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# SHIFTING CULTIVATION, GENDER, AND REDD+ IN CAMEROON AND THE DEMOCRATIC REPUBLIC OF CONGO

FOREST CARBON, MARKETS AND COMMUNITIES  
(FCMC) PROGRAM



APRIL 2015

This publication was produced for review by the United States Agency for International Development.

The U.S. Agency for International Development (USAID) launched the Forest Carbon, Markets and Communities (FCMC) Program to provide its missions, partner governments, and local and international stakeholders with assistance in developing and implementing REDD+ initiatives. FCMC services include analysis, evaluation, tools, and guidance for program design support; training materials; and meeting and workshop development and facilitation that support U.S. Government contributions to international REDD+ architecture.

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This report presents the findings of field studies on shifting cultivation in the Democratic Republic of Congo (DRC) and Cameroon undertaken between November 2012 and March 2013. The authors recognize that the dynamics of REDD+ have evolved in these countries since the time of the study and its public release in 2014. The authors believe that the findings and observations on the issues explored in the report relating to the practice of shifting cultivation, its place within REDD+ deliberations and approaches, and the impacts these evolving approaches could have on gender roles, remain relevant for consideration by policy makers and project developers and implementers.

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## **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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During the course of preparing the final draft of the field report, the team learned that Marie-Ange Bunga, the Gender Expert, friend and colleague in DRC, passed away unexpectedly. Marie-Ange invested a lot of thought and energy in this study. She was a good companion during all the work, with passion and love for her country. She was committed to doing work that makes a difference and we hope the final report will fulfill some of her visions and expectations for the study. The DRC has lost a valuable talent who had much to give for the betterment of her country and no doubt inspired others to strive for equality and sustainability in the management of DRC’s natural and human resources.

# EXECUTIVE SUMMARY

Shifting cultivation – also called swidden, slash-and-burn, or rotational cultivation – is the natural resource management system that underpins food production and livelihoods in the forest zones of Central African and many other countries. It has been identified as a key driver of deforestation in Central Africa and is hence the focus of many international initiatives and projects that come under the rubric of REDD+ (Reducing Emissions from Deforestation and Forest Degradation and the role of conservation, sustainable management of forests and enhancements of forest carbon stocks).

This report presents the findings of field studies on shifting cultivation in the Democratic Republic of Congo (DRC) and Cameroon that were commissioned by the Forest Carbon, Markets and Communities (FCMC) Program. The field research was conducted in coordination with the Central African Program on the Environment (CARPE), a United States Agency for International Development (USAID) regional conservation and climate change program. Between November 2012 and March 2013, the study team spent 75 days in the DRC and Cameroon and conducted about 300 group or individual, semi-structured stakeholder interviews using a snowball sampling strategy in eight rural sites (Figure 2), as well as in Yaoundé, Cameroon, and Kinshasa, DRC. About half the interviews were conducted with women.

In the sites visited, shifting cultivation is the primary form of agriculture practiced in primary and secondary forests. The shifting cultivation systems discussed here largely produce subsistence crops; however, households also produce crops for sale and grow perennial cash crops such as cocoa and coffee. Generally women carry out the bulk of agricultural labor, although in some areas men clear and burn the sites in preparation for planting. While women play a critical role in agriculture in these regions, their role in REDD+ thus far has been limited.

At the sites in Cameroon, cocoa agroforestry provides significant incomes, but plantations are distinct from food-crop fields and typically are controlled by men. The success of smallholder cocoa cultivation attracts people to the forest frontier. Farmers leave lands with higher population density, declining fertility, and aging cocoa plantations to establish new cocoa plantations in forests. With the development of road networks, larger investors are also attracted to forest areas to establish large-scale oil palm and rubber tree plantations. This trend of large-scale plantations is already developing in Cameroon, but not at the sites visited. This dynamic reverses a trend of large-scale plantation decline over the past couple of decades.

At the DRC sites, cultivation of perennial cash crops such as coffee, cocoa, and plantains has been declining since the 1990s. This trend has decreased household cash income and placed household food security at risk. Household vulnerability has been further exacerbated by weak markets, increased crop damage from disease, and declining returns from hunting and fishing. The DRC is currently considered the most food-insecure country in the world according to the [Global Food Security Index](#). In many areas security of tenure for smallholders is weak, and large-scale agricultural, forestry, and mining concessions predominate as land uses.

Given this situation, securing tenure rights and providing support to smallholder farmers and other forest dwellers practicing shifting cultivation and other small-scale economic activities may help reduce the risk of larger-scale deforestation carried out by outside loggers and large-scale plantation or other investors. It could also contribute to the reduction of poverty. However, there is no guarantee that this course of action will reduce deforestation if other key constraints remain in place. (Ickowitz et al., 2015)

In some cases, REDD+ and Payment for Ecosystem Services (PES) projects have considered shifting cultivation an unsustainable land use. This perception has been widespread since the colonial era (Colfer et al., 2015). Some projects propose alternatives such as crop rotation; fire suppression; plowing; agroforestry; conservation agriculture; perennial crops; and income-generating activities such as fish farming, chicken farming, and apiculture. The aim of the alternatives is to progressively diversify and in some instances phase out shifting cultivation while increasing farmers' income and food security. While some farmers appreciate these interventions, many expressed concerns to the study team. Women in particular noted that many proposed techniques required additional labor, which the women were unwilling or unable to provide. Support for the commercialization of non-timber forest products was a positive exception. Villagers also reported that the projects worked primarily with the local men, and very little with the women.

The unpopularity of shifting cultivation alternatives with some intended project beneficiaries, and the failure of certain proposed alternatives to meet local needs, may generate anti-conservation and/or anti-nongovernmental organization (NGO) resentments among farmers. These negative perceptions are likely exacerbated by overall poor relations between local and state actors. For example, according to some farmers interviewed, forest rangers, or eco-guards, often do not respect the civil rights of the villagers and make no distinction between subsistence and commercial hunting.

Financial transfers to local communities are promoted through community forestry operations, PES schemes, and conventional rural development activities. In all visited sites, local associations or committees channel and manage the money. Most of these groups are newly created with support from an NGO or project. Many of the villagers interviewed criticized these local institutions for favoring the relatives and friends of their leaders (elite capture), for their lack of transparency, and for spending money on activities that had limited or no positive impact. Based on these and other findings, the field team offers the following observations to stimulate reflection and guide support for REDD+ programming:

1. Policymakers need to recognize and take into account farmers' capacity to make decisions based on their own means, interests, and experiences. Rather than planning the activities of farmers in a top-down way, REDD+ promoters and managers should work with target beneficiaries jointly to develop appropriate options and incentives to reconcile farmers' objectives (sustainable livelihoods) with the global agenda (conservation and greenhouse gas emission reductions).
2. The "committee-based natural resources management" approach should be more thoroughly assessed and analyzed as a management strategy by its promoters. To balance the "committee-based" approach, alternative strategies need to be explored and possibly developed in which individual farmers or families could participate and receive direct benefits from forest conservation, which in turn would have to be reconciled with notions of common property regimes. They could become shareholders in a carbon or mixed carbon-commodity enterprise.
3. History has shown that market incentives drive agricultural intensification at large scale. Without improved terms of trade to producers, intensification is unlikely to take hold. With that perspective in mind and with the consent and participation of farmers and other relevant stakeholders, a broad range of intensification options could be considered, including ecological intensification (agroforestry, conservation agriculture); rehabilitation of smallholder plantations; integration of agriculture with livestock husbandry; and capital-intensive approaches, such as the use of animal traction and chemical inputs in savannas and deforested land. Such support could be provided mostly in areas where population density is elevated and soil fertility is declining, so that people can be assisted to remain on their land rather than out-migrate. Communities living in forest areas should have the right and option to adopt more productive and rewarding agricultural practices – i.e., small-scale family farm activities that do not provoke large-scale deforestation – but attention to market

structures is needed. Commercialization of non-timber forest products and REDD+ payments could complement other livelihood activities. Thus, a well-constructed incentive framework could be framed within regional planning efforts and coordinated at national scale. However, it is also unlikely that agribusiness will improve the food security of local people, as food will flow to high population density areas.

4. Land and resource tenure, use, and/or access rights need to be defined and secured, so that people living in forest areas will be able to invest in their land over time. Benefit-sharing mechanisms for REDD+ and PES schemes must ensure that forest-dependent communities receive both real and tangible incentives to not deforest as well as an adequate share of the benefits. Tenure security should address management, access, and use rights together with ownership rights. Local institutions have managed these types of rights for centuries *de facto*, and increased *de jure* security would allow more flexibility and lower transaction costs if carefully devised to avoid mass-scale land sales. Bylaws governing individual and family rights and responsibilities need to be integrated into tenure regimes to avoid conflict and facilitate investment.
5. Women are the main agricultural labor force and the engine of farming systems transformation. In part this is because food crop farming is largely unprofitable, and women's labor is undervalued, even though household food security relies on these efforts. Men are more involved than women in social relationships with projects and other external stakeholders. Pathways to ensure the viable participation of women in REDD+ decision-making need to be identified.
6. Policymakers should develop and/or adapt new analytical tools to study the drivers of deforestation, including existing bottom-up tools. Conventional tools that rely on satellite imagery and correlations between a limited set of variables are useful but insufficient because often they do not capture social elements such as gender and power dynamics at sites. Bottom-up analytical tools for studying drivers exist but need to be developed, promoted, and shared further. Using examples from current REDD+ pilot projects in Cameroon and DRC, it is clear that REDD+ feasibility studies at site-level should capture local dynamics including context-specific drivers and biophysical, socioeconomic, and cultural aspects. Without such fine-grained information, REDD+ actions and social and environmental safeguards risk being inadequate, unproductive, or even counter-productive.

The key driver of deforestation is not the type of land use, but rather the investment capacity and the social and economic arrangements that exist between and among stakeholders living on forest frontiers and competing for access to resources. In other words, the fate of primary forests in the regions visited, and possibly in the whole Congo Basin, will depend on which economic model prevails – capital-intensive agribusinesses or family smallholder farms – and not on technical options such as shifting cultivation versus alternatives. Shifting cultivation systems should not be considered an unsustainable land use to be eradicated. Instead these systems should be recognized as a complex and diverse natural resource management system that has adapted to changing economic and policy conditions over time. Beyond the fate of farmers practicing shifting cultivation, the future of smallholder farming in general is at stake when designing REDD+ policies and projects.

# 1.0 INTRODUCTION

This study examines the links between shifting cultivation, deforestation and forest degradation, REDD+ (Reducing Emissions from Deforestation and Forest Degradation and the role of conservation, sustainable management of forests and enhancements of forest carbon stocks) policy dynamics, and gender in two Central African countries — the Democratic Republic of Congo (DRC) and Cameroon. Its purpose is to provide inputs and ideas to the United States Agency for International Development (USAID) and other government and nongovernmental stakeholders, including communities, for consideration in the development of REDD+ policies and projects. The Forest Carbon, Markets and Communities (FCMC) program, funded by USAID, initiated the study. FCMC promotes a socially sound approach to REDD+ through technical and knowledge support to local, national, and international actors and processes.

Shifting cultivation – commonly called swidden or slash-and-burn cultivation – has been identified as a key driver of deforestation in Central Africa. As a result, it is a target for modification or “transformation” in certain REDD+ project interventions. However, this natural resource management (NRM) system underpins food production and livelihoods in the forest zone. While women play a critical role in agriculture in these regions, their engagement in REDD+ thus far has been limited and their role unclear, relative to the engagement and defined roles for men. The study also looks at the risks and benefits of existing and proposed new systems envisioned under certain REDD+ projects and pilots. Finally, the study examines strategies to engage vulnerable stakeholders.

The specific objectives of the study were to:

1. Assess the extent to which shifting cultivation drives or buffers against deforestation and forest degradation in the DRC and in Cameroon;
2. Analyze the consequences of how policy-makers and project implementers in the DRC and Cameroon consider shifting cultivation, with a particular attention to REDD+ stakeholders;
3. Identify key gender issues associated with shifting cultivation and the policies that target it; and
4. Contribute to improving imagery interpretation regarding drivers and outcomes of deforestation from shifting cultivation versus other drivers/causal factors.

Regarding the first objective, the relationships between shifting cultivation and deforestation is already subject to intense debate among REDD+ stakeholders. The outcomes of this debate frame the way the issue is addressed. To bring a different and perhaps fresh perspective to the issue and avoid replicating previous studies, the study took into account existing analyses and findings, which helped to select the mainly qualitative methodology that was used. Annex 4 reviews available studies about the drivers of deforestation and forest degradation in the Congo Basin. It shows that beyond attempts to discriminate between drivers and their impacts, deforestation should be considered as a complex process that several factors influence. Drivers of deforestation and forest degradation interact with other ecological and socioeconomic factors. These dynamics need to be addressed systematically if appropriate policy solutions are to be found.

Regarding the second objective, REDD+ stakeholders’ perceptions of shifting cultivation and how those perceptions translate into policy and project interventions, was investigated through the field site case studies (Annex 2) complemented by interviews with key REDD+ stakeholders at national level and a literature review.

Regarding the third objective on gender issues, the same level of effort was invested in interviews of male and female stakeholders at all study sites. In each country a gender expert was recruited to specifically interview women, while the team leader focused on interviewing men or mixed groups. A separate gender analysis was prepared based on fieldwork in Cameroon (Annex 3) and the main findings were integrated into this report.

Regarding the fourth objective, this report makes some observations on the use of satellite imagery. Field sites visited were geo-referenced (Annex 1).

The study methodology is described in Annex 1. In brief, the team adopted case study-based, qualitative methods, with the aim of using a systematic approach to describe how various farming communities practice shifting cultivation in a given social, economic, and political environment. The study was designed to pay particular attention to gender issues and how these relate to REDD+ stakeholders and institutions. Theoretical frameworks and tools used in the field were adopted from agrarian studies, gender studies, cultural ecology, political ecology, and development anthropology, with a focus on the impacts of technological and political change on ecologies, human well-being, social systems, and natural resource management.

From November 2012 to March 2013, the study teams conducted approximately 300 group or individual, semi-structured stakeholder interviews<sup>ii</sup> at about 12 sites located in the DRC and Cameroon, and in Yaoundé and Kinshasa.<sup>iii</sup> This work included 180 interviews by the team leader<sup>iv</sup> using a snowball sampling strategy.<sup>v</sup> About half the interviews were conducted with women. This approach enabled the team to produce a systemic view of land-use changes in localities in four provinces in the DRC and three regions in Cameroon. The team also attended the 13th dialogue on Forest, Governance and Climate Change organized by the Rights and Resources Institute (RRI). The aim was to compare field findings with other sources and to analyze additional, prevalent discourses and perceptions among REDD+ stakeholders.

# 2.0 THE CONGO BASIN FORESTS

## 2.1 IMPORTANCE OF THE CONGO BASIN FORESTS

After the Amazon, the Congo Basin forests are the second-largest tropical forest blocs in the world, comprising an estimated 300 million hectares (ha) of forest. As shown in Figure 1, these forests stretch over six countries and constitute 70 percent of the forests in Africa. They are globally significant in terms of their biodiversity and ecosystem services and provide critical habitat for endangered species. They sequester an estimated 25 percent of global forest carbon. Thirty million people live in the forests and more than 75 million people rely on them for their livelihoods (Megevand et al., 2013).

The amount and rate of deforestation and forest degradation is lower in the Congo Basin than elsewhere in the world. Between 2000 and 2005, only 5.4 percent of the total global loss of humid tropical forest occurred in the Congo Basin (Hansen et al., 2008, cited in Megevand et al., 2013).

According to Megevand (2013: 3),

*“The Congo Basin forests may be at a turning point, heading toward higher deforestation and forest degradation rates. The Congo Basin forests have been mainly “passively” protected by chronic political instability and conflict, poor infrastructure, and poor governance. Congo Basin countries thus still fit the profile of High Forest Cover and Low Deforestation (HFLD) countries. However, there are signs that Congo Basin forests are under increasing pressure from a variety of sources, including mineral extraction, road development, agribusiness, and biofuels, in addition to subsistence agricultural expansion and charcoal collection.”<sup>vi</sup>*

## 2.2 DRIVERS OF DEFORESTATION

Four studies on the DRC’s deforestation and forest degradation drivers were conducted to support the preparation of the DRC’s REDD+ policies. Two of them were conducted by civil society organizations (GTCR 2012a, 2012b); and one was conducted by the *Université Catholique de Louvain* (Defourny et al., 2011). The fourth study, which deals with post-conflict areas more specifically, was conducted by an independent expert with funding from the United Nations Environment Programme (UNEP) (Mahonghol, 2012). A synthesis of these studies was issued (Ministry of Environment, Nature Conservation and Tourism [MECNT] United Nations [UN]-REDD+, 2012), and its conclusions were formally validated at a stakeholder workshop. The Cameroon REDD+ Readiness Plan ([R-PP], FCPF [Forest Carbon Partnership Facility], 2012) lists several studies on the various drivers of deforestation. In addition, the World Bank conducted a study at the scale of the whole Congo Basin (Megevand, 2012).<sup>vii</sup> Defourny et al.’s (2011) quantitative study is probably the most influential and sophisticated study available.

These studies, analyzed in more detail in Annex 4, generally argue that shifting cultivation or agricultural expansion is an important — or the most important — proximate driver of deforestation, along with firewood collection, charcoal production, artisanal and industrial logging, plantations, mining, biofuels, and development of infrastructure such as roads. These analyses also examine underlying causes of deforestation, such as population growth, economic growth, and poor governance. Ickowitz (2006, 2011) has challenged the view that shifting cultivation is the main driver of deforestation in Africa.

**FIGURE I. FOREST ECOSYSTEMS OF THE CONGO BASIN.**



Source: Megevand, 2013; based on WWF, 2012.

are intensive fuel wood use and energy inefficiency; non-compliance with forest concession management plans; and anarchic exploitation of timber, mining, and infrastructure. Options identified to address these factors include different approaches to agricultural intensification, increasing the efficiency of fuel wood use, and different approaches to forest management.

### 2.3 REDD+ STRATEGIES IN THE DRC AND CAMEROON

In the DRC, the R-PP and the draft National REDD+ Strategy assumes that, in the absence of REDD+, slash-and-burn agriculture would be responsible for 20 percent of additional deforestation and that forest degradation that might occur by 2030. To address this issue, the DRC plans to improve the productivity of subsistence agriculture. Critics of this plan argue that shifting cultivators are being blamed unfairly for deforestation and that the catalytic role of logging and industrial plantations is being underestimated or overlooked.

In Cameroon, an R-PP was submitted to the FCPF, but a National REDD+ Strategy was not yet prepared at the time of the study. The R-PP identifies four factors as direct causes of deforestation and degradation but notes that it is difficult to prioritize direct causes of deforestation at the national level given the diversity of the country's agro-ecological zones. One of these factors is the conversion of forests for various land uses including shifting cultivation (close to 80 percent of rural households in Cameroon practice this); cash crops such as coffee and cocoa; and industrial plantations such as oil palm and livestock grazing. The other factors

# 3.0 OVERVIEW OF FIELD STUDIES

## 3.1 LOCATION OF FIELD SITES

Sites visited for this study (Figure 2) included a REDD+ project in the DRC (Ecosystems Restoration Associates [ERA] Mai Ndombe in the Inongo Territory) and a PES project with two sites in Cameroon (Community PES project of the Centre for the Environment and for Development [*Centre pour l'Environnement et le Développement*; CED] in Nkolényeng [Djoum district] and Nomedjoh [Lomié district]). Additionally, sites were visited where REDD+ projects are to be established (Luki and Djolu in the DRC and Mintom in Cameroon).

In the DRC, fieldwork was conducted in five villages or sites:

- **Kesenge** in the ERA-Congo Sprl. Mai Ndombe REDD+ concession in the Inongo sector, **Inongo** Territory (Bandundu Province);
- **Yalungu** and **Bossonongo**, two neighboring villages in the Lingomo sector, **Djolu** territory (Equateur Province);
- The **Luki** Biosphere reserve (Inera office and **Tsemba-Kituti** enclave) in the Bas-Congo Province; and
- **Mampu** and **Mbankana** on the Bateke plateau in the Kinshasa Province.

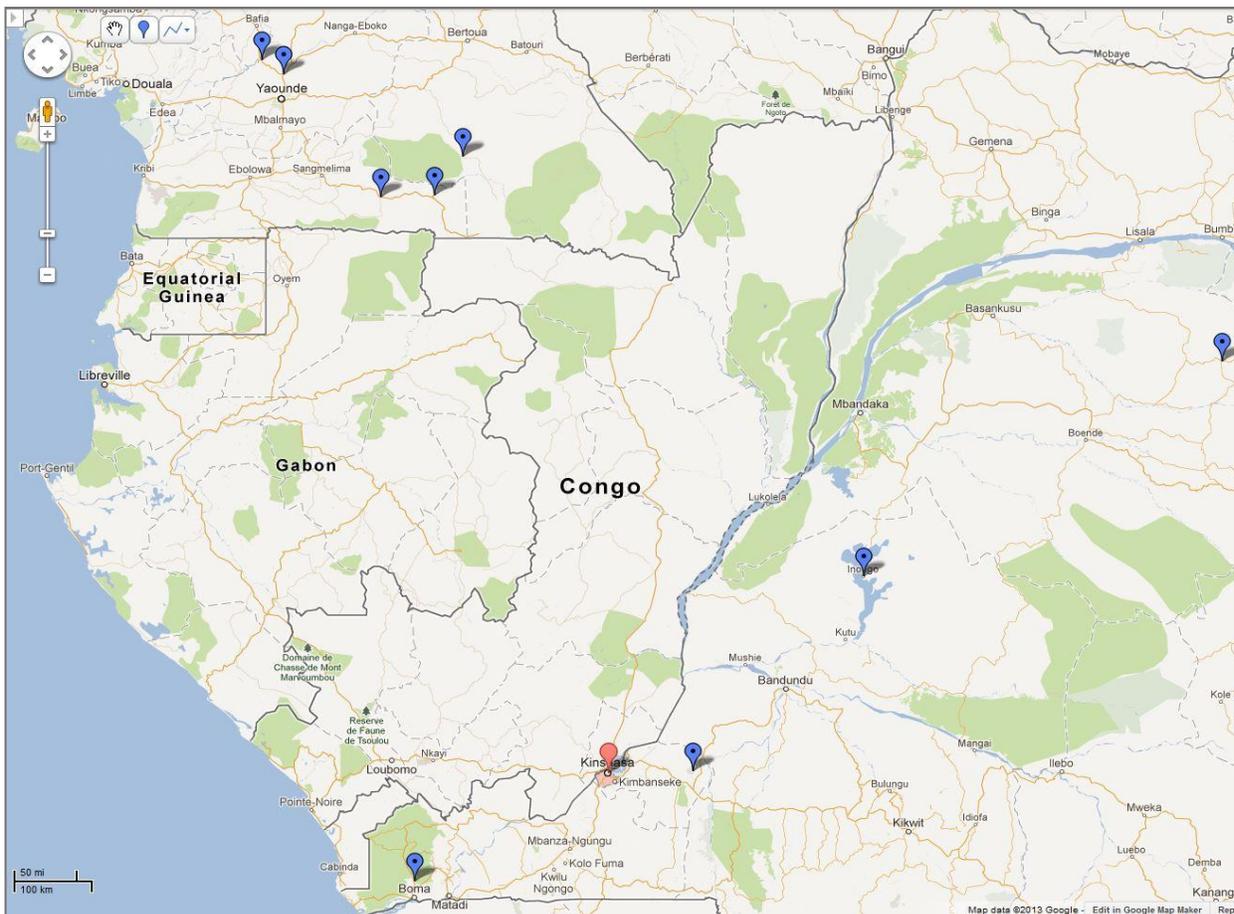
In Cameroon, fieldwork was conducted at eight sites:

- **Mintom**-Centre, **Lélé** and several localities around these villages (**Akom**, **Alati**, **Belle-Ville**, **Mboutokong**) in the Mintom District (South Region) where the World Wide Fund for Nature (WWF) is implementing a REDD+ readiness project;
- **Nkolényeng** in the **Djoum District** (South Region), and **Nomedjoh** in the Lomié District (East Region), where the NGO CED implements a pilot PES project;
- **Lomié-Centre**, **Eschiambor**, **Kongo** and the GeoVic mine in the Lomié District (East Region), where a series of NGOs and projects support community forestry, the commercialization of non-timber forest products, and other sustainable forestry and development activities;
- **Ebebda** (Ebebda District) and **Olembe** (**Obala** district) in the Lekié department (Central Region). Many farmers who recently settled in the study site originate from these areas, so the team decided to investigate why they had migrated.
- Additional REDD+ stakeholders were interviewed in **Kinshasa** and **Yaoundé**, where team members also attended the 13<sup>th</sup> dialogue on Forest, Governance and Climate Change organized by RRI.<sup>viii</sup> One short interview was conducted in **Mvomeka'a** on the road back from Lomié to Yaoundé. The coordinates for fieldwork site pins in Figure 2 and the list of interviews for each site are provided in Annex I.

Because of constraints on time and budget for the overall study, in addition to the logistical challenges incumbent on field-work in the region, the findings draw on relatively few sites. Annex 2 provides a more detailed description of the four major field study areas:

- Kesenge and Bossonongo, DRC;
- Mampu and Luki, DRC;
- Ngogla Mintom Forest and surrounding area, Cameroon; and
- Lékie and Mbam et Kim, Cameroon.

**FIGURE 2. LOCATION OF FIELD STUDY SITES IN THE DRC AND CAMEROON.**



### 3.2 SHIFTING CULTIVATION SYSTEMS

Shifting cultivation is the predominant form of agriculture in the forest zones of the Congo Basin and generally has a noted division of labor between women and men. Historically, men cleared new sites for cultivation in the forest (felling large trees and burning them), and women did the remaining agricultural work (planting, weeding, harvesting, and processing the crops). Women might clear fallows where trees are smaller. In Cameroon, women were found to clear and burn the sites, and men assisted with very large trees only. Typically selected trees with important non-timber uses were left on the site.

Shifting cultivation was practiced at all sites visited in DRC. Typically, a family manages one to three active fields (0.5 to 1.5 ha of cultivated land) plus five to 10 plots at various stages of fallow

development. This equates to 5 to 10 ha of land to sustain livelihood needs. While significant primary forest is still available, farmers prefer to cultivate young fallow close to home. At times they cultivate older secondary forests located a few kilometers from the village that were cleared by their ancestors. Hunting, fishing, and gathering of edible plants provide additional food and income, but these complementary activities are on the decline because of declining stocks and increased enforcement. They are practiced both in primary forests and in fallows.

Cassava is the main staple and cash crop, but maize also provides significant income. As a cash crop, maize is shipped to Kinshasa or to regional marketplaces when possible, or transformed into alcohol and transported to Mbandaka in the case of Djolu. Other crops (plantain, yams, sweet potatoes, taro, rice, pineapple, sugarcane, oil palm, and coffee) are relatively minor but may provide additional income and complement the household diet. Livestock husbandry is minimally developed. Farmers are interested in raising pigs, goats, chickens, and ducks but are easily discouraged; diseases are frequent, and animal health care is unavailable.

In the past, logging and perennial crops — rubber trees, oil palm trees, coffee, and cocoa — played important roles in the economy. Private or state enterprises established large-scale plantations, which promoted cash crops and provided employment as well as transport of agricultural products to market for the farmers. In the recent past declining prices have led to abandonment of perennial cash crops and these types of enterprises are virtually absent, although there is an increasing trend in rehabilitating or establishing new tree crops, particularly oil palm.

At sites visited in Cameroon, shifting cultivation in primary and secondary forests is practiced mainly for subsistence with some market sales. The basic crops grown are similar to those grown in the DRC and include cassava, plantain, egusi melon, peanuts, maize, and cocoyam. Women farm relatively small plots, generally ranging from 1.5 to 2.0 ha per year.

Contrary to the DRC sites, perennial crops continue to play a significant economic role in Cameroon. Cocoa is the main cash crop and is planted in association with subsistence crops once the forest is cleared. These “cocoa agroforests” remain permanently in place under the shade of remaining forest trees that form a closed canopy and provide timber and non-timber products. Another important perennial cash crop is oil palm trees. Plantain plantations also can be found in some areas.

### **3.3 PROMOTION OF ALTERNATIVES TO SHIFTING CULTIVATION**

In the sites visited, project developers were promoting shifting cultivation alternatives such as agricultural intensification, agroforestry, and other “green” technologies, in addition to encouraging agriculture outside forests in neighboring savanna areas. Specific technologies included crop rotation, fire suppression, plowing, agroforestry, conservation agriculture, perennial crops, and alternate income-generating activities such as fish farming, chicken farming, and apiculture. Shifting cultivation is common in areas where land (forest or savanna) is in abundance. Where farm land is scarce or limited in amount, some farmers already practice alternatives to traditional shifting cultivation – such as coffee and cocoa agroforestry, agricultural intensification, crop rotation, perennial crops, and alternative income-generating activities – without the help of project developers.

The approaches used at these diverse sites are remarkably similar and seem to reflect the general pattern that REDD+ projects are developing. They consist generally of (1) creating or building on existing village associations or committees often headed by local elites; (2) establishing contracts with these institutions to restrict forest clearing while advocating more sustainable forest management; (3) making cash payments to the institutions as an incentive to respect the contracts; (4) helping the institutions manage the money they receive; and (5) proposing development activities to be financed by REDD+ or PES payments.

# 4.0 DISCUSSION OF KEY FINDINGS

## 4.1 SHIFTING CULTIVATION: CAUSE OF OR BUFFER AGAINST DEFORESTATION AND FOREST DEGRADATION?

Several studies reviewed in Annex 4 analyze drivers of deforestation and forest degradation in the Congo Basin. These studies rely on satellite images for analysis of spatial patterns and correlate these patterns with socioeconomic variables on the ground. Most were conducted in the DRC, where the REDD+ National Coordination with support from the Food and Agriculture Organization (FAO) and the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD+) program undertook four separate studies as noted in Section 2.2. The studies generally agree on the following points:

The **main direct causes of deforestation and forest degradation** in the DRC are, in order of importance: shifting cultivation, charcoal production, mining activities, and logging.<sup>ix</sup>

The **main underlying causes** are, in order of importance: demographic growth; institutional considerations (political decisions, civil wars, and weak governance); infrastructure development; and economic conditions (crisis, unemployment, poverty).

If one adopts the FAO definition of forests<sup>x</sup> (10-percent tree cover), most land that is cleared for shifting cultivation reverts to forest after a few years of fallow. Thus, shifting cultivation may be the first proximate, if not ultimate, direct cause of primary forest clearing and forest degradation, but not necessarily of deforestation per se.<sup>xi</sup>

Second, the meaning or definition of the term “cause” can be viewed through various lenses. For example, if a large-scale oil palm plantation is established in a degraded secondary forest used for shifting cultivation, and if farmers subsequently leave the area and settle in a primary forest zone, what then is the cause, or driver, of the primary forest clearing? Shifting cultivation or oil palm? This domino effect underscores the importance of studying interlinked processes at various scales. The above example is typical of what happens on forest frontiers where smallholder farmers clear land that larger-scale investors later appropriate (Gerber, 2007; Oakland Institute, 2012). The responsibility for deforestation and forest degradation is often put on shifting cultivators, because their practices are considered ‘backward’ as compared to more modern farming techniques (i.e., intensive plantations). Small farmers also rarely have a political voice or access to decision-making processes.

Third, analyses of the relative importance of different deforestation drivers derived from satellite imagery would be enhanced by additional data and context. In many cases in Cameroon and DRC, these analyses are corroborated by expert opinion and field-level verification involving local communities and civil society organizations. In certain REDD+ feasibility studies at the site-level, deforestation analysis is based on both ‘bottom-up’ (community-based) and top-down (satellite imagery) approaches. Standalone satellite analyses are empirically strong but theoretically weak because they measure processes but cannot explain them. The finding that shifting cultivation is a key driver of deforestation could hold because it is the only land use that satellites can detect in remote areas where other activities such as logging, hunting, and road building are absent. Alternative land uses introduced in several REDD+

projects are practiced on too small a scale to register in current satellite imagery. However, some alternatives, such as tree-crop expansion or even sustainable intensification, could trigger more deforestation when market conditions shift (Ruf, 1995).

Fourth, the distinction made between proximate and ultimate causes might have limited relevance. For instance, logging causes new road building. Roads trigger charcoal making, which triggers market expansion (charcoal income needs to be spent), which triggers slash-and-burn cultivation (there are buyers for harvests), which triggers further infrastructure development, which triggers immigration, which triggers intensification and the abandonment of shifting cultivation. This is just one of a multitude of imaginable scenarios. Given the close interaction between “proximate” pressures and drivers, a **systems approach** is needed to understand and map these connections, rather than attributing the observed impacts to a single cause or imputed causal chain. A systems map or conceptual model may be able to parse out common elements across the Congo Basin and also show variance depending on market, infrastructure, tenure, labor availability, livelihood options, and other factors.

In contrast to the above studies, the study team found that farmers practicing shifting cultivation do not deforest large tracks of land. They stay on the land they are farming unless they are pushed away by more powerful stakeholders with financial resources and political connections, and they farm the land through a combination of agroforests, fallow of various age, and subsistence fields. On the other hand, agricultural modernization renders forestland more attractive and may trigger degradation or forest loss on a relatively a massive scale, mainly through the development of infrastructure required to deliver production to markets. This process increases land rents, which represent a threat to REDD+ policies, as carbon payments will not match the opportunity cost of not clearing land for intensification (as pointed out by Phelps et al [2012] and Megevand [2013])<sup>xii</sup>. Rather than blaming shifting cultivators for deforestation and degradation and opening forestlands to agricultural intensification, a more effective way to reduce deforestation would be to constitute a buffer against large-scale clearing by securing the use rights of shifting cultivation farmers and other vulnerable groups.

In other words, future forest clearing and degradation will depend on whether smallholder farming or agribusiness predominates on forestlands. Smallholders clear forests at a slow pace, relying mostly on the family’s manual labor. Few smallholders in the DRC have access to chainsaws, but this is not necessarily the case for Cameroon, where chainsaws financed from cocoa income are more available. Agribusinesses purchase motorized equipment (e.g., chainsaws, bulldozers) and clear forests at a pace proportional to their financial resources. They can hire migrants looking for work, attracting more settlers who will clear and cultivate more land to feed this labor force, and push weaker social groups ahead toward the forest frontier, provoking more clearing and preparing new lands for future expansion.

The future of the Congo Basin’s forests will depend on the attractiveness of the region to investors and on the investment capacity of newcomers. To take the Ngoyla Mintom forest as an example, in the worst-case scenario, logging companies will open dense networks of trails into the forests, and mining operations will attract thousands of families to new towns. Migrants will facilitate the settlement of relatives, while large estates will be granted to domestic or foreign investors. Logged forests will be clear cut to establish cocoa or oil palm monocultures. Weaker social groups will be pushed out toward pristine forests, which they will clear to establish shifting cultivation and cocoa fields. In the best case scenario – from an ecological standpoint – migrants will continue to settle in the region, clearing new pieces of forest to establish subsistence shifting cultivation fields and cocoa agroforests at a pace that depends on manual labor and available supports such as credit, access to markets, and labor. If more Forest Management Units (FMUs) are given to REDD+ stakeholders as conservation concessions rather than logging concessions, and fewer logging trails are opened, the impact of migrations and smallholder farming could remain minimal. However, while it may lead to greater deforestation, agribusiness is not necessarily a bad trend for rural development if it provides the opportunity for salaried employment — a foundation for economic growth (Ickowitz, 2015).

## 4.2 POLICY-MAKERS AND PROJECTS' ATTITUDES REGARDING SHIFTING CULTIVATION

All of the field case studies and most of the interviews in Kinshasa and Yaoundé indicated that REDD+ and other conservation and development stakeholders perceive that a core purpose of REDD+ is to phase out shifting cultivation. While it is clear that farmers who practice shifting cultivation clear forests, this narrow observation explains little about the entirety of forces that drive land use changes in the Congo Basin. The case studies show that the negative views on shifting cultivation, which exists from national to local levels, is counterproductive and does not incentivize shifting cultivators to adopt or develop land uses that consume less primary forest.

A dominant perception regarding shifting cultivation is that farmers who practice this land use are not rational economic agents. Hence, projects are designed to train, educate, and sensitize them. When farmers do not adopt newly proposed techniques or when intended beneficiaries manifest resistance toward project activities, communication and awareness raising efforts are increased to explain to farmers the benefits to be gained by adopting proposed activities.<sup>xiii</sup> However, policymakers and project implementers should avoid concluding that farmers are not making informed land use choices. If the design of interventions were modified to include more input by farmers themselves, new options could emerge such as agroforestry, forms of conservation agriculture, or even “old school” green revolution techniques that employ improved germplasm and other inputs. These new options could be promoted without rejecting traditional shifting cultivation techniques, which over time have proved to be adaptive to forest environments with heavy rain and soils with relatively poor chemical properties. There are various options for increasing production sustainably in forest environments — and farmers are key stakeholders in these endeavors.<sup>xiv</sup>

Farmers are constrained by both the biophysical environments and the structure of the economic environment. Choices are made within a framework of socioeconomic and environmental processes. This framework can be modified, and REDD+ can do it. By giving additional value to the forest, REDD+ can provide incentives that will change the frameworks within which farmers make choices.<sup>xv</sup> Within an appropriate framework of incentives, farmers may clear less forest and modify farming systems to use less land. To make incentives most effective, farmers should be given the space to make choices based on all available options. Policies and projects could determine specific objectives such as forest conservation, but should be flexible in how to achieve these objectives. In addition to incentives, project promoters could also provide new ideas that farmers may adopt to move in a new direction.

Policymakers and project proponents should consider shifting cultivation as a legitimate option when developing project and policy interventions. Policies and projects should work in favor of various land uses conducive to less forest clearing and degradation. These options include providing the right mix of incentives and working as partners with farmers to make choices, including practicing shifting cultivation, within an incentive framework. During fieldwork the study team observed that the only “alternative” land use that seemed to be well accepted to some extent was a shifting cultivation system (the Mampu model, see case studies), which supports this conclusion.

A note on the use of satellite imagery/remote sensing and shifting cultivation studies: Satellite imagery shows concrete land use patterns, puts numbers behind them and uses statistical methods to make the numbers “talk.” Platforms, analyses and interpretations are not uniform. Ickowitz (2015) points out that several remote sensing approaches have been used in the Congo Basin, resulting in different measures and patterns related to deforestation and the agricultural frontier. In addition to the different interpretations of remotely sensed data, there are many other ways to gather data about and depict patterns and events related to land and natural resource use and management. Farmers generate multiple inferences out of the thousands of variables that constitute the fabric of their daily life, where they have been engaged in similar land use practices for generations, perpetuating knowledge within

their culture while exchanging new information. As such, interpretation of images and trends derived from remote sensing is considerably enhanced by fieldwork and by engaging with farmers, as determined decades ago by [anthropologist Jane Guyer and geographer Eric Lambin](#). Thus, the main conclusions of this report were derived from discussions with shifting cultivators.

### 4.3 KEY GENDER ISSUES ASSOCIATED WITH SHIFTING CULTIVATION

One of the first findings regarding gender is that there are norms regarding the roles of men and women in shifting cultivation. In many households, although not all, the husband is in charge of clearing and burning the land, while his wife is responsible for all agricultural work once the land is cleared. Perennial crops are the exception. The study found that in the forest regions of Cameroon specifically, and in the country as a whole, agricultural activities are the main occupations of women who, in addition to doing the clearing and the burning, also do the planting, weeding, harvesting, processing, and marketing of surpluses. Men assist mainly by felling the large trees. Women farm relatively small plots, however, generally ranging from 1.5 to 2 ha per year. Women also do some hunting; sell distilled spirits and surplus crops; provide day labor to better-off neighbors; and harvest, transform, and sell non-timber forest products (NTFPs).

The husband and adult males contribute to the household economy by hunting, fishing, managing commercial perennial plantations, and looking for jobs or trade opportunities. Men are most often responsible for providing the main income and dietary protein, while women ensure household food security by providing staple crops and the rest of the family diet. (Households may be polygynous or multi-generational.)

Some women are involved in cash crop production — especially cocoa in the case of Cameroon, where widows inherit their husbands' land and women who never married inherit from their fathers or, notably, establish their own farms. Women owners are equally involved in the process of extending existing farms, and others are creating new farms. Because of the high labor requirements, women owners may hire labor or engage in a “two- party system.” In the latter, a man is hired and takes over full responsibility for the farm activities, from clearing to marketing, under the supervision of the woman owner. The proceeds from such a system are shared equally — fifty percent for the woman owner and fifty percent for the farm manager. The hired laborer is paid on a daily basis depending on agreed work.

These farming scenarios are changing. The labor required for clearing forests is decreasing because young fallows, where vegetation is easier to slash, are increasingly preferred over mature forest. On the other hand, the labor burden from plantation to harvest is increasing, because larger plots are cultivated as a consequence of dwindling job and trade opportunities, weeds are more prolific on fallow land than on forestland, and fields are located farther away from households because of larger settlements and declining fertility in older fields. New arrangements between husband and wife assist adaptation to these changes, but they may not be evolving quickly enough. As a result, women work very hard, and yet households do not produce significant surpluses unless a major cash crop such as cocoa generates substantial income. Families are vulnerable, and when an unforeseen problem strikes, food security is at risk. Such a crisis occurred in Inongo (see case studies) with cassava diseases. In Cameroon, women reported doing most of the work of clearing and burning the sites, although sometimes men helped them by felling the largest trees. The implication for REDD+ policies is that promoting agricultural intensification and diversification and discouraging primary forest clearing risks placing an additional burden on women's labor unless solutions are found to resolve this labor bottleneck.<sup>xvi</sup>

Two general tendencies were observed at all field sites visited, although these could be broadened with a more comprehensive literature review. Some research resonated strongly with the team's findings. Russell (1990) showed that in the Bandundu Province in the late 1980s, cassava was not well maintained because women did not have time to care properly for their fields following declining soil fertility and

increasing distance between dwellings and fields. These conditions were exacerbated by a compulsory cultivation system under the authority of the agricultural services approaches in place at the time. The women rejected any technical innovation that would not save labor. This attitude resonates with that of women today who deserted farmer groups in Bossonongo (see case studies, Annexes 2 and 3). Russell (1990) further showed that women changed their farming techniques, adopting new ones that saved time and labor but reduced yield per hectare. For instance, they neglected the mounding of cassava or planted it at a lower depth, which may have contributed to the development of cassava diseases. The ecological crisis encountered by cassava would thus in essence be a labor crisis or a negative feedback loop resulting from declining labor productivity.

Women may well be the pillar upon which future farming systems will develop, with the caveat that women may farm mainly because it is not profitable and men are able to seek more profitable options such as petty trade or small-scale extractive industry. When farming is profitable, men engage, as is the case with tree crops, peri-urban horticulture, and other cash crops. Labor-saving techniques promoted for REDD+ projects should be developed collaboratively with women, as they will be the primary beneficiaries. But this work should not be done without consideration of men's activities, because sometimes techniques adopted by men can save women's labor. For instance, the clearing of more primary forests by men reduces women's labor because weeds are less invasive on forestland than on fallow land. Plowing with animal traction, which is typically an activity of men, also reduces the incidence of weeds and thus women's labor load. Support to households to acquire draft equipment and animals, an activity managed by men, thus could be a strategy to reduce the excessive workload of women. Implementing such approaches would require that REDD+ stakeholders work collaboratively with both men and women to develop techniques anchored in new gendered social arrangements as well as the ecological realities of intensive pests and weeds, diseased or poor germplasm, loss of crop diversity, and other factors.

A second key gender issue identified somewhat less clearly in the case studies concerns the different attitudes of men and women regarding REDD+ project interventions. In the case of Bossonongo, women deserted the associations, while men continued to be active. This difference could be a result of the project approach, which may have paid more attention to men during meetings and in activities in general. In this case, women explicitly complained about the excessive workload required with new techniques, and men agreed with the project implementers. Given that women are responsible for household food security, they cannot afford to mobilize their labor inefficiently. Men may be less busy because they focus on perennial crops and hunting, which are all on the decline in Bossonongo. Even if projects eventually fail to deliver positive outcomes, there is hope that some benefits such as agricultural inputs, tools, or access to credit will materialize. The case of Nkolényeng in Cameroon, which is a community PES project, provides an additional illustration of this dynamic.

At the national level, Peach-Brown (2011: 163) did a broad review of the way REDD+ policymakers address gender issues. The research showed that "women have had limited participation in discussions on issues of climate change or REDD+." At the local level, NGOs and projects work to include women in decision-making institutions. In Inongo, women are targeted specifically and have their own organizations. However, efforts to empower women face resistance from local traditions and culture, which is not yet ready for major changes.

Gender issues need to be framed within broader economic systems. Gender relationships build upon the overall social relations of production within the household. Hence, they cannot be examined or understood in isolation from the farming systems and the interactions of the local society within which these systems exist. Ill-designed gender approaches risk isolating women from the broader system and overlooking relevant strategies for empowering women. Free, Prior and Informed Consent (FPIC) guidelines and safeguard systems within REDD+ projects and the policy process aim to address some of these gender-related issues, but these should be considered as guidelines and should be adapted to

specific situations. Support for men's activities, such as providing a plow and pair of oxen, could contribute to reducing women's labor burden and empower them more than through activities such as handicraft or family planning, which are often promoted for women.

## 5.0 POLICY SUGGESTIONS

### 5.1 DEVELOP NEW AND/OR SHARE AND ENHANCE EXISTING ANALYTICAL TOOLS TO STUDY DEFORESTATION DRIVERS AND THE ENVIRONMENTAL IMPACT OF SHIFTING CULTIVATION

The general prejudices against shifting cultivation may be partially explained by the limits of conventional tools used to study the drivers of deforestation. A series of questions is proposed that could constitute the building blocks of an alternative analytical framework.

The amount of land a family needs to ensure a basic livelihood depends on understanding the local farming system (cropping system, livestock system, tool system); the household micro-economics (resources, investment capacity, vulnerability); and the local culture (level of needs, importance of leisure and free time, acceptable level of drudgery).<sup>xvii</sup> The answer is context specific. For instance, in Kesenge and Yalungu, shifting cultivation requires using about 5 to 10 ha of land (with a fallow duration of five years) to satisfy basic needs, although more rigorous research is needed to verify this figure.

**PHOTOGRAPH 1. FIELD ESTABLISHED ON SECONDARY FOREST OR OLD FALLOW IN YALUNGU.**



If a family were to use its full work force to maximize production and income rather than simply satisfying basic needs, how much land could it farm within a given system? If a family can only farm less than required to sustain its livelihood, then it will be food insecure, experience an economic decline, or tap into natural capital to survive. If it is able to farm more than required to meet livelihood needs, then it will be capable of generating a surplus and investing in intensification (purchasing more inputs); extensification (expanding its cultivated land); or other strategies (diversification, migration). Only if a surplus is generated can sustainability be considered. Then incentives and

other options might shape the decision for intensification versus extensification.

A third question is whether a family actually farms as much land as it can manage properly. In general, farmers cultivate the maximum land possible, because basic needs are barely satisfied. The case in Yalungu demonstrated that some families farm less land than they could if their needs are minimal and can be met without the full potential of the family workforce, or if there is no incentive to maximize production because selling surpluses is difficult.

The final question is whether land use practiced in the forest is more attractive than land uses practiced in non-forested areas, such as savannas, or than other economic options, such as urban employment.

The respective advantages of each livelihood strategy are a determinant of migration rates between the forest and the savanna or cities. While this question is of paramount importance, research programs and conservation projects rarely work at a sufficiently large spatial and temporal scale to address it.

By combining these questions, one could construct deforestation models in which spatial units would not be land units as observed in satellite imagery, but rather functional units observed on the ground, that is, agrarian systems. Satellite imagery still would be useful to characterize the biophysical environment and identify the spatial signatures of agrarian systems, but images would be interpreted in light of a deeper understanding of the functional units that shape landscapes.

## 5.2 VALUE FARMERS' KNOWLEDGE, CHOICES, AND INNOVATION

Policymakers should not try to answer the above questions in detail without involving local farmers, since they can base responses on their detailed knowledge of the biophysical, social, economic, and political contexts in which they operate.

To increase the potential for REDD+ success, a key objective of policymakers and project proponents should be to maximize opportunities for farmers to develop and/or have access to a broad range of technologies so that they can make the choices most appropriate for them. Two avenues can be envisioned to achieve this: increase the range of options available to shifting cultivators, and create a proper incentive framework.

## 5.3 WIDEN THE RANGE OF OPTIONS AVAILABLE TO LOCAL FARMERS

Policymakers and project proponents should broaden the range of land-use options proposed for REDD+ projects. Shifting cultivation needs to be included as one of these options because it meets farmers' needs and has proved to be a viable land use for centuries.

Noting that others are possible, proposed options in addition to shifting cultivation follow (in no particular order):

**Ecological intensification and the adoption of green technologies** that rely on plant material instead of chemical input and heavy tools or machinery, such as agroforestry, no-till agriculture, and cover crops. NGOs and international actors promoting REDD+ activities seem to favor these options the most. The most frequently cited alternative is the Mampu agroforestry model, which is in fact a shifting cultivation system. This approach provides an interesting alternative, although it may depend on subsidies for adoption by smallholder farmers. Conservation agriculture has a record of successful adoption by smallholder farmers in savanna areas of the region (CRS, 2012). The most common practices are those promoted by the International Center for Tropical Agriculture (CIAT) in Bossonongo and WWF in Luki and Mintom. These include crop rotation, plowing, reduced burning, fallow reduction, etc. These techniques may have the unintended consequence of increasing the opportunity costs of labor, especially for women. The least-promoted techniques appear to be the most promising. These are the agroforests developed by farmers and reserve managers in the Luki Biosphere and the cocoa agroforests of Cameroon. The techniques are also suitable in a forest environment but they are not a complete substitute for subsistence farming.

**Integrating livestock husbandry with agriculture, and the provision of productive capital.** NGOs less frequently employ this pathway, but staff from government bodies and representatives of civil society paid significant attention to it. Cattle diseases and the low investment capacity of most shifting cultivators unfortunately constrain it. It could lead to unequal development and widening of social differentiation if not accompanied by public policies such as access to credit, development of animal health care, and limitation of large-scale cattle ranching, which now dominates the sector.

**Development of perennial crops.** Cocoa is the main source of income for smallholder farmers of forested landscapes of Cameroon. In the DRC, perennial crops have played a significant role in smallholder farming in the past but have been abandoned because of declining prices. These could see resurgence with increasing demand for biofuels and organic and fair trade certified products.

**Use of chemical inputs.** This option is rarely promoted. The high cost of chemical inputs and their negative environmental and health impacts are widely cited to justify rejecting them. Some NGOs and government projects, however, have promoted agrochemicals.<sup>xviii</sup> In Cameroon, chemical control of pests and diseases is common practice in cocoa fields, including in agroforests. The lack of such products results in significantly lower production (Pedelahore, 2012); thus, safely used chemical inputs should not be excluded from the range of options.

**Mechanization.** There have been several attempts to introduce tractors in the DRC, but these usually failed because local elites monopolized the equipment or used it for purposes other than those intended. However, there are cases in which smallholder farmers significantly increased their income by hiring the plowing services of local entrepreneurs owning a tractor, as in the Mampu landscape. If agricultural investments are to be displaced from forests to savannas, mechanization should not be excluded. In this case, credit should be provided to village entrepreneurs to acquire a tractor or tiller that other villagers can rent.

**Progressive transformation of shifting cultivation systems in forest areas.** Developing perennial crops and diversifying annual crop association and/or rotation could allow a progressive reduction of the fallow period without abandoning the use of fire and without causing an irreversible fertility decline. This approach was adopted by farmers confronted with changes in forest cover (Boserup, 1964; Mazoyer and Roudart, 1996). After several cycles of shorter fallow over a period that can last up to a decade, trees and shrubs can be eliminated, the root mat can be reduced, the land can be plowed, and more complex crop rotations can be introduced.

**Development of agriculture in savanna areas** to reduce the risk of migration to forest areas or even cause a reverse migration, as suggested by Megevand (2013).<sup>xix</sup> The options cited above should be promoted in savanna areas first to retain populations on already cleared land and rebuild natural capital that has been lost. The development of infrastructure, connection to markets, and provision of services could increase the efficiency of this approach. If these investments are first provided in forested landscapes, the effect will be the reverse — more people migrating from savannas and potentially increased forest degradation. However, communities in forested areas should not be excluded from REDD+ investments. They should also be provided with the option of developing more intensive land uses to increase their income and productivity. Support that focuses on small towns and already established settlements can also keep these populations from settling farther away in primary forests.

All options should be considered, and project implementers should work in partnership with women and men farmers to choose the best options for their circumstances. This approach is consistent with the latest findings of resilience science (Gunderson and Holling, 2012). Economic efficiency relies in part on designing proper incentive frameworks that align the interests of farmers and the broader public.

## 5.4 SECURE LAND TENURE RIGHTS

Securing land tenure rights, use rights, and/or access rights is intensively debated among REDD+ policy-makers, and the importance of the issue is widely recognized.<sup>xx</sup> An RRI workshop held in Yaoundé in March 2013 underscored the importance of securing tenure rights, not only to guarantee that local populations and indigenous peoples receive their share of REDD+ benefits, but also to counter large-scale land appropriations. Based on the fieldwork conducted in the DRC and Cameroon, the following points emerged.

First, tenure rights are not synonymous with ownership. Tenure rights constitute a bundle of rights that may include ownership, access, long or short-term use, etc. Customary tenure systems in forest areas usually grant use rights rather than ownership, and often the rights are lost if the land is not used. This path enables more flexibility and more optimal use of the resource. It also avoids resource capture, because land cannot be acquired for speculation on future benefits that might be generated from it, and can be “acquired” only to the extent that it can actually be used. As receiving REDD+ benefits does not require a physical use of the land – to the contrary, it requires its non-use – customary tenure systems could be disrupted if secure tenure is not designed carefully within the framework of REDD+. Any intervention dealing with tenure systems should consider the complexity of the current system, whether in the context of REDD+ or not.

Second, procedures for securing formal tenure would be inevitably complex and costly, even if current systems are just simplified. As a result of this complexity the most educated and better-off people usually obtain more benefits from tenure modification programs.

Third, customary land rights are embedded like Russian dolls. In general, there are three levels. Individual farmers have permanent use rights to land that can be transmitted to their heirs but are lost if the land is not used. Lineage or clan elders have rights over land that is not yet used but has been granted to them by the village chief (the *chef de terre* in the DRC). However, this right may be more of a management right rather than a use right. Elders have the authority to give this land to members of their lineage and sometimes to grant or sell to outsiders. Village chiefs have rights over the remaining unused land: pieces of forest that are considered as part of the territory of the community but have not been granted to clan or lineage elders. Like lineage or clan elders, village chiefs normally have only management rights over this land. They can grant the land to outsiders who want to settle or invest in their community. But the situation is increasingly ambiguous, especially in certain regions of the DRC where *chefs de terre* tend to consider themselves as landowners and sell land without regard to community benefits.

Fourth, different types of use rights exist in parallel. There are use rights for cultivating land (usually attributed at the household level); for collecting forest products and hunting (which is often the justification for attribution of specific sections of forest to lineages); and for grazing animals in pastoral societies (which does not apply in the areas studied). Maps of these various use rights do not necessarily overlap.

Fifth, REDD+ payments do not require land ownership at this stage. REDD+ is envisioned to finance environmental services. Farmers can be paid if it is verified that a parcel of land within the REDD+ parameters has not been cleared, the non-clearing providing an environmental service. They do not need to own this land and the carbon it stores. This situation is comparable to park managers and rangers (eco-guards) who are paid for patrolling a forest they do not own. REDD+ strategies could evolve into a mechanism where secure tenure is mandatory, but for now such a mechanism does not exist.

Sixth, if local farmers are not clear regarding their state-derived legal rights over the land they inhabit and use, a scenario could develop wherein they would not be included in benefit-sharing arrangements or be allowed “legal” responsibility to manage traditional lands, and REDD+ benefits would be captured by others who claim a formal state-derived right to the land. To avoid these situations or other possible perverse outcomes, projects must take traditional land use and tenure systems into account, and effective grievance systems have to be established to manage potential conflicts.

Seventh, women and pygmy (“autochtone”) groups generally lack rights to the lands they inhabit and use. Women cannot make decisions regarding the land they use without consulting their husbands, and pygmies depend on chiefdoms from other groups who make land-use decisions.

In consideration of the above points, the following suggestions are offered for consideration:

- Management rights and use rights, rather than ownership, should be granted to communities. The granting of management rights should be done at the higher levels among the stakeholders identified — the village chief or institution having recognized authority over land allocation, and the lineage elders who have authority over allocation within their family. These two levels should be distinguished in any project design or PES transaction. Use rights should be granted to the whole community but left under the authority of those being granted management rights. Individual rights to specific land and resources should be respected within communal rights.
- Once management and use rights have been granted to the community, policies should be adopted to ensure that entities external to the community could not buy or sell the land. Under this framework the government would abandon its power to grant or sell land for forest concessions or to outside investors once the land use and benefit agreements are in place.
- Persons or institutions given management rights under REDD+ should not be able to sell the land. They should continue to allocate use rights to villagers following the same customary systems. Only individual villagers could sell the land, and only if they actually used it (cultivated it) and if they had the approval of authorized authorities, such as their lineage or clan leader and the village chief.
- The fact that every member of the community, clan, or lineage has some use rights should be stated explicitly in the management plan developed to guide transactions, together with a definition of who is member. This kind of arrangement has the advantage of reducing transaction costs. A bottom line should be defined for both men and women, especially regarding rights over PES and REDD+ payments.

Granting of rights over land should be associated with proper regulations for benefit sharing. For instance, management rights should not infer, implicitly or explicitly, entitlement to capture carbon benefits (REDD+ payments). Carbon benefits in the form of REDD+ payments should be linked to the actual, physical use of the land and associated use rights. This would require defining a new type of right that can be granted to individual households – the right to store carbon on a piece of land instead of clearing it, and to receive payment for that. Lineage or clan elders (not village chiefs) would allocate these rights to the members of their families in the same way they traditionally allocated rights to clear and use the land.

Indigenous peoples such as the Baka (pygmies) and other vulnerable groups should also benefit from land rights allocation systems. Otherwise, they will likely have less command and control over procedures required to secure their rights and will be further marginalized by land tenure policies. Properly designed, implemented, and enforced FPIC and safeguard systems should be developed and monitored to address these issues over time.

Once the rules, options, and principles are agreed upon, management and use rights could be distributed to communities living in forest areas, starting with communities whose use rights are absent or are the weakest (pygmy groups).<sup>xxi</sup>

## **5.5 QUESTION THE REDD+ PROCESS IN DEPTH AS A FUNCTION OF ADAPTIVE LEARNING AND MANAGEMENT, AND MODIFY ACTIVITIES AS APPROPRIATE**

During the study team’s debriefing in Yaoundé after the fieldwork, one of the participants asked: “Is the population ready for REDD+ in the area you visited?” The team’s conclusion, from the sites it visited, was that the structures are not currently in place to implement wide-scale REDD+ activities, and that REDD+ policymakers and stakeholders need more time to understand and advance REDD+ in the

country. This finding raises important questions about the wisest approach to proceeding. Should REDD+ implementation be delayed until the population is ready? Or should REDD+ policies and field approaches be modified until they are better integrated into the context of specific projects and landscapes? It is important to identify who the REDD+ beneficiaries are, and to determine what REDD+ actually is and for whom it exists.

Regarding the first point, the key REDD+ stakeholders are people or groups of people who are living in forested areas or envisioning migration to forest areas, and who compete for access to land and resources. Other stakeholders include entities having rights over resources, organizations that support communities to access resources, and opportunists on various scales who want to capture REDD+ benefits.

At present, it is difficult to address some of the questions that emerged during the study because there is no agreed international framework to guide the development of national REDD+ projects or strategies, and no consistently applied methodology to scale up and/or learn from. As a result, several different approaches are being applied. Various REDD+ proponents develop modalities that REDD+ stakeholders can choose on their own and implement pilot REDD+ projects using voluntary carbon markets. Many pilot activities voluntarily adopt standards such as the Voluntary Carbon Standard (VCS) and Climate, Community and Biodiversity Alliance (CCBA) Standards<sup>xvii</sup> to obtain certifications and sell carbon at a better price; however, beyond these private initiatives, no international agreement has been signed regarding a global, common framework for REDD+. The REDD+ architecture is still being discussed, with different options being proposed (Karsenty, 2012). These options range from the creation of global and national funds that would subsidize forests and sustainable agriculture, to the definition of a set of rules that would regulate the sale of carbon credits by private and public operators at local, regional, or national scales. The rules for establishing baseline scenarios and measuring additionality, leakage and permanence, the modalities for monitoring and benefit sharing, and the criteria of eligibility are still intensely debated.

There are enough voluntary and private REDD+ investments underway to be able to observe what REDD+ stakeholders are actually doing on the ground and see which options are currently preferred. It is also possible to look at non-REDD+ projects like PES schemes, whose objectives are similar to those of REDD+ and could evolve into or merge with REDD+ projects. For instance, in the DRC, the firm ERA-Congo Sprl. Explicitly aims to fill the gap left by weak territorial administration, a laudable intention. What matters now is by whom, how, and with what purpose these REDD+ pilots will be managed.

The committees and associations being created to locally manage REDD+ pilot projects are intended to be governance bodies made up of people who share common goals, including working for the common good and capturing wealth and resources, ideally for equitable distribution within the communities they serve. These are not government bodies and are not always representative of the people for whom they work. Committees or associations can be biased in favor of one village clan, or controlled by local elites with more education. Often they are accountable to the NGO or project that supports them rather than to the people for whom they are supposed to work (the community). Hence, there is a risk that authority and powers granted could be abused. This lack of representativeness and downward accountability is a well-known phenomenon in Community Based Natural Resources Management (CBNRM) and other community-based conservation and sustainable development approaches (Ribot, 2004, 2011).

In the pilots visited during this study, communities and individual farmers, particularly women, were not given the choice to use cash payments as they wished. Choices are often made by NGOs and other REDD+ stakeholders and channeled within the community through the established governance bodies. In Nkolényeng (Cameroon) for instance, when the team asked farmers whether they could modify a PES-financed activity, they replied yes but that they needed to ask their farmer's group, which would

transmit the demand to the village association, which would then make a report and transmit it to CED (the implementing NGO), whose office is in Yaoundé.

This situation is not very different from how NGOs and rural development projects have been operating for decades. The main difference is that “traditional” projects typically operated for a few years, ended, and did not systematically create community institutions in charge of managing financial resources and enforcing rules. This dynamic is going to change with REDD+. This new generation of projects will last up to 25 or 30 years, which is currently the typical duration of REDD+ carbon contracts. They may also have greater financial resources. However, a more optimistic scenario can be envisioned, and in the long term communities could transform these governance bodies to their advantage through adaptive management and innovative shareholder arrangements.

## **5.6 PROVIDE THE RIGHT INCENTIVE FRAMEWORK THROUGH REDD+ POLICIES**

Based on the case studies, discussions with REDD+ stakeholders, and literature review, three main options for implementing REDD+ are suggested.

### **Option 1: REDD+ projects aimed at delivering carbon credits**

In this option, REDD+ carbon credits are used to finance activities similar to those commonly financed by rural development, sustainable development and conservation NGOs and projects. These include agricultural research and extension programs, income generating activities, sustainable resource extraction programs, village development and conservation committees, micro-credit, capacity building, training, awareness raising campaigns, and land-use mapping and zoning. The ERA REDD+ project in Inongo and the Community PES of CED illustrate this option, while the African Wildlife Foundation (AWF) and WWF seem to be preparing for it in Djolu, Luki, and the Ngoyla Mintom forest.

These activities are similar to those implemented in pre-REDD+ projects, such as Integrated Conservation and Development Projects (ICDP), CBNRM, community conservation, and landscape or ecoregional sustainable development programs. The main differences are the funding mechanism, which promotes private funding from carbon buyers instead of public aid, and contractual arrangements that require measurable results in terms of verified emission reductions. If project developers favor this option, an opportunity could be missed to adopt and/or adapt approaches other than what aid institutions have been implementing for decades with limited success. The pitfalls analyzed in the case studies, such as a bias against traditional shifting cultivation techniques, excessive reliance on committees and associations, and the lack of adequate and equitable consideration of women and minority groups might be exacerbated.

### **Option 2: REDD+ finances regional planning policies that drive the country to a green economy**

The National Coordination REDD+ (CN-REDD+) is currently promoting this approach, which is at the core of the national REDD+ strategy in the DRC. It is also evoked in the Cameroon R-PP. It is consistent with a commitment to mainstream REDD+ within sectorial national policies. It considers that REDD+ policies should do more than manage carbon credits to finance local sustainable development schemes and should be used as a template for developing nationwide green economies. A national REDD+ fund has been created for this purpose.

The main obstacle is that the green economy option may be less appealing to economic decision-makers when compared with short-term profits generated by mining, unsustainable harvesting of forest resources, and large-scale conversion of forest to industrial plantations.

### Option 3: Combining the options

These approaches are not mutually exclusive. Pilot REDD+ projects delivering carbon credits (Option 1) are part of a learning process and could provide valuable lessons. An ambitious cross-sectorial, long-term, national REDD+ green policy and strategy (Option 2) is required to provide an overall framework for deciding proper incentives or payment mechanisms and for synthesizing experiences in pilot projects. Direct cash payments to reward families who adopt conservation practices could inform a third option, as these are commonly practiced in developed countries and are being explored by emerging countries such as Brazil.<sup>xxiii</sup> WWF is collaborating with the government of the DRC to elaborate an emission reduction program in the Mai Ndombe province with the goal of contributing to a green development agenda in the DRC, effectively working to combine Options 1 and 2.<sup>xxiv</sup>

## **5.7 EMPHASIZE WOMEN AND OTHER VULNERABLE GROUPS**

This last suggestion derives from observations about gender issues. More effort is needed to involve women and vulnerable groups in policies and projects. This has to be done with an emphasis on partnership between men and women and between indigenous and non-indigenous groups. The grounds for this inclusion should be defined based on a deep knowledge of the material conditions that determine (at least in part) gender relationships. This approach includes at its core an understanding of the social relations of production inside the household (relations between men and women) and between households and communities (between and among indigenous and non-indigenous groups).

More specific suggestions on how to better address gender issues and support women in shifting cultivation and REDD+ are provided in Annex 3.

## 6.0 CONCLUSION

This study concludes that conservation and development policymakers, including REDD+ stakeholders, should consider shifting cultivation as a principal land use that will continue to shape future landscapes in Cameroon and the DRC. Other land uses such as oil palm plantations may have a greater potential to trigger waves of deforestation and forest degradation. Such land uses could catalyze the migration of smallholder farmers who are able to generate more income by tapping into pristine natural capital than by maintaining it or creating other forms of productive capital in their home region. Such migrations increase the value of land and its attractiveness to larger-scale investors, because once the land is cleared, populations increase and trade and infrastructure develop.

The key driver of deforestation is not the type of land use, but rather the investment capacity and the social and economic arrangements that exist between and among stakeholders living on forest frontiers and competing for access to resources. In other words, the fate of primary forests in the regions visited, and possibly in the whole Congo Basin, will depend on which economic model prevails – capital-intensive agribusinesses or family smallholder farms – and not on technical options such as shifting cultivation versus alternatives.

**PHOTOGRAPH 2. THE CONGOLESE RAIN FOREST SEEN FROM THE AIR**



Because shifting cultivation with agroforestry is central to smallholder farming systems, a strategy aimed at buffering against future deforestation and forest degradation should include support for shifting cultivation farmers and other local stakeholders such as hunting and gathering groups by securing their rights over access to land and resources. This approach contributes to economic development, as there is evidence that smallholder farmers lifted out of poverty are more productive per hectare than absentee landowners or larger-scale farmers (for example, see the extensive work of Robert Netting, including

“Smallholders, Householders”).<sup>xxv</sup> The fate of smallholder farming could be at stake in the REDD+ agenda. Small-scale farmers should be reconsidered as both efficient economic agents (Megevand, 2013)<sup>xxvi</sup>, and as practicing a type of agriculture that has lower environmental impact than agribusiness models. It is also unlikely that agribusiness will improve the food security of local people, as food will flow to high population density areas.

Bias may exist in conservation and development circles against shifting cultivation. Most official documents, such as the Cameroon 2035 vision,<sup>xxvii</sup> emphasize the promotion of mid- to large-scale farms to drive the country to the so-called “*agriculture de seconde generation*”<sup>xxviii</sup> (second generation agriculture). Shifting cultivation and other traditional farming methods are often seen as an impediment

to achieving this transition. Observations during the study indicated that smallholder farmers are willing to increase production and income – and are capable of using the land more efficiently than large-scale investors (Pedelahore, 2012) – if provided with appropriate means and support. Indigenous groups (pygmy groups) whose livelihoods were based on hunting, fishing, and gathering until one or two generations ago, and who are still attached to and dependent upon this way of life, are still inadequately considered. Women are almost absent from the decision-making sphere, although household food security continues to rely on them.

The REDD+ process is framed within this history. This study found that the current REDD+ market in the Congo Basin is controlled by a few entities<sup>xxix</sup> that are perceived to collaborate more with governments and regional elites than with farmers. The provision of environmental services depends primarily on the presence of a few intermediaries, mainly international NGOs. Buyers and sellers have unequal access to information, and only educated elites understand the functioning of carbon markets, creating huge barriers to participation.

REDD+ is a new instrument. If and when significant financing for REDD+ emerges it is likely to have a major effect on land use and land-use changes. From local projects to regional planning efforts, REDD+ could orient both conservation and development policies and programs at much larger scales than currently exist. REDD+ should be seen as an opportunity to do something new and different. In addition, United Nations Framework Convention on Climate Change (UNFCCC) negotiations are also discussing non-market based payments. This means that REDD+ payments in the future will come from both market and non-market sources, and this evolution could bring a lot of changes in the way REDD+ will function in the future.

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## 8.0 ACRONYMS AND ABBREVIATIONS

ADB	African Development Bank
AFHAN	<i>Association des Femmes, Hommes et Amis de Nkolényeng</i> [Association of Men, Women and Friends of Nkolényeng]
AGEFO	<i>Action de Gestion Durable des Forêts en Intégrant les Populations Baka</i> [Sustainable Forest Management Action Integrating Baka People]
APV	<i>Accord de Partenariat Volontaire</i> [Voluntary Partnership Agreement]
ASBAK	<i>Association des Baka de Lomié</i> [Baka Peoples Association of Lomié]
AWF	African Wildlife Foundation
CADIM	<i>Centre d'Appui au Développement Integral de Mbandaka</i> [Mbankana Centre for Integrated Development]
CAR	Central African Republic
CARPE	Central Africa Regional Program for the Environment
CBFF	Congo Basin Forest Fund
CBFP	Congo Basin Forest Partnership
CBNRM	Community Based Natural Resources Management
CCBA	Climate, Community and Biodiversity Alliance
CDM	Clean Development Mechanism
CED	<i>Centre pour l'Environnement et le Développement</i> [Centre for the Environment and for Development]
CEFDHAC	<i>Conférence sur les Ecosystèmes de Forêts Denses et Humides d'Afrique Centrale</i> [Conference on Central African Moist Forest Ecosystems]
CFA	<i>Communauté Financière Africaine</i> [African Financial Community]
CI	Conservation International
CIAT	International Center for Tropical Agriculture
CIFOR	Center for International Forestry Research
CIRAD	<i>Centre de Coopération Internationale en Recherche Agronomique pour le Développement</i> [Agricultural Research Centre for International Development]

CN-REDD+	<i>Coordination Nationale REDD+</i> [National Coordination REDD+]
CO <sub>2</sub>	Carbon Dioxide
COMIFAC	<i>Commission des Forêts d'Afrique Centrale</i> [Commission for the Forests of Central Africa]
CRS	Catholic Relief Services
DFAP	<i>Direction de la Faune et des Aires Protégées</i> [Direction of Wildlife and Protected Areas]
DFID	Department for International Development-UK
DRC	Democratic Republic of the Congo
ECOFAC	<i>Programme de Conservation et de Valorisation des Écosystèmes Forestiers d'Afrique Centrale</i> [Program for the Conservation and Valorization of Central Africa Forest Ecosystems]
ERA	Ecosystems Restoration Associates
ERAIFT	<i>Ecole Régionale d'Aménagement et de Gestion Intégrée des Forêts Tropicales</i> [Regional School of Tropical Forests Management and Integrated Management]
ER-PIN	Emission Reduction Program Idea Note
EU	European Union
FAO	Food and Agriculture Organization of the United Nation
FCCM	Forest, Carbon, Markets and Communities
FCPF	Forest Carbon Partnership Facility
FLEGT	Forest Law Enforcement, Governance and Trade
FMU	Forest Management Unit
FPIC	Free, Prior and Informed Consent
GEF	Global Environment Facility
GIC	<i>Groupe d'Initiatives Communes</i> [Common Initiatives Group]
GIS	Geographical Information System
GIZ	<i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i> [German Society for International Cooperation, Ltd.]
GLOBIOM	Global Biomass Optimization Model
GTCR	<i>Groupe de Travail Climat REDD+</i> [REDD+ Working Group]
HFLD	High Forest Cover, Low Deforestation
Ha	Hectares
HVA	<i>Société Hollandaise d'Agro-Industrie</i> [Dutch Agro-Industry Society]

ICDP	Integrated Conservation and Development Project
ICLD	Swedish International Centre for Local Democracy
ICRAF	International Centre for Research in Agroforestry
IEC	Information, Education and Communication
IIASA	International Institute for Applied System Analysis
IMF	International Monetary Fund
INADES	<i>Institut Africain pour le Développement Économique et Social</i> [African Institute for Economic and Social Development]
INEAC	<i>Institut National d'Etudes Agronomiques du Congo</i> [Congoese Institute for Agronomic Studies]
INERA	<i>Institut National d'Etudes et de Recherches Agronomiques</i> [National Institute for Agronomic Studies and Research]
IRAD	Institute for Agricultural Research for Development
IUCN	International Union for Conservation of Nature
LDC	Local Development Committees
MAB	Man and the Biosphere Program
MECNT	<i>Ministère de l'Environnement, la Conservation de la Nature et du Tourisme</i> [Ministry of Environment, Nature Conservation and Tourism]
MINADER	<i>Ministère de l'Agriculture et du Développement Rural</i> [Ministry of Agriculture and Rural Development]
MINEP	<i>Ministère de l'Environnement et de la Protection de la Nature</i> [Ministry of Environment and Protection of Nature]
MINEPAT	<i>Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire</i> [Ministry of Economy, Planification and Regional Planning]
MINFOF	<i>Ministère des Forêts et de la Faune</i> [Ministry of Forestry and Wildlife]
MLW	Maringa-Lopori-Wamba landscape
NGO	Non-Governmental Organization
NRM	Natural Resources Management
NTFP	Non Timber Forest Products
OFAC	<i>Observatoire des Forêts d'Afrique Centrale</i> [Observatory for Central African Forests]
OSFAC	<i>Observatoire Satellital des Forêts d'Afrique Centrale</i> [Satellite Observatory for Central African Forests]
PACEBCo	<i>Programme d'Appui à la Conservation des Ecosystèmes du Bassin du Congo</i> [Congo Basin Ecosystems Conservation Support Programme]
PDD	Project Design Document

PES	Payment for Environmental Services
PRA	Participatory Rural Appraisal
RAPAC	<i>Réseau des Aires Protégées d'Afrique Centrale</i> [Protected Area Network in Central Africa]
RBL	<i>Réserve de Biosphère de Luki</i> [Luki Biosphere Reserve]
REDD+	Reducing Emissions from Deforestation and Forest Degradation
REFADD	<i>Réseau Femmes Africaines pour le Développement Durable</i> [African Women's Network for Sustainable Development]
RFUK	Rainforest Foundation UK
R-PIN	Readiness Plan Idea Note
R-PP	Readiness Preparation Proposal
RRA	Rapid Rural Appraisal
RRI	Rights and Resources Initiative
RRN	Natural Resources Network [ <i>Réseau Ressources Naturelles</i> ]
SFM	Sustainable Forest Management
SNV	<i>Stitching Nederlandse Vrijwilligers</i> [Foundation of Netherlands Volunteers]
SOIL	Sustainable Opportunities for Improving Livelihoods
TNS	<i>Trinational de la Sangha</i> (Sangha Tri-National)
TRIDOM	Tri-National landscape Dja - Odzala - Minkebe
UFAM	<i>Union des Fermiers Agroforestiers de Mampu</i> [Union of Mampu Agroforestry Farmers]
UK	United Kingdom
UNDP	United Nations Development Program
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNOPS	United Nations Office for Project Services
UN-REDD+	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation
USAID	United States Agency for International Development
VCS	Voluntary Carbon Standard
WCS	Wildlife Conservation Society
WHRC	Woods Hole Research Center

WWF

Worldwide Fund for Nature

ZIC

*Zone d'Intérêt Cynégétique* [Hunting Areas or Ground]

## 9.0 ENDNOTES

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- i The DRC was selected because most of the remaining primary forests of the Congo Basin are located in this country, and because it is the most advanced country of the region in REDD+ policies preparation and implementation. The DRC issued a draft REDD+ national strategy. One privately funded REDD+ project, managed by Ecosystems Restoration Associates at Mai Ndombe project and analyzed in this report, has already sold carbon credits on the international market (read more at: <http://www.offsetters.ca/media-centre/investor-relations/2013/02/01/era-carbon-offsets-announces-significant-first-sale-and-delivery-of-offsets-from-mai-ndombe-redd-project-in-the-drc>). Cameroon was selected for study sites because significant forest policy reforms have been implemented since 1994, including decentralization, community forestry, and sharing of logging royalties. The lessons of this work can help inform REDD+ policy-makers and practitioners.
- ii The team did not establish focus groups and undertook informal group and individual interviews so as to be less intimidating to local stakeholders and to promote more open discussion.
- iii Sites visited and schedules are indicated in Annex I.
- iv The complete transcript of interview notes (a 400 page Word file) is available on request from: [Jacques.pollini@gmail.com](mailto:Jacques.pollini@gmail.com). Only a fraction of the available data is used in this report. This material may be used for preparation of scholarly articles for peer-reviewed journals.
- v In many cases local leaders suggested to the field team that certain people be interviewed, which the team did so to not cause offense. The team also had open discussions in these situations and was able to triangulate their findings with direct observation, literature, or other informants.
- vi This portrayal is consistent with figures found in the DRC R-PP, according to which forests in DRC have been cleared at a rate of 0.2 to 0.3 percent over the past 20 years, as compared with the global average of 0.6 percent. This relatively low deforestation rate has several likely causes including war, the absence of development, and the poor state of infrastructure. In the current context of post-conflict stabilization and reconstruction, the situation is expected to change. The population is increasing rapidly (3 percent), and the growth rate could reach 6 to 8 percent during coming decades (IMF and WB) as a result of development of agricultural, logging and mining activities, and infrastructure investment.
- vii This list is not exhaustive and includes only the most recent studies and those with a national scope. Other studies include Woods Hole Research Center (WHRC), 2007, “*Réduire les émissions de CO2 du déboisement et de la dégradation dans la République Démocratique du Congo : un premier aperçu*”, which was presented at the UNFCCC COP-13 at Bali in 2007 and was used for the elaboration of the DRC REDD+ R-PIN. The MacKinsey report (*MECNT 2009: Potentiel REDD6 de la RDC*) also includes a discussion about deforestation drivers whose conclusion was widely disputed by members of civil society, because it identified as a main driver local communities practicing shifting cultivation and collecting firewood (GTCR, 2012).
- viii <http://www.rightsandresources.org/events.php?id=814>.
- ix The synthesis report mentions non-industrial logging for mainly local use as the third cause of deforestation, but makes no mention of industrial logging.
- x According to UN-REDD+ (2011), the DRC defines forests as any area of at least 0.5 ha with trees of at least three meters high on at least 30 percent of its surface. According to this definition, most fallows aged five years or greater constitute a forest – although a degraded one.

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- xi The intent is not to minimize the ecological impact of this land use, as five to 10-year fallows generally have much lower conservation value than primary forests.
- xii Using modeling approaches, Phelps et al. (2013) and Megevand (2013) dispute the “land-sparing” model, still very popular among REDD+ stakeholders as noted in the case studies. According to this model, agricultural intensification will reduce pressure on forests because less land will be necessary to produce the same output. Phelps et al (2013: 5) argued instead that “conservation policies that promote or impose an intensification agenda on extensive farmers may actually spur future agricultural expansion” to the detriment of conservation. They show that increasing cassava yields in the DRC will lead to higher agricultural land rents, which will increase the opportunity cost of implementing REDD+ policies. In the end, “the cost of reducing forest sector emissions could significantly exceed current and projected carbon credit prices” (Phelps et al., 2013: 1). Megevand (2013: 5) draws similar conclusions. Simulations by the CongoBIOM model “suggest that intensification of land production in the Congo Basin will lead to an expansion of agricultural land owing in a context of growing demand for food and unconstrained labor supply. Productivity gains that make agricultural activities more profitable tend to increase pressure on forested land, which is generally the easiest and cheapest land for farmers to access.”
- xiii There is substantial investment given to communication, outreach, and awareness-raising.
- xiv For theoretical justification of this position, see the concepts of “bounded rationality” (Gigerenzer and Selten 2002).
- xv See the concept of “choice architecture” (Thaler and Sunstein, 2009).
- xvi Labor constraints to agricultural intensification are documented by Boserup (1964) and by Shapiro and Tollens (1992).
- xvii See Chayanov, 1922; Ellis, 1988; Netting, 1993; and Dufumier, 1996 for theories of peasant economics.
- xviii Chemical fertilizer use combined with other technologies is promoted by the project CATALIST of the International Fertility Development Center (IFDC) in the great lake region, including in Eastern DRC (read more at: <http://www.ifdc.org/getdoc/827362e3-24d6-4832-8bc1-414a404dce92/CATALIST>).
- xix “There is an estimated 40 million ha of suitable non-cropped, non-forested, non-protected land in the Congo Basin. This corresponds to more than 1.6 times the area currently under cultivation. Utilizing these available areas, along with an increase in land productivity, could dramatically transform agriculture in the Congo Basin without taking a toll on forests. Decision makers must prioritize expanding agriculture on non-forested lands.” (Megevand, 2013 : 17-18).
- xx According to Awono et al. (2013), there is broad recognition that tenure reform is a key governance challenge among REDD+ stakeholders. UNFCCC and the Center for International Forestry Research (CIFOR) outline the importance of clarifying tenure rights, and CCBA certification requires it. This represents a challenge for REDD+ because of the “absence of recognition of customary institutions and customary rights to land, resources and forest in sub-Saharan Africa” (Awono et al., 2013: 2).
- xxi According to the Cameroon Ministry of Forests and Wildlife, “The issue of land for the Baka “Pygmies” must be seen as a matter of access to citizenship” (MINFOF, 2011:53, unofficial translation).
- xxii See <http://v-c-s.org/> and <http://www.climate-standards.org/> for more information.
- xxiii In Brazil, through the Bolsa Floresta program, families in Amazonas State can receive an incentive payment of US\$30 per month per family that commits to zero-deforestation of mature forest. See: Bakkegaard (n.d.), available at <http://www.isecoeco.org/conferences/isee2012/pdf/sp25.pdf>
- xxiv B. Fobissie, personal communication to FCMC, November 2013.

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- xxv Smallholder farmers with a decent income are also consumers buying local products. They can contribute to the development of the national economy by buying simple products produced by a nascent industry.
- xxvi “With about half the population active in agriculture in most countries of the Congo Basin, there is a need to foster sustained agricultural growth based on smallholder involvement. Experience in other tropical regions shows this is possible. Thailand, for example, considerably expanded its rice production area and became a major exporter of other commodities by engaging its smallholders through a massive land-titling program and government support for research, extension, credit, producer organizations, and rail and road infrastructure development” (Megevand, 2013 : 18). Further, “Large agribusiness operations, especially rubber, oil palm, and sugarcane plantations, have the potential to sustain economic growth and generate considerable employment for rural populations. Given weak land governance, there is a risk that investors will acquire land almost for free, interfere with local rights, and neglect their social and environmental responsibilities. Governments should establish stronger policies on future large land investments, including requiring land applications to be oriented toward abandoned plantations and suitable nonforested land“ (Megevand, 2013: 18).
- xxvii Document elaborated in 2009 by the Ministry of Economy, Planning and Regional Planning (MINEPAT), and aimed at framing and orienting national policies in the long term. Read more at:  
[http://www.cameroonembassyusa.org/docs/webdocs/Cameroon\\_VISION\\_2035\\_English\\_Version.pdf](http://www.cameroonembassyusa.org/docs/webdocs/Cameroon_VISION_2035_English_Version.pdf)
- xxviii See “*Note d’information sur le MINADER*” of the Ministry of Agriculture and Rural Development, retrieved from:  
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CDEQFjAA&url=http%3A%2F%2Fwww.Cameroonemarche.cm%2Fdownload%2F%3Fflang%3Dfr%26strMode%3DvideoDoc%26id%3D145&ei=UdSTUbydFsEmqQGyYIDACw&usq=AFQjCNHlkMYvd2aButYL5PtguPVcbt-6dw&sig2=YZP4yVC2ALUCr3nYNglung>
- xxix Wildlife Works, for instance, is present in both the DRC (ERA REDD+ Mai Ndombe project) and in Cameroon (feasibility study for a REDD+ project in the Ngoyla Mintom forest).

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