Forest Certification in Bolivia

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ABSTRACT

Forest certification has been widely adopted by Bolivian stakeholders as a result of a strong combination of policy, training, technical assistance, and economic incentives for responsible forest management. The new Forestry Law of 1996 and associated regulations, the national dependency on foreign exports, and national and international support of forest management and certification together facilitated the development of forest certification in Bolivia. Several benefits result from certification: improved forest management practices in the field; reduction of social conflicts among timber companies and local communities; maintenance of existing markets or access to new ones; reduced enforcement costs for state agencies; and support of the new Forestry Law and its norms. Almost 1.5 million hectares have been certified by the Forest Stewardship Council, of which 96 percent belong to large timber firms. Only one of the 13 certificates is associated with a community-based operation. The promotion of community participation in forest management and certification processes is still needed, as well as the identification of High Conservation Value Forests and additional research on forest ecology and silviculture.

INTRODUCTION

Acceptable and sound forest management practices are essential for forest certification. This is what the new Bolivia Forestry Law has promoted since its promulgation in 1996. Under Bolivia's former Forestry Law, commercial use of forests was virtually monopolized by large logging firms. Today, in addition to timber companies, other groups such as indigenous people, local communities, and small landowners have the right to access productive forests. Under the old law, timber companies paid per volume harvested, a practice that facilitated the accumulation of large landholdings among a few companies, led to corruption, and promoted selective harvesting of the most valuable species, especially mahogany.

The new law democratized stakeholders' access rights to forested lands for commercial objectives, created forest management norms, and minimized overlapping rights among stakeholders. In addition, the law improved the national forest administration, established clear rules for forest managers (Quevedo 1998), and enforced the adoption of improved management practices among concessionaries (Boscolo *et al.* 2002). In short, the new Forestry Law prepared companies and landowners for certification standards by building a solid legal, technical, and administrative forestry platform. The law was a response to mounting domestic societal outcry about decades of unsustainable and mining-type forest harvesting.

In July 1997 the Forest Service granted 5.47 million hectares of forestland to timber companies (Superintendencia Forestal 1997) – one-quarter of the 22 million hectares that they had originally controlled. This reduction in available forest area, the Forestry Law changes, plus the indigenous demands for lands, meant that new social actors could access the forest for commercial objectives, but left millions of hectares in limbo without any form of formal management and vulnerable to shifting cultivation.

Today firms must pay per area instead of per harvested volume and are forced to intensify land use and capital (Bojanic 2001). The primary goal of the fees payment by area system was to eliminate corruption during the allocation and supervision of volume harvested. Recently this payment system was modified further: companies now pay only for the area on which they effectively intervene each year, i.e. the annual cutting area, in addition to a fee paid to the Forest Service for "supervision service."

This new payment system has reduced the amount of fees paid to the government and municipalities, but it appears to have economically revitalized the forest industry. As a result of the fee payment system (by area, not volume), the new Forestry Law indirectly discourages selective harvesting and forces forest managers to seek new species and markets. According to Jack (1999a), this is where we find one of the connections between the new forestry regime and certification: the search for "green markets" for non-traditional species.

When forest managers in Bolivia fulfill the national forest management laws and regulations, they meet several certification requirements (Nebel *et al.* 2003, Contreras-Hermosilla and Vargas 2001, Jack 1999a). The development of certification is indeed a result of a process promoted by the new Forestry Law (PRISMA 2000), which created favorable conditions for forest certification (Moreno 2003). However, it is fair to say that fulfilling the Forestry Law requirements does not necessarily imply sustainable forest management or the successful completion of a certification assessment.

The new Forestry Law was not the only factor leading to changes in forest management in Bolivia. There was also a massive institutional movement that led Bolivia toward improved forest management and certification: there was a commitment among the institutions related to the forest sector to support the new system and to work toward social, economic and environmental forest sustainability.

By 1997 the Bolivian political environment was ripe for forest certification; since the beginning of the process, certification received enough support from national organizations, including the government. International aid from government agencies as well as from non-governmental organizations (NGOs) played a significant role in the capacity building of forest management and certification. The FSC Bolivian national initiative received enough support from most stakeholders, including Bolivia's government and national and international NGOs.

Almost 1.5 million hectares of Bolivia's forestland is certified under the Forest Stewardship Council (FSC) system. There is a wide commitment among stakeholders to support certification, especially among large firms, although community-based forest management still needs to be promoted. Finally, the lack of adoption of the Criteria and Indicators system for sustainable management developed by the International Tropical Timber Organization (ITTO) and the *Tratado de Cooperación Amazónica* – TCA (Amazon Cooperation Treaty), facilitated the introduction of the FSC system.

Forest certification development is a result of an interesting and unique combination of public policy, legislation, training, technical assistance and economic incentives for forest management. This case study analyzes these dynamics.

BACKGROUND FACTORS

Historical Context

Forestry Problems

As in most developing countries, the Bolivian forestry sector faced substantial difficulties with respect to forest certification, many of which were associated with the country's economic and social issues. Illegal logging was uncontrolled because of the weakness of the Forest Service, the existence of corruption, and a lack of authority.

Deforestation was another threat to forest conservation because of shifting cultivation and agro-industry: the national rate of deforestation is about 270,000 hectares per year (Rojas *et al.* 2003); the Santa Cruz Department is the most affected by human activities with 203,400 hectares deforested each year (Camacho *et al.* 2001).

The absence of sustainable forest management was the rule and forestry was characterized by the high-grading (Nebel *et al.* 2003) of a few valuable species (*Swietenia macrophylla*, *Cedrela* spp, and *Amburana cearensis*). Although forest management was clearly defined and demanded by the former Forestry Law, sustainable forest management plans were not implemented in the field (Superintendencia Forestal 1997). International markets played a role in high-grading the most valuable species, since these markets are oriented toward a few valuable timber species, which are now scarce.

Only timber companies were allowed access to forestland, and held 22 million hectares under long-term contracts (Stolz and Quevedo 1992). This inequity caused several social conflicts, since other stakeholders could not access the forest for commercial purposes. The lack of serious management, corruption in the public and private forestry sectors, and inequity brought a lack of credibility to the forestry sector. In part because of this, loggers were blamed for all forest destruction and had a very poor reputation.

Cordero (2003) identifies the different illegal operations in Bolivia: (a) invasion of public lands and harvesting; (b) harvesting in different areas than those authorized; (c) illegal use of permits (e.g. use the same permit for several harvestings); (d) illegal timber transportation; and (e) illegal reception and wood processing in sawmills. As a result of illegal logging, sustainable forest management was undermined.

Policy Responses

Before the 1996 Forestry Law, little was done by the government to prevent forestry problems. The Forest Service was contaminated by corruption – with exceptions of course – and the timber industry acted freely. The most important attempt to increase the efficiency of the forest administration was the decentralization of the Forest Service in 1985, an action that did not achieve its objective: the problems that existed at the national level were replicated at the local level.

On the other hand, several NGOs, especially the *Asociación Ecológica del Oriente* (ASEO), or Eastern Ecological Association, developed national campaigns against forest destruction, demanding sustainable forest management, an end to forest conversion, and transparent public administration. By this time, several northern NGOs were demanding boycotts of the tropical timber trade, which ended with a forest certification system. Gradually, public awareness was raised and this has certainly contributed to forestry sector changes, although deforestation caused by shifting cultivation and agro-industry continues to this day.

Structural Features

Ownership and Tenure

Bolivia has a total land area of almost 110 million hectares, of which 50 percent is covered by natural forests (Castello and Roca 2002). Forest management occurs mainly in tropical and subtropical forests. Here, seven forest regions are used for timber production: Amazon, Choré, Preandino-amazónico, Bajo Paraguá, Guarayos, Chiquitanía and Chaco. The Amazon is the region with the highest standing timber volume per hectare (Dauber *et al.* 1999). The productive forests represent about 41 million hectares, 28 million hectares of which are declared appropriate for full forest management (Castello and Roca 2002).

In Bolivia, all natural forests ultimately belong to the government; the state grants commercial harvesting rights to four main groups (long-term contracts are not granted any longer) in accordance with the Forestry Law (Table 1). All groups are required to have a forest management plan approved by the Forest Service.

Table 1 Forest Bolivian rights granted (as of December 2003)

Type of Right	Quantity	Area (ha)
Forest Concessions	78	5,091,087
Local Social Associations (ASL)	19	531,161
Indigenous Lands (TCO)	23	560,273
Private lands above 200 ha	128	739,121
Private lands equal or below 200 ha	649	78,803
Long-term contracts	2	225,400
Total	**899**	**7,225,844**

Source: Superintendencia Forestal, 2003, data not published

Forest Concessionaries and the Timber Industry

This sector includes companies with large areas (average of 65,000 hectares per concession). The government grants these companies 40-year concessions, which are renewable every five years after a technical audit. If the operation is certified in accordance with an international system (such as FSC), it does not need to pass a government audit and contract renewal occurs automatically.

With the new forestry regime, companies could choose to convert their long-term harvesting contracts to the system of forest concessions or to maintain their contracts as granted by the old forestry law. Long-term contracts provided the legal means to grant rights to those industries that preferred not to use the concession scheme. Today, there are only two long-term contacts left (Table 1). New concessions are supposed to be granted through international auctions (although none has been held yet).

In general, forest concessionaries are vertically integrated and carry out all of the processes in the production chain: forest management, logging, primary and secondary transformation, and national and international commercialization. However, the timber industry is poorly diversified; most timber products are solid wood (Castello and Roca 2002). The timber industry produces mainly furniture, flooring, doors, laminates and other products such as sawn timber, veneer, plywood and particle board.

Secondary transformation of timber is essentially concentrated in this part of the forest sector, as firms have more financial resources, technology and experience than other segments of the sector. With the exception of one, all companies are national. Most timber companies are part of the *Camara Forestal de Bolivia*-CFB, or Bolivian Forestry Chamber.

Asociaciónes Sociales del Lugar (ASLs, or Local Social Associations)

ASLs have an average management area of 28,000 hectares with a minimum of 261 ha and a maximum of 62,572 ha. The Forest Service grants concessions to them for 40 years under the same regulations followed by timber companies. These concessions are given to local people (i.e. that effectively live on site) without auction as long as they meet the requirements for ASLs. According to the new Law, local people from any municipality may request up to 20 percent of the public forest area of the local municipality as long as they are organized as an ASL. Table 2 shows that there are 19 ASLs across the country, all with forest management plans approved by the Forest Service.

Table 2 ASLs with approved forest management plans (as of December 2003)

No	ASL Name	Department	Area (ha)
1	Asociación Agroforestal San Rafael	Santa Cruz	52,928
2	Asociación de Cortadores de Madera de Comunidad Mucha Miel	Santa Cruz	20,474
3	Asociación Forestal Madereros San Miguel –AFOMASAM	Santa Cruz	46,624
4	Asociación de Madereros de San Miguel de Velasco – AMAISAM	Santa Cruz	41,495
5	Asociación de Madereros Agroforestal San Ignacio De Velasco – AMASIV	Santa Cruz	44,176
6	Asociación Comunitaria Agroforestal Santa Ana – AMASAV	Santa Cruz	42,408
7	Asociación de Aserradero Yapacaní	Santa Cruz	62,572
8	Agrupación Social La Candelaria	La Paz	15,876
9	Agrupación Social del Lugar Copacabana	La Paz	15,482
10	Agrupación Social Caoba	La Paz	15,109
11	Asociación Agroforestal Maderera Siete Palmas	La Paz	15,102
12	Agrupación Social Forestal San Antonio	La Paz	14,986
13	San Josecito El Tunal	Tarija	261
14	Asociación Agroforestal Comunitaria El Tuna	Santa Cruz	25,295
15	Agrupación Social El Triunfo	La Paz	16,664
16	Asociación de Madereros Guapomo	Santa Cruz	45,025
17	Asociación Agropecuaria Forestal y Artesanal – Idiama	La Paz	18,386
18	Asociación Forestal Monte Verde	Santa Cruz	18,302
19	Asociación Forestal Puerto Alegre	Santa Cruz	19,996
	Total area		531,161

Source: Superintendencia Forestal 2004, data not published

To create an ASL it is necessary to have at least 20 members, all of whom must be local residents with at least five years of settlement in the area. Most ASL concessions have been granted to former local loggers who have good organizational capacity, logging knowledge, and resources. Despite these capacities, however, ASLs show a lack of consolidation as enterprises; they need to improve their administrative and financial management skills, and develop a participatory mechanism (Certificación Forestal

2000). Several problems have been identified by FAO/PAFBOL s/f, and PRISMA (2000) for ASLs:

- high degree of financial and technical vulnerability;
- low levels of technical assistance from municipalities on forest management;
- deficient organization and administration;
- lack of market information;
- lack of capacity in business management;
- lack of capacity to provide large volumes and quality for formal markets;

Many of these loggers used to harvest forests illegally, in part due to the former legal impediments to accessing productive forests. The challenge now is to bring all of those actors to legality and responsible management, facilitate their access to forests, and give them technical assistance. In general, ASLs produce logs and some saw timber to sell in local markets. Several ASLs are inactive or need to develop more efficient organizational management systems. This explains in part why forest lands managed by ASLs are not certified, although a few of them have expressed some interest in certification in the past (Katherine Pierront, SmartWood/Bolivia, 2004, personal communication).

Private Lands

Private lands belong to groups or individuals that have either purchased lands outright or have acquired them free from the government. Since the forestry technical norms are less onerous for areas below 200 ha, most plans approved by the Forestry Service belong to small owners (84 percent of plans are for areas less than 200 ha, 16 percent of plans pertain to areas greater than 200 ha). This difference in technical norms for small and large properties has led some loggers and landowners in the east of Bolivia to obtain permits to harvest timber on small, 3 ha tracts, and then to illegally harvest timber on lands adjacent to these properties (Cronkleton and Albornoz 2003).

In recent years, interest in forest management and certification by private landowners has grown. In general, these landowners produce sawn timber and sell on local markets.

Indigenous Lands

Indigenous lands belong to the so-called Tierras Comunitarias de Origen (TCO), or Original Community Lands, and are legally granted to indigenous peoples by the Bolivian government. These lands are considered private lands, and are legally equivalent to other forms of land tenure rights recognized by the Bolivian constitution. These stakeholders have gained exclusive rights to forest resource use inside their territories.

Although most Bolivian people are indigenous, all lands ultimately belong to the Bolivian state and it is the government that grants land rights to indigenous and non-indigenous people. To constitute a TCO, i.e. for land to be recognized as "indigenous land," the community must demonstrate its traditional right to that land. The process generally takes years and is characterized by conflicts with other private rights or land interests, and overlapping ownership rights.

A good example of these conflicts is the TCO Monteverde, which is in permanent conflict with ranchers who claim rights over portions of the land inside the TCO. Most TCOs hold large areas and it is difficult for them to protect their lands or simply to be free of conflicts because of previous land settlements. There are currently 51 indigenous land claims, covering 17,495,677 hectares, but as of July 2003 only 3,330,493 hectares had been legally defined as TCO lands (Cronkleton and Albornoz 2004). As of December 2003 the Forest Service had approved 23 TCO forest management plans for a total of 560,273 ha (Table 3).

On average, approved indigenous plans cover 26,000 hectares, which generally is less than the total TCO land. Despite the traditional knowledge of indigenous people regarding natural forests, today this sector probably faces the largest difficulties in implementing long-term commercial forest management plans. This is largely due to its lack of experience in business administration and wood processing, and lack of capital. Like ASLs and private and communal lands, TCOs mainly produce logs and sawn timber and sell in local markets. Most people from TCOs work in agriculture rather than forestry.

Of all of these actors, timber companies are best prepared for certification because of their experience in timber harvesting, wood processing, and commercialization, as well as their access to capital. Since certification is directly connected to international markets in Bolivia, large firms are the most interested in certification. Although they face several limitations, indigenous initiatives present a great potential for forest management and certification, mainly due to large indigenous forest holdings.

Table 3 Indigenous forest management plans approved by the Forest Service (by December 2003)

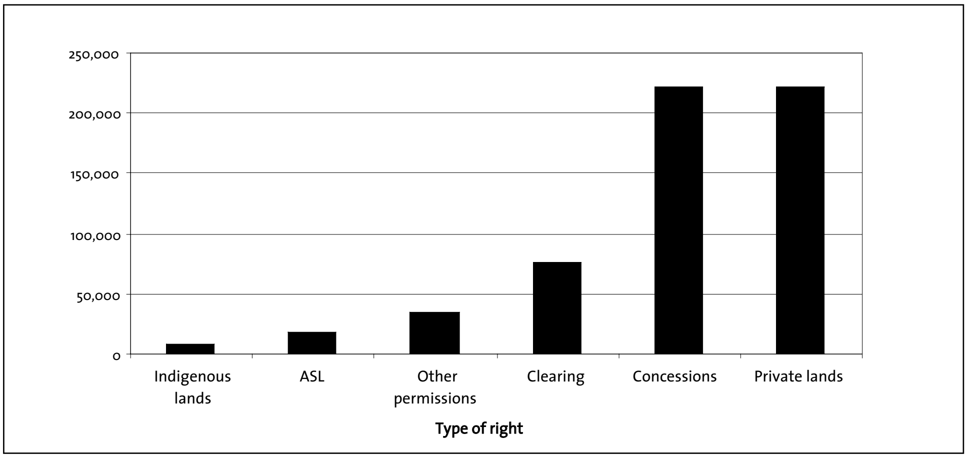
	TCO Name	Department	Area (ha)
1	Territorio Indigena Multietnico – TIM	Beni	15,467
2	Territorio Indígena Siriono TCO-TIS	Beni	12,017
3	Gran Concejo Tsimane Chimane I TCO – TICH	Beni	10,401
4	Gran Concejo Tsimane Chimane II TCO – TICH	Beni	50,277
5	Comunidad Indigena Villa Esperanza TCO – TIMI	Beni	1,327
6	Comunidad Indigena San Juan de Dios de Litoral TCO – TIMI	Beni	532
7	Comunidad Indigena El Chontal TCO – TIMI	Beni	1,661
8	Yuqui TCO – Yuqui	Cochabamba	55,986
9	Yuracare TCO – Yuracare	Cochabamba	60,809
10	Asociacion Agroforestal Tumupasa AGROFOREST TCO – Tacana	La Paz	7,707
11	Comunidad Indigena San Pedro TCO – Tacana	La Paz	20,638
12	Asociación de Pequeños Industriales Agroforestales de Tumupasa APIAT TCO – Tacana	La Paz	2,773
13	Central Indigena Del Bajo Paragua CIBAPA TCO – Bajo Paragua	Santa Cruz	90,758
14	Central Indigena de Comunidades Originarias de Lomerio – CICOL TCO – Lomerio y Zapoco	Santa Cruz	60,800
15	El Carmen Sapocó Santa Monica TCO – Monte Verde	Santa Cruz	7,434
16	Comunidad Indigena Cosorio Palestina – TCO Monte Verde	Santa Cruz	4,000
17	Comunidad Indigena Zapoco TCO – Ayoreo	Santa Cruz	19,982
18	Comunidad Indígena Yotau TCO – Guarayos	Santa Cruz	28,586
19	Zona Agraria Santa Maria, TCO – Guarayos	Santa Cruz	2,433
20	Asociacion Indigena Maderera Cururu – AIMCU TCO – Guarayos	Santa Cruz	26,421
21	Asociacion Indigena Forestal Urubicha Salvatierra AIFUS TCO – Guarayos	Santa Cruz	41,123
22	Asociación Forestal Indigena Salvatierra AFIS TCO – Guarayos	Santa Cruz	38,701
23	Comunidad Puerto San Salvador TCO – Yuracare	Cochabamba	440
			560,273

Source: Superintendencia Forestal, 2004, data not published

Markets

The Bolivian forest sector contributes only 3 percent of the Gross Internal Product but 11 percent of foreign exports (STCP 2000). About 50 percent of the industry's productivity is export-related, which is why certification has been welcomed by the timber industry. In 2002 the Forest Service authorized an allowable cut of 581,782 m3 (see Figure 1 for authorization by stakeholder), but Castello and Roca (2002) indicate that in reality 1.1 million m3 of timber is cut each year. The difference may be explained by illegal harvesting, which is severely affecting legal timber business through its unfair competition.

Figure 1 Volume authorized by the Forest Service in 2002, by stakeholder



Source: Superintendencia Forestal 2003

According to CFB (2003), in 2002 the value of exports was US$88.2 million. The main products exported included Brazil nuts (US$ 28 million), boards (US$ 20.3 million), doors (US$ 13 million), chairs (US$ 4.4 million), furniture (US$ 3 million), and others.

A total of 45 species were exported. The main species were: *Cedrela* spp. (US$ 11.3 million), *Swietenia macrophylla* (US$ 8.3 million), *Amburana cearensis* (US$ 8.14 million), *Cedrelinga catenaeformis* (US$ 6 million). Other important species were *Cariniana* spp, *Machaerium* spp, *Hura crepitans* and *Ficus* spp. The main markets were USA (US$ 42.6 million), UK (US$ 15.6 million), México (US$ 6.6 million), Chile (US$ 3.43 million) and the Netherlands (US$ 2.3 million). Other significant markets included Germany, Italy, France, Perú and Argentina.

The dependence on foreign exports and the presence of environmentally sensitive markets have together contributed to the certification boom in Bolivia. According to the manager of La Chonta concession, a certified operation, forest certification is an opportunity for the Bolivian timber industry but it is not truly voluntary because it has been imposed by the current international green-labeling trend (Antelo 2000).

Similarly, STCP (2000) considers that in the medium-term certification will be a basic requirement (not an option) for accessing environmentally sensitive markets such as the United Kingdom, Netherlands, and Germany. Although the green market plays an influential role, Jack (1999a) reminds us that certification was developed not only by the market, but also with support from national organizations and the new Bolivian Forestry Law.

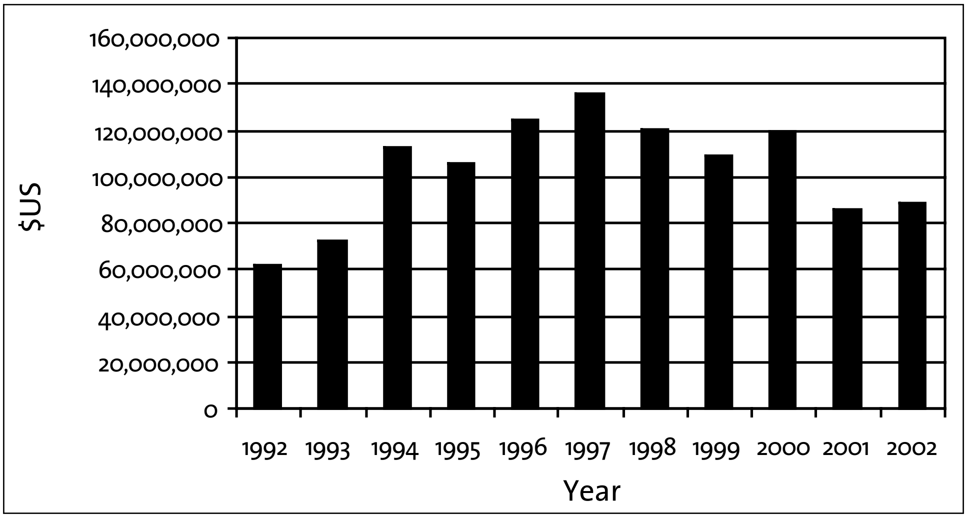
Forest products exports are presented in Table 4. In 2002 a total volume of 63,574 m^3 was exported, the equivalent of US$ 88.2 million. Figure 2 presents the dollar value of forest products exports for an 11-year period.

Table 4 Bolivian forest products exports (in US$) for 2000, 2001, and 2002

Type of Product	Year 2000	Year 2001	Year 2002
Raw material	24,753,487	21,158,814	20,622,482
Elaborated (including Brazil nuts)	69,058,949	59,844,610	58,348,552
Semi elaborated	25,730,323	4,784,854	8,557,392
Other	380,120	164,251	696,298
Total	119,922,878	85,953,529	88,224,724

Source: CFB (2003)

Figure 2 Value of Bolivian forest products exports (in $US) between 1992 and 2002.



Source: CFB (2003)

According to Carden (2003), the market is not a problem for the Bolivian forest industry, but rather, internal deficiencies such as: a lack of communication links between potential buyers and producers; the lack of logging contractors to harvest and saw trunks; unpublished information about the availability of species and volume; illegal harvesting; old transformation equipment poorly maintained and generally underutilized; the lack of financial liquidity and access to financing; and finally, traditional non-professional family-based company administrations. Similarly, Sainz (1999) identifies the following limitations to timber company exports: inconsistency of product quality; insufficient capacity to respond to sub-contract orders; and low industrial efficiency.

Sacre (2002) concurs with Carden (2003) regarding market issues, and claims that Bolivia has a large potential to access new markets and expand current markets, but its timber industry also needs to focus on valued-added certified products. Here, certification offers an opportunity for small carpenters who could take advantage of the green market (Viehbeck 1999). In general, the Bolivian timber industry is very small compared to other neighbor Amazon countries; harvesting per unit area is also low, averaging 3-4 m^3/ha.

THE EMERGENCE OF FOREST CERTIFICATION

Initial Support

Around 1990, a series of events occurred that made the environment appropriate for forest management and certification:

1990 The first attempt to implement a reduced-impact logging effort was carried out in the Chore Reserve by the SENMA/BID Project, with the introduction of harvesting inventory (100 percent), marking, and mapping of harvested trees. This practice was later consolidated by the BOLFOR Project.

1993 WWF established a field office with a focus on forest management training. This initiative has led to a Program Office that supports community certification.

1994 The BOLFOR forest project was funded, aimed at providing technical assistance, research and training for forest management.

1994 A national workshop decided to implement the certification process under FSC Principles and Criteria (P&C).

1995 The *Consejo Boliviano para la Certificación Forestal Voluntaria* (CFV; the Bolivian Council for Voluntary Forest Certification) was officially established.

1996 Bolivia's new Forestry Law was promulgated.

1996 The CIMAR/SmartWood certification program was created, which looked to develop local capacities, promote certification among timber industries and local communities, and reduce certification costs (Saravia and Peña 1999). This program, together with CFV, implemented a series of workshops on certification throughout Bolivia.

1997 A strong Forest Service was created and replaced the old and inefficient forest service. National forest management regulations were established in coordination with the BOLFOR Project.

1999 CADEFOR (*Centro Amazónico de Desarrollo Forestal* or Amazonian Center for Forest Development) was created with BOLFOR´s support.

Other initiatives, agencies and foreign governments that contributed to improved forest management (and certification) were PROMAB, PANFOR, FTPP, CIAT, MHNNKM, APCOP, SNV, CIFOR, USAID, FAO, ITTO, DANIDA, the McArthur Foundation, the Alton Jones Foundation, WWF, FSC, and governments of the Netherlands, Germany, Sweden, United Kingdom, and Switzerland.

The efforts to adopt the TCA and ITTO Criteria and Indicators failed to be implemented. Bolivian stakeholders decided to adopt the FSC scheme because it was a market-based approach to certification that seemed to be accepted by most consumers in the northern hemisphere.

Certification first emerged with the implementation of the BOLFOR Project, a USAID/Bolivian government project. The BOLFOR Project began in February of 1994, when USAID signed a contract with a consortium of actors that included Chemonics International and the subcontractors Tropical Research and Development (TRD), Conservation International (CI) and Wildlife Conservation Society (WCS). BOLFOR's goals were to reduce the degradation of forest, soil, and water resources and to protect the biodiversity of Bolivia's forests; its purpose was to build Bolivian public and private sector capacity to develop and support sustainable forest use programs.

In 1994, BOLFOR Project hired Richard Donovan as a consultant to develop strategic options for initiating voluntary forest certification in Bolivia. Donovan recommended that BOLFOR promote the certification process under the FSC scheme. On October 11^{th} of the same year, BOLFOR organized a broad national workshop to discuss the need for a forest certification process. Sixty-five people attended the meeting, representing the different interests, including government, timber industry, environmentalists, NGOs, indigenous groups, and academics; all agreed to support a national initiative under the FSC system. A working group was immediately formed. The next year the CFV was legally established as an NGO, and began focusing its attention on promoting certification and developing standards.[1] Today, many of the CFV founding members actively participate in the national and international FSC dialogue.

[1] For a full review of the CFV process see Jack (1999a, 1999b).

It is interesting that, while the national government promoted certification, it never attempted to interfere with or control the process. It was clear to government officials from the beginning that forest certification was a voluntary process, the success of which depended on its transparency, credibility, and independence from the government sphere. BOLFOR's officers were responsible for clarifying the government's role in certification to high-level government officials and for communicating the objectives and benefits of certification, all of which were easily understood.

At the onset of certification, however, it was necessary to address a lack of interest among the industrial forest companies led by the CFB (*Camara Forestal de Bolivia* or Bolivian Forestry Chamber), which saw certification as a maneuver of NGOs, ecologists, and northern conservationists and a roadblock to their commercial interests. Despite industry concerns, however, the certification process continued its course in Bolivia along with the international process, which convinced some markets to give preference to certified products.

Although the timber industry did not initially trust certification, it did not boycott the effort. Time passed and as the benefits of certification became apparent – specifically that it was not a "trap" and that it was a feasible goal that did not require tremendous effort – more firms engaged in the process, including the CFB itself. By this point, all doors were open to certification, a phenomenon that led Bolivia to become, today, the world's first country with certified tropical natural forests.

The CFV follows a similar structure to that of the FSC: it has a board of directors that represents the three chambers (environmental, social and economic) and a diverse member group that represents different interests. CFV was endorsed by FSC in January 1998 as a national initiative. In general, it successfully raised significant funds; the main donors were BOLFOR I (Chemonics/USAID), BOLFOR II (TNC/USAID), the McArthur Foundation, the Alton Jones Foundation, WWF, FSC, and GTZ. The objectives of the CFV are to:

- guarantee the credibility of the voluntary forest certification process;
- enforce the application of forest certification principles;
- act on conflict resolution and interpret certification rules;
- promote forest certification at the national and international levels; and
- link the national and international certification efforts and initiatives.

CFV was the first FSC national initiative in Latin America. This brought about advantages as well as disadvantages. International attention throughout CFV's development allowed it to obtain financial support relatively easily; however, FSC's lack of experience in dealing with national initiatives and standards development translated into inadequate guidance and slower development.

It is clear that the 1990s witnessed a high internal and external interest in forest certification. It is tempting to attribute it to Bolivia's new Forestry Law, but the process started several years before the law's promulgation. The real interest was actually in sustainable forest management, which was probably cultivated by the wide, participatory, national discussion about a new forestry law that started in 1992. The public wanted better use and management of the natural forests and this probably attracted international cooperation. Certification itself resulted from this effort to improve forest management practices.

Institutional Design

One of the immediate tasks of the CFV was the development of Bolivia's national forest certification standards. Technical committees were created by CFV to develop national standards for forest management and, later, a separate standard for Brazil nuts. Both committees consisted of experts and represented social, economic, and environmental interests.

Most likely it was the participative process for developing the national standards that attracted the attention of many stakeholders, who viewed the process as an open, balanced and transparent forum within which to discuss forest issues. Such a forum is difficult to find in the private, NGO, or governmental spheres.

For the first time, many interests – some of which were opposed – came to the same table to openly and respectfully discuss forest management concerns with the clear aim of reaching a consensus. As a result, the approved standards were fully accepted by stakeholders and were effectively implemented in the field. Another factor that sped the certification process was the number of educational courses on certification and chain-of-custody, as well as a series of workshops directed by CFV and SmartWood that promoted certification among forest companies, the communities, and foresters.

Standards

The technical committee for standards development was established in December 1994 and was composed of 12 well known, respected individuals from the environmental, social and economic chambers. At this time the CFB was not supportive of the certification process; it refused to collaborate with the technical committee but did not try to keep its members from doing so.

Four key principles were identified to guide the creation of the Bolivian standard: the principle of *legality* of operations, the principle of *gradualism* in achieving sustainable forest management, the principle of the *precautionary approach*, and the principle of the use of the *best available technology* (CFV 2000a).

The only true controversial issue was related to rights of indigenous groups, forest workers, and concessionaries. In the end, agreements were reached. The success of the process was assured by the group's flexibility. Individual players were not seeking personal gain but, rather, supported the certification initiative (Jack 1999b). According to Nittler and Cordero (1995), the main debate in the standards working group developed around the following questions:

- Should the standards "impose" or "promote" forest management?
- How detailed should the standards be, and when and how may the certifiers use their own criteria during assessments?
- How should land tenure and community rights be dealt with?

The standards-setting process can essentially be characterized as follows: (a) the technical committee prepared several drafts; (b) the drafts were widely distributed among national and regional stakeholders; (c) the technical committee considered the stakeholders' recommendations and prepared a new draft which was again distributed among the stakeholders; (d) more drafts were prepared by the technical committee and finally submitted to the CFV Board of Directors; and finally (e) the CFV Board of Directors approved the final version and submitted it to FSC for its endorsement. The consultation process involved a series of workshops and consultations among approximately 450 stakeholders and ended with a field test. The standards were finally endorsed by the FSC in January of 1999.[2]

CFV's and FSC's lack of experience in national standards development delayed the process since no guidelines were available. For example, the working group developed indicators without correlating them to the FSC P&C. A reorganization of the indicators was done at FSC`s request. Additionally, at the beginning of the process,

[2] For a full review of the standards process see Jack (1999a, 1999b).

the indicators were so specific that they appeared to be management prescriptions that were not flexible enough to allow maneuvering by certifiers or forest managers. This approach was seriously criticized by reviewers and later corrected. Jack (1999a) summarizes the factors that led to a consensus during the standards development in the working group:

- a neutral facilitator, who created a comfortable atmosphere;
- the existence of FSC P&C, which clarified what could be done and what could not, i.e. it delineated the arena for the players;
- the participation of scientists, immune to potential vested interests;
- the fact that BOLFOR and CFV provided a neutral environment for participants;
- the understanding that, ultimately, certification will benefit all;
- minimal confrontation because of professionalism among the participants; and
- participants' striving to understand their colleague's point of view.

The implementation of the Bolivian FSC standard was relatively easy for forest management operators who followed their forest management plan approved by the Forest Service (Jimmy Rojas, Industria Maderera Pando, 2004, personal communication). According to the general manager of La Chonta Concession, "Certification is not difficult to reach if managers fulfill the new Forestry Law and its norms" (Antelo 2000). The main difference between the Bolivian Forestry Law and FSC Standards is the social/labor component, which is not included in government regulations and is likely the reason that social NGOs became very interested in certification in the beginning. Some other key requirements of the certification standard and possible conflicts with governmental norms included wildlife protection, forest damage reduction, road construction planning and maintenance, conflict management, forest protection, training, waste management, and accounting/administration.

One issue that remains unsolved is FSC Principle 9 regarding High Conservation Value Forests (HCVF), which apparently will require much effort from managers to identify and manage. The first attempt to deal with this issue was a study by Rumiz *et al.* (2001), which proposed indicators for the national certification standard. The study recognized the complexity of Principle 9, particularly that it might cause positive and negative effects on certification in Bolivia. The implications were: (a) higher management and certification costs; (b) the dilemma between strict protection and forest management; (c) the need for social research, local consultation, and land claims; and (d) the identification of biological and social HCVF attributes. Based on this report and further discussions, the CFV proposed a set of indicators to the FSC. Today CFV is currently implementing another study financed by Dutch foundations that aims at identifying HCVFs and their attributes.

In general, certification standards have directly and indirectly helped to solve or reduce several problems, including illegal logging in certified forest management units, hunting, markets, lack of forestry sector credibility, and social conflicts. Alarmingly, however, illegal logging continues across the forestlands. Rates of illegal harvesting and deforestation are probably increasing, as are limitations on the Forest Service's and municipalities' control over illegal logging. The following factors seems to be associated with illegal forest activities (Pacheco 2003):

- high costs of sustainable forest management relative to illegal logging;
- unrealistic forest and land use regulations;
- unclear land tenure;
- insufficient support to local forest users;
- financial difficulties of the Forest Service;
- little governance by municipalities.

After five years of implementation, the Bolivian standard was reviewed, adjusted and harmonized by the CFV Board of Directors in 2004.

THE REACTION TO CERTIFICATION

Forest Policy Community and Stakeholders

At the beginning, certification was generally supported by most stakeholders, except by the timber industry, which initially did not trust the process. A few timber companies, such as La Chonta and CIMAL/IMR, became interested in the new niche for certified timber products within the international market and decided to certify their operations and explore the new market opportunity. This choice was a complete success for them. Tarumá was another leading firm in certification, but later lost its certificate. Other firms opposed certification and advocated against the new Forestry Law. This attitude still exists in some parts of the forestry sector, but most companies do not oppose certification openly.

I worked in 1997 for the recently established Forest Service and witnessed a dramatic change in one of the largest companies and its attitude toward certification. One day the chief forester of the company visited me and asked me to replace the management plan he had submitted to the Forest Service a few weeks earlier with an updated version. Since the plan was also a legal document and already under revision, it was not easy to replace. However, his argument was very convincing: the company had contacted a client in the United Kingdom, who offered to buy all of the company's garden furniture production – but only if the product was certified. Within six months, this company transformed its traditional harvesting scheme to a very efficient one and was later certified by FSC. The company had only been missing the market signal; its local capacity was ready to respond. Examples like this were enough to stimulate the interest of the forest industry in certification. Later, most forest companies became the best allies of certification and the CFB adopted certification as an institutional policy. Today, 20 percent of the area under forest management in Bolivia is certified and a similar proportion is expected to be certified within the next two years.

Doubts about the forest certification process also existed outside the forest industry sector; some stakeholders from civil society suspected that certification was a Northern plan to control the world's rainforests. However, when Bolivia's logging companies adopted certification, most doubts disappeared. The national government affirmed its commitment to certification since it improved its image both inside and outside the country.

Community forests and indigenous people were also interested in certification, although the process is clearly dominated by industrial forest companies. In terms of forest management capacity and political influence, the community sector is the weakest in the certification process and timber companies the strongest. Since certification is closely related to the export of forest products, benefits are not evident for communities.

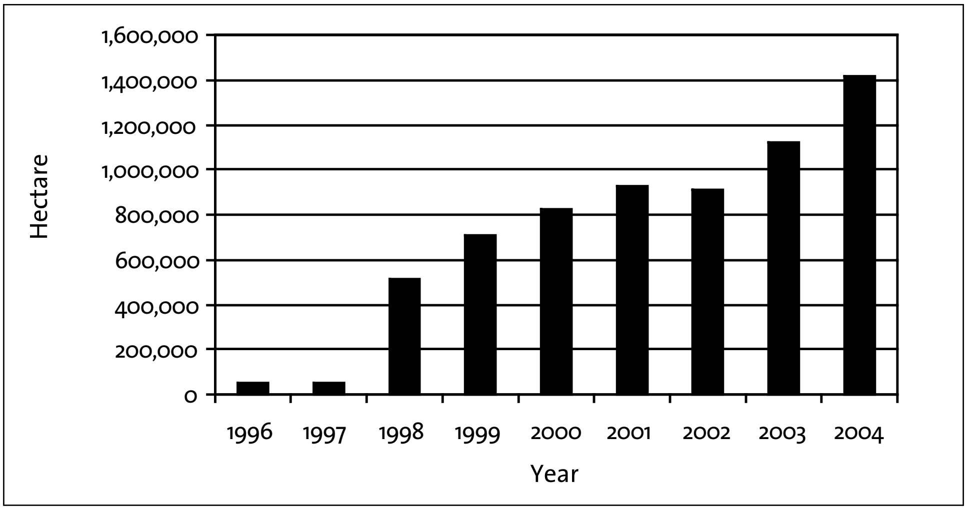
Along with other efforts to promote community participation in certification, the Green Label Project was implemented by SNV and *Confederación de Pueblos Indigenas del Oriente Boliviano* (CIDOB, or Confederation of Indigenous People of Eastern Bolivia), and financed by the Netherlands; the project's second phase was carried out by HIVOS (Semo 1999). The Green Label Project worked in coordination with the national certification process and had representatives at CFV and the standards technical committee. Despite its efforts, the Green Label Project was not able to add community-based initiatives to the group of certified producers; however, it was able to educate communities about the benefits of certification and forest management.

Similarly, since 1999, WWF-Bolivia has managed a fund supported by Sweden to finance technical assistance and certification for community-based forest operations in Latin America (Pierront 1999).

Current Status of Forestland Certification

Forest certification in Bolivia has grown quickly since 1998 (Figure 3). The country currently has 13 certified forest operations, totaling 1,414,083 hectares (Table 5) and 17 chain-of-custody operations (Table 6). Three forest management operations are currently involved in the certification process (Table 7), all through SmartWood. Two operations have lost their certificates and one has been temporally suspended. No Brazil nut management operation has yet been certified.

Figure 3 Growth of certification in Bolivia



Source: Based on data provided by SmartWood South America

Table 5 Certified forest management operations in Bolivia (as of July 2004)

Firm	Type of Right	Location	Area (ha)
Aserradero San Martín Concesión Cinma San Martín	Concession	Santa Cruz	119,200
Aserradero San Martín S.R.L. Concesión Cinma Pando	Concession	Santa Cruz	166,228
CIMAL/IMR Ltda.. Concesión Guarayos	Concession	Santa Cruz	181,750
CIMAL/IMR Ltda.. Concesión Marabol	Concession	Santa Cruz	75,500
CIMAL/IMR Ltda.. Concesión Velasco	Concession	Santa Cruz	154,494
Empresa Agroindustrial La Chonta Ltda. Concesión La Chonta	Concession	Santa Cruz	100,000
Empresa Agroindustrial La Chonta Ltda. Concesión Lago Rey	Concession	Santa Cruz	120,000
Indusmar S.R.L. Concesión Selva Negra	Concession	Cochabamba	67,402
Industria Maderera Pando S.A. (IMAPA)	Concession	Pando	38,000
INPA Parket S.R.L. – Propiedad Amazonic	Private	Santa Cruz	29,952
Sagusa Pando S.R.L. (Concesión Sagusa Pando)	Concession	Pando	66,060
Industria Forestal Cachuela S.A. (INFORCASA)	Concession	Pando	244,107
Territorio Comunitario de Origen – Yuqui	Community	Cochabamba	51,390
Total			1,414,083

Source: SmartWood 2004

Table 6 Chain-of-custody certified firms in Bolivia (as of April 2004)

Firm	Place
Bolivian Forest Saver S.R.L.	Santa Cruz
Carpintería Don Fernando S.R.L.	Santa Cruz
CIMAL/IMR Ltda. División Industrial	Santa Cruz
CIMAL/IMR Ltda. División Muebles	Santa Cruz
Empresa Agroindustrial La Chonta Ltda.	Santa Cruz
Forestal Agroindustrial Pacahuaras S.A.	Beni
INPA PARKET LTDA	Santa Cruz
Jolyka Bolivia S.R.L.	Cochabamba
Maderera Boliviana Etienne S.A. (MABET S.A.)	La Paz
Martínez Ultra Tech Doors Ltda.	Cochabamba
Sociedad Boliviana Maderera S.R.L. (SOBOLMA)	Santa Cruz
Taller Artesanal Bolivia	Santa Cruz
Taller Artesanal Hermanos Guasase	Santa Cruz
Tecnocarpinteria Amazonas S.R.L.	Santa Cruz
Tecnocarpinteria San Pedro S.R.L.	Santa Cruz
United Furniture Industries Bolivia S.A.	La Paz
MEDEX SRL.	Cochabamba

Source: SmartWood South America

Table 7 Bolivian forest management operations in certification process (by April 2004)

Firm	Type of Right	Location	Area (ha)
Aserradero San Pedro S.R.L.	Concession	Santa Cruz	17,000
Cimagro Pando S.R.L.	Concession	Pando	365,122
Complejo Industrial Maderero San José Ltda. (Concesión San José)	Concession	La Paz	60,000
Total			442,122

Source: Data provided by SmartWood South America

As shown in Table 5, there is only one certified community-based operation in Bolivia. Despite the nation's certification achievement, it is clear that community certification initiatives need to be improved or certified markets may be monopolized by big firms, and *equity* – one of the fundamental goals of FSC – will be jeopardized (Nebel *et al.* 2002).

Certification is concentrated in the largest, most capable and best-organized forest companies, which have used their capacities to benefit from certification. Three firms manage 65 percent of the certified area in Bolivia. The question is: how can small producers and community-based initiatives, with little capacity for forest management, be certified?

The concentration of certification in large forest firms in Latin America has already been pointed out by Markopoulos (2002), who claims that "*only the largest and most advanced enterprises will have the necessary financial resources, business experience and market linkages to exploit certification benefits*," and presents the following general shortcomings of certification vis-à-vis community forestry:

- Generic drawbacks of business intensification/reorientation;
- High cost of certification;
- Inaccessibility of green markets;
- Standards and procedures limitations;
- Unclear linkages between standards development and public policy processes.

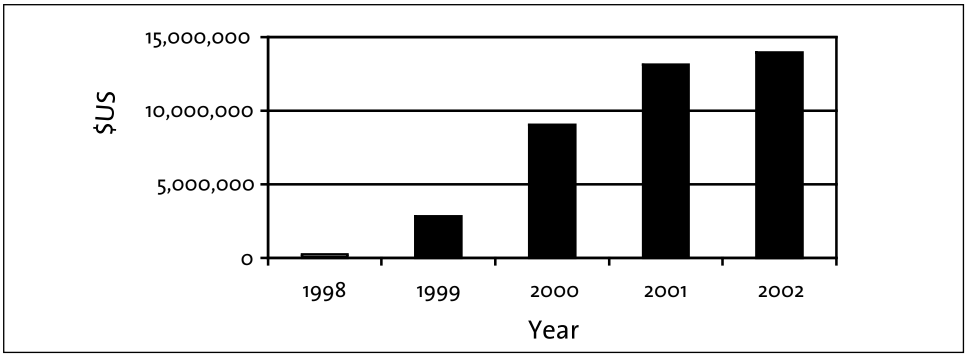
Similarly, Van Dam (2002) expresses his concern regarding certification's benefits to communities; he claims that forest certification has benefited the richest countries, the biggest enterprises, and the temperate and boreal forests. This argument is supported by the lack of a fair trade market for community forestry, the high concentration of certified area in the Northern countries, and the dominance in the South of large forest companies that have the resources to pay certification assessments and have experience with forest management and commercialization. In addition, Van Dam argues that large timber companies do not really promote sustainable local development and this is why an additional FSC Principle should be added regarding the role of large timber companies in local community development. However, the exact role of timber companies in local social development is open to question.

Current Status of the Certified Marketplace

Since Bolivia's timber industry is vertically integrated, most companies process their own raw materials. The supply of certified products is not sufficient to meet buyers' demands. Industries without certified forests are forced to mix 70 percent certified wood and 30 percent non-certified wood, as allowed by FSC (Jorge Vrsalovich, Jolyka, 2004, personal communication). Others with forest concessions seek additional certified supplies because their international buyers demand more than they can produce in their own forests (Alberto Arce, CIMAL/IMR Company, personal communication).

Within the last five years, the Bolivian economy has been affected by a general crisis and the timber industry has not been excepted. However, it has become clear that certified companies were better able to deal with the crisis than non-certified companies by maintaining or creating new markets and by improving their internal administrative and management systems (Pablo Antelo, La Chonta, personal communication). These certified firms showed others that sustainable forest management was possible, and even profitable, during a crisis. While timber exports have declined in the past few years, sales of certified products have increased each year (Figure 4).

Figure 4 Bolivian annual exports of certified products



Source: CFB 2003

EFFECTS OF CERTIFICATION

Forest certification was implemented to promote sustainable forest management and to serve as an incentive for the forest industry and social stakeholders. In many ways, certification has succeeded, and has helped solve or at least minimize many problems by promoting the implementation of real sustainable forest management in the field. As a result:

- Certified companies exert more control over their concessions and illegal logging is controlled, at least within the certified forest management unit. However, according to Nebel *et al.* (2003), forest certification is expected to have little impact on reducing deforestation outside forest management units.
- Less oversight is needed by the Forest Service for certified timber companies, since certifiers systematically verify the field management activities of forest managers and operators.
- Rare species and wildlife are better protected. Hunting is not allowed on certified forestlands, except in justified cases in relation to indigenous people.
- Sustainable forest management practices have been improved, although some local ecologists and silviculturalists now demand further progress toward sustainability through the adoption of various silvicultural practices (Fredericksen *et al.* 2003).
- Certified companies now have improved access to international markets, and more lesser-known species are being introduced into the marketplace.
- Credibility has increased, at least for certified companies (Nebel *et al.* 2003). In general, the forestry sector has a better reputation than it did 10 years ago.

- Better communication among timber companies and social stakeholders has developed, and social conflicts in the field have decreased.
- The group that has received the fewest benefits from the establishment of certification in Bolivia is community forest operations.

Power

At the national level, the best impact of certification was to improve the image of the forestry sector in general and of the forest industry in particular. Certification ensured that timber harvesting is done in a proper way, thereby satisfying a wide range of stakeholders. Previous critics of logging companies and forest certification are now defenders of those they once attacked. These critics included foresters and environmentalists who demanded sustainable forest management practices from logging companies. Since many foresters worked for logging companies, they frequently engaged in fierce debates.

Once sustainable practices were achieved by several timber companies, there was no longer a reason to attack loggers; instead, they needed support in order to keep the system working. Although it is probable that not all forest management plans are well implemented, the public expects that the Forest Service will supervise timber companies and, ultimately, enforce sustainable forest management.

Gradually, the forest sector was heard at the political level, not only because of its economic power but also because of its new achievement in forest management. With acknowledged credibility, certified operations received more attention from the national government, NGOs, and the international community. Banks are more willing to give loans to certified firms. Today the CFB manages a fund to finance certification, supported by the Swedish International Development Agency (SIDA). The goal of the fund is to raise US$250,000 in order to finance 100 percent of the scoping (preliminary assessment) and 50 percent of the full assessment of any forest management operation affiliated with the CFB. It has a board of directors consisting of three members from the CFB and one from CFV (CFV 2003a). In essence, Bolivia's timber industry gained credibility through forest certification and became more pro-management. It is not clear whether certification has affected the balance of power among industry, community and indigenous groups, except where the timber industry has consolidated its own green markets.

All actors, including government, NGOs, foresters, and forest companies, are proud of the national certification achievement. In 2002 the CFB received the prize "Gift to the Earth" given by WWF, which internationalized recognition of Bolivia's achievement in forest certification. The national government, recognizing the importance of sustainable forest management, has sanctioned a decree ordering all public construction works to use only timber from sustainably managed sources.

Social

Community-based forest management is more complex than that carried out by logging companies because of the need to address multiple objectives, including social and economic issues relating to the people settled on managed lands. A workshop on community forest management and the mechanisms of social participation in certification (CFV and CIEC 1997) ranked the degree of limitation (*high, low* and *no limitation*) for 14 initiatives against five possible constraints. The highest ranked constraints were lack of capital, tenure, and commercialization.

The community forest sector has not received benefits from forest certification as expected. In an attempt to solve this problem, several workshops have been held, but in all cases the answer was not the lack of funding to pay for certification, but a lack of forest management to certify.

Recognizing this weakness, several projects and organizations aim to support community-based operations, such as BOLFOR II, the FOMABO Project (financed by Danida), FTPP, and CFV. In 1999 a workshop was held to identify the opportunities and limitations of community-based forest management (CFV 2000b). The workshop concluded that efforts to improve community operations' capacity for forest management and access to certification should focus on providing them with information about forest management and certification, technical assistance, training, financing, and capacity-building for commercial production.

For the indigenous sector, there are two main incentives for certifying forest operations: access to better markets for their products and recognition of land claims by improving their public image. This is particularly true for the case of Lomerío (McDaniel 2004, Markopoulos 2002), in which land ownership consolidation has been the greatest certification benefit. Lomerio is an indigenous operation that was certified in 1996, making it the first certified operation in Bolivia. The operation lost its certificate five years later when its contract with the certifier ended and the operation could not satisfy the pre-conditions for its second certification assessment despite the attractive potential financial returns (Hanrahan and Grimes 1997). Lomerio's management problems became evident in 1999, when the Central Intercomunal of Lomerío (CICOL) decided to close its sawmill due to accounting and management problems. There were problems related to land conflicts with the ASL AMAISAN, community participation problems in decision-making; sales and benefits distribution (McDaniel 2004), lack of explicit community long-term commitment to sustainable forest management, and need for improvements in some aspects of financial and technical forest management.

Today, only one community-based plan holds a certificate: the Yuqui operation (51,390 hectares), certified in 2004, which received strong external support from BOLFOR and Centro Técnico Forestal-CETEFOR (Forestry Technical Center). WWF-Bolivia financed the cost of certification.

At the local level, within the certified forest industry, working conditions have improved.[3] Workers have better housing infrastructure, food, job security, training, and social benefits. In general, their rights are more respected than those of workers in non-

[3] Personal observation.

certified land units. In addition, better communication exists between timber companies and local communities. Social conflicts between certified areas and local communities have been minimized or solved,[4] and certification has facilitated dialogue among stakeholders. This includes improved rights of local communities to access timber and non-timber products for domestic uses, and reduced community illegal logging on certified operations, although more research is needed to assess these claims. For the timber industry, social issues are probably the most sensitive. Antelo (2000) mentions that this issue must be addressed with caution, but asserts that in the long term agreements between industry and communities will favor management operations.

[4] Personal observation.

Economic

The main markets for certified products are the UK, the U.S., Germany, the Netherlands, and Sweden. About 85 percent of products exported from Bolivia are destined for the UK or the U.S. In 1998, certified product exports totaled only US$0.18 million, but the figures increased to US$14 million in 2003. This trend contrasts with exports of non-certified timber products, which in 1998 totaled US$120 million and decreased to US$85 million in 2003 (CFB 2003). According to Sandoval (1999), the main benefit of certified operations was access to new markets, not better prices, but Nebel *et al.* (2003) claim that the average price premium was between 5 and 51 percent.

There is clearly a positive perception of companies that export certified products, with respect to certification. Fuertes (2000) reports an opinion poll of 43 exporting forest companies: 94.6 percent considered certification to be beneficial, 91.9 percent indicated that certification guaranteed fair pay and social benefits, 89.2 percent indicated that certification optimized company's operations, 86.5 percent considered that certification increases management costs, 75.7 percent concluded that there was a similarity between certification and the Forest Law, and 72.2 percent indicated that it improves labor conditions.

Environmental

It is difficult to discuss certification without addressing forest management, since the first is a consequence of the second. Within the last 10 years the Bolivian forestry sector has worked toward developing and implementing the basic requirements of sustainable forest management – essentially, the clarification of stakeholders' rights, field management planning, and on a lesser level, ecology and silviculture. Most achievements have been in facilitating stakeholder access to forestlands, eliminating an overlap of stakeholders rights, developing management norms, implementing annual cutting volumes and area for harvesting, creating census and harvesting maps, as well as focusing on marking seed trees and harvest trees, road construction and logging planning, and wildlife and riparian zones protection.[5]

[5] Personal observation.

The contribution of certification can be seen in the field: improved attitudes and more consistent management practices, compliance with governmental regulations, reductions in supervision costs for the Forest Service, and better relationships between timber companies and local communities (Olvis Camacho, Technical

Superintendent at the Forest Service, personal communication). High value conservation forest management is in its beginnings. Despite the fact that environmental benefits from certification appear obvious, they need to be empirically tested in the field. To what extent is certified forest management sustainable? What is missing?

CONCLUSION

Summary

Certification does not exist without forest management. In Bolivia, certification emerged when a series of events occurred that together promoted sustainable forest management: (a) several organizations decided to support forest management; (b) the new Forestry Law and its norms were promulgated; (c) a new and more efficient forest service (the Forest Service) was established; (d) and local capacity was developed for forest management and certification practices.

There is no doubt that certification has brought local benefits that are not related to markets or prices and that international market interest has reinforced certification. However, the lack of clarity about price premiums and the demands of international markets create uncertainty among stakeholders. At the national level, as suggested by Boscolo and Vargas (2001), certified operations should be given more incentives and the government should develop a stronger policy to provide certification benefits domestically.

The main impact of forest certification has been to make forest companies interested in better forest management, although some observers assert that it is time to increase the quality of field management operations. Effective monitoring of natural regeneration responses to harvesting and the implementation of silvicultural practices have been most unattended to.

Although conditions of forest workers in the field and the relationship between loggers and communities have improved, it is necessary to better incorporate community-based management plans in the certification system. Otherwise, the concept of *equity* will be jeopardized and larger timber companies will monopolize forest certification, including the market and a number of certification benefits.

The incorporation of communities is not an easy task, however. A workshop held in Santa Cruz, Bolivia, in June 2003 attempted to identify a strategy for community forest certification (CFV 2003b) and detailed a series of certification problems that seemed to prevent community certification, but failed to identify the main constraint, namely, the difficulty in implementing forest management plans. It is not enough to have funds for their assessments, to lower the standards (although adaptation to specific community/indigenous characteristics may be needed), or to create specific markets for communities. This is currently not the biggest problem in Bolivia; direct costs of certification in Bolivia are low compared to other countries in Central America (Sandoval 1999), and funds for assessments are available (at least for now), especially those managed by CFB and WWF. The real need is to create or support local conditions to implement forest management plans. To do this, it is necessary to strengthen local forest management capacities (access to capital, and training in forest management, wood processing, and business management). However, this is a field that certification does not deal with. Social scientists, economists, and foresters should seek alternatives, which may include direct or indirect technical assistance for forest management and capacity building. Simultaneously, the FSC SLIMF strategy should keep working to make sure that certification does not contain barriers for community certification but, on the contrary, promotes it.

Roadblocks and Challenges

Certification in Bolivia faced some obstacles, but not many. The primary obstacle was opposition from industrial forest companies, which did not trust certification and perceived it as a "trap." For example, when the CFV and the Forest Management Trust once organized a meeting among Bolivian forest producers and international certified timber product buyers, the CFB refused to participate. The CFB systematically refused to participate in certification activities, but the approach of the working group was not to confront the CFB; rather, it worked with those companies interested in certification. When it was clear that certification was an effective tool for facilitating access to preferential markets and improving internal company administration systems and public credibility, the CFB adopted certification as an institutional policy.

As noted above, much attention needs to be directed to community forestry. The main limitations for community-based forest management according to CFV (2000b) are:

- Lack of experience in intensive forest management for commercial goals;
- Lack of technology, capital and organizational structure for production, processing, and wood products commercialization;
- The cost of certification and the implementation of standards;
- Lower product quality and harvest volumes than demanded on international markets;
- Low negotiation capacity when developing alliances with private companies.

Another challenge in the certification process was the lack of experience in Bolivia with certification and field forest management. The CFV was the first national initiative in the South, and, without a prototype, the working group learned by experience. It took years to write and submit the national standards to FSC for endorsement. In addition, although environmentalists and foresters usually belonged to the same chamber, they did not always agree on management issues, since they were both learning about real forest management and its impacts. Despite these challenges, the CFV standard was the first endorsed by FSC for the tropics.

Future Development

Over the past 10 years, Bolivia has experienced significant developments in forest management and forest certification, which I identify as Phase I. Now it is necessary to start Phase II of management, which is the inclusion of real monitoring of natural regeneration and responses to harvesting, and the implementation of silvicultural practices to assure that forest management is truly environmentally sustainable. Here, certifiers have a role in asking for continual improvement of forestry practices.

Future Research

HCVF management is expected to be a bottleneck for Bolivian certification. Research to identify HCVF attributes and applicable management methods will be necessary, which may be beyond the managers' capacity. If management becomes too expensive, too complicated, or scientist-dependent, it will be impracticable and no longer be an interesting option. Basic research should be funded and carried out by the Bolivian government, NGOs, and the international community.

Supporters of forest certification should continue to promote the use of certified products in the international market, identify fair markets, and advocate for better prices. In addition, domestic markets should also be developed, as otherwise certification market benefits will be a privilege only for exporters. Finally, the North-South balance in all approaches and negotiations is a requirement if stakeholders want certification to work in the long term in all corners of the Earth.

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LIST OF ORGANIZATIONS CONSULTED

Name	Organization
Mr. Alberto Arce	CIMAL/IMR Forest Concession
Mr. Henry Moreno	Bolivian Council for Voluntary Forest Certification
Mr. Pablo Antelo	Bolivian Forestry Chamber
Ms. Ruth Silva	WWF-Bolivia
Ms. Katherine Pierront	SmartWood
Mr. Rolyn Medina	SmartWood
Mr. Olvis Camacho	Forest Service
Mr. Thelmo Muñoz	Forest Service
Mr. Rudy Guzmán	CADEFOR
Mr. Roberto Quevedo	BOLFOR II

ACRONYMS

APCOP *Apoyo para el Campesino del Oriente Boliviano* (Support for the Peasants-Indigenous People of the Eastern Bolivia)
ASEO *Asociación Ecológica del Oriente* (Eastern Ecological Association)
ASL *Asociaciones Sociales del Lugar* (Local Social Associations)
BID *Banco Interamericano de Desarrollo* (Interamerican Development Bank)
CADEFOR *Centro Amazónico de Desarrollo Forestal* (Amazonian Center for Forest Development
CETEFOR *Centro Técnico Forestal* (Forestry Technical Center)
CFB *Camara Forestal de Bolivia* (Bolivian Forestry Chamber).
CFV *Consejo Boliviano para la Certificación Forestal Voluntaria* (Bolivian Council for Voluntary Forest Certification)
CI Conservation International
CIAT *Centro de Investigación Agrícola Tropical* (Tropical Center for Agricultural Research)
CICOL *Central Intercomunal de Comunidades Originarias de Lomeríos* (Central Intercomunal of Lomerío)
CIDOB *Confederación de Pueblos Indigenas del Oriente Boliviano* (Confederation of Indigenous People of Eastern Bolivia)
CIFOR Center for International Forestry Research
CIMAR *Centro de Investigación y Manejo de Recursos Naturales* (Center for Research and Natural Resources
DANIDA Danish International Development Agency

FAO	Food and Agriculture Organization of the United Nations
FSC	Forest Stewardship Council
FTPP	Forest Trees and People Program
GTZ	*Gesellschaft für Technische Zusammenarbeit*/German Organization for Technical Cooperation
HCVF	High Conservation Value Forests
HIVOS	Humanistic Cooperation for Development Cooperation
ITTO	International Tropical Timber Organization
MHNNKM	*Museo de Historia Natural Noel Kempff Mercado* (Noel Kempff Mercado Natural History Museum)
NGOs	Non-governmental organizations
PANFOR	*Pando Forestal* (Pando Forestry)
SENMA	*Secretaría Nacional del Medio Ambiente* (National Secretariat for the Environment)
SIDA	Swedish International Development Agency
SLIMF	Small and Low Intensity Managed Forests
SNV	Netherlands Development Organization
TCA	*Tratado de Cooperación Amazónica* (Amazon Cooperation Treaty)
TCO	*Tierras Comunitarias de Origen* (Originally Community Lands)
TNC	The Nature Conservancy
TRD	Tropical Research and Development
USAID	US Agency for International Development
WCS	Wildlife Conservation Society
WWF	World Wide Fund for Nature