengthen the capacity of targeted Indigenous Peoples and Local Communities in selected territories and at the national level to participate in REDD oriented land and forest management activities. The project has 3 components. (1) Reinforce the participation of IPLC in forest and land management processes related to REDD component will provide tailored support, including on administrative and financial management (FM) issues, and improve dissemination of information about REDD and its impact on the IPs and LCs. (2) Support community-based sustainable forest and land management component will help empower IPLCs by (a) supporting initiatives exploring how to attain formal recognition of their traditional user rights and (b) financing natural resource management activities that enhance climate change adaptation and the sustainable management of forest landscapes to improve rural livelihoods. (3) Increase the capacity to implement development activities for IPLC and consolidate feedback component aims at ensuring the smooth implementation of the project in compliance with Bank procedures but with enough flexibility to match the capacity of the communities $6m. 2016-2021.
Indigenous People	Multiple	Forest Peoples Programme		Reporting on Indigenous Peoples rights in the DRC. https://www.forestpeoples.org/en/resources?Publications%5B0%5D=language%3Aen&Publications%5B1%5D=region%3A45
Impact Investment	UKAIDS	Palladium	Partnerships for Forests	The Partnerships for Forests programme aims to reverse tropical rainforest loss in Western and Central Africa by leveraging private sector investment in Forest Partnerships in the cocoa, coffee, oil palm, rubber and timber value chains. Partnerships for Forests will support partnerships at different levels of maturity, from those that are only ideas through to projects that are already being piloted. In October 2016, Partnerships for Forests announced the first call for concepts

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
				for innovative partnerships to catalyze investment in forests and sustainable land use. "We are an incubator; through grant support and technical assistance, we develop partnerships between the private sector, the public sector and communities that generate the same, or better, returns from forests and sustainable land use as from unsustainable practices." https://partnershipsforforests.com
Governance	KfW	GIZ		Support to the Ministry of Environment. 24 M EURO—September 2016 to August 2019.
FUND			Forest Investment Program (FIP).	Committed since January 2009 to the REDD + readiness process, the DRC was selected in 2010 from among the eight pilot countries of the FIP, one of the three Programs of the Strategic Climate Fund. The DRC FIP Investment Plan was approved and validated in June 2011 by the FIP Sub-Committee for approximately US $ 60 million of grant.
FUND			Central African Forest Initiative (CAFI)	The largest international collaboration to protect the Congo Basin, CAFI consists of six Central African countries (DRC, Republic of Congo, Gabon, Cameroon, Equatorial Guinea and the Central African Republic), five donors (UK, France, Germany, EU and Norway) and international organizations (UN and the World Bank). On April 22 2016, CAFI and the Minister of Finance of the DR Congo signed a letter of intent (LOI) for 200 million US dollars to address deforestation and forest degradation in the country and to promote sustainable development. This LOI is the first signed between CAFI and a country of the Central Africa region, and the largest one ever concluded on REDD+ in Africa.
FUND			Forest Ecosystems in Central Africa (ECOFAC) VI	This regional program is funded to the tune of 71,500,000 euros by the European Union under the Regional Indicative Program (RIP) of the 11th European Development Fund (EDF). Scheduled for a period of five years (2016-2020), it covers seven countries: Cameroon, Congo, Gabon, Central African Republic, Democratic Republic of Congo, Sao Tome and Principe and Chad. Officially launched in July of 2017, ECOFAC supports allowing the responsible management of natural resources and protected areas. The Democratic Republic of Congo will benefit from a global budget of 120 million.
FUND			The Carbon Fund	Countries that have made significant progress in their REDD+ readiness endeavors may be selected to participate in the Carbon Fund, through which the FCPF will pilot incentive payments for REDD+ policies and measures in developing countries. Such performance-based payments will play an essential part in valuing forests more while they are standing than when they are cut. The

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
				Carbon Fund became fully operational in May 2011. e Carbon Fund will remunerate the selected countries in accordance with negotiated contracts for verifiably reducing emissions more than in the reference scenario. The Carbon Fund's payments are intended to provide an incentive to the recipient countries and the various stakeholders—including forest-dependent indigenous peoples, other forest dwellers or the private sector—within each of these countries, to achieve long-term sustainability in financing forest conservation and management programs. This would help reduce the negative impact on the global climate from the loss and impoverishment of forests. In the DRC, the Mai Ndombe Emissions Reduction Program (ERP) is under development. https://www.forestcarbonpartnership.org/sites/fcp/files/2016/Jan/ERPD%20DRC%20Summary%20Jan%202016.pdf
Forest Management	French Development Agency (AFD)	Ministry of Environment, with Technical Assistance	AGEDUFOR, Phase II	Reinforce sustainable management of production forests in all of DRC's forest provinces (Bandundu, Ecuador, Orientale). Phase II of the Sustainable Forest Management Support Project (AGEDUFOR) has three specific objectives: Consolidate the achievements of central government officials in monitoring the evaluation of the planning process and develop the transfer of skills at the provincial and territorial level. Contribute to the implementation of forest management by industrial operators on a critical surface. Support the creation of a regulatory framework, methods and instruments for the operational and efficient implementation of management plans by all stakeholders.
Forest Management	BMZ	Ministère de l'Environnement et Développement Durable	Biodiversity conservation and sustainable forest management	The project is strengthening the skills and capacities of the local population and the private owners of forest smallholdings, as well as those of the specialists and managers of the relevant ministries, service providers and decentralised state structures. In so doing, it is laying the foundation for the conservation of biodiversity and a legal, sustainable approach to managing natural resources. The project sets out to involve the people in environmentally sound, economically sustainable resource management, and to help develop a technically competent and sustainably financed administration which is equipped for and open to dialogue. This serves to boost acceptance of protected areas and reduce the pressures placed on them. The livelihoods of the local population are also improved as a result. 2016—2019.
Finance	IFC/World Bank Group	FINCA	The Partnership for Financial Inclusion	A $37.4 million joint initiative of IFC and The MasterCard Foundation to expand microfinance and advance digital financial services in Sub-Saharan Africa. The Partnership has already supported a 3 year project with FINCA to expand access to finance in DRC via agent banking. This second phase project will help

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
				FINCA to strengthen the core business and consolidate the gains from the agent network, in order to build necessary foundation for becoming DRCs leading mass market financial institution. IFC World Bank Group. http://www.finca.cd/en/
Finance	GIZ	Ministry of Finances	Programme for microfinance system development in the DR Congo	To improve the regulatory and institutional environment of the Congolese financial sector. Sustainable access to financial services is being promoted by building a stable and inclusive financial sector. The most important partner is the Congolese central bank (Banque centrale du Congo, BCC). Responsible for monetary policy and financial sector regulation and supervision, the central bank is decisive in shaping the environment for the financial sector. To perform its tasks in accordance with international standards, the central bank has initiated a reform process. GIZ is supporting the change management department in making this process even more effective and efficient. GIZ is also advising the central bank on management of internal risk and IT systems and money processing. 2012 to 2021
Community Forests	GEF	UNEP/ Ministry of Environment, with support from Rainforest Alliance and Action d'Aide Sanitaire et de Développement aux plus Démunis (AASD)	Promoting the Effective Management of Salonga National Park through Creation of Community Forests and Improving the Well-being of Local Communities	Community-based, landscape-scale planning and sustainable production management of multiple value chains supports and enhances biodiversity conservation objectives in the Monkoto Corridor and the Salonga National Park. Not yet approved for implementation. https://www.thegef.org/search/site/DRC
Community Forests	DFID	Rainforest Alliance UK	Securing Community Rights and Protecting Local Livelihoods	The project will support pilot Concessions; advance policy/legal framework and government capacity; support civil society advocacy; and the development community consensus through round tables. Partners: Groupe d'Action pour Sauver l'Homme et son Environnement (GASHE), Réseau Ressources Naturelles (RRN) and Centre d'Appui à la Gestion Durable des Forêts Tropicales (CAGDFT). Three year project. http://www.rainforestfoundationuk.org/media.ashx/community-forests-in-drc-web.pdf
Community	UKAID	IIED	CoNGOs	CoNGOs NGOs collaborating for equitable and sustainable community

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
Forest				livelihoods in Congo Basin forests is an IIED-led UK consortium that aims to achieve improved governance and practice in equitable and sustainable community forestry livelihoods in the Congo Basin. "This project will work directly with a range of key stakeholders in forest dependent communities, such as forest and farm producers, indigenous peoples, and women's groups, to help build the foundations for a more inclusive and equal forest and land use sector in the Congo Basin." DRC Partner Tropenbos International. http://pubs.iied.org/G04056 Tropenbos International. Tropenbos International (TBI) is an international NGO established in 1986 in Holland. TBI's main area of work focus on knowledge and capacity building support to improve the governance and management of tropical forests. In DRC TBI is based in Kisangani in the Oriental Province. TBI is a member of the Forest Connect Alliance managed by IIED.
Community Forest	GEF	FAO/Ministry of the Environment	Community-Based Miombo Forest Management in South East Katanga	To promote the sustainable management and restoration of miombo forest ecosystems in order to reduce carbon emissions from deforestation and forest degradation; and 2) To improve the sustainability of livelihoods of local communities through the marketing of wood fuels and non-timbre forest products (NTFP) harvested from sustainably managed forests. Approved for implementation 2016. $ 19,174,927.00 USD. https://www.thegef.org/search/site/DRC
Civil Society	Rainforest Foundation Norway (RFN)	NGOs		Our work in the region promotes the recognition of forest-dependent peoples' access and rights to land and is geared towards achieving a sustainable, community-based management of the rainforest. It is our experience that the rainforest is preserved most effectively in areas where its traditional populations secure the legal right to manage it. We provide resources for capacity building and the strengthening of local organisations and national networks of non-governmental organisations, and support their advocacy work as well as their field work with forest-dependent peoples. This work is geared towards achieving a policy shift, towards one that respects human rights, maintains the integrity of the world's second largest rainforest and combats poverty through sustainable community-based forest managementhttps://www.regnskog.no/en/what-we-do/central-africa
Civil Society	Norad	WWF	Forest Governance Programme	Supporting local civil society organizations to advocate for better governance in the forest sector and tackle illegal logging in DRC. More specifically, the programme aims at supporting local civil society to a) monitor and ensure implementation the of regulations on forest concessions, especially the payment

PROJECT TYPE	DONOR	IMPLEMENTING PARTNER	NAME	DESCRIPTION
				of financial benefits to local and indigenous communities and, b) monitor timber flows and advocate for law enforcement against illegal timber trade. These activities will ensure that forest companies provide socio-economic development to local and indigenous communities in and adjacent to the forest concessions, as well as reducing illegal trade, thus maintaining ecosystem integrity and services for the benefit of people and nature in DRC. 2017-2020
Civil Society	EU	Centre for International Development (CIDT)	Citizen Voices for Change: Congo Basin forest monitoring project (CV4C)	This 4-year project aims to strengthen the contribution of non-state actors (NSA), such as civil society (CS), Indigenous Peoples (IP) and community organizations, to improving forest governance, sustainable forest management and the contribution of forests to development in five Congo Basin countries. Year one of the project saw the accomplishment of twelve forest monitoring missions by the CV4C project partners. Eleven were investigative and one was part of training. Six took place in Cameroon by CED, four in the Democratic Republic of Congo through OGF, one in Republic of Congo by CAGDF and the training mission was operated by Brainforest in Gabon.
Carbon Credits		Ecosystem Restoration Associates/Wildlife Works Carbon	REDD+ project in the ERA conservation concessions in the Inongo Territory	The Mai Ndombe REDD+ Project, located in western DRC, Africa, will protect 248,956 hectares of forest from industrial logging, unsustainable fuel wood extraction and slash and burn agriculture. Carbon validation will be undertaken by the Verified Carbon Standard (VCS) and major socio-economic co-benefits ensured by the Climate, Community and Biodiversity (CCB) standard. The project is developed and managed in a joint venture by forest carbon leaders ERA-Ecosystem Restoration Associates Inc. and Wildlife Works Carbon LLC. This groundbreaking project will be the first of its kind in the Congo Basin and utilizes the novel methodology developed by Wildlife Works, VM0009, 'Methodology for Avoided Deforestation' approved by the VCS in October, 2012. The project is estimated to deliver over 175MT CO2-e over 30 years. https://mer.markit.com/br-reg/public/project.jsp?project_id=103000000000129 http://www.wildlifeworks.com/dr-congo

ANNEX VII: TOOLS FOR WORKING WITH COMMUNITIES FOREST ENTERPRISES

Seven selected tools and two websites to support the development, financing, and management of community forest enterprises.

1) **The Green Value Tool for Simplified Financial Analysis**

   Purpose: Developed to help small and medium enterprises monitor and evaluate costs and income, negotiate fair prices, improve their financial management and transparency, and strengthen the sustainability of their businesses.

   Target users: The Green Value tool was originally designed for community timber enterprises, but can be used by all people who work with any kind of small or medium enterprise, such as forest enterprises, farms, fisheries, REDD initiatives, or tourism companies. Enterprises can range in size from small family production systems to medium-sized businesses to large cooperatives. It has proven useful to extension agents, administrators, technical staff, consultants, and representatives of non-governmental and governmental organizations.

   Description: A simplified methodology with six steps for monitoring and analyzing costs and revenues. It is comprised of a User's Guide and a series of pre-formatted worksheets (in spreadsheet software) for entering and analyzing financial data.

   URL: www.green-value.org

2) **Market Analysis and Development Toolkit for Developing Forest Product Enterprises (MA&D) Toolbox**

   Purpose: Empower producers, manufacturers and traders to plan and develop equitable, sustainable, ecologically sound, socially beneficial and financially viable tree and forest product-based enterprises.

   Target users: Local communities are the primary actors in the process, from identifying and planning forest enterprises to sustainably managing their local environments. Project management teams, individual entrepreneurs and groups of entrepreneurs.

   Description: Multiple tools providing a simple, clear, participatory process to plan and develop community enterprises with a phased sequence of steps to ensure that all critical elements are included for establishing their enterprises and minimizing risks. MA&D training materials include a Manual, five Field Facilitator Guideline modules, a Map of the process and a MA&D Brochure. The Field Facilitator Guidelines assist field facilitators and entrepreneurs to implement the MA&D approach.

URL: http://www.fao.org/sustainable-forest-management/toolbox/modules/development-of-forest-based-enterprises/basic-knowledge/en/

3) **Conservation Enterprise Planning Checklist**

Purpose: To identify the considerations regarding the theory of change for the conservation enterprise approach and enabling conditions for establishing enterprises and assuring conservation and other outcomes along the theory of change.

Target users: Practitioners supporting conservation enterprises.

Description: Checklist with spaces for notes. Annex 1 of Baker, A. & Judy Boshoven, J. (2017). "Building a Conservation Enterprise Keys for Success". Produced by Foundations of Success under the Measuring Impact project, for USAID.

URL: https://rmportal.net/conservation-enterprises/ce-documents/building-a-conservation-enterprise-keys-for-success/view

4) **Building Profitable and Sustainable Community Forest Enterprises: Enabling Conditions**

Purpose: To explain three main enabling conditions for profitable and sustainable community forest enterprises: clear commercial forest rights, strong social organization and competitive business skills.

Target users: People developing projects to support community forest enterprises

Description: 10 pages of background, 12 case studies.

URL: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.453.6091&rep=rep1&type=pdf

5) **Guide to Investing in Locally Controlled Forestry**

Purpose: guidance on building the partnerships necessary for successful investment in locally controlled forestry that yield acceptable returns and reduced risk, not only for investors, but also for local forest right-holders, national governments and society at large.

Target users: Investors, rights-holders, governments, NGOs and donors. "Anyone involved in managing, governing, owning and providing stewardship for forests."

Description: Includes background and a roadmap to successful investment in locally controlled forestry that covers the business stages of proposition, establishment, validation, preparation, negotiation and performance management—with practical advice for both investors and forest right-holder groups. 17 case studies and a range of templates and sources of further information. 120 page document.

URL: http://pubs.iied.org/13565IIED

Citation: Elson, D. (2012), Guide to investing in locally controlled forestry, Growing Forest Partnerships in association with FAO, IIED, IUCN, The Forests Dialogue and the World Bank. IIED, London, UK.

6) **Securing Forest Business: A Risk Management Toolkit for Locally Controlled Forest Businesses**

Purpose: Provide guidance on how to systematically assess, and manage or take, risks to help businesses improve and adapt.

Target users: locally controlled forest business managers and their staff

Description: Seven modules on risk self-assessment and analysis; assigning responsibility and actions to manage or take those risks. 42page document.

URL: http://pubs.iied.org/13583IIED/?a=D+Macqueen

Citation: Bolin, A. Macqueen, D. Greijmans, M. Humphries, S and Ochaeta, J.J. (eds.) (2016) Securing forest business. A risk-management toolkit for locally controlled forest businesses. IIED, London.

7) Expanding Access to Finance for Community Forest Enterprises: A Case Study of Work with Forestry Concessions in the Maya Biosphere Reserve (Petén, Guatemala)

Purpose: Guidance on providing access to finance for community forest enterprises.

Target users: Technical Assistance Providers

Description: 10 case studies with introduction, recommendations and conclusions.

URL: https://www.rainforest-alliance.org/sites/default/files/2016-08/expanding-access-finance-CFEs.pdf

Citation: Hodgdon, B & Loewentha, A. 2015. Expanding Access to Finance For Community Forest Enterprises A Case Study of Work with Forestry Concessions In the Maya Biosphere Reserve (Petén, Guatemala) Community Forestry Case Studies No. 10/10. Rainforest Alliance.

8) Websites

MARKETLINKS: Tools & Training. Online courses and other useful resources that enhance knowledge and skills for students and development practitioners in developing, managing, and monitoring value chain projects. Little information specifically on community forestry, but the definitive source for information on enterprise development. https://www.marketlinks.org/tools-and-training

FAO Sustainable Forest Management (SFM) Toolbox: broad collection of tools, case studies and other resources for forest owners, managers and other stakeholders. http://www.fao.org/sustainable-forest-management/toolbox/en.

ANNEX VIII: SILVICULTURAL PRESCRIPTIONS FOR COMMUNITY BASED MANAGEMENT

The following draft principles and steps are found in Russell, 2002. Based on research in Cameroon, they integrate social-management principles with silvicultural plans for the management community forests where both NTFPs and timber are harvested. We include them here to provide access to key recommendations from this unpublished paper.

Principles

1. Information is the property of the community
2. Both indigenous and scientific knowledge should be respected and employed in collecting information and implementing a management plan
3. The community should be trained in scientific methods where appropriate and outside experts should become conversant with local terms and uses
4. Diverse interest groups and divergent opinions on forest management within the community have to be identified and aired in wide consultation
5. Outside interests can be invited to participate when these consultations are completed
6. Traditional management units should be the framework of community forest management where possible rather than entirely new institutions
7. Non-commercial uses of the forest should be highlighted

Steps

1. Synthesize traditional and scientific knowledge about forest composition, disturbance regimes, succession, regeneration (including pollinators and dispersers), use and management to create a picture of the composition and dynamics of stands.
2. Demarcate areas controlled by clans, family or other units as well as forest that will be managed communally.
3. Demarcate stands within these areas.
4. Identify vulnerable NTFP species and habitats and make those species and stands off-limits using traditional taboos and controls; ban or limit hunting of key dispersers
5. Inventory stands controlled by each clan as well as community forest that are to be exploited commercially (both for timber and NTFP gathering). Data should include approximate area, local and scientific names of trees, approximate basal area, and presence of understory NTFPs.
6. Create a realistic business plan for forest enterprises with help from outside experts
7. Mark commercial species to be cut based on size (age approximations), season (not flowering), location, and value. Do not cut rare or endangered species or those with significant NTFP value.
8. Cut to maintain structure of forest particularly in vulnerable areas such as near roads.
9. Locate and liberate saplings of moabi, Irvingia and other key NTFP and prime commercial species from competing vegetation at sapling stage; do not use arborice but girdling.

10. Determine size class distribution of NTFP species that will be harvested commercially and consider enrichment planting if density of seedlings/saplings is low.
11. Develop simple guidelines for sustainable NTFP harvesting based on local knowledge. Discuss and disseminate them at community meetings.
12. Test different methods of promoting regeneration such as increasing gap sizes during logging operations, cutting only after a large masting season (the problem of Chromolaena raises its ugly head here as it will cover any clearing for up to six years making it hard to track regeneration).
13. Test different processing methods such creating planks for local construction at the logging site using chainsaws or portable sawmills.
14. Institute a simple monitoring system for each clan that blends into their daily routine.

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