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Research Article

Putting the plus first: community forest enterprise as the platform for REDD+ in the Maya Biosphere Reserve, Guatemala

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Abstract

Covering 2.1 million hectares, Guatemala's Maya Biosphere Reserve (MBR) is the largest protected area in Central America and is home to globally important biodiversity. Established in 1990, the reserve is also the site of an internationally significant experiment with community forestry: twelve community forest concessions in the MBR cover over 400,000 ha, about 19% of its total area. Over the last fifteen years, these concessions have developed local enterprises that have generated thousands of seasonal and permanent jobs, and over \$4 million in annual sales of sustainably harvested forest products. At the same time, analyses have shown that the rate of deforestation in concessions certified by the Forest Stewardship Council (FSC) is remarkably lower than in adjacent "core zone" protected areas in the MBR. Such community forests represent a promising strategy for reducing emissions from deforestation and degradation (REDD+), where payments could add a crucial revenue stream for local forest-based enterprise. Under an initiative led by the Rainforest Alliance, approximately 470,000 hectares with potential to offset approximately 1 million tons CO₂-equivalent per year will be eligible for payments for avoided deforestation. This paper details the history and development of community forest enterprise in the MBR, the rationale and potential for developing REDD+ in MBR concessions, and the work of the Rainforest Alliance and national and international partners on a host of complex activities, including estimation of carbon offset potentials, baseline definition, legal and regulatory analyses, and preparation of a project document for validation to voluntary carbon standards.

Keywords: Community forestry, forest carbon finance, forest conservation, enterprise development, environmental management standards

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Introduction

For decades, governments, donors, civil society groups and development organizations around the world have lent support to a wide array of community forestry efforts. A guiding assumption has been that by devolving forest rights to locals, community forestry can mitigate the negative ecological and social effects often associated with management by extra-local actors, while providing the raw material for the development of local enterprises and livelihood improvement. A multitude of benefits can result from successful community forestry: from poverty reduction to biodiversity conservation, social justice and increased tenure security [1-4].

There is no single definition of community forestry. The term has been used to describe an array of forest management approaches, applied in different ecosystems, aimed at different objectives, and including local communities to a greater or lesser degree. As an umbrella concept, its use (and misuse) and application in a wide variety of political settings has given rise to a veritable lexicon of alternative terms – including, among others, “social forestry” [5-6], “joint forest management” [7-8], “community-based forest management” [9], and “community-based forestry” [10-11]. The common denominator for all such efforts is that local communities are given some role in forest management and, as a result, are entitled to some sort of benefit, material or otherwise.

In its many forms, community forestry is on the rise. A growing body of research suggests a marked trend towards increased management authority for local communities over forests. White and Martin [12], and Sunderlin *et al.* [13] find that as much as 27% of forests are under community control, with indications that this number will increase in the future. Although the level of local participation and control is highly variable, it is increasingly clear that communities are responsible for the management of a significant share of the world’s forests, particularly in the tropics, where deforestation rates are highest [14].

The significance of this trend has taken on even greater importance as the discourse develops around reducing emissions from deforestation and degradation, conservation of forest stocks, sustainable management of forests and enhancement of forest carbon stocks (REDD+). Although the very concepts of payments for ecosystem services and carbon trading continue to be debated [15-16], many note the potential for REDD+-driven policy reform to leverage significant gains for local communities, especially in the areas of forest tenure and use rights [17]. However, others have sounded the alarm that REDD+ could harm local interests – especially indigenous groups whose customary tenure is unrecognized – if the architecture of eventual national systems favors state control [18]. While more specific language ensuring respect for the rights of communities through social safeguards has been agreed to by the UNFCCC international dialogues (e.g. UNFCCC Decision 1/CP.16 in 2010), there is concern whether national REDD+ readiness processes are adequately addressing the issue [19-20]. Given the mounting evidence that sustainably managed community forests outperform strict protected areas in conserving forest cover and associated biodiversity [21-24], it is clear that sustainably managed community forests, which also produce significant benefits for local communities, represent an important strategy for REDD+.

In this context, the experience during the past fifteen years of forest communities in the Maya Biosphere Reserve in the Petén region of northern Guatemala has tremendous global importance. As of April 2012, nearly 480,000 ha of the forests in the MBR were certified to Forest Stewardship Council (FSC) standards, over 345,000 ha of which are controlled by communities granted forest concessions. Deforestation rates in these certified forest concessions over the last ten years are

some twenty times lower than in adjacent protected areas [24]. At the same time, forest management and enterprise development have provided a major boost to local economies, generating thousands of both permanent and seasonal jobs and increasing household incomes [25].

Notwithstanding the successes of community forest management in the Petén, there are very real threats to this model for forest conservation over the long term. The small and medium sized forest enterprises that have been built up by concessionaire communities remain incipient, struggling to turn profits sufficient to outweigh the mounting pressure for conversion to other land uses, principally cattle ranching (often used by drug traffickers for money laundering). The level of threat varies among individual concessions, reflecting differences in forest resource availability, social histories and organizational dynamics. But several critical barriers are familiar (indeed often inherent) to tropical forest management operations globally, particularly community-run concerns: high management costs, low productivity, weak markets and limited access to finance. The latter issue is commonly cited by community producers as the most important constraint to achieving forest enterprise competitiveness.

This paper details the development of community forestry in the MBR and then chronicles an initiative underway called GuateCarbon, a subnational REDD+ project to secure an added layer of finance for forest concessions. The central strategy of this initiative is to use forest enterprise and certification as the fundamental building blocks for the generation of carbon credits that will have strong market demand. Following a standards-based approach – building off FSC and incorporating Climate, Community and Biodiversity Alliance (CCBA) and Verified Carbon Standard (VCS) protocols – GuateCarbon covers an area of approximately 470,000 hectares of forest, with an estimated potential to offset an average of approximately 1 million tons CO₂-equivalent per year. Assuming a market price of \$3-5 per ton CO₂¹ and applying a conservative 40% discount, the project could generate more than \$2 million per year, complementing forest enterprise activities in the MBR by adding critical ‘top-layer’ finance to secure and maintain competitiveness.

As a subnational project being developed in parallel with Guatemala’s national strategy for climate change and REDD+, the GuateCarbon pilot is a valuable example for government policy makers looking for field-based experience to inform policy. At the same time, as an early example of REDD+ project development for the voluntary market – and as one of the few such projects in the world building on community-based production forestry and enterprise – GuateCarbon is generating important lessons with global significance to civil society groups, development practitioners, donors, academics, and private sector investors. This paper provides details on the concessions in the MBR as the basis for REDD+, describes the steps taken to date in the development of the GuateCarbon project, and highlights some of the early lessons generated.

The Petén and the Maya Biosphere Reserve

Situated in the Selva Maya – a tropical forest expanse spanning Belize, Guatemala and Mexico – the Maya Biosphere Reserve forms the heart of the largest block of broadleaf forest north of Amazonia. Its 2.1 million hectares are home to a wide array of globally-important biodiversity and iconic wildlife species, including jaguar, puma, tapir and scarlet macaw [27]. This natural endowment attracts thousands of tourists to the MBR every year, a majority of whom are drawn by the MBR’s impressive

¹ A recent analysis by Forest Trends’ Ecosystem Marketplace found average reported price across the forest carbon market to be \$5.5/tCO₂e [26].

archeological ruins – most notably Tikal – a reminder that the area hosted the development of the Maya Civilization. Significant scholarship indicates that the Petén in 750 A.D. was then one of the most heavily populated places on Earth [28].



Fig. 1. Location of the Maya Biosphere Reserve, Petén Department, Guatemala.

After the collapse of the Maya, through Spanish colonization, and into the mid-20th century, the Petén was sparsely populated. Some estimates have put the 1950s population at just 25,000 [29]. The most important economic activity at the time was chicle (*Manilkara* spp.) extraction, along with unregulated harvest of precious hardwoods and wild animal species. With the 1954 U.S.-backed *coup d'état* and the advent of military rule, the Guatemalan government took formal steps to exploit the region's vast natural resource wealth. In 1957, the government, with the support of the United States Agency for International Development (USAID), created the Enterprise for Economic Promotion and Development of the Petén (FYDEP by its Spanish acronym) to integrate the region into the country's economy and promote colonization. FYDEP was the only government agency in the Petén; it was charged with control of chicle harvest and sale, oversight of timber harvesting, and the promotion of settlement through land sales [29].

Since one of the requirements for titling was forest clearance, and since FYDEP gave preference to large plots for middle and upper-class *mestizos*, the Petén began to experience high rates of deforestation. By the 1980s, the civil war in Guatemala caused waves of migration to the Petén, which in turn saw an increasing amount of paramilitary activity. Deforestation intensified significantly, converting vast areas of forested land to farmland and cattle ranches. At the same time, international organizations began pressuring the Guatemalan government to take steps to preserve the forests of the Petén. This led to the phase-out of FYDEP and the establishment of the National Council of Protected Areas (CONAP) in 1989. The following year, through Decree 5-90, CONAP established the Maya Biosphere Reserve (MBR) [30].

The MBR Master Plan, approved in 1992, established a core zone of protected areas, allowing controlled forest extraction within a multiple-use zone, and setting aside a buffer zone at the southern edge of the MBR for the “stabilization” of agricultural use.

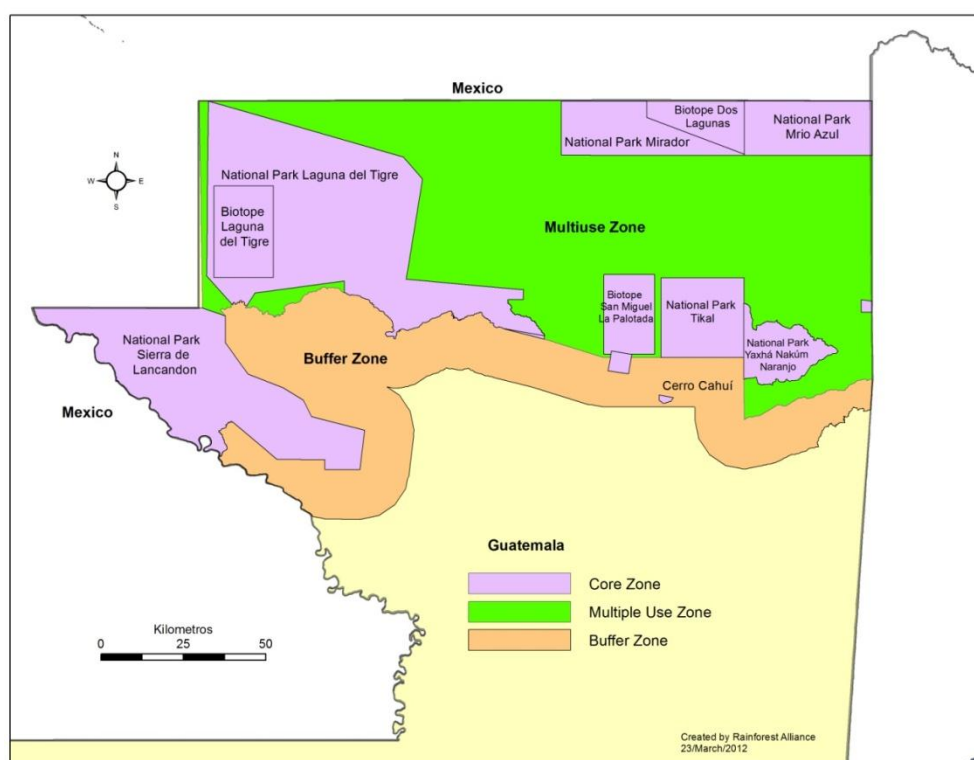


Fig. 2. The Maya Biosphere Reserve and main use zones

Over a third of the Maya Biosphere Reserve was established as a core zone, an area of strict-protection forests, biotopes and archaeological sites. According to the Master Plan, in the core zone, natural biological processes are to be left untouched and reserved for scientific research and recreational use, and no permanent human settlements, farming, or cattle ranching are permitted. However, due to a lack of active management and sufficient funds for protection, these areas have suffered from extensive deforestation and degradation over the last decade (see Figure 4 below).

A belt of land on the south edge of the MBR, totaling just under a quarter of the reserve, is gazetted as a buffer zone. Here, human settlement and limited agricultural activities are permitted, with the aim of stabilizing land use in the reserve and reducing pressure on natural forest areas.

Covering 40% of the MBR, the multiple-use zone is made up primarily of forest concessions allocated to a host of local communities and two private companies for sustainable forest management. These concessions are the central focus of this paper. Additionally, the multiple-use zone consists of three biological corridors established to ensure connectivity between core zone national parks (corridors are shown in light orange in Fig. 3).

Table 1. . Use zones of the Maya Biosphere Reserve

Use zone	Area (ha)	% of reserve land area
Core zone	767,000	36
Multiple-use zone	848,400	40
Buffer zone	497,500	24
Total	2,112,900	100

Creation of forest concessions

The MBR's designation as a reserve initially brought about significant social conflict [31]. A number of villages established decades before the reserve's creation – such as Carmelita, Cruce a Dos Aguadas, La Pasadita, San Miguel la Palotada and Uaxactún – had developed their own forest management systems that were central to local livelihoods [29]. Official declaration of the area as a protection forest was seen by some of these communities as a conservation land grab; others were concerned that the MBR would ultimately be concessioned out to private sector interests. As a result, the first years of the MBR saw frequent demonstrations by communities demanding access to forest resources.

In 1995, such movements coalesced into the Association of Petén Forest Communities (ACOFOP), founded to resolve forest conflict through the negotiation of increased rights for communities. ACOFOP focused its energies on negotiating concessions for member communities, an aim that encountered considerable resistance. Although ACOFOP benefitted from significant support from international non-governmental organizations (NGO) and the donor community, government agencies and industrial interests were highly skeptical of community capacity to manage natural forest and build competitive local enterprise [30]. Moreover, some conservation NGOs argued strongly for the whole reserve to be off-limits to timber harvesting, believing that any type of forest extraction would lead to forest degradation and land use conversion [32].

Ultimately, however, ACOFOP was able to use the legal framework to the advantage of its members. Government policies guiding the management approach for the reserve – such as a set of concession procedures approved for application in the multiple-use zone in 1994 – were unequivocal in their recognition of the legitimacy of traditional forest use by established communities [33-34]. Through a protracted public consultation process overseen by CONAP, it was agreed that such communities would be allowed to apply for a concession by first mapping areas of traditional use (including agricultural and forest lands) and successfully demonstrating agreement of boundaries with neighboring communities [35]. With the concession approved, a forest inventory would be undertaken to inform a forest management plan and environmental impact assessment. Finally, a

25-year contract would be signed, granting exclusive rights to all the resources in the concession to the corresponding community. The concession agreement can be cancelled by CONAP if the management plan is not followed, if there is insufficient capacity for operations, or if the concession declares bankruptcy [36].

Although the legal standing was clear, as were the steps to winning concessions, awarding rights over the forest for all ACOFOP members took time. Regulations for allocation of the community concessions originally required that each be backed by an NGO to provide technical and financial backstopping. Additionally, CONAP made it a requirement that, within three years of granting the concession, all operations would need to achieve (and then maintain) FSC certification to continue to hold their contracts [37]. The first concession was granted in 1994, to San Miguel la Palotada, a rather small area of just over 7,000 hectares. Over the following eight years, eleven more community concessions were approved, as well as a handful of community cooperatives in the southwestern portion of the MBR, and two industrial concessions run by private sector firms. Appendix 1 Table 2 shows a breakdown of approved forest management units in the MBR.

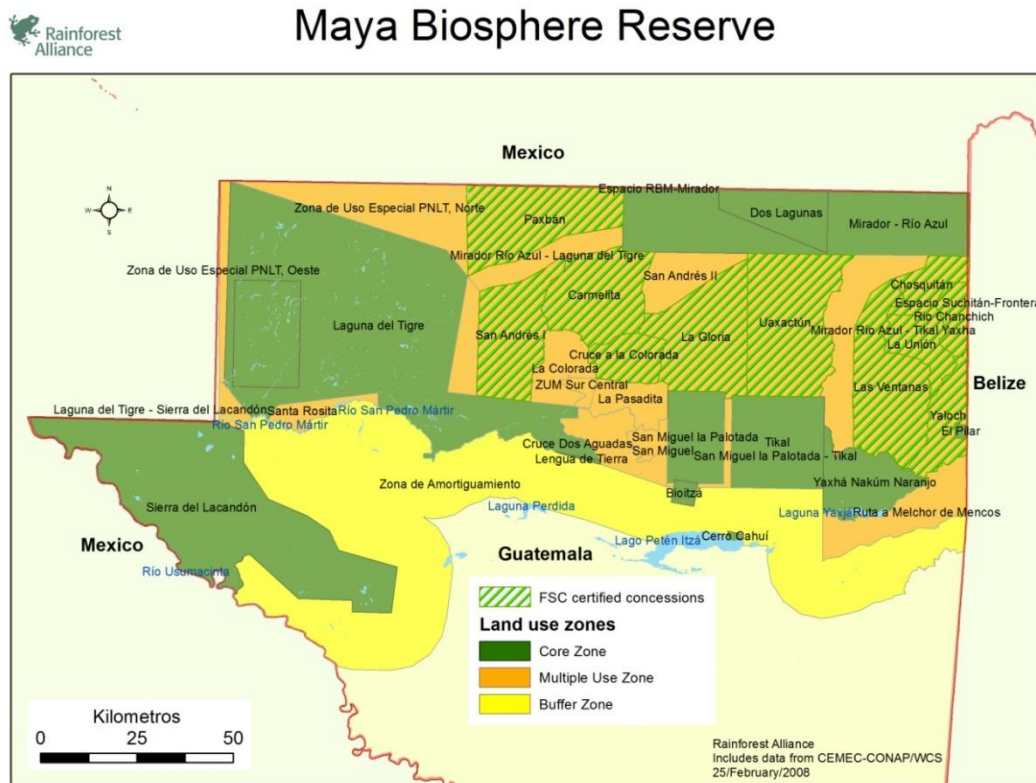


Fig. 3. The MBR showing forest concessions

The strong presence and assistance of both international and local NGOs in organizing communities, undertaking forest management planning, and securing approval of concession contracts cannot be understated. Moreover, the financial and political backing of major donor agencies such as USAID, the Inter-American Development Bank and Kreditanstalt für Wiederaufbau (KfW), a German government-owned development bank – as well as charitable organizations like the Ford

Foundation and the Netherlands-based international NGO ICCO – was central in the establishment and approval of concessions. One estimate put USAID support alone to the Petén at \$135 million through 2006 [38].

Developing community capacities: from forest management to enterprise

As the awarding of concessions gathered momentum, the bulk of technical assistance given at the community level was dedicated to building local capacities in forest management, monitoring and control. A range of international and local NGOs were involved in training communities in all aspects of forest management: from basic forest ecology to inventory to management planning and operations². By 2004, fourteen of the management units had achieved FSC certification (four have since been suspended due to land conflicts and concession cancellation). At present, all concessions with continuing management approvals remain certified. Significantly, after only a few years, nearly all the communities had sufficient in-house technical capacity to carry out nearly all forest management field work by themselves³ [32]. Such impressive advances toward sustainable forest management, resulting from a decade of dedicated research, training and applied forestry practices, are clearly a globally significant achievement, rarely seen in the tropics⁴.

As management capacities have been built, technical assistance in the MBR has come to focus increasingly on competitive forest enterprise. As Nittler and Tschinkel [32] emphasize, the institutions providing assistance during the concession establishment process were not particularly skilled in business development and enterprise. Recognizing the continuing challenges that community-run operations face with such issues, ACOFOP formed a unit in 2002 to assist its members with business administration, marketing, contract management, pricing, and product development, among other enterprise development needs [25]. Attempting to meet such a wide array of goals while maintaining its commitment to advocacy on behalf of its members, ACOFOP has evolved new organizational modes in an attempt to balance economic and political aims [39].

In 2003, with external support, ACOFOP's marketing unit was spun off into a new entity, called FORESCOM (*La Empresa Comunitaria de Servicios del Bosque, S.A.*). FORESCOM was founded as a private company owned by its members, now totaling eleven community concessions operating in the MBR. With support from donors and the Guatemalan government, the business has acquired significant infrastructural assets – including milling equipment, molding planes and drying kilns, as well as road-building and maintenance machinery – and provides a range of services to its members in forest operations, wood processing and finished product storage. FORESCOM also provides marketing services for members, particularly in finding new markets for certified material. A focus of such efforts has been on finding markets for lesser-known timber species like pucté (*Bucida buceras*), manchiche (*Lonchocarpus castilloi*) and santa maría (*Callophyllum brasilienses*), as well as the non-timber forest product xate (*Chamaedorea spp.*). Moreover, FORESCOM acts as the group certificate holder for the FSC certification of seven of its members, as well as holding its own chain-of-custody certificate for processing and sale of certified material.

² Most notably CATIE (*Centro Agronómico Tropical de Investigación y Enseñanza*), *Asociación Centro Maya*, *Fundación Naturaleza para la Vida* (NPV), PROPETEN, *Asociación para un Mundo Justo*, World Wide Fund for Nature (WWF), Wildlife Conservation Society (WCS), Conservation International (CI) and FIPA (*Fortalecimiento Institucional en Políticas Ambientales*).

³ Certain concessions also shared externally-sourced technical assistance services.

⁴ Further reading on technical forestry, concession norms and management guidelines in the MBR is available on the CD of SI-CONFOR (*Sistema de Información de Concesiones Forestales*).

However, significant bottlenecks still hamper development of enterprise competitiveness and the forms of income needed for sustainable forest management in the Petén. Continuing lack of clarity in concessions statutes and lack of compliance with internal rules undermine community support; a lack of continuity in enterprise leadership creates a constant need for capacity building; and lackluster administrative and financial controls allow petty corruption and poor business practices. Worse, invasion of concession lands by outsiders (often associated with drug trafficking) is a growing threat, perhaps the most serious of all.

Impacts of community concessions

In spite of these continuing challenges, it is clear that the concession model has generated significant socio-economic and environmental benefits. A recent paper by Radachowsky *et al.* [40] noted that current estimates of aggregate annual revenue from certified timber sales by all forest concessions in the MBR run to more than US \$13 million. In the community-run concessions alone, total sales to date are estimated to have topped \$30 million. Fundamental improvements in cost control, milling efficiencies, value-added processing and income from exports of lesser-known species and NTFPs have made concessions more efficient as well. In 2003, income from sawn wood was \$2.8 million, but by the end of 2008 this figure had more than doubled to \$5.8 million, despite a mere 5% annual increase in product volumes [25]. There are, however, large variations among the concessions and the related CFEs.

At the household level, impacts are harder to measure. A full accounting is difficult to arrive at, but one estimate put the number of person days of work generated in 2003 at 50,000, amounting to nearly US \$360,000 [39]. Another more recent analysis calculated the number of permanent jobs generated by concession activities at more than 1,300 [25], and another found the number of total jobs per year generated to be more than 3,000, or more than 300,000 person days [40]. Given a total estimated population in the Petén of about 500,000, community forest enterprise is therefore a significant generator of jobs at the regional scale. Such jobs are typically well compensated, with most salaries running above the national minimum wage. Indeed, jobs created by the concessions have been found to generate incomes far above regional averages [39-40].

Furthermore, many of the better-organized concessions also dedicate a share of forestry profits to social development projects such as basic healthcare and education, as well as environmental education and forest protection measures. Investment in such projects averages some US \$200,000 per year. In addition to these investments – which meet needs for services commonly provided through state programs – the concessions also pay taxes, and contribute to social security, in the amount of approximately US \$900,000 annually⁵.

Meanwhile evidence suggests clear success with respect to the guiding goal of the concession arrangement: conservation of forest resources. In comparison to the alternative approach lobbied for at the MBR's establishment – strict protection – the concessions have outperformed neighboring protected areas. An analysis published in 2008 found that during 2002-2007, the average annual deforestation rate for the entire MBR and the core protected areas was twenty times higher than the deforestation rate for the FSC certified concessions [24]. The same study found that, during 1998-2007, the incidence of wildfires in the MBR was variable (7% to 20% of forest area burnt

⁵ Since this amounts essentially to a double tax on community forest operations, a review of the taxes levied on concession sales would seem warranted.

annually), while the area burnt on FSC certified concessions was significantly less, and indeed steadily dropped from 6.5% in 1998 to 0.1% in 2007. Figure 4, shows a map that accompanies this study.

Despite this, significant threats remain to be overcome if the community concession model is to be sustained and strengthened. First, there are fundamental social issues that must be resolved if the concessions are to continue to generate the range of benefits noted above. Nittler and Tschinkel (2005) highlight the “twin scourges of incompetence and corruption” in the management of community concessions as the most serious threat to their success. Although some progress has been made in the intervening years, the difficulty of attaining genuine participation (especially given the variability within and between the different concessions) suggests that highly concentrated efforts to improve transparency in concession management and enterprise are still needed in a majority of the communities [41]. Additionally, the empowerment of a representative yet specialized and dedicated team of professionals to permanently manage the enterprise side of community forestry operations is essential. Without such changes – while maintaining fealty to the community-based model – the success of the concessions in a globalized market cannot be ensured.

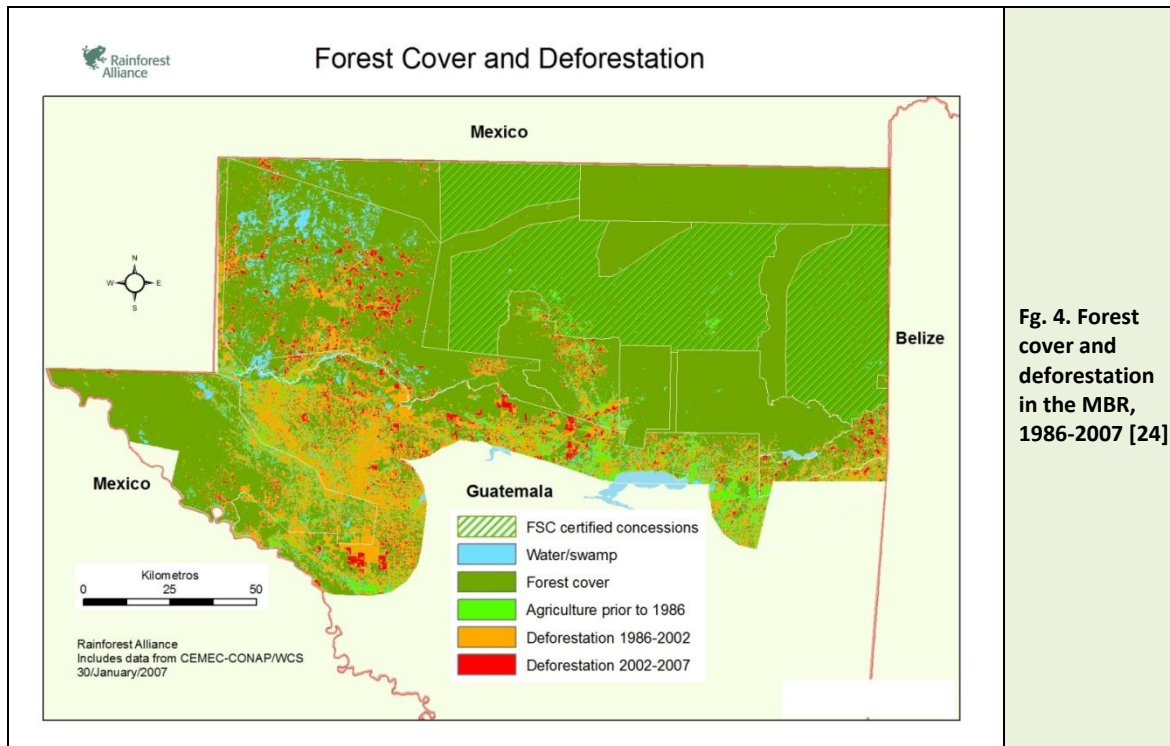


Fig. 4. Forest cover and deforestation in the MBR, 1986-2007 [24]

Another major issue that has already been partially addressed but that remains a threat is the need for diversification. Once reliant almost exclusively on the production of mahogany and Spanish cedar, the concessions have long appreciated the need to find markets for a wider array of timber species, as well as non-timber forest products. The significant advances made in this regard mentioned above represent important gains, particularly with *xate*, which has the added advantage of creating jobs for women in a sector that has traditionally been dominated by men. However, further diversification will almost certainly become necessary in coming years.

Finally, business and marketing capacities among the community enterprises need continued improvement. The formation of FORESCOM, training of business staff and the improved market access, especially for lesser-known species, are important steps forward. However, as with the development of forest management capacities during the 1990s, these improvements have relied on significant donor investment and assistance from NGOs. Permanently installing these capacities both within FORESCOM and among the community concessions themselves will be critical to ensuring survival of forest-based enterprise over the long term. Moreover, improving transparency and addressing fundamental market competition tensions between FORESCOM and its own members is essential if the second-tier enterprise is to maximize its potential.

Without such improvements, the concessions face an uncertain future. Particularly troubling is the rising tide of land conversion in the MBR linked to drug trafficking. A recent study by Zander and Durr [42] found an alarming trend of extensive land sales in an area directly adjacent to the MBR, much of it for the establishment of cattle ranches used to launder drug money. Mounting anecdotal data attest to a similar dynamic inside the MBR, where such transactions result in deforestation. Although the majority of these conversions are happening in core zone protected areas – consistent with the study results noted above – community concession lands have also come under pressure. A very strong social and economic bulwark indeed will be needed to hold back pressure from such threats.

Such continuing threats form the basic argument for adding yet another layer of diversification to the income of forest concessions in the MBR, that of payment for environmental services. The remainder of this paper is concerned with an initiative led by the Rainforest Alliance, the Government of Guatemala, forest concession partners, and civil society groups, to enable forest concessionaires in the MBR to earn payments for REDD+. These payments will create a new source of revenue for concessions to invest in conservation and to meet pressing social needs.

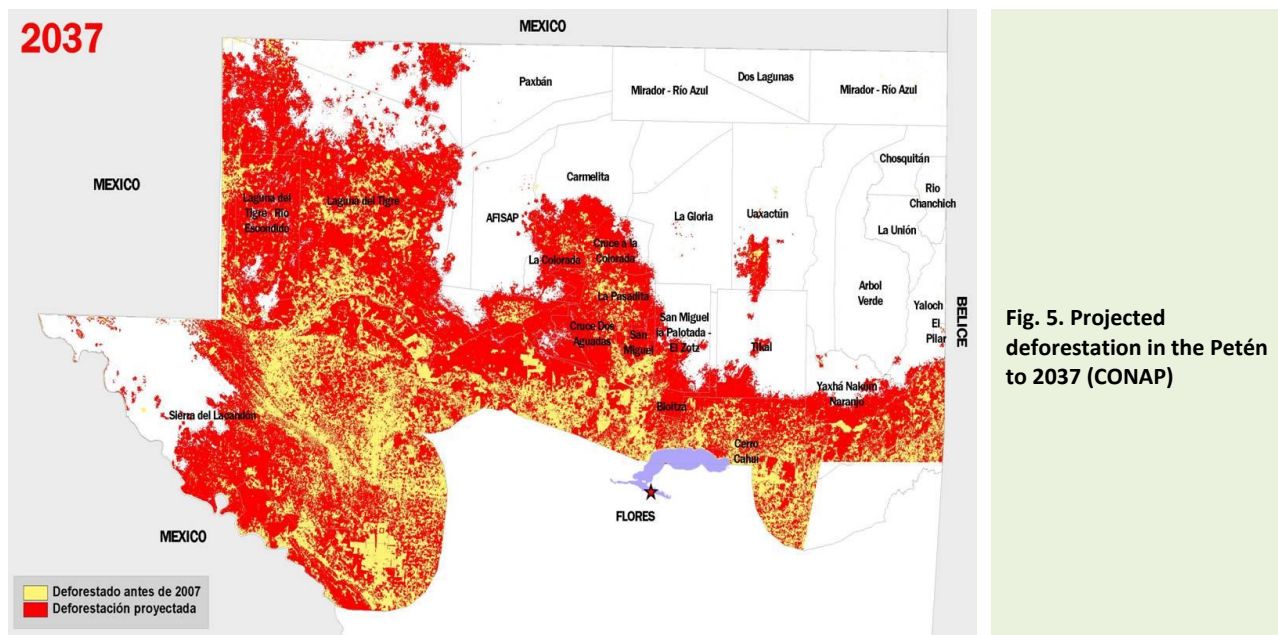


Fig. 5. Projected deforestation in the Petén to 2037 (CONAP)

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The GuateCarbon project

The GuateCarbon project was developed in response to rapidly evolving voluntary markets for verified carbon credits from reduced carbon emissions or increased sequestration of carbon dioxide, as well as increasing government and international support for innovative approaches to mitigate climate change. Moreover, a growing appreciation of pilot projects in guiding national strategies for REDD+ (i.e. the “nested approach”) has increased support for GuateCarbon since its inception.

The concept for the project was developed in 2006 by the Rainforest Alliance, ACOFOP, CONAP, the Ministry of Environment and Natural Resources (MARN), the National Forestry Institute (INAB) and the two private companies with concessions in the MBR: Gibor and Baren. A host of donors including most notably USAID, the Inter-American Development Bank, the Guatemala Exporters Association (AGEXPORT) and IUCN—The World Conservation Union have provided support to the project.

Approximately 470,000 hectares of forest in the MBR’s Multi-Use Zone are included in the project area, with an estimated potential to offset approximately 33 million tons CO₂-e from avoided deforestation over a 30-year life span, or an average of about 1 million tons CO₂-equivalent per year⁶. It has been estimated that successful implementation of the project will result in payments of more than \$2 million per year to complement forest enterprise activities in the MBR⁷. Such payments would benefit more than 5,000 families in the certified concessions through increased dividend payments, improved enterprise competitiveness and better conservation of forest resources. In addition, it is estimated that about 100 forest-dependent families will benefit directly through the creation of new jobs for local workers, mainly in the realm of forest monitoring, control and administrative functions related to project management.

The Rainforest Alliance is providing support to ACOFOP, CONAP, MARN, and the two private concessionaires (Gibor and Baren) in each of the key steps involved in bringing carbon credits in MBR certified forests to market, while ensuring establishment of mechanisms for the equitable administration of revenues generated from carbon credit sales. All activities are being undertaken in coordination with local, national and international-level partners – including community groups, government counterparts, civil society and private sector actors –under the management of a multi-stakeholder project coordination unit. Additionally, project preparation is being designed in line with accepted international standards (i.e. CCB and VCS).

To date, several important technical steps in the process of realization of the GuateCarbon pilot have been concluded⁸. A subnational baseline emissions assessment has been completed, covering

⁶ Detailed description of the procedures to perform all calculations of the methodology will be published in the VCS Project Description upon successful validation. The information will be found in section 6.1.2 of the VCS-PD Annex.

⁷ This is a conservative price estimate, based on market information compiled by Forest Trends in the 2011 State of the Forest Carbon Markets Report (26). While predicting market dynamics accurately is impossible, forest carbon prices have been increasing (from \$3.8/TCO₂E in 2008, to \$4.5/TCO₂E in 2009, and up to \$5.5/TCO₂E in 2010) despite various analyses forecasting downward trending markets. While prices vary widely across regulated and voluntary markets, VCS prices were used as guidelines for the GuateCarbon carbon price estimates. There remains significant interest by corporations and other non-regulated entities in carbon credits.

⁸ However, since the project is not yet fully implemented, calculating transaction costs is not yet possible.

Petén Department and the north of Cobán. This baseline has been developed using CONAP forest cover data from 2001, 2006 and 2010, with reference to key variables such as roads, population density, markets and development plans, in order to model predicted deforestation dynamics. At the same time, information necessary for carbon stock assessment was compiled and analyzed. The resulting baseline – covering nearly 40% of Guatemala’s national territory – is being used as the reference point for assessing performance in stemming deforestation and degradation in the MBR. Based on these outputs, as well as community consultations, a first draft Project Design Document (PDD) for GuateCarbon has been completed and is undergoing validation. The PDD – aligned with CCB and VCS standards – and will serve as the key reference document during project validation and execution.

The estimation of potential carbon credits that could be generated by the GuateCarbon project was done by closely following the technical specifications in the VCS approved REDD methodology VM0015 for Avoided Unplanned Deforestation, version 1. This methodology is for estimating and monitoring greenhouse gas (GHG) emissions of project activities that avoid unplanned deforestation (AUD) and enhance carbon stocks of forests that would be deforested in the baseline case, for which the GuateCarbon situation was deemed applicable and eligible. To improve the quality of adherence to this leading REDD methodology – developed for the World Bank by Lucio Pedroni of Carbon Decisions International – the respective firm was contracted to calculate the change in forest carbon stocks with and without the project (baseline). Carbon pools included above and below-ground biomass, deadwood and harvested wood products, and the change in forest cover was modeled and calculated for the dominant forest types over a period of 40 years post-deforestation. To calculate the stocks in different carbon pools post-deforestation, three scenarios were considered: deforestation without prior-harvest, deforestation after sustainable logging, and deforestation after unsustainable logging⁷.

The estimation of the forest carbon in the project area at the start of the project and the estimated change over the 30-year project crediting period relative to the subnational baseline for the northern lowlands of Guatemala enables calculation of annual and cumulative totals for net GHG emission reductions. As of the 2012 version of the VCS project description for GuateCarbon, after deducting for leakage, these amount to nearly 56 million tCO₂e. With application of a very conservative risk assessment of 52%, based on the VCS tool for assessing internal and external risks that may result in non-permanence of emissions reductions, the GuateCarbon projected estimated that total potential credits after 30 years (which are VCUs issued at each verification plus eligible VCUs that can be removed from the buffer reserve in the future) would be about 33 million tCO₂e. On average, over the next 30 years, annual VCUs for trade would conservatively be on the order 1 million tCO₂e.

The centrality of partnerships in undertaking work to date cannot be overemphasized. Baseline analysis and PDD elaboration required extensive collaboration among an array of groups: community stakeholders, local and international NGOs, government (CONAP, MARN), and international donors such as the IDB, USAID and the Danish International Development Agency (DANIDA). Critically, information for baseline establishment, including forest cover maps and data for carbon stock estimation, was provided by CONAP’s GIS unit, significantly reducing the costs to project proponents and securing increased collaboration from government partners. In other contexts where similar stores of data already exist, an inventory of such information should be undertaken as a first step in baseline analysis, which in turn should be done where feasible in

partnership with government agencies, building national capacities in carbon project preparation and monitoring.

In this vein, an important element of GuateCarbon is the extent to which the project has served to both build capacities and inform the national-level policy dialogues on REDD+. The key government agencies involved with the project are also charged with the design and ultimate implementation of a national REDD+ scheme for Guatemala, including the country-level Readiness Preparation Proposal (R-PP), which outlines the process by which the Government of Guatemala will develop its national strategy for REDD+. By developing a subnational project over an important area of the country, GuateCarbon is following a “nested approach,” generating important early lessons and highlighting key areas for policy development as part of Guatemala’s national REDD+ readiness plan.

For example, significant work has been undertaken at the national level to address legal and regulatory issues concerning the benefits from carbon sales, chief among them ownership of forest carbon. After protracted negotiation informed by legal analyses undertaken by the Rainforest Alliance, a trust fund mechanism – termed a Special Purpose Vehicle – is being designed for the management of payments generated through the sale of carbon credits. Once finalized, this mechanism will be used to apportion payments generated from the sale of carbon credits between government agencies, the concessions and project administration units. End uses of carbon payments will include dividend payments, monitoring and reporting work, verification audits and forest management expenses. Exactly what portion of funds will go to different stakeholders, and how funds will be divided within communities, is currently being negotiated.

The position of community stakeholders and the Rainforest Alliance is that since REDD+ is ultimately designed to compensate for activities to reduce emissions – not simply to pay for carbon stocks – the bulk of the carbon payments should go to those undertaking sustainable forestry, *i.e.* the communities and concessions. Some Guatemalan government stakeholders, on the other hand, initially viewed the issue differently, believing that since the forest belongs to the state, government agencies should receive and administer carbon payments. After more than a year of negotiations, however, the Government of Guatemala has formally agreed to transfer the rights to credits for emissions reductions to the forest concessions.

The stumbling block to agreement on this central issue lay in the perception held by government lawyers that ceding the state’s rights to carbon – to any entity – would equate to ceding rights to territory, thus undermining state sovereignty. This belief led to the temporary rejection of any proposal put forward by stakeholders to address carbon rights. After a series of technical workshops and meetings to clarify the difference between rights to carbon and rights to emissions reductions, the government agreed that such rights could be recognized as belonging to the concessions. The legal rationale for the decision rests with the Protected Areas Law, since the activities undertaken by the concessions to reduce emissions are aligned with its objectives.

This process of negotiation and resolution of carbon rights is highly significant, given the uncertainties surrounding the issue in many tropical countries where REDD+ projects are under development. Typically, the language of such projects discusses “rights to carbon” which often generates tremendous opposition – not only from government, but also from communities and other local stakeholders rightly concerned about the implications of such projects on sovereignty, territorial or otherwise. In the case of GuateCarbon, redefinition of the term as “emissions reductions rights” clarified the issue for decision makers, aligning the language with existing law and

avoiding the uncertain and possibly very lengthy process of developing a new law, without undermining community interests⁹.

Equally critical in the preparation process is the work ongoing at the community level to achieve Free, Prior and Informed Consent (FPIC) and establish social baselines to monitor socio-economic impacts during the life of the project. The Rainforest Alliance has developed a series of modules for climate and carbon education workshops that have been applied in the Petén communities, and work is ongoing with ACOFOP and other partners to secure and document local-level FPIC as part of the PDD preparation process. At the same time, the Rainforest Alliance worked at the international level with a number of partners – including CCBA, Flora and Fauna International and Forest Trends – to develop a social impact assessment manual specifically geared towards carbon projects, which will be used to monitor changes in a number of key social and economic indicators over time.

In using such approaches to ensure FPIC and draft the PDD, GuateCarbon emphasizes the importance of following a standards-based approach to project design. Building on the concessions' history of compliance with FSC standards for forest management, the project has placed a high premium on following internationally accepted procedures designed to ensure that actions undertaken will result in long-term emissions reductions, and that payments received will be used equitably. Designing the project in line with CCB and VCS standards, moreover, helps to ensure that the project will attract investors and garner a more secure market share, while providing an example for the international community of a sustainable REDD+ project based on community production forestry.

Implications for conservation

The plus comes first

In the rather bewildering avalanche of studies, methodologies, consultations, workshops, pilot projects and other efforts that have been produced since the concept of REDD+ was introduced in the 2007 United Nations meetings in Bali, it has been agreed that the mitigation benefits from the “plus” activities (conservation of forest stocks, sustainable management of forests and enhancement of forest carbon stocks) should be accounted for within UNFCCC policy approaches to REDD+. Many recognize that these “plus” activities also have the most significant benefits for the livelihoods of forest-dependent communities.

The GuateCarbon project, however, demonstrates that the logic implicit in REDD+ puts the cart before the horse. The approach taken by the project is to use REDD+ payments to *strengthen* the economic viability of sustainable forestry and local enterprise, helping ensure that those activities persist in the future amid continued threats. The goal is not so much that REDD+ payments generate good forestry practice and livelihood improvement, but rather that such achievements make REDD+ possible in the first place. REDD+ payments then reinforce and consolidate the viability of the model.

Conceived as such, REDD+ payments are not a silver bullet that will solve long-entrenched forest governance issues and economic disparities with the injection of more cash. Rather, REDD+ should be viewed as a complement to promising (yet still threatened) strategies that would benefit from additional assistance from a market-based source. Situating REDD+ payments within a framework

⁹ Moreover, given the proliferation of extractive industry and economic land concessions in the country and regionally, the legal agreement reached under GuateCarbon could well be taken as a model for how to ensure the protection of local community interests.

of diverse income sources also avoids the tremendous risk that will be placed on communities and other stakeholders who rely solely on carbon payments as a conservation strategy. Given outstanding uncertainties in carbon markets, the GuateCarbon approach seems more than warranted.

If the certified concessions are *already* conserving forest, however, the question becomes: what is the additionality of REDD+ activities under GuateCarbon? The first answer to this question, as indicated above, is that threats to the sustainability of the MBR continue, including the certified concessions. Although deforestation has been limited in the concessions, especially in comparison to the core zone protected areas, it does continue. The baseline analysis undertaken by GuateCarbon confirms this; results are shown in Figure 5. Secondly, the significant level of donor and government subsidies to the community concessions – recognized as a key part of their establishment and success – is unlikely to be sustained over the long term at comparable scales. REDD+ payments would help compensate for the reduction in such subsidies, complemented as well by increased forest enterprise competitiveness.

As can be seen in Figure 5, if current trends continue, the deforestation front will move further into the core zone protected areas of the MBR, covering nearly all of the MBR's western portion, with the exception of the highly remote Sierra Lacandona. Deforestation from illegal land conversion is also projected to have a serious impact on a number of the community concessions – especially those that are close to the buffer zone and the western core zone areas, as well as those that have had their contracts cancelled.

The extent to which forest management successes to date have depended on an abundance of international aid underscores the vulnerability of community concessions in the MBR. Adding REDD+ payments as a top layer of finance to strengthen the concessions will form a critical revenue stream which will help tip the balance in favor of forest conservation and locally-based enterprise in this important forest region that is under growing threat from deforestation.

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Appendix 1. Table2. **Community and Industrial Concessions in the Multiple-use Zone**

Community concessions			
No.	Name	Extension (Ha)	Year Approved
1	San Miguel*	7,039	1994
2	La Pasadita**	18,817	1997
3	Carmelita	53,797	1997
4	Impulsores Suchitecos	12,217	1998
5	Laborantes del Bosque	19,390	2000
6	Uaxactún	83,558	2000
7	San Andrés	51,939	2000
8	Árbol Verde	64,974	2000
9	La Colorada*	22,067	2001
10	Cruce a La Colorada	20,469	2001
11	Custodios de la Selva	21,176	2002
12	Civil El Esfuerzo	25,386	2002
Subtotal – Community concessions		400,829	
Community cooperatives^[1]			
No.	Name	Area (Ha)	Year Approved
1	Bethel	4,227	1999
2	La Técnica	4,607	1999
3	Maya Itzá	5,924	2001
4	Ejido Sayaxché	7,419	2001
Subtotal – Community cooperatives		22,177	
Industrial concessions			
No.	Name	Extension (Ha)	Year Approved
1	Baren Comercial Ltd. (La Gloria)	66,548	2000
2	Gibor, S.A. (Paxbán)	65,755	2000
Subtotal – Industrial concessions		132,303	
Total		555,309	

¹ Cooperatives that appear in Figure 3 but not in Table 2 – La Felicidad, Los Laureles and Monte Sinaí, for example – are not currently engaged in forest management. *Concession cancelled; **Management plan suspended