Forest Certification in Guatemala

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ABSTRACT

The forest certification process in Guatemala has largely been confined to the forest concessions in the Maya Biosphere Reserve (MBR), representing 95 percent of the country's certified forest area. Forest certification in Guatemala is unique in that certification in accordance with the scheme of the Forest Stewardship Council (FSC) is mandatory in order for both communities and industrial groups to obtain and maintain forest concessions in the MBR. Unlike other countries where forest certification has almost exclusively been advanced in a joint effort between non-governmental organizations, development projects and the private sector, the case of Guatemala shows the important role government agencies can play as agents backing the process. Despite initial resistance, the National Council for Protected Areas (CONAP), as the state agency in charge of the Maya Biosphere Reserve in the Petén region of northern Guatemala, permitted forest management in the MBR provided that it was subject to FSC certification. Sixteen forest management units covering close to half a million hectares of broadleaved forests have since been certified, including 10 community concessions, four cooperatives or municipal *ejidos* and two industrial concessions. In addition, two forest plantations outside the MBR have been certified. Notwithstanding the considerable progress towards sustainable forest management in the MBR, economic benefits as returns on certification investments have generally not lived up to expectations. Moreover, forest certification has yet to gain momentum outside the Maya Biosphere Reserve where the process is voluntary. Increasing the benefits of certification and expanding its coverage would require a concerted effort between the various stakeholders involved, thorough cost-benefit analysis in each individual case, and the development of integrated supply chains of certified forest products. Toward this end, we suggest creating learning alliances between key actors in the certification process, such as managers from certified management units and processing plants, non-governmental and governmental organizations, certification and accreditation bodies, donor agencies, research institutions, and business development service providers.

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INTRODUCTION

The following case study presents an analysis of the forest certification process in Guatemala,[1] focusing on the forest concessions in the Maya Biosphere Reserve (MBR) where 95 percent of the certified forest area in Guatemala is located (see FSC 2004).

The case of forest certification in Guatemala is unique in that forest certification in accordance with the Forest Stewardship Council (FSC)[2] scheme is mandatory in order for both communities and industrial groups to obtain and maintain forest concessions in the MBR. Unlike other countries where forest certification has almost exclusively been advanced in a joint effort between non-governmental organizations (NGOs), development projects and the private sector, the case of Guatemala shows the important role of government agencies as agents backing the process. Given that non-timber forest products (NTFPs) have yet to gain certification, the Guatemalan case centers around the certification of wood-based forest products.

Unlike other countries in Latin America or elsewhere in the tropics, albeit similar to Mexico, community forestry groups figure prominently among the certified forest operations in Guatemala. In most cases, forest certification would not have been possible without advocacy and intense support from NGOs and development projects, providing both technical and financial assistance. Certification bodies were also instrumental in raising awareness of the potential benefits of certification and the procedures involved. Industrial operations have largely been excluded from external support, explaining to a large extent why certified community forest concessions by far outnumber certified industrial concessions. Mandatory forest certification played a key role in the strategies of NGOs and development projects seeking to convince the National Council for Protected Areas (CONAP)[3] to allow forest management in the MBR. Forest certification thus evolved as the *sine qua non* for advancing sustainable forest management in the multiple use zone (MUZ) of the Maya Biosphere Reserve. However, it has yet to emerge as an important instrument promoting sustainable forest management outside the MBR where forest certification is voluntary and, for the time being, largely absent.

In this case study we will argue that forest certification can be instrumental in promoting sustainable forest management in areas subject to restrictions in natural resource use, such as multiple use zones of biosphere reserves. Independent third party certification can build confidence in sound forest management and thus ensure support from both government agencies and environmental NGOs. We will further argue that confidence in its ecological soundness is a necessary but not a sufficient step towards sustainable forest management. Only when certified operations are both environmentally sound and economically viable, will they receive the social and institutional support required to ensure sustainability. This holds particularly true for the certified community operations, where subsidized forest certification is yet to give way to a self-sustaining process with an overall favorable cost-benefit ratio of certified forest management. Towards this end, it will be necessary to develop integrated supply chains of certified forest products and to establish learning alliances among the various stakeholders involved.

[1] Analysis was based on personal experiences (three of the five authors have intimately been involved in the certification process in Guatamala from its very beginnings), personal interviews, literature review and analysis of primary documents such as reports of certifying bodies, governmental and non-governmental organizations, and development projects.

[2] As elsewhere in Latin America, forest certification has exclusively been implemented according to the FSC scheme. To date, competing certification schemes have not made significant efforts to undercut this *de facto* monopoly and carve out their share in the market.

[3] CONAP is in charge of administering Guatamala's protected areas, while the National Forestry Institute (INAB) administers all forest areas outside the protected areas.

BACKGROUND FACTORS

Despite its relatively small land surface of 108,889 km², Guatemala reveals high natural and cultural diversity. Due to its location at the isthmus between two large land masses, topographical and edaphic variation, and broad rainfall, thermal and altitudinal ranges, Guatemala is home to a large variety of ecosystems and species. The country's strategic position between two oceans with access to international ports[4] both on the Atlantic and Pacific coasts greatly facilitates international trade.

[4] Puerto Barrios, Santo Tomás de Castilla and Puerto Quetzal.

Historical Context

Forestry Problems

The country's broad ecological variation leads to a wide variety of forest ecosystems, which in turn are subject to a complex pattern of access to and ownership of forest resources. For most users, though, forests are a source of firewood rather than construction wood or valuable timber. To date, these features have hindered the development of a national-level approach to sustainable forest management. In the southern region, principal forestry problems include small-scale landownership, pressure to convert forests into agricultural lands, and low productivity of coniferous and mixed forests along with their overexploitation for firewood. In the Petén, on the other hand, overall conditions are more conducive to sustainable forest management, although this northern region suffers from poor access and a long trajectory of forest fires and illicit logging of valuable species, particularly mahogany (*Swietenia macrophylla*).

Given the vast tracts of forests remaining in the Petén and their high levels of biodiversity, one of the key issues has been how best to conserve these principal forest resources of the country. It is in this context that forest certification has emerged as a policy tool. Rather than seeking to promote sustainable forest management on a national scale, advocates of forest certification asserted that it would bring the following benefits:

- *Assure government agencies that the public forests in the MUZ of the Maya Biosphere Reserve are well-managed.* Distrust was related to the industrial concessions in the MBR, rather than the community concessions that were backed by various kinds of NGOs.
- *Avoid criticism from conservation groups opposing extractive activities in any part of the Maya Biosphere Reserve.* Similar to government agencies, several environmental NGOs initially opposed timber extraction in the MUZ. Forest certification was believed to lend credibility to the forest concession process.
- *Promote sound forest management.* Mandatory certification was assumed to improve forest management in the MUZ by making both industrial and community concessions comply with basic principles of sound forest management as reflected in expert recommendations and the conditions imposed by them.

- *Improve prices of certified wood and obtain access to niche markets.* Although at the time of stipulating mandatory certification, improved prices and access to niche markets were not regarded as the principal objectives, it was expected that certification would bring about significant improvements in these respects.

Policy Responses

Between the 1960s and 1980s, the forests in the Petén were subject to indiscriminate exploitation of mahogany. A total of 13 logging companies operated under the supervision of Fomento y Desarrollo de Petén (FYDEP), a state enterprise administrated by the military. Use rights were granted as renewable logging contracts for periods of three to five years. Companies with such contracts legally extracted as much mahogany as possible. Without any provision for management plans, they simply were required to pay a volume-based tax. At that time, the concept of forest conservation through sustainable development did not rank high on governmental agendas. Rather, the policies in place sought to colonize the so-called jungles, i.e., sparsely populated, forested areas including parts of the Petén, as part of the overall goal to boost agricultural production and productivity.

In the second half of the 1980s, agricultural policies based on the advances brought about by the green revolution and biotechnology gradually experienced a "greening," i.e., environmental issues found their way into rural development agendas, reflecting the emerging paradigm of sustainable development. In addition, the public administration system in Petén underwent a general overhaul. In 1989, FYDEP was succeeded by CONAP and the following year saw the creation of the Maya Biosphere Reserve[5] and, consequently, all logging contracts in the reserve were revoked. Covering 2.1 million hectares, the MBR was divided into three zones: the core zone, consisting of national parks and biotopes; the multiple use zone, where the forest concessions are located; and the buffer zone, where the cooperatives and municipal *Ejidos* are located and where land use is generally restricted, also on private property.

The creation of the MBR in 1990 can be seen in light of the overall pursuit for sustainable development in the context of the pre and post-Rio process. The reserve was essentially the outcome of successful lobbying by environmental NGOs, along with interventions from donor agencies. In particular, the USAID-funded Maya Biosphere Project proved to be instrumental for promoting the conservation and sound use of natural resources in the region.[6] Initially, however, the creation of the reserve resulted in a series of conflicts with logging companies and local populations who saw their livelihoods severely restricted. In the course of time, and after amendments to the regulations and through projects involving the affected groups, acceptance has risen and major conflicts have been settled.

The shift from the "jungle clearing" policy to the "tropical forest conservation" policy in the Petén was anything but a smooth transition in view of changing development paradigms. The legal framework related to the MBR, for example, allowed for granting concessions in the multiple use zone, but CONAP initially revealed little political will to promote such a complex process. Earlier experiences

[5] National governments nominate areas as biosphere reserves which then are designated under the Man and the Biosphere (MAB) program of the United Nations Educational, Scientific, and Cultural Organization (UNESCO). One of the key challenges faced in biosphere reserves is the reconciliation between the conservation of natural resources and their sustainable use. As of July 7, 2005, UNESCO has designated 482 biosphere reserves in 102 countries, two of which in Guatemala (UNESCO 2005).

[6] The USAID-funded Maya Biosphere Project turned out to be the principal source of technical and financial assistance for the development of activities related to the conservation and management of the forests in the MBR.

with largely uncontrolled logging in the Petén and its negative repercussions on forest conservation did not convince CONAP that sustainable forest management could be ensured by granting concessions. Against this backdrop, the OLAFO community development project, executed by the Tropical Agricultural Research and Higher Education Center (CATIE), facilitated an extensive process of conceptualization and negotiation, but it was not until 1994 that the first concession (San Miguel La Palotada) was granted. It was anticipated that now the concession process would rapidly gain momentum. Yet CONAP continued to be concerned about the potentially adverse effects of forest management, slowing down the granting of further concessions in the MUZ.

Finally, the process was revitalized in 1996 on the basis of the positive forest management experiences gained in the San Miguel concession in the MUZ and the community forest of the Bethel Cooperative in the buffer zone. In the same year, CONAP entered into a collaborative project with CATIE (funded by USAID) to streamline the concession-granting process. As a result, less bureaucratic regulations for granting the concessions in the MUZ were promulgated in 1999. In addition, mandatory forest certification was established as a formal requirement for both industrial and community concessions.

Structural Features

Ownership and Tenure

The name Guatemala derives from *guauhtemallan* in the Nahuatl language, meaning "Land of Trees." Forests cover 3.90 million hectares or 35.7 percent of the land surface, including 2.24 million ha of broadleaved forests (57.6 percent), 1.07 million ha of fragmented forests associated with agricultural land (27.6 percent), 459,960 ha of mixed forests (11.8 percent), 101,650 ha of coniferous forests (2.6 percent), and 17,730 ha of mangrove forests (0.5 percent) (FAO 2003).

Guatemala is a centrally organized, constitutional democratic republic, with its forest resources being administered by CONAP and the National Forestry Institute (INAB). CONAP is in charge of the protected areas, which harbor 51.4 percent of the remaining forests (Figure 1), including most of the country's broadleaved forests (71.5 percent). The majority of coniferous forests, mixed forests, and forests associated with agricultural land (75.6 percent) are found outside protected areas and, hence, are administered by INAB.

An estimated 700,000 hectares are subject to some type of forest management scheme. Two thirds of this area is under concession or licensed by CONAP, and the remaining area is controlled by operations with permits or licenses granted by INAB or delegates in the municipalities. Some 265,000 hectares of coniferous and mixed forests are considered as having productive potential (FAO 2003).

Forest ownership types in Guatemala are (in order of descending area): private, national, and municipal-communal. Notably, recent figures derived from the National Forest Inventory Pilot Project 2002-2003 (FAO/INAB 2004) show marked differences in terms of total forest area as compared to earlier assessments by FAO (2003) (Table 1).[7]

[7] It remains unclear to what extent this variation is due to real changes in area and/or to differences in the methodological approaches.

Table 1 Forest cover in Guatemala according to ownership type

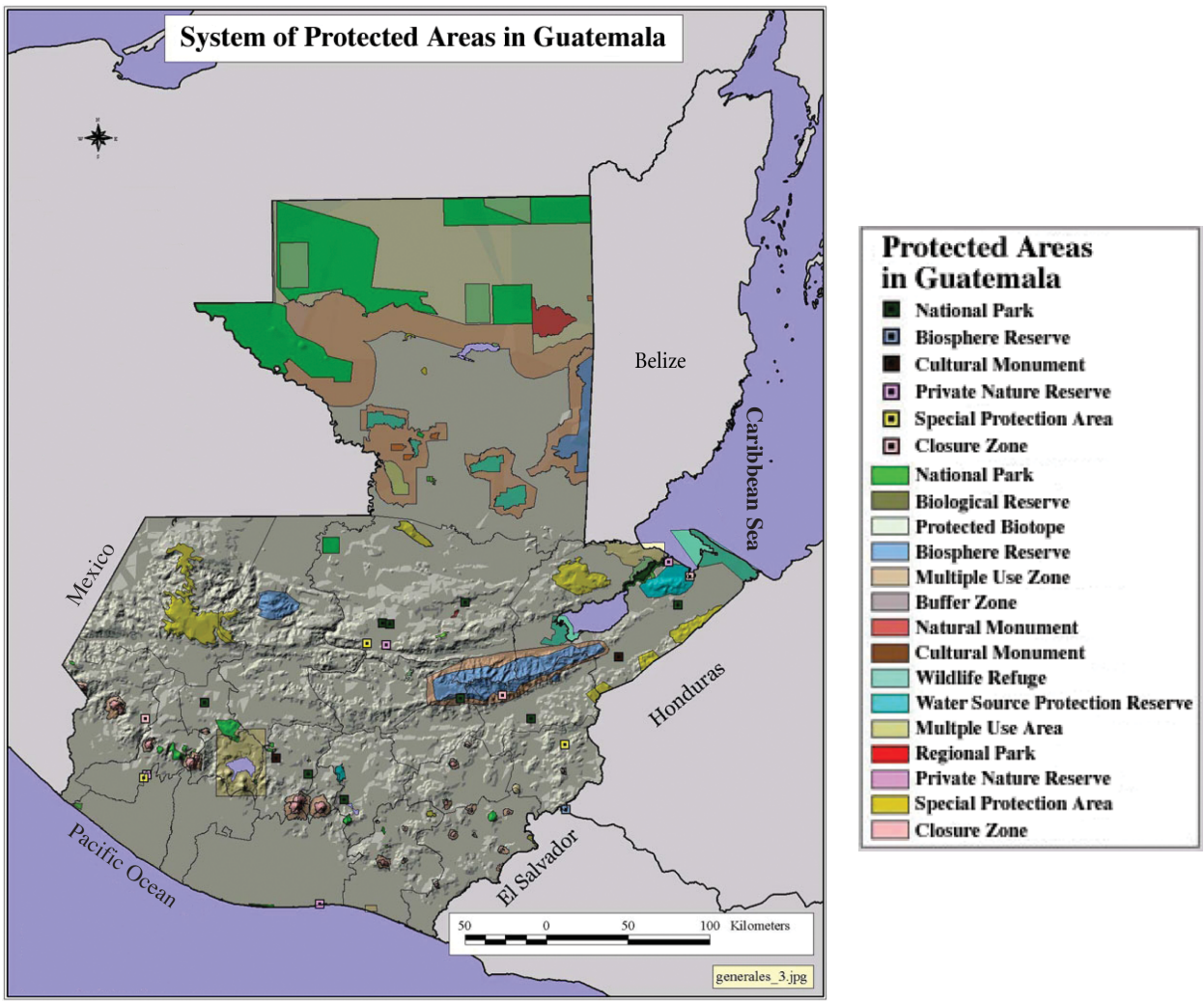
Type of ownership	Area (ha)	Percentage (%)
Private	1,531,133	38
National	1,367,732	34
Municipal-Communal *	934,630	23
Other **	212,521	5
Total	3,111,386	100

Source: Preliminary results of the National Forest Inventory Pilot Project 2002-2003 (FAO/INAB 2004)

* Includes registered communal and municipal farms, non-registered communal farms, and farms encroached on by communities

** Areas lacking clear ownership rights due to conflicts or encroachment

Figure 1 Map of forest cover in Guatemala (INAB 2004)



Close to half a million hectares of broadleaved forests were awarded as forest concessions in the multiple use zone (MUZ) of the MBR. These concessions constitute the largest forest management units in the country. Of the 16 units established, 10 are community concessions, four are cooperatives or municipal *Ejidos* and two are industrial concessions. According to Guatemalan regulations, all concessions are required to obtain certification under the FSC scheme within three years of their establishment.

Forest Plantations

The principal objective of plantations in Guatemala is wood production for sawmilling. According to INAB's statistics, during the 1980s and 1990s a total of 78,909 hectares were reforested; however, there is little up-to-date information on the current situation (FAO 2003) and the extent to which these plantations accomplish their objectives. Four coniferous species (*Pinus maximinoi, Pinus oocarpa, Pinus caribaea* and *Cupressus lucitanica*) and two broadleaved species (*Tectona grandis* and *Gmelina arborea*) represent 70 percent of all plantations in the country.

Deforestation

Annual loss of forest cover is estimated at 50-60 thousand hectares, equivalent to 1.3-1.5 percent of total forest cover. In recent years, deforestation has largely been concentrated in coniferous forests (FAO 2003). This is largely due to the fact that the coniferous forest zone is characterized by higher population density, better road infrastructure and soils which are more suitable for agriculture, as compared to the broadleaved forest zone. In addition, conifer wood fetches good prices in the national market, providing incentives for unsustainable forest utilization.

Timber Production

The principal forest products are logs for sawn wood production and fuelwood. The average volume of harvested timber destined for the national forest industry is 575,000 m^3 $year^{-1}$. However, illegally harvested timber is estimated to be an additional 30 to 50 percent of the volume reported, amounting to a total of between 748,000 and 862,000 m^3 $year^{-1}$ (FAO 2003).

Annual consumption of firewood has decreased from 15.8 million m^3 in 1990 to 13.8 million m^3 in 1999 (INAB 2001; FAO 2003). However, firewood will continue to be the principal source of heat and lighting (currently used by 60 percent of the population), unless energy consumption patterns change significantly, and electric energy and propane gas supplies are increased (IDC 1999).

There is no reliable information regarding primary and secondary processing in the timber industry. According to INAB (2001), 1,054 forest product processors are officially registered. However, the true number of sawmills, secondary wood manufacturers (furniture-makers, woodworkers, among others) is thought to be significantly larger. The majority are small enterprises processing softwood and being characterized by low technical and technological capacities and unstable flows of raw

materials. As a result, product quality is low, waste is high and little value is added. At the same time, there are a few large enterprises that meet high-quality standards and export a good part of their production. Except for the industrial concessions, the wood-based industry does not manage its own forests and, consequently, depends on third parties for its raw material supplies.

Markets

Around 90 percent of harvested timber is destined for national markets, which absorb mostly low quality products, while the remaining high quality products are exported. It is estimated that 68 percent of the processed volume is marketed as sawn wood, 14 percent as manufactured goods, 8.6 percent as plywood and wood-based panels, and 9.4 percent as miscellaneous products. It is estimated that 70 percent of the processed wood originates from coniferous forests (FAO, 2003). This shows that despite the limited area covered, coniferous forests are by far the most important source of industrial round wood.

A total of 66,857 m^3 of sawn wood was exported in 2001, of which 78.0 percent was pine (*Pinus* spp.), 11.4 percent mahogany (*Swietenia macrophylla*), 2.9 percent santa maría (*Calophyllum brasiliense*), 2.1 percent palo blanco (*Cybistax donnell-smithii*), 1.7 percent tropical cedar (*Cedrela odorata*) and 1.5 percent castilla (Castilla elastica); 12 other species made up the remaining 2.4 percent (INAB, 2001). Exports are destined mainly to El Salvador and USA, while imports originate principally from Costa Rica and Mexico (Table 2).

Table 2 Export and import values of wood products in Guatemala, broken down by principal trade partners in 2001

Principal export destinations			Principal import origins		
Country	**Value (US$)**	**%**	**Country**	**Value (US$)**	**%**
El Salvador	9,068,078	39.1	Costa Rica	3,213,110	31.0
USA	6,162,927	26.6	Mexico	1,470,825	14.2
Dominican Republic	2,494,152	10.7	USA	1,133,816	10.9
Honduras	1,634,934	7.0	Nicaragua	1,094,688	10.6
Mexico	1,460,784	6.3	Chile	887,422	8.6
Costa Rica	780,757	3.4	Honduras	523,122	5.1
Italy	778,919	3.4	El Salvador	432,168	4.2
TOTAL (33 countries)	**23,209,381**	**100.0**	**TOTAL (47 countries)**	**10,357,443**	**100.0**

Source: PAFG 2003

Non-Timber Forest Products

Chamaedorea palms (*Chamaedorea* spp.), locally called xate, chicle gum (*Manilkara zapota*), and allspice (*Pimenta dioica*) are the country's commercially most important non-timber forest products (NTFPs). According to CONAP statistics, 4.2 million lbs. of xate and 300,000 lbs. of chicle are produced annually, worth US$660,000 and US$309,000, respectively (FAO 2003). Similar to other countries, NTFP use and commercialization largely escape official statistics. Nonetheless, NTFPs do play a critical role in household economies, in particular in the broadleaved forest zone. The fibre of bayal (*Desmoncus* spp.), for example, serves as a substitute for cane, palm leaves from guano (*Sabal* sp.) and escobo (*Cryossophylla argentea*) provide roof thatch, and a wide variety of forest plants serves as source of local medicine or food. In the Carmelita concession, NTFPs like xate, chicle and allspice account for more than 50 percent of the household income in individual cases; in addition, wildlife constitutes an important source of protein and income (Mollinedo *et al.* 2002). For the time being, NTFPs have not been subject to forest certification. Currently, however, the US-based SmartWood Program of the Rainforest Alliance is elaborating certification standards for NTFPs.

General Forest Sector Statistics

According to the Bank of Guatemala (BANGUAT), the forest sector contributes approximately 2.5 percent of the GDP. An estimated 37,000 jobs are generated by the sector, corresponding to 1.1 percent of the economically active population (PAFG 2000). Forest sector statistics are summarized in Table 3.

Table 3 Forest sector statistics in Guatemala

1	**General statistics[a]**	**Surface Area**	
		ha	**%**
1.1	Total land surface	10,888,900	100
1.2	Land with forestry land use capability	5,570,000	51.1
1.3	Protected areas	3,098,700	28.5
2	**Forestry statistics[b]**	**ha**	**%**
2.1	Forest cover area (total)	3,898,600	100
	• Broadleaved forest	2,244,400	57.6
	• Coniferous forest	101,600	2.6
	• Mixed forest	460,000	11.8
	• Forest associated with agricultural land	1,074,800	27.6
	• Mangrove forests	17,700	0.5
2.2	Forest plantation area (total)	71,155	100
	• Fiscal incentives	19,337	27.2
	• Programa Nororiente	5,492	7.7
	• Forestry incentives (PINFOR)	25,565	35.9
	• Voluntary plantations (Simpson)	8,842	12.4
	• Area earmarked for reforestation	11,719	16.5
2.3	Annual deforestation rate[c]	53,700	1.4
3	**Forest industry[a]**	**Number**	
	• Registered forest product processors	1,054	
	• Forest product retailers	1,097	
4	**External timber trade[d]**	**US$**	
	• Exports	23.2 million	
	• Imports	10.4 million	
	• Balance	12.9 million	
5.	**Macro-economic indicators**		
5.1	Percentage of GDP[d]	2.5	
5.2	Direct employment (jobs)[e]	36,878	

[a]INAB (2001)
[b]FAO (2003)
[c]FAO (2001, cited in FAO 2003)
[d]PAFG (2003)
[e]PAFG (2000)

THE EMERGENCE OF FOREST CERTIFICATION

Initial Support

Sparking Interest in Certification

Two incidents gave a decisive impetus to the certification process in Guatemala: a capacity-building event and the granting of forest concessions in Petén. In April 1996, the SmartWood Program organized in Petén the second "Training Workshop in Evaluation, Monitoring and Forest Certification",[8] co-funded by the United States Agency for International Development (USAID) through a joint project between CATIE and CONAP. This workshop kicked-off the certification process in Guatemala by training technical personnel that later on would be available as potential SmartWood assessors. It aimed at building local capacities as a way to lower certification costs. Field assessments were conducted in several community management units in the MBR (San Miguel, La Técnica, Bethel) that received technical support from various NGOs and projects. These community forestry operations were considered certifiable according to FSC standards. The technicians left the workshop convinced of the advantages of certification, particularly with regard to allegedly higher prices for certified wood. It should be mentioned that there was little experience in the marketing of certified forest products at that time and, consequently, such assumptions were based on well-intended advice and positive expectations rather than sound market analysis.

[8] The first "Training Workshop in Evaluation, Monitoring and Forest Certification," also organized by SmartWood, had been held in Mexico the year before.

The second incident giving rise to certification in Guatemala was the establishment of forest concessions in the multiple use zone of the MBR for which certification was stipulated as a mandatory requirement.[9] The key actors in this process were CATIE as CONAP's assessor, USAID as donor agency, and CONAP as the body responsible for awarding the concessions. In the preceding section, we outline the circumstances that led CONAP to make a voluntary tool like forest certification mandatory in the MUZ of the Maya Biosphere Reserve. Apart from two industrial concessions, the related concession process has mainly strengthened forest-based communities who obtained usufruct rights to a large portion of forest resources in the MUZ.

[9] The regulations for awarding and managing the forest concessions stipulate: "... obtain FSC certification within the first three years after being awarded the concession and maintain it valid during the term of the concession contract ..." (CONAP 1999).

Nowadays, all communities located in the MUZ belong to one of the 10 community concessions. In its initial phase, several communities were concerned about potential adverse effects of the concession process. As the first concessions developed successfully, resistance to the concession process ceased and gradually all communities in the MUZ became involved, not least because this was the only way to obtain legal use rights over the forest resources. Even outside the MUZ, communities approached CONAP to obtain a concession, arguing that their livelihoods depend on the extraction of timber and non-timber forest products. CONAP granted these concessions under the restriction that agricultural activities were not permitted.

These community concessions are frequently confused with private property of forested areas belonging to community groups legally organized as cooperatives. As these communities are located in the buffer zone of the MBR close to the

Usumacinata River and, hence, outside the MUZ, they are not subject to mandatory forest certification. In these cases, voluntarily forest certification was successfully promoted by a local NGO called Centro Maya.

Inclusion of Certification in the Concession Regulations

During the consultative phase for the development of the concession regulations, environmental NGOs showed aversion towards the industrial loggers but supported community concessions. As the discussion centered on the issue of whether or not concessions should be awarded to the industrial sector, the proposal for certified concessions was first introduced as an assurance of sound forest management. From a legal point of view, mandatory certification could not be confined to the industrial concessions and, consequently, was extended to the community concessions. The CATIE-CONAP project[10] played a key role in the consultation process and elaborated a proposal for the rules and regulations governing the forest concessions and stipulating mandatory certification. The principal objective was to ensure a secure process towards sustainable forest management in the MUZ, taking into account CONAP's institutional weaknesses. Mandatory forest certification requiring annual audits was considered crucial to reduce the incidence of political interference and corruption. Due to its established presence in the region, forest certification was to be obtained according to the FSC scheme.

[10] The CATIE-CONAP Project, funded by USAID within the framework of the Maya Biosphere Project, aimed at making the forest concessions viable through technical assistance provided to CONAP.

Curiously, there was little discussion regarding the mandatory certification clause. From CONAP's perspective, the fact that the forests in the MBR are state property sufficed to justify imposing all the rules and regulations deemed necessary to ensure that these are managed and monitored in a manner that fully accomplishes the objectives of a biosphere reserve. Neither FSC as accreditation body nor the certification bodies were consulted or took an active stance regarding mandatory certification. While environmental NGOs expressed doubts or overtly opposed forest management in the MBR, most stakeholders agreed that mandatory certification was an appropriate mechanism to ensure sound management of the forest resources under concession. At the same time, most stakeholders had little knowledge on the practical implications of forest certification. But even private companies accepted mandatory certification, on the premise that this would speed up the process of granting concessions. It should be borne in mind that they had waited more than ten years to be granted a forest concession.

The First Certified Forest Management Units

The certification process in the forest management units in the MBR began prior to the official approval of the new concession regulations, in both the concessions and the private communally managed units in the MBR's buffer zone. As of 1996, NGOs that supported the community organizations motivated them to subject their management systems to certification assessments given their advanced state of forest management. Costs associated with certification assessments were covered by international donor agencies, particularly USAID through its Maya Biosphere Project.

Certification soon became a question of prestige for both the community groups and the NGOs supporting them. Due to the large areas of the first concessions to be certified, varying between 7,000 and 53,000 hectares, Guatemala temporarily harbored the world's largest area of certified community forests. Once the mandatory certification regulation was approved, the number of assessments rose concomitantly with an increasing understanding of the different aspects of sustainable forest management and certification by technical personnel in NGOs and government agencies.

The industrial concessions took their time to become certified as they were not clear about the process and not least because they needed to become certified only within three years of formalizing the concession contract. Nonetheless, their principal concern was related to the transition from a conventional exploitation system to sustainable forest management with its economic, social and environmental implications.

Institutional Design

Guatemalan National Council of Forest Management Standards (CONESFORGUA)

The forest certification process in Guatemala has largely been a result of successful campaigning by development projects and NGOs seeking to provide an impetus to sustainable forest management in Petén. Despite the unique stipulation of mandatory certification in the MUZ of the Maya Biosphere Reserve, the FSC has played a rather passive role in the process to date. It may therefore not come as a surprise that it was not until 2002 that the Guatemalan National Council of Forest Management Standards (CONESFORGUA)[11] was formally set up to define the national forest management standards and that, as of mid 2004, it has not been endorsed as a national initiative by FSC.

The emergence of CONESFORGUA needs to be seen in the context of recent changes in Guatemala's forest policy. The formulation of the national forest action plan (PAF-G) in 2000 required that relevant government agencies, such as the Ministry of Agriculture, Livestock and Food (MAGA) and in particular the National Forestry Institute (INAB), provide a clear strategy for the sustainable management of the country's forest resources. This action plan would provide the basis for a working group established to develop national standards. During the initial stages, there was some doubt as to whether these should follow the stipulations of the Lepaterique Process[12] or the FSC system. Following a series of consultations, it was agreed to opt for the FSC system, taking into account its predominance throughout Latin America, a factor believed to greatly facilitate its adoption.

Due to slow progress, the development of national standards was commissioned to a national council in 2001. But it was not until 2002 that it became formalized as the Guatemalan National Council of Forest Management Standards (CONESFORGUA). In 2003, CONESFORGUA carried out a series of consultations throughout the country to define the criteria for creating the social, environmental and economic chambers of the national initiative. At present, CONESFORGUA is working jointly

[11] CONESFORGUA has established its administrative headquarters at the Chamber of Industry in Guatemala City and maintains a technical office in INAB. Its current members include representatives from INAB, CONAP, Gremial Forestal (Forestry Board), the Forestry Chamber, the Dutch-funded PROCUCH project and NPV, among others. CONESFORGUA is yet to be endorsed by FSC.

[12] Central American government initiative to formulate regional criteria and indicators for sustainable forest use.

with INAB, PAF-G and WWF to develop draft national standards (covering natural and plantation forests) to be circulated among the various actors concerned.

In this context, forest certification was seen as a vehicle that could promote sound forest management not only in Petén but elsewhere in Guatemala. Non-governmental organizations also had a stake in this recent move towards a national-level approach to promoting sustainable forest management, with WWF providing financial assistance to CONESFORGUA for developing a workplan.

In addition to CONESFORGUA, and preceding its foundation, a considerable number of institutions and projects promoted certification in Guatemala, including the Rainforest Alliance, CATIE, CONAP, USAID/Maya Biosphere Project, and Centro Maya.

Rainforest Alliance

Through its SmartWood program, Rainforest Alliance was one of the most active organizations in promoting certification in Guatemala. It was particularly successful among NGO-supported community groups. This is reflected in the fact that four community management units became certified even before certification became mandatory, among them two community operations under a private property regime where even today certification is voluntary. A huge impetus to forest certification was the willingness on part of the Maya Biosphere Project to cover the costs incurred in the certification process. In this context, the following factors underlay the project's decision to contract SmartWood for the assessments:

- SmartWood became involved in the concession process by providing training on forest certification in the Petén.
- SmartWood's track record in the region provided NGO personnel with greater confidence in the expertise required for the process.
- Being a US-based organization, SmartWood was more acceptable to the principal donor (USAID).

CATIE

CATIE[13] played a fundamental role by organizing, in collaboration with SmartWood, the first local certification events, and became the principal advocate of the concession process and sound forest management in Petén. Through the projects CATIE-CONAP and CATIE-OLAFO, CATIE provided technical assistance and training to CONAP staff and community groups working toward sound management of the forest concessions in Guatemala.

CONAP

CONAP was the principal decision-maker for applying a forest management system to the forest resources in the multiple use zone of the MBR and opting for certification as a supervision mechanism, as proposed by CATIE. It is worth mentioning that

[13] Based out of Costa Rica, the Tropical Agricultural Research and Higher Education Center (CATIE) is committed to research, postgraduate education and outreach in ecological agriculture and sustainable management of natural resources in tropical America. Its mission is to foster the conservation and sustainable management of natural resources and to reduce poverty in its 13 member countries, including all Mesoamerica, the Dominican Republic, Colombia, Venezuela, Bolivia, and Paraguay.

there was no agreement on collaboration between CONAP and the SmartWood Program with respect to forest certification.

USAID/Maya Biosphere Project

USAID emerged as the principal donor that covered the major part of costs related to the provision of technical assistance and conducting baseline management studies, as well as covering direct certification costs of community operations and those related to complying with conditions. Financial support was channeled through implementing organizations such as CATIE, Chemonics, Centro Maya, ProPetén and the Fundación Naturaleza para la Vida (NPV).

Centro Maya

Centro Maya (CM) acted as an implementing organization of the Maya Biosphere Project, providing technical assistance to privately-owned community cooperatives and several community concessions. From the outset, CM was in favor of certification, persuading even those community groups that were not legally required to get certified.

Standards

In the absence of national certification standards, all certification assessments in Guatemala were based on the certification body's generic standards. Since 2004, SmartWood has used standards that were developed specifically for the Selva Maya regions of Guatemala and Belize. To a certain extent, these standards are the result of an initiative that arose in Petén in 1997. It aimed at developing regional standards for the entire Selva Maya, including Petén, the states of Chiapas, Campeche and Quintana Roo in southern Mexico, and Belize.

The national standards currently being developed by CONESFORGUA are expected to be adapted to the heterogeneous reality of forest management in Guatemala, thus facilitating its field application. The duration of the related process underlines the difficulty of this undertaking. Potentially contentious issues include high conservation value forests and the development of a generic standard for the management of both natural forests and plantations. Additional challenges are posed by the heterogeneous nature of natural forests, in particular marked differences between broadleaved and coniferous forests. It remains to be seen how this heterogeneity and the expectations of the respective stakeholders will be addressed by the national standards.

At present, efforts are also being made to develop standards for the certification of NTFPs. SmartWood is working on internal NTFP standards to be applied as long as national standards are not available. In addition, the University of Minnesota, jointly with the Commission for Environmental Cooperation (CEC), NGOs and research institutions, is developing an alternative certification mechanism to promote the export of Chamaedorea palm fronds to the United States. Various US-based religious

congregations are willing to pay price premiums for this NTFP, provided that environmental and social standards of sound management and fair commercialization are met. In order to ensure that the economic benefits for small producers are not reduced, a certification scheme is being sought that does not result in additional costs for the producers (see Current *et al.* 2003).

THE REACTION TO CERTIFICATION

Forest Policy Community and Stakeholders

Reactions to forest certification in Guatemala have principally been positive, although the visions of the different stakeholders have varied according to their particular vested interests, as well as over time as the process moved forward.

Public Sector

Guatemala's forest policy explicitly considers forest certification as a political tool, as reflected in an excerpt from a forest policy document: ". . . the State, through the Ministry of Agriculture, Livestock and Food (MAGA) and its affiliates, shall promote certification as a mechanism to facilitate the insertion of the country's forest products in the international market. This shall be promoted through the wide dissemination of the certification process, as well as by complying with the subsidiary and facilitating roles that correspond to MAGA, in line with the agrarian and sectoral policy 1990-2030" (MAGA *et al.* 1999).

Two government agencies are in charge of the administration of national forests: the National Council for Protected Areas (CONAP) and the National Forestry Institute (INAB). CONAP staff views forest certification as an important step in raising CONAP's institutional image. As of mid 2004, almost all certified areas in Guatemala are located in forests administered by CONAP, largely due to mandatory certification in the forest concessions of the MBR. Nowadays, CONAP staff views both forest management and certification positively, notwithstanding its critical stance in the initial phase of the process.

Over time, INAB became gradually more involved in the certification process, and now serves as the headquarters of CONESFORGUA, together with the Forestry Board. An example of INAB adopting certification as a policy instrument is that certified forests on private lands may gain access to forest incentives without any additional administrative requirements. INAB also co-sponsored several certification events and, jointly with PAF-G, has actively been supporting the development of the national standards.

Non-Governmental Organizations (NGOs)

NGOs that were originally pro-certification have remained so. After SmartWood introduced Centro Maya's technical personnel to the benefits and procedures of certification in 1996, Centro Maya went on to play a key role in promoting certification in community groups who are not subject to mandatory certification.

Although the Worldwide Fund for Nature (WWF) was not present during the initial phase of the certification process, its participation has gradually increased over time. In 2001, WWF implemented a pilot project together with the Fundación Naturaleza para la Vida (NPV) to assist a number of forest management units to comply with conditions. Additionally, WWF has attempted to promote business round tables and has supported the development of national standards.

Conservation International's (CI) initial position was against forest management in the MBR; however, in 1995, through ProPetén, CI began to provide technical and financial support to forest management and to assist the Carmelita and San Andrés community groups to comply with conditions. CI presented a proposal to CONAP in 2000 to compensate community groups for not harvesting a significant part of their forest areas. The lack of clarity of this proposal caused a certain level of controversy between CONAP, various NGOs and several community leaders, as well as the scientific community (see Southgate 2002).

Forest Owners

Certified community concessions viewed certification as yet another requirement to gain access to the forest resource and maintain their concessions. The fact that accompanying NGOs supported the process with external funding did not help to internalize its significance. Frequently only the community leaders understood the conditions, and in many cases the NGOs were more committed to complying with them than the communities themselves. Awareness raising campaigns have been conducted by various local NGOs and development projects, but for the time being they have met with limited success in terms of creating a broad sense of ownership among community groups.

The situation is similar for certified private and municipal community forests. The Cooperatives of Usumacinta and the Municipal Ejido of Sayaxché gained certification as a result of the influence of NGOs and the subsidies they provided. But, as is the case for the majority of the community concessions, they have not been able to internalize the significance of certification, nor sell their certified wood in niche markets with price premiums. Both in the community concessions and other community forests, forest certification has largely been perceived as being imposed or induced by external actors. Subsidies granted by NGOs and development projects have not permitted the creation of a sense of ownership, putting at risk the sustainability of the certification process among community groups.

Certified industrial concessions, on the other hand, recognize certification as a good investment through gains in security, recognition and market opportunities, despite their initial reservations and fear that the process would be imposed on them rather than the community operations. The two certified industrial concessionaires have said that they would maintain their certificates even if mandatory certification were revoked, but at the same time express their concern with conditions sometimes perceived as being too demanding.

Primary and secondary processing enterprises have shown little interest and understanding of certification. Those operations with more knowledge on the subject

have rejected certification as long as real market possibilities still appear tenuous. To date there are only seven chain of custody certificates in Guatemala, three of which are held by the industrial concessions. The majority of private forest owners is unaware of the certification process. Nevertheless, interest in certification is mounting, principally by plantation forestry owners.

Associations

The Association of Community Forests of Petén (ACOFOP), a second-tier organization consisting of 22 organizations from 30 local communities, has been recognized for the good forest management practiced by its associates, which came to light through forest certification. ACOFOP, at the same time as expressing negative opinions regarding mandatory certification, is also proud of the various prizes received for its achievements. ACOFOP also views certification as an opportunity to obtain external technical and financial support for the community forestry process.

Most of the members of the Forestry Board (Gremial Forestal) have poor knowledge of the certification process. Recently, however, they showed increased interest in the certification of forest plantations and conifer forests.

Current Status of Forestland Certification

Forest certification in Guatemala is relatively recent, with the first forest having been certified in 1998. By the start of April 2004, this had risen to 18 FSC certified forest management units (515,023 ha), of which 16 are natural forest (511,661 ha) and two plantations (3,362 ha). All the certified natural forests are located in Petén, where community forestry predominates with 14 certified units (380,334 ha), and only two industrial management units (131,327 ha). SmartWood has recently taken the decision to suspend the certificates of two community management units (La Pasadita and Bethel) due to poor management and non-compliance with conditions. The fact that two community certificates have been suspended owes to serious administrative deficiencies on part of new community leaders in one case, and failed implementation of the management plan (abandonment of timber extraction) in case of the other (Table 4).

Of the 18 certified management units, 17 were assessed by SmartWood and one tree plantation by SGS. The owners of the latter, however, have recently opted for SmartWood to conduct the certification audits.

Table 4 Certified forest management units in Guatemala, as of February 2004

	Organization	Area (ha)	Population benefiting	Year of certification	Certification status
Community concessions	Suchitan	12,217	191	1998	Certified
	San Miguel	7,039	145	1999	Certified
	La Pasadita	18,217	386	1999	Suspended
	Carmelita	53,797	388	2000	Certified
	Uaxactún	83,558	688	2001	Certified
	San Andrés	51,940	1,015	2001	Certified
	Arbol Verde	64,973	7,452	2002	Certified
	Laborantes del				
	Bosque	19,390	392	2003	Certified
	El Esfuerzo	25,328	250	2004	Certified
	Custosel	21,176	423	2004	Certified
	Sub-Total	**357,635**	**11,330**		
Industrial concessions	GIBOR	64,869	n.a.	2001	Certified
	Baren Comercial	66,458	n.a.	2003	Certified
	Sub-Total	**131,327**			
Cooperatives and municipal *Ejidos*	La Técnica	4,607	298	1999	Certified
	Bethel	4,149	523	1999	Suspended
	Unión Maya Itzá	5,924	1,059	2001	Certified
	Ejido Sayaxché	7,419	5,000	2002	Certified
	Sub-Total	**22,099**	**6,880**		
Plantations	Ecoforest S.A.	2,242	n.a.	2003	Certified
	Los Alamos	1,120	n.a.	2003	Certified
	Sub-Total	**3,362**			
	Total	**514,423**			

Source: Author's elaboration based on FSC (2004)
Note: n.a. = not applicable

Additionally, seven chain-of-custody certificates have been granted, three of which belong to the two certified industrial concessions. However, these enterprises buy only small volumes of certified wood from the community concessions, due largely to problems with quality, prices and timely delivery.

Current Status of the Certified Marketplace

For the time being, demand for certified wood on the domestic market is virtually nonexistent. Almost the entirety of certified wood is exported to the USA, Mexico, and to a lesser extent, Europe. All exports of certified products must go through the handful of enterprises that have chain-of-custody certification. Despite the large area certified, annually harvested volume is low. The annual harvested area is less than 10,000 ha, with less than 2.5 m3 harvestable volume per hectare. In 2002, this translated into an annual cut of approximately 20,000 m3 (CONAP 2003). Less than half of this timber is being sold as certified sawn wood, principally mahogany (*Swietenia macrophylla*) and some secondary species such as santa maría (*Callophyllum brasiliense*), manchiche (*Lonchocarpus castilloi*) and pucté (*Bucida buceras*) (Table 5). Based on timber extraction in ten community concessions in 2000, Ortiz et l. (2002)

conclude that mahogany was by far the most important species (49.6 percent of extracted volume), followed by tropical cedar (12.8 percent), manchiche (12.3 percent), santa maria (10.3 percent), and pucté (5.5 percent).

Table 5 Timber sales by certified community forest management units, 2003

Sawn wood (board feet)				
Management Unit	**Mahogany**	**Secondary species**	**Total**	**Distribution Channel**
Arbol Verde	331,003	178,200	509,203	With chain of custody
Uaxactún	105,559	92,938	198,497	With chain of custody
San Andrés	96,639	199,340	295,979	With chain of custody
Carmelita	195,740	61,382	257,122	With chain of custody
Sub-total	728,941	531,860	1 260,801	
Suchitecos	145,340	192,203	337,543	Without chain of custody
Laborantes del Bosque	156,000	135,750	291,750	Without chain of custody
Custosel	183,470	125,882	309,352	Without chain of custody
El Esfuerzo	231,868	283,411	515,279	Without chain of custody
Sub-total	716,678	737,246	1 453,924	
Total	**1 445,619**	**1 269,106**	**2 714,725**	
Logs (Doyle feet)				
Management Unit	**Mahogany**	**Secondary species**	**Total**	**Distribution Channel**
La Pasadita	75,000	68,668	143,668	Without chain of custody
San Miguel	9,926	152,530	162,456	Without chain of custody
La Unión Maya Itzá	n.a.	n.a.	n.a.	Without chain of custody
Bethel	n.a.	n.a.	n.a.	Without chain of custody
La Técnica	n.a.	n.a.	n.a.	Without chain of custody
Sayaxhe	n.a.	n.a.	n.a.	Without chain of custody
Sub-total	≥ 84,926	≥ 221,198	≥ 306,124	

Source: Unpublished data provided by Chemonics
Note: n.a. = not available

The majority of certified timber entering the market was purchased by the US-based company Rex Lumber involving a local broker. The UK-based company John Bode Timber purchased Carmelita's production in a transaction mediated by the NGO Mundo Justo. A smaller portion was purchased by the Guatemalan company CAOBA S.A., which manufactures doors and windows for Home Depot in the United States.

Apart from low production levels, it is evident that the distribution channels through which community groups sell their wood are not operating adequately, due mainly to the following factors:

- The supply of certified timber is not efficiently reaching the demand due to a lack of communication mechanisms. Several initiatives are in place to mitigate this, for example by creating regional networks of certified timber. Organizations promoting trade in certified timber include the CATIE-based Center for the Competitiveness of Ecoenterprises, with its bilingual website "EcoNegocios Forestales – Forest Eco-Business" (www.catie.ac.cr/

econegociosforestales), and WWF Central America who also offers a web-based platform (www.maderacertificada.com).

- Advance sale to buyers who provide credit and not necessarily to those who pay the best price. The lack of working capital along with inadequate administration of the community enterprises frequently forces the enterprise to resort to advance payments with an inherent penalty in terms of prices below the current market rate.
- Lack of entrepreneurial capacities of community groups. Some timber buyers have complained about non-compliance with contractual arrangements. In some cases, community groups have accepted advance payments from several sources without delivering the volume stipulated.
- Poor product quality. In most cases, sawn wood enters the market without being properly dried. As a result, most wood is warped, in particular mahogany. Many buyers request pre-dimensioned timber, but many community groups do not have the conditions to meet this specific demand.
- Low supply volumes. Despite the large area certified, harvested volumes are strikingly low due to the inherent high diversity of trees in tropical forests of which only few are currently marketable. In addition, most producers tend to sell their timber individually, despite recent efforts to realize joint sales.

Many producers claim that there is no significant difference between the prices paid for certified and uncertified wood. Others, however, have managed to receive price premiums by complying with the factors described above (see Table 6). Sales managers and intermediaries have pointed out that, in the case of certified mahogany, a premium of US$0.05-0.10 per board feet, equivalent to less than 10 percent of the sales price, may be obtained. Typically, however, prices for non-certified wood soon catch up with the prices for certified wood. Price premiums are therefore difficult to be maintained in an environment where competing buyers of non-certified wood match prices in order not to lose access to raw material suppliers.

Table 6 Sales prices of sawn mahogany in certified and non-certified markets fetched by eight management units in Petén, 2003 (US$/bft)

Management unit	Certified		Management unit	Non-certified	
	High grade	Low grade		High grade	Low grade
A	3.10	1.10	E	2.15	1.10
B	2.65	1.25	F	2.22	1.10
C	2.70	1.10	G	2.20	1.10
D	2.65	1.10	H	2.60	1.10
Mean price	**2.77**	**1.14**		**2.29**	**1.10**

Source: Unpublished data provided by Chemonics

Table 6 shows that sawn wood of certified mahogany fetched higher prices than non-certified mahogany. In 2003, the industrial producers (not included in Table 6) achieved prices of up to US$3.15/bft of high-grade mahogany. However, this price can

be attributed not only to certification, but also to the high quality of the product, confidence in the producer due to a record of compliance, and the fact that the suppliers did not require advance payments.

EFFECTS OF FOREST CERTIFICATION

The forest certification process has brought about numerous effects, the most significant of which have been experienced at the level of the management unit, in particular in the Petén region of Guatemala. It needs to be stressed, however, that advances towards sustainable forest management in Petén were well underway when certification emerged in Guatemala. Related processes were supported by various governmental and non-governmental organizations that realized that forest certification might help strengthen forest management on the ground. While government agencies were primarily concerned with forest conservation, many NGOs put emphasis on technical rather than social aspects of forest management.

Power

Improving the Image of the Forest Sector

The forest sector has traditionally been considered the enemy of forest conservation. With more than half a million hectares certified, the image of the forest sector has considerably improved, bringing together representatives from conservation groups and forest management operations. Given that almost all the areas certified are located in protected areas, a shift in attitudes has been witnessed in the government agency administering these areas (CONAP) as well as in environmental NGOs, such as Conservation International. Their initial opposition towards any intervention in the forest gave way to a supportive attitude reflected in technical and financial assistance provided for the certification of community operations.

Greater Security in the Concession Granting Process

Certification has significantly increased acceptance of the concession process in the MBR. Recent efforts to create a national park in the concession areas would probably gain momentum if these areas had been degraded by forestry activities. But forest certification has lent credibility to the sustainable forestry movement, rendering it very difficult for the government to revoke the forest concessions and establish a national park. In fact, the very existence of forest concessions is the main argument for rejecting this proposal.

Greater Participation by Community and Private Users in Decision-making

Both individual forest users and the organizations they represent are very active in certification decision-making fora, thereby gaining momentum in a process to which until recently they had limited access.

Greater Understanding of Forest Management Issues

Certification has raised the understanding of the significance and implications of forest management. Both the certification and standards development processes have offered discussion fora, enabling a variety of actors to become informed and enrich their understanding of good forest management.

Social Effects

Improved Health and Labor Security

Certification has had a positive effect regarding health and safety, especially during harvesting operations, which are considered the potentially most hazardous activities. Improvements were made in three main aspects:

- *Use of safety equipment.* Before becoming certified, forest workers often had inadequate footwear, clothing, or protective headwear. Through certification, the use of minimum safety equipment became mandatory.
- *Availability of first-aid kits in logging camps.* The vast majority of logging camps had no first aid kits or basic medicine available in the event of accidents or common illnesses. The certification standard required this equipment be available and personnel be trained in basic first aid techniques.
- *Life insurance.* To protect the security of workers and their families, certification standards require that the forest workers be covered by some system of insurance, at least during the period of forest harvesting. While Guatemala's social security system is not ideal, by law it is mandatory for all enterprises with more than five workers to be affiliated with it. Additionally, the assessed operation can consider a private scheme or the creation of a contingency fund by the community enterprise itself.
- *Improvements in working conditions.* Certification has had a positive impact on working conditions, in particular regarding:
- *Improvements in camp conditions.* One of the most important discernable impacts brought about by certification has been the improvement of logging camps. This is a prominent example of low-cost improvements induced by the conditions imposed through the certification process. In most cases improved spatial arrangements of the camps, including the establishment of latrines and the spatial segregation of dining space and minimally comfortable sleeping quarters, can make a significant difference.
- *Labor contracts.* Before certification, many enterprises informally contracted their workforce. The certification standard requires formal labor contracts between employer and employees, irrespective of the communal or private nature of the operation. This resulted in fairer payments, access to credit, and other social benefits as stipulated by the law.

Improvements in Community Organization

In the absence of baseline data, it is difficult to provide clear evidence for improvements in relatively complex processes such as community organization. Nonetheless, the fulfillment of several corresponding conditions can be seen as an indicator for unmistakable progress in this respect. In particular, forest certification helped to improve the level of community organization in some of the certified concessions by requiring:

- *Development of a strategic plan, internal regulations, operations manuals.* The aim of many of the conditions assigned during the assessment process was to clarify the mission and objectives of the community organization. Some salient issues were: the definition and prioritization of the work guidelines, the evaluation of the economic and social viability of projects, improvement of the current organizational structure and regulations, greater participation by different stakeholders, improved definition of the criteria in order to define benefits, among others. However, while the documents required by the certification assessment are available, their application is often lacking.
- *Organization of production structures.* Certification stimulated the creation of various committees responsible for specific tasks, such as forest extraction, supervision of logging operations, forest fires, women, control of illegal logging, among others.

Conflict Management

Certification assessments have generally identified a lack of conflict management mechanisms regarding organizational, managerial and administrative aspects of forest operations. By promoting the establishment of clear rules and regulations, forest certification has made a significant contribution to manage and, wherever possible, mitigate conflicts.

- *Land use mapping and planning.* In this aspect, the main contribution of certification was to promote land use mapping and planning initiatives begun by NGOs and CONAP. This is particularly critical in some concessions in order to define land tenure in areas where agricultural activities are practiced on an individual or household level. Greater clarity and stability in terms of land use has been gained by spatially defining the agricultural production areas on a management unit level, and specifying these in the management plan. In other cases, the certification assessment has required that existing land use mapping and planning be respected.
- *NTFP extraction.* The relationship between traditional harvesters of NTFPs (principally of Chamaedorea palm, chicle gum, and allspice) and the new concession-holders has not always been entirely clear. The certification assessments detected this weakness and required the establishment

of a consensual set of procedures and regulations for all forest resource users.

- *Consolidation of the relationship with other community groups.* Certification has stimulated the exchange of experiences with other users and the establishment of agreements for the collaborative use and maintenance of infrastructure (such as access roads and boundaries), as well as undertaking actions for the common good (e.g. forest fire control).
- *Socialization of actions within community groups.* It is fundamental that the members of the community groups understand the activities undertaken and the benefits gained. Several conditions have required the managers or community leaders to present periodic reports to members' assemblies in order to provide greater transparency to the forest management activities and the processing and marketing of the forest products.

Increased Technical Capacities

Forest certification has raised the technical and administrative capacities of the involved groups. This has been achieved through the implementation of capacity-building plans, the exchange of experiences with other management units, the direct execution of management on the ground, and compliance with conditions. All these factors have stimulated administrators, technicians and organizations to improve their technical abilities, particularly with respect to reduced-impact logging (directional tree felling, construction of logging roads and skid trails), primary processing (by exploring value-adding options, such as drying, wood-working, residue use, etc.), sustainable timber extraction (by establishing an annual allowable cut), management of NTFPs, and administrative and financial control (application of common and relatively automated tools for financial control).

Increased Understanding of the Regulations for Natural Resource Management

In general, certification has helped stakeholders to better understand regulations on natural resource management, for example those referring to species listed by CITES or species protected by national legislation. However, in the majority of cases this information has been confined to the leaders or other persons who participate in workshops and courses, and may not reach the workers in the field. Similarly, responsibilities and recommendations related to certification are frequently not transferred during leadership changes. This is partly due to the fact that, in community operations, the council of directors is created to deal with social and economic problems of the population rather than with setting up a community enterprise.

Economic Effects

Improved Administration of Community Enterprises

To become certified, many operations were required to improve their financial, administrative and management systems. Many of the conditions were focused on establishing a transparent financial system to evaluate and monitor costs and incomes. In some cases, it was required that the enterprises hire a manager, and information on the financial aspects be divulged at members' assemblies or even among the entire community.

Increased Timber Prices

Temporarily, certified wood has fetched higher prices. This, however, has not always been perceived by the sellers, as buyers of non-certified wood have frequently undercut the price advantage of certified wood by offering the same price for non-certified wood. This is a clear example of skewed benefit capturing among the first links of supply chains of uncertified tropical timber, illustrating that there is scope for paying higher prices to small-scale wood producers irrespective of forest certification. Despite the generally low, if not absent, willingness-to-pay higher prices for certified wood, forest certification has contributed to increased transparency surrounding the wood prices paid to log and sawn wood producers.

Access to Incentives

INAB awarded management incentives to certified cooperatives or municipal *Ejidos*, such as Bethel and La Técnica, because of increased confidence regarding the sustainability of their forestry operations.

Access to Niche Markets

Certification has attracted new buyers searching for certified wood. However, a large proportion of certified wood continues to be sold through traditional distribution channels, which show no preference whatsoever for certified products. In some cases, certification has required communities to prepare a business plan, including a marketing strategy to fully take advantage of their certified status. It remains yet to be seen whether this translates into concrete advantages in terms of market access.

Environmental Effects

Improved Management Planning

Part of the improvement in management planning lay in improving weak areas of the management plans, as follows:

- *Improved estimations of harvesting intensity*. In many cases, cutting cycles were proposed which did not correspond to the harvested volume and the regeneration rates of the species concerned. To avoid forest degradation

and obtain certification, length of cutting cycles and logging intensities needed to be revised and adjusted according to local growth conditions and the general context of the management unit (regional and local growth and mortality patterns, diameter distribution of commercial species, among others). This led to the redefinition of the annual harvesting area and/or logging intensities in several management units.

- *Five-year management plans.* Certification requires five-year management plans. Thus the "creaming" of the most productive forest stands has largely been avoided, giving way to a long-term vision of the impacts of forestry operations on forest dynamics and structure.
- *Inclusion of NTFPs.* Although the harvesting of NTFPs is socially one of the most important activities in the Petén region, this aspect was generally not included in the management plans before certification.
- *Financial analysis.* In many cases, certification required the inclusion of financial analyses in order to determine the financial viability of the proposed management.

Improved Resource Management

Forest management as practiced by the community groups had been adequate even before certification. Nevertheless, compliance with pre-conditions and conditions improved forestry operations, in particular through the application of instruction manuals for resource management, better planning, infrastructure construction, and improved tree harvesting. In some cases, implementation of silvicultural treatments was required, though these are not always considered beneficial by the people in charge of forestry operations.

Species Protection

The certification standards have emphasized the protection of threatened species according to CITES, and the protection of seed trees, residual trees and those reserved for future harvests. Additionally, certification has required that defective trees not be harvested, and that fauna be protected through habitat conservation, hunting regulations, listing prohibited species, among others.

Protection of Conservation Areas

Aspects of forest management related to the protection of water bodies, soil, and archeological sites were improved. In some cases, forestry operations were required to improve demarcation of protected zones along rivers, lagoons and wetlands.

Plan for Prevention and Control of Forest Fires

In a number of management units, a plan for the prevention and control of forest fires was required, including: a monitoring and patrol program, a system of fines for

those responsible for forest fires, organization of brigades, fire fighting strategies, training of personnel, and acquisition of equipment.

More Efficient and Integrated Management of Forest Resources

Certification has promoted the use of forest residues and the integration of NTFPs in some forest management plans. Most concessions, however, still rely on the extraction of only a few commercial tree species.

Improvements in Annual Operational Plans

Certification required the hiring of resource managers, the installation of offices to administer forestry operations, the use of technical documents, and capacity-building in forest management.

CONCLUSION

Summary

Certification in Guatemala emerged as a result of the forest concession process in the Maya Biosphere Reserve (MBR). The main factors promoting certification were 1) the existence of relatively large and technically well-managed management units with technical assistance from NGOs; 2) the financial support provided by international donor agencies to finance the certification process; and 3) the government's decision to make certification mandatory for concessions in the MBR. Most of the positive and negative impacts of forest certification therefore apply to the Petén region of Guatemala, and not the country as a whole.

Certification of the first management units improved the overall understanding of the process and helped with the replication of the experience in community areas where certification was voluntary and where technical and financial assistance from donor agencies facilitated its adoption. Certification soon became a question of status for the NGOs or projects and the community groups involved.

The industrial concessions, as well as those communities with a greater entrepreneurial vision and endowed with larger volumes of high-value timber species, will continue to be committed to certification even if mandatory certification should be suspended. However, communities with fewer advances towards sustainable forest management rather view certification as a burden, particularly as they are increasingly required to absorb the associated costs. It is especially here where unfulfilled price premium expectations, nurtured for many years by NGOs, development projects and certification bodies alike, have turned into a disincentive to continued certification.

The principal *positive* impacts brought about by certification include:

1) prestige and security in the process of concession granting in the MBR and forest management in general (e.g. national and international prizes awarded);

2) improvement in the organization and administration of forest resources by community groups and private owners;

3) improvements in safety aspects and general well-being of forest workers;

4) improvements in the conservation of forest resources;

5) greater understanding of good forest management through the standards development process;

6) access to certified product markets for some certified enterprises; and

7) increased understanding of good forest management by technical and professional personnel.

The chief *negative* impacts include:

1) increased costs of forestry operations in order to comply with certification requirements, not all of which help increase the economic benefits of forest management;

2) disappointment among some community groups as a result of false expectations regarding price premiums for certified timber;

3) a sense of abandonment by community groups with low returns from forest management once they no longer receive subsidies from support organizations and do not have the financial resources to pay for re-assessments, audits and compliance with conditions in order to maintain their certificates;

4) a sense of exclusion among members of community groups as there is a general lack of awareness and understanding of what is certification. As a result, many certification requirements are not fully internalized;

5) subjective assessments. There is a clear variation in the assessment criteria between different assessment teams, who often lack an understanding of the local conditions;

6) excessively demanding standards. With dwindling support from NGOs, many conditions are difficult to comply with. In some cases, conditions are not practical.[17] In other cases, technically appropriate conditions elevate costs and alienate those who consider entering the certification process;

7) weak audits with a strict focus on compliance with outcomes. Disregarding gradual improvements in forest management can result in discouragement and frustration of those involved in the process;

8) mistaken notion that only certified forest management stands for sound forest management. Development interventions should not focus exclusively on certified operations, but acknowledge and support non-certified examples of sound forest management; and

[17] For example, the condition to carry out biological studies calls for the involvement of specialized research centers, but forest-based communities do not dispose of funds to finance such studies.

9) certification should not be seen as an end in itself, as the target of 200 million hectares of certified forests by 2005 suggests (see World Bank and WWF 1997). Rather, it is a means to promote sustainable forest management, provided that a cost-benefit analysis for each particular case results favorably (Stoian and Carrera 2001).

Roadblocks and Challenges

The major challenges to forest certification in Guatemala are high costs as compared to relatively low monetary benefits, low access of small producers to certification, lacking access to niche markets for certified forest products, incipient community-based forest enterprise development, and heterogeneous application of assessment criteria. Most of these factors, if not all, are not confined to Guatemala but are shared by other countries of the tropical belt.

High Costs

Certification costs not only include the direct costs of assessments, audits and membership, but also the costs incurred in complying with preconditions and conditions. In the case of community groups, the majority of these costs were covered by development projects and NGOs funded by the international donor community. Though there has been a gradual shift to costs being absorbed by the concessionaires, many communities still lack sense of ownership of the process and find costs prohibitive in the absence of tangible monetary benefits.

Table 7 presents a sample of certification assessment costs in Petén. Fixed costs are independent of the size of the area to be assessed. Costs of annual audits ranging between US$1,000 and US$2,000, as well as the annual FSC membership fee of US$ 250 are included as fixed costs.

Table 7 shows that despite low variation in total annual cost between the different management units, there is a considerable difference in terms of cost per certified area (US$0.10-1.90 ha^{-1} $year^{-1}$), annually harvested area (US$8-107 ha^{-1}), and the volume of harvested round timber (US$4.2-52.9/$m^3$). These figures show that, in certain cases, costs of certification are very high, if not prohibitive. This fact has often been concealed by the considerable subsidies granted to community groups by external organizations.

Evidently one of the greatest challenges facing the certification process is reducing its costs and increasing its monetary benefits. Towards this end, FORESCOM S.A. was set up in 2003 as a company representing various community forest concessions. Establishing this company in collaboration with ACOFOP is part of the exit strategy of the Maya Biosphere Project, in its last phase executed by Chemonics. FORESCOM S.A. has recently been assessed as a resource manager under a group certification scheme. This response to various community groups allows the dilution of certification costs, the strengthening of community operations through mutual support networks, and increased access to technical assistance and niche markets. FORESCOM S.A. currently represents nine community concessions, including some of the least consolidated ones.[18]

[18] More consolidated groups, such as Carmelita y Suchitán, have avoided the group certification scheme as they prefer to maintain their own identity and not incur membership costs.

Table 7 Estimated costs of certification for community forest management units in Petén, Guatemala

Forest management unit	Area		Annually harvested volume (m./yr.)[c]	Costs							
	Total (ha)[a]	Harvested (ha/yr.)[b]		Assessment (US$/5 yrs.)[d]	Annual audit (US$/yr.)[e]	Annual FSC membership (US$/yr.)[f]	Compliance with conditions (US$/yr.)[g]	**Annual total (US$/yr.)[h]**	By total area (US$/ha/yr.)[i]	By harvested area (US$/ha/yr.)	By harvested volume (US$/m³)
A	4,149	112	911	5,750	1,500	250	5,000	**7,892**	1.90	70	8.7
B	4,607	262	683	5,750	1,500	250	5,000	**7,892**	1.71	30	11.6
C	5,924	117	559	9,000	1,500	250	5,000	**8,550**	1.44	73	15.3
D	6,484	252	371	13,350	1,500	250	5,000	**9,420**	1.45	37	25.4
E	7,039	74	250	5,750	1,500	250	5,000	**7,892**	1.12	107	31.6
F	18,215	295	344	5,750	1,500	250	5,000	**7,892**	0.43	27	22.9
G	51,940	1102	2102	9,990	1,500	250	5,000	**8,748**	0.17	8	4.2
H	53,793	402	1487	8,424	1,500	250	5,000	**8,435**	0.16	21	5.7
J	83,558	382	393	9,794	1,500	250	5,000	**8,709**	0.10	23	22.2
Average	26,190	333	789	8,173	1,500	250	5,000	**8,380**	0.94	44	16.4

[a]CONAP (2003)
[b]Area cut annually, using as reference the annual harvesting area for 2002 (ibid.)
[c]Annual harvested volume, using 2002 as reference (ibid.)
[d]Cost of the certification assessment (every 5 years) (own elaboration; WWF 2004)
[e]An average of 4 audits over 5 years
[f]Annual FSC membership fee
[g]Exact information is not available regarding the cost for complying with conditions, but a conservative estimate is US$ 5,000 a year. This amount varies over time and has in the past been absorbed by supporting NGOs.
[h]The annual cost was obtained from the sum of the assessment cost divided by 5, plus the cost of annual audits, membership and compliance with conditions
[i]The cost per hectare certified is relatively low and inversely proportional to the total size of management unit, varying between US$ 0.10 and US$ 1.90 ha-1 year-1

Costs of complying with (pre-)conditions may be significantly higher than direct assessment costs. Exact information regarding these costs is not readily available. A project executed by WWF, though, can serve as a point of reference: it invested around US$110,000 to assist six management units in complying with conditions arising from the certification assessment (WWF 2004). According to Soza (2003), the annual cost of complying with conditions can be as high as US$12,000. In view of the large variability of the conditions in different management units and the general dearth of pertinent studies, it is difficult to determine the exact amount of indirect certification costs. Annual indirect costs of US$5,000 as presented in Table 7 are considered a conservative estimate.

Predominance of Small Producers Outside the MBR

The predominance of small producers, who generally face difficulties in covering the cost of certification and complying with its rigid standards, is a considerable challenge for the future of forest certification in Guatemala. Large forest management units are concentrated in the MBR, with their majority being certified or in the process of certification. Outside the MBR, however, most of the forests are managed by small producers without access to viable mechanisms, such as group certification, strategic alliances between small producers and processing companies, preferential purchase policies by the government, among others. Small producers outside the MBR thus constitute the most disadvantaged group in Guatemala's certification process.

Lacking Access to International Niche Markets for Certified Wood

To date, demand for certified wood products has largely been concentrated in industrialized countries. The corresponding niche markets require high product quality, minimum volumes and timely delivery. However, the current conditions in Guatemala permit only a small minority of enterprises to comply with these requirements. A major obstacle is poor product quality due to limited technical skills, obsolete production technologies and financial constraints to invest in these.

The domestic market for certified wood products is still in its infancy. To date, the public sector has not given any preference to wood originating from certified sources in Guatemala. As a result, most certified wood is being exported to USA, Mexico, and, to a lesser extent, Europe. One of the few domestic companies purchasing certified wood is CAOBA S.A. This company, however, obtains most of its certified wood supplies from the USA. Curiously, timber imports include not only temperate wood species but also tropical timber such as mahogany. This exemplifies a general dilemma facing domestic wood manufacturers interested in certified wood: working with the community concessions in the Petén which have problems with timely delivery of the qualities and volumes needed, or importing high-grade mahogany originating from Brazil with on-time delivery ensured by U.S.-based import-export companies.

Incipient Community-Based Forest Enterprise Development

As the aforementioned examples demonstrate, left to their own devices small producers cannot easily access niche markets for certified wood. Their training and technical assistance needs are huge, and community enterprise development processes take decades rather than years. In this context, it remains to be seen how rapidly FORESCOM S.A. will gain momentum and what kind of assistance will be needed to consolidate the process on the long run. One opportunity to gain short-term access to international markets is the establishment of strategic alliances with technologically advanced industrial partners that are certified for chain of custody. Such community-enterprise links require careful selection of the strategic allies, fair and equitable negotiations of the "rules of the game," and probably some kind of stewardship in their initial phase. This role could best be assumed by business development service providers, i.e., NGOs, projects and consulting firms specialized in rural enterprise development. While current certification standards for forest management units do address social issues, chain-of-custody certification is mainly concerned with traceability. Equitable decision making and fair benefit sharing between wood-producing community enterprises and wood-processing industries thus easily escape independent third-party evaluation. This underscores the need for supply chain stewardship by business development service providers.

Differences in the Application of Criteria

Despite the fact that certification assessments were conducted by the same certification body (SmartWood), emphasis and rigor in assigning conditions varied significantly depending upon the assessment team and the certification standard used at the time of assessment. Table 8 shows the scope and number of conditions, ranging from 13 to 64 per management unit. The largest number of conditions was assigned to silvicultural and organizational/administrative issues. Based on the authors' experiences talking to assessors in various opportunities, differences in the application of certification criteria became manifest. These were identified by requesting assessors to determine the weight of personal criteria when imposing a condition. Additionally, different standards have been used over time, as reflected in SmartWood's shift from generic standards to its own standards for the Selva Maya Region. Variations in the number of conditions are also due to varying progress towards sustainable forest management among the management units.

Table 8 Number of conditions in natural forest management units in Guatemala

Management unit	Social	Economic	Organization and Administration	Silviculture	Environmental	Monitoring	Research	Total
A	1	–	3	4	1	1	3	13
B	–	1	2	7	3	–	2	15
C	1	1	5	9	–	3	2	21
D	1	1	10	5	2	3	2	24
E	1	1	3	6	1	1	1	14
F	1		3	6	1	1	2	14
G	2	1	7	2	6	4	2	24
H	4	7	16	16	13	7	2	65
I	2	–	10	9	4	4	–	29
TOTAL	13	12	59	64	31	24	16	

Source: WWF (2004)

In some cases, conditions have been perceived as too demanding and with little practical relevance for improving forest management. In this context, the formulation of national standards is important as it seeks to adapt the certification process to local conditions, thus facilitating access of non-subsidized producers to certification.

Future Developments/Scenarios

It is anticipated that the area of certified natural broadleaved forests in Guatemala will increase by around 90,000 ha in the near future, as several community management units are in the process of certification. However, the total area certified is not expected to increase significantly in the years to come, due to the following reasons: 1) Management units of broad-leaved forests outside the MBR are relatively small, with low volumes of commercially valuable species; 2) The cost of certification and compliance with conditions is prohibitive for small-scale producers seeking individual certification; 3) Low integration between the primary and secondary processing industry; 4) Industrial processing is of poor quality and mainly destined for domestic markets that do not reveal any significant demand for certified wood products.

The potential for certification of natural coniferous forests is relatively low given that: 1) most of these forests are small in scale and located in areas with steep slopes and relatively high human populations; 2) the domestic softwood industry is generally uncompetitive, with products of poor quality and enterprises lacking vertical integration; 3) low domestic prices of softwood and high production costs result in low competitiveness as compared to producers of certified softwood in countries like Canada or Chile; and 4) the major part of production is currently destined for the domestic market, while exports are largely destined for the construction sector in El Salvador that does not demand certification.

Certified products from forest plantations in Guatemala face more positive perspectives in light of the national program of forestry incentives. As of June 2004, two plantations had been certified and further plantations are in the process of certification. It remains to be seen to what extent plantation products will meet the demand for certified forest products in the national and international marketplace.

It needs to be reemphasized that in the absence of tangible monetary benefits for certified forest management operations the future of forest certification is bleak. However desirable non-monetary benefits, such as the increased dialog between forest users, the wood-based industry, development professionals, scientists and political decision makers may be, it can no longer be ignored that these largely accrue to national and international societies. From the perspective of wood producers and processors, however, monetary benefits are the *sine qua non* to spark and maintain interest in forest certification.

In the case of Guatemala, the future of the certification process will depend on the ability to

1) demonstrate that certification can bring significant competitive advantages in the medium term, such as access to niche markets;

2) promote certification beyond Petén, for example through the consultation process related to the development of national standards;

3) improve product quality through demand-oriented design and development of certified wood products;

4) develop integrated supply chains of certified timber and non-timber forest products. There is ample scope for better coordination between producers, processors, traders and their respective business development service providers. Forging strategic alliances between producers and processors, for example through community-enterprise links, can bring about mutual benefits. Well-designed marketing campaigns need to reach to the final consumer as a key actor of the future certification process;

5) implement strategies to incorporate small and medium producers in the certification process through innovative group certification schemes;

6) craft policies for preferential purchase of certified products by governmental institutions;

7) adapt standards to the national and regional reality, allowing for minimum levels of compliance and strengthening CONESFORGUA as the national initiative in charge of them;

8) evaluate the suitability of the Small and Low Intensity Managed Forests (SLIMF) guidelines, which are currently being developed by FSC; and

9) homogenize the application of certification standards (generic or national) to the extent possible. The outcomes of certification assessments should not be dependent on individual assessors' views and preferences.

Future Research

Despite the investment of millions of dollars in forest certification over the past decade, surprisingly little is known on a number of key variables that will determine the future of the certification process. It is recommended that future research focus on:

- The role of certified forest management in rural livelihood strategies;
- Mechanisms for adapting the forest certification process to the needs and realities of small producers;
- Cost-benefit analyses of certification, taking into account the direct and indirect costs of certification as well as monetary and non-monetary benefits;
- Community-enterprise links along certified chains of custody, including institutional arrangements of collaboration, benefits sharing and conflict resolution;
- Political and legal arrangements to promote certified forest management;
- Analysis of supply chains for certified wood products, with emphasis on transaction costs, institutional arrangements and interactions between the different actors, product flow, information and capital (including the distribution of benefits);
- Application of national standards and application of standards in the field by different certification bodies and professional assessors;
- Analysis of alternative certification schemes for NTFPs;
- Trends in national and international markets for certified wood products;
- Environmental, social and economic performance of certified forest operations vs. non-certified ones;
- Ecological monitoring of certified forests.

Research needs not only to be applied and applicable, but requires innovative approaches such as participatory action research and multi-stakeholder analyses. Research needs to be coupled with a concerted effort to develop integrated supply chains of certified timber and non-timber forest products. The *sine qua non* for the future certification process is a favorable cost-benefit ratio for both forest management and chain-of-custody certificates. Research and development efforts need to become subject to structured learning processes. This requires the establishment of learning alliances between key actors in the certification process, including managers from certified management units and processing plants, non-governmental and governmental organizations, certification and accreditation bodies, donor agencies, research institutions, and business development service providers.

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LIST OF ORGANIZATIONS CONSULTED

Organization	Date	Location
Rainforest Alliance, SmartWood Program	22 February 2004	Guatemala City
Rainforest Alliance, TREES Program	22 February 2004	Guatemala City
CONESFORGUA	22 February 2004	Guatemala City
Gremial Forestal	23 February 2004	Guatemala City
INAB – Instituto Nacional de Bosques	23 February 2004	Guatemala City
Empresa Caoba S.A.	24 February 2004	Antigua, Guatemala
WWF Centroamérica	25 February 2004	Petén, Guatemala
CATIE/MIF Project	25 February 2004	Petén,Guatemala
CONAP – Consejo Nacional de Áreas Protegidas	25 February 2004	Petén, Guatemala
ACOFOP	25 February 2004	Petén, Guatemala
Alianza para un Mundo Justo	26 February 2004	Petén, Guatemala
Sociedad Civil Arbol Verde	26 February 2004	Petén, Guatemala
Cooperativa Carmelita	26 February 2004	Petén, Guatemala
Sociedad Civil Impulsores Suchitecos	27 February 2004	Petén, Guatemala
Empresa Baren Comercial	27 February 2004	Petén, Guatemala
Empresa Gigor	27 February 2004	Petén, Guatemala
Fundación Naturaleza para la Vida	27 February 2004	Petén, Guatemala
Chemonics/Biofor	28 February 2004	Petén, Guatemala
FORESCOM	28 February 2004	Petén, Guatemala

ACRONYMS

ACOFOP	*Asociacion de Comunidades Forestales de Petén* – Association of Forest Communities of Peten
CATIE	Tropical Agricultural Research and Higher Education Center
CONAP	*Consejo Nacional de Areas Protegidas* – National Council for Protected Areas
CONESFORGUA	*Consejo Nacional para la Generacion de Estandares Forestales de Guatemala* – National Council of Forest Management Standards
FAO	Food and Agricultural Organization of the United Nations
FSC	Forest Stewardship Council
FYDEP	*Fomento y Desarrollo de Petén* – Promotion and Economic Development of Peten
GDP	Gross Domestic Product
INAB	*Instituto Nacional de Bosques* – National Forestry Institute
MAB	Man and the Biosphere
MBR	Maya Biosphere Reserve
MIF	Multilateral Investment Fund
MUZ	Multiple use zone
NGO	Non-governmental organization
NPV	*Naturaleza para la Vida* – Nature for Life Foundation
NTFP	Non-timber forest product
PAF-G	*Plan de Accion Forestal Guatemala* – Forestry action Plan for Guatemala
PROCUCH	"Sustainable Management of Natural Resources in the Sierra de los Cuchumatanes" Project
SLIMF	Small and Low Intensity Managed Forests
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
WWF	Worldwide Fund for Nature

APPENDIX: QUANTIFYING THE EFFECTS OF CERTIFICATION

It is by no means easy to quantify the effects of forest certification, and to separate these from the progress towards sustainable forest management that otherwise would have been achieved through the support by NGOs and development projects beyond certification. Nevertheless, the fact that three of the five authors of this chapter have intimately been involved in the certification process in Guatemala from its very beginnings provided the basis for valuing certification effects quantitatively. Based on social, economic and ecological aspects at management unit level, the authors developed a scoring system to compare changes in performance before and after certification (Table 9).

Table 9 Scoring of performance level

Scoring	Level of performance
1	Very poor
2	Poor
3	Regular
4	Good
5	Very good

It needs to be stressed that the scoring system has been developed according to what we perceive a sustainable forestry ideal for Central America, taking into account the peculiarities and advances towards sustainable forest management in the region. "Very good" (5) thus denotes a very positive outcome in the given regional context, whereas in regions with a far longer trajectory in sustainable forest management, such as Central Europe and parts of North America, this score might well translate into "good" or "regular". It is also worth mentioning that the certified operations did not depart from the same level, and that in the course of time the units have undergone different developments. The valuation presented in Table 10 thus reflects advances at aggregate rather than individual level.

Table 10 Scoring of performance level (before and after certification)

			Before	After
Social Effects	Improved Health and Labor Security	Use of safety equipment	2	4
		Availability of first-aid kits in logging camps	2	4
		Life insurance	1	4
	Improvements in Working Conditions	Improvements in camp conditions	2	5
		Labor contracts	1	5
	Improvements in Community Organization	Development of a Strategic Plan, Internal Regulations, Operations Manuals	2	3
		Organization of production structures	1	4
	Conflict Management	Land use mapping and planning	2	4
		NTFP extraction	1	3
		Consolidation of the relationship with other community groups	3	4
		Socialization of actions within community groups	2	4
	Increased Technical Capacities		3	4
	Increased Understanding of the Regulations for Natural Resource Management		2	3
Economic Effects	Improved Administration of Community Enterprises		2	3
	Increased Timber Prices		2	3
	Access to Incentives		3	4
	Access to Niche Markets		2	3
Environmental Effects	Improved Management Planning	Improved estimations of harvesting intensity	3	4
		Five-year management plans	2	5
		Inclusion of NTFPs	2	3
		Financial analysis	2	4
	Improved Resource Management		3	4
	Species Protection		3	4
	Protection of Conservation Areas		3	4
	Plan for Prevention and Control of Forest Fires		3	5
	More Efficient and Integrated Management of Forest Resources		2	3
	Improvements in Annual Operational Plans		3	5