Certification of community-based forest enterprises (CFEs): limits of the Brazilian experiences

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ABSTRACT:

The Brazilian Amazon is one of the world's largest tropical forests. It supplies more than 80 % of Brazil's timber production and makes this nation the second largest producer of tropical wood. The forestry sector is of major importance in terms of economic production and employment creation. However, the Brazilian Amazon is also known for its high deforestation rate and for its rather unsustainably managed timber resources, a fact which puts in the balance the long-term future of the forestry sector in the region. Since the mid-1990s, with strong support from World Wildlife Fund (WWF), the number of tropical forests certified by the Forest Stewardship Council (FSC) has significantly increased. This is especially true for projects sponsored by large scale companies. The number of community-based forest management projects has also increased. Certification of community-based forest enterprises (CFEs) was initially a goal for the sponsors and community members. Certification is viewed as a way to reach alternative timber markets. In Brazil, the state of Acre has the highest concentration of CFEs certified by FSC. Most of them have been implemented with the support of environmental NGOs and public funds. Environmental NGOs strongly defend the advantages of certification for communities; however, in reality, this option is not that advantageous. Despite all the efforts, the number of participants in each project remains low. Why is this occurring? In this paper, we analyze the underlying motives of a few individual's participation in CFEs certification projects. We aim to present and discuss some factors that shape the success of CFEs and their later certification. The results are based on surveys conducted in two certified CFEs in the state of Acre.

RÉSUMÉ:

L'Amazonie Brésilienne, l'un des plus grands massifs forestiers mondiaux, est à l'origine de 80 % de la production de bois du Brésil. Les taux de déforestation élevés (malgré un certain ralentissement ces dernières années) et le rythme d'exploitation peu durable des ressources remettent en cause la pérennité du secteur forestier dans la région. Depuis le début des années 1990, avec le soutien du WWF, le nombre d'entreprises forestières certifiées par le FSC (Forest Stewardship Council) a considérablement augmenté dans le domaine privé. C'est aussi le cas, mais dans une très moindre mesure, de l'exploitation forestière communautaire, en particulier dans l'Etat de l'Acre. Les ONGs défendent de manière générale les multiples avantages de ce type de certification pour les communautés vivant en Amazonie. Pourtant, en dépit des multiples incitations financées à fonds perdus, le taux d'adhésion des communautés locales reste faible. Cet article analyse les facteurs responsables de la faible participation des populations aux projets de certification de l'exploitation communautaire des forêts. L'analyse est basée sur des enquêtes de terrains menées au sein de deux communautés forestières de l'Etat de l'Acre certifiées par le FSC.

Keywords: Brazil, environmental certification, community-based forest management

JEL Classification : Q23, L15

INTRODUCTION

Community-based forest enterprises (CFEs) are considered as an alternative to protect forest and at the same time provide complementary incomes for small landholders (Colchester et al., 2003). The next step is to achieve certification. Since the mid-1990s, the implementation and certification of sustainable forest management has increased thanks to international donors and environmentalists NGOs support. However, certified forests still represent only a very small share of the whole area logged by timber companies. Implementation of CFEs has also increased as well attempts to certify these initiatives. The cases of Mexico and Bolivia are the most famous (Pacheco, 2003; Richards, 1992; Bray et al., 2005, Antinory and Bray, 2005). According to Molnar (2003), communities with forest enterprises have benefited from certification in a number of direct and indirect ways. For instance, they have gained weight in debates regarding forest policies for communities and smallholders and have been legitimized as important stakeholders of the forestry sector. Some have consolidated or established their tenure rights over forests, as in Guatemala's Petén region or in Bolivia. Where tenure rights were already secure, as in Mexico, communities have gained legitimacy as forest managers' vis-à-vis the state and civil environmental movements.

In Brazil, the national networks promoting community forestry have emerged from social movements of indigenous people, rubber tappers and civil society which, since the 1980s, have opposed the central government's and international financial institutions' plans to open up the Amazon to road-building, colonization, logging, mining, building of dams and ranching (Colchester et al., 2003). The state of Acre, located in the Western Amazon, is a pioneer in CFEs and their certification. Until 2005, there were five CFEs certified by FSC (Forest Stewardhip Council) in this State. These projects represent about fifteen thousand hectares. The large number of CFEs can be explained by the fact that the local government strongly supports environmental NGOs´ efforts to promote and finance sustainable forest management. The main, and often sole, product extracted is timber. Non-timber forest products are often neglected mainly because of the lack of significant market opportunities. Despite the strong governmental incentives of the last ten years in favor of certification, the number of participants engaged in certified CFEs remains small. Additionally, the number of participants in some CFEs has decreased. Why is this occurring?

The successful experience with forest certification is shaped by larger problems faced by CFEs. The New Institutional Economics literature and empirical findings have underlined some determinants of the individual decision to join in CFEs (Agrawal and Gibson, 1999; Baland and Platteau, 1996; Ostrom, 1999, 1992a; Schlager and Ostrom, 1992; McKean, 1998; Wade, 1994). Probably, the same determinants also influence commitment within CFE and its certification in the long term. This paper aims to present and discuss some of these determinants. The results are based on the analysis of two certified CFEs in Acre. The Porto-Dias Agro-Extractivist Settlement Project and the Pedro Peixoto Settlement are amongst the older experiences of certified CFEs thanks to the support of the G7 Pilot Program for the Amazon (PPG7 Program), WWF and FSC, mainly. After a brief review of the literature (section 1), the methodology and the sample cases chosen are presented (section 2). Section 3 presents the main factors found to influence participation to CFEs and to their certification. In the final discussion, we will look at the other issues threatening both projects' sustainability (section 4).

1. THE CFES POTENTIAL AND CHALLENGES

The potential significance of CFEs is large when one considers the current worldwide trend toward devolution of forestlands to local communities (White and Martin, 2002). Communities managing forests for timber production appear in some cases to be able to help alleviate poverty, promote economic development, and provide incentives for forest preservation (Wunder, 2001). However, there are also increasing numbers of failed CFEs experiences (Smith, 1996). Researchers agree that their potential has not been realized in many countries due to a lack of clear tenure rights and adverse policy and regulatory environments. Policies and subsidy schemes have generally been designed with large, formal industry in mind; regulatory frameworks in many countries disadvantage CFEs and greatly reduce their potential profitability. Many regulatory frameworks impose slow and costly permit processes and artificial business models. Internal challenges, local social inequities, limited technical and business skills, quality and scale of production, and potential internal

conflicts all require strong social/governance processes and horizontal learning as well as appropriate access to market, information and technical knowledge (Molnar et al., 2007).

The literature on common property explains how individuals and communities may overcome these difficulties, solving the "tragedy of commons", through the establishment of common property resource management regimes. Several authors agree that some individual features enhance the likelihood that collective action will emerge (Ostrom, 1999, 1992a; Schlager and Ostrom, 1992; McKean, 1998; Wade, 1994; Baland and Platteau, 1996; Arnold, 1998). This paper will address two of these features: a) the perception of forest value by the individuals participating in CFEs and b) the perception of property rights security.

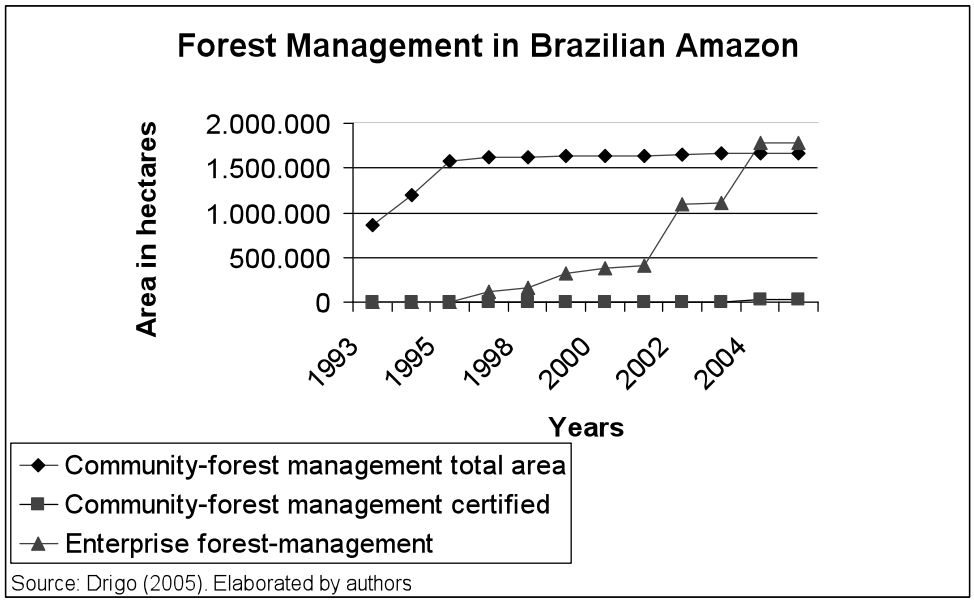
Ostrom (1999, 1992b) underlined the users´ perception of forest value as one factor influencing the decisions of communities living near or inside forests. In Brazil, profits from forest management, mainly from Brazil nuts and rubber tapping, have been, and sometimes still are, an important source of family income. Rubber tappers of Porto Dias Settlement Project often also quote the potential use of medicinal plants and vegetal extracts for cosmetic use. However, as Toni (2004) analyzed, the situation is quite different among rubber tappers' new generation and recently settled farmers, who show a preference for agriculture and cattle ranching.

Finally, the property rights issue (economic and legal) seems to be crucial (Barzel, 1997; Ostrom, 1999). The problem of secure property rights over the resources is of utmost importance in creating incentives for long term investments in forest management. New Institutional Economics literature provides two distinct definitions of property rights. One, primarily developed by Alchian (1965) and Cheung (1969), refers to the ability to exploit a piece of property. The other is basically the right assigned by the state to individuals. Barzel (1997) designates the first one as "economic property rights" and the second one as "legal property rights". In Barzel´s definition, economic property rights refers thus to an individual's right to use a good (or the services related to that good) directly or to use it indirectly through trade. Legal rights play primarily a supporting role. Community-based forest management and its certification process face many challenges with regard to Brazilian laws on forest management. Officially, the Brazilian legislation is rather strict and timber can only be extracted legally from either a privately sponsored or a community-based sustainable forest management project, or, with a deforestation permit which limits deforestation to 20 % of the surface of each rural property. These two types of authorization are normally conceded by the Brazilian Institute for the Environment (IBAMA), the governmental agency responsible for the environment. In practice these laws are not, or are rarely, enforced.

2. METHODOLOGY

As mentioned above, the implementation and certification of sustainable forest management in the Brazilian Amazon has significantly increased since the mid-1990s (figure 1).

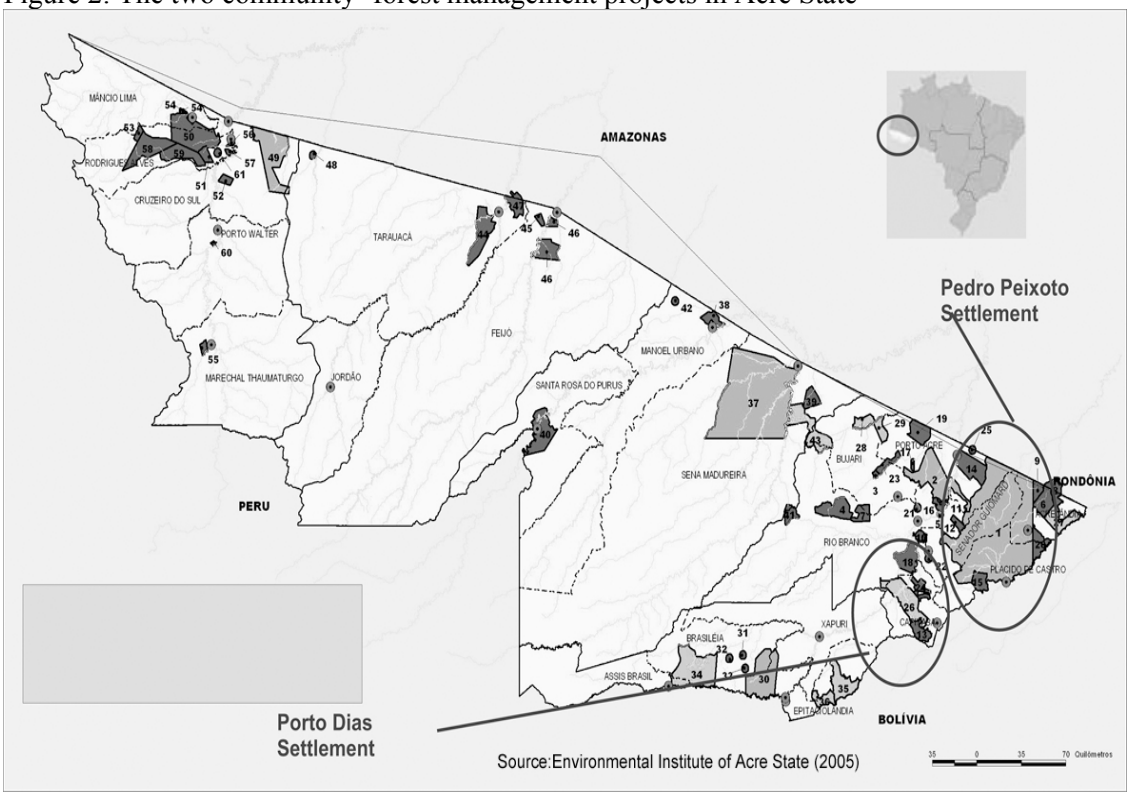
Figure 1: Forest certification projects in the Brazilian Amazon



Source: Drigo (2005). Elaborated by authors

This paper focuses on two initiatives of community-based forest management in the Brazilian Amazon, more specifically in the state of Acre. The Acre State was chosen because of its pioneer effort in promoting community-based forest management. The oldest experiences are found in this State. The two initiatives selected involve the participation of two different types of individuals. The Porto Dias Agro-Extractivist Settlement project is composed mainly of rubber tappers with their own prior experiences and motivations to manage forest resources. It was also designed to accommodate small farmers. Thus, rubber tappers and small farmers have to live together (see infra). In the case of Pedro Peixoto Agricultural Settlement, sixteen farmers have decided to exploit their legal forest reserves (figure 2).

Figure 2: The two community- forest management projects in Acre State



These small sample cases are not universally representative. Thus, it did not make sense to study them from a quantitative perspective. These two initiatives were chosen because they were pioneers in investing in community-based forest management and certification as well. Using a qualitative approach, the interviews were aimed at collecting data on behavioural patterns among the beneficiaries of the two projects. The interviews were carried out in 2003 and 2005. All the families engaged in the two CFEs were interviewed, including those that have decided not to join to the forest management project. In total, the sample was composed of twenty-four families, including rubber-tappers and small-scale farmers. The NGO members, the forestry engineers, other technicians that worked directly with the community members, the certification body responsible for the certification process and the governmental authorities were also interviewed. The purpose was to rebuild the history of the two projects. The questions were designed to address the expected determinants found in the literature. For instance, regarding the issue of the perception of the forest value, the purpose was to know whether or not resources were an important source of income to the family budget. Previous experience in managing and selling the products of their forest reserve areas (even before the forest management project) was tracked. In addition, their plans to re-invest the profits obtained with forest management (in forestry activities or in other economic activities like agriculture, for instance) were investigated. Trying to capture the influence regarding the individual's perception of property rights security, some hypothetical situations were presented to the interviewees and their reaction was registered. For instance, they were faced with a situation where the forested area was under some

pressure from outsiders. In the sequence, they were asked how much they were willing to spend in monitoring activities. Following qualitative approaches (Miles and Huberman, 1994) the material was transcribed and organized in order to discover patterns in the different answers.

The Porto Dias Agro-Extractivist Settlement Project began in 1989. The settlement covers 22,145 hectares and is located about 80 kilometers from Rio Branco, the capital of the state of Acre. According to official data, eighty three families are living in the settlement. Because it is a "model" settlement, Porto Dias includes two types of families: traditional rubber tappers and landless farmers from several Brazilian regions. Each family occupies around 300 hectares of land. Nobody has private property rights over the land. The area belongs to the federal government and the legal instrument governing property rights is a contract between the rubber tappers association and the National Institute for Colonization and Agrarian Reform (INCRA). Specific rules applying to land and forest use are defined in this contract and can be found in the Porto Dias Settlement Use Plan. This document establishes the rules for sustainable forest management and other economic activities allowed within the settlement. The first attempts of forest management started in 1990. The Project has been supported by the WWF and Amazon Workers' Center (CTA), a local NGO. At the beginning, only six rubber tappers have been involved in forest management for wood production. In subsequent years, participation increased a little, reaching up to 13 participants. At the end of 2005, only 8 members remained. Annual profits from timber extraction are shared between the participants.

Table 1. Main characteristics of the two community-based forest management projects

Main features	Community-based forest management projects	
	Group of the Pedro Peixoto Settlement	Group of the Porto Dias Agro-Extractivist Settlement
Date of the Settlement establishment	1971	1989
Total area (ha) of the Settlement	316.588	22.145
Official number of families settled	3,000	83
Unit production area (ha)	80	300
Property rights regime over land	Owners	User's rights governed by a contract
Property rights regime over forest resources	Permissions to logging and collect others products under a Forest Management Plan	Permissions to extract non-wood forest products under a Utilization Plan. Logging timber depends on Forest Management Plan approved
Beginning of the community-forestry project	1996	1996
Number of the families engaged in community-forestry	16	08
Origin of participants	Small farmers	Rubber tappers
Prior experience with forestry	None	Extractivism of nuts and rubber tapping
Main source of families income	Cattle ranching using "slash and burn" process; coal production	A mix of cattle ranching, using slash and burn process, too and extractivism of rubber and Brazilian nuts
Participants links with another organizations	Rural Workers Syndicates	Rural Workers Syndicates, Rubber Tappers Movement
Forested area per family unit (ha)	40	210
Forest area managed per year	04	10
Volume of timber expected per year	480 m³	1,000 m³
Certification year	2003	2002
Main supporters of the forestry activities and certification	Pilot Program to Protect Tropical Forests – PPG7/ Rainforest Alliance/Ford Foundation/ ITTO	Pilot Program to Protect Tropical Forests – PPG7/ WWF/Rainforest Alliance/Ford Foundation/ITTO

Source: Drigo (2005)

The Pedro Peixoto Agricultural Settlement Project is a "classic" agricultural settlement. Individual properties are much smaller. Each family owns 80 hectares. Private property rights over land are granted when farmers remain on their land for five years. In 1995, the Brazilian Enterprise of Agricultural Research (Embrapa Acre) implemented a pilot project to promote forest management and certification among the Pedro Peixoto settlers.

3. FACTORS INFLUENCING THE DECISION TO JOIN IN CFES AND CERTIFICATION

3.1. Short-term income related motivations

In both cases, an expected increase in income in the short-term motivated the first actors to join to the CFEs and later to join to the forest certification scheme. The expectation of higher profits is mainly based on the fact that the price of certified sawn timber is, on average, US$ 750,00 per m3 for the high value species whereas the price non-certified sawn wood only reaches US$ 321-508 per m3 (Lentini et al., 2005).

According Vasconcelos and Fadell (2005), the Porto Dias rubber tappers gain around US$ 1.780,00 per year. This income comes from the collecting and selling of rubber and Brazilian nuts. Family income from agriculture and cattle ranching is not precisely known but agriculture is mostly for subsistence. The cattle ranching activity is quoted as a secondary income source. As stated by the community itself, when CFEs project and certification started, the rubber tappers were experiencing a significant income drop due to low prices of Brazilian nuts and rubber.

The small farmers of the Pedro Peixoto were in a worst position. They had not tradition in exploring any forest products. Their income was mainly from cattle ranching (calves selling) and they were facing decreasing pasture productivity. Some of these small farmers were completing their income through the production of manioc flour. Some of them were receiving subsidies of the social government programs, as the "Bolsa Familia" program reserved for low income families. According to Saldanha (2003), family incomes vary a lot among settlement projects farmers in Acre State, from US$ 780, 00 to US$ 5.250 per year. The higher values refer to some medium and larger farmers living in the settlement. However, 50% of the farmers are smallholders and high poverty levels are found. In average, the small farmers could accumulate around US$ 3.000 per year according to the president of Pedro Peixoto small farmers association (personal communication).

Truthfully, all the members of these two CFEs projects were expecting to improve their family income. According the business plan prepared by EMBRAPA for Pedro Peixoto Settlement (Silva and Sa, 2005), each small farmer could gain around US$ 3.200 per year. This income could be achieved with a minimal annual productivity of 15 cubic meters per hectare (about three trees per ha) and with the selling of certified sawn wood. The preferential market was, at that time, small and medium furniture firms located in Sao Paulo state. However, the real income has varied a lot among the participants. Some farmers have finally not start exploration. In fact, until 2003, only two farmers had achieved about US$ 880, 00 per year selling sawn timber. Two mains reasons explain this disappointing outcome.

First, the two farmers did not explore 15 cubic meters per hectare, mainly because there was no demand for all the species available. Each farmer has thus explored only one or two trees. Even if the selling contract was intermediated by a NGO and the price of certified timber was negotiated, the small quantity of the timber logged did not provide much additional income. Second, due to insufficient experience in operating the portable sawmill, the sawing productivity was lower than expected (around 30%). Regarding the Porto Dias Project, there were no detailed prospective scenarios made on income potential of forest management. The interviews revealed an income expectation of U$ 200, 00 per month or about U$ 2.500 per year.

Hence, since the beginning of their commitments in CFE, the members knew that it would be necessary to certify their project in order to achieve liability and, consequently, more lucrative markets. However, even if higher possible prices for certified timber and potential additional income are cited as initial motivations, they do not explain alone the decision to join to CFEs and to its certification, as market and market prices uncertainty are significant.

3.2. Forest value perception

Beyond short-term income related motivations, as stressed by Ostrom (1999), the users' perception of forest value can explain the decision to join or not to join the forest management project. They are also important to foreseen long term commitment with CFEs. Two different situations are observed in the case studies.

The traditional rubber tappers in Porto Dias Settlement share a common vision of forest value. This vision has existed since the mid-1980s. Extractive Reserves are a distinctive category of protected areas in Brazil. They have been established to preserve tropical forests and other ecosystems through sustainable use of natural resources by local populations. The concept of Extractive Reserves has originated in the struggles of the rubber tappers to gain legal rights to the lands they traditionally occupied (Keck, 1995). The rubber tappers are forest dwellers who are descendents of migrants brought to Amazon in the late nineteenth century and during the Second World War to extract rubber from trees growing naturally in the Amazon. In the 1970s, the expansion of the agricultural frontier in Amazon region began encroaching on the forests. Although they had been living in their lands for generations, the rubber tappers did not have legal title to these lands, most of which belonged to former rubber estates under the control of rubber barons. With the colonization, these estates were acquired by cattle ranchers who started to evict the rubber tappers and their families in order to establish pasture. In order to resist to this process, the rubber tappers organized peaceful confrontations called empates to stop the clearings. This process led them to develop a proposal that could simultaneously address their claims for land rights and protect the forests (Brown and Rosendo, 2000). These goals became the conceptual basis for Extractive Reserves. Currently, the representatives of rubber tappers know they need to preserve the forest as one source for future income. For instance, during our interviews some of them reported their plans to continue to invest in rubber tapping, but also to invest in other non-timber forest products (fruits, vegetal oils, etc.) for the cosmetic industry.

Table 2. Variation of the factors among the families of the two projects

Pedro Peixoto Settlement Project (small farmers)			Porto Dias Settlement Project (rubber tappers)		
	Factor 1 Forest value perception	Factor2 Perception of the Property-rights over forest resources		Factor1 Forest value perception	Factor2 Perception of the Property-rights over forest resources
FPP1	(+)	(+)	FPD1	(+)	(+)
FPP2	(0)	(0)	FPD2	(+)	(+)
FPP3	(+)	(+)	FPD3	(+)	(+)
FPP4	(+)	(+)	FPD4	(+)	(+)
FPP5	(+)	(+)	FPD5	(-)	(-)
FPP6	(-)	(-)	FPD6	(+)	(+)
FPP7	(0)	(0)	FPD7	(+)	(+)
FPP8	(0)	(+)	FPD8	(0)	(+)
FPP9	(+)	(+)			
FPP10	(-)	(-)			
FPP11	(+)	(0)			
FPP12	(-)	(-)			
FPP13	(+)	(+)			
FPP14	(0)	(0)			
FPP15	(0)	(0)			
FPP16	(+)	(+)			

Legends:
FPP = Family of Pedro Peixoto 1,2,3, etc.
FPD = Family of Porto Dias 1,2,3, etc.
Factors 1 e 2: (+) = positive perception; (-) = negative perception; (0) =

Source: Drigo (2005)

Profits from non-timber forest products, mainly from Brazil nuts and rubber tapping, were still important in the family income as showed above. However, these products were not included in Forest Management Plans yet or in certification scope. The main reason is that there were neither good prices nor markets for these products, even if they were certified. One could observe a common vision of forest value among the older generation of rubber tappers living inside Porto Dias Agro-Extractivist Settlement. However, one did not find the

same perception among rubber tappers' new generation nor among recently arrived settlers, who showed more preference for agriculture and cattle ranching, as in Toni (2004). According to this author, time contributed to attenuate conflict period memories. Opposition to cattle ranching decreased whereas it was seen in the past a strong determinant of rubber tappers fighting to get rights over land and protect their natural resources. The cattle ranching alternative appears not only as a better economic option but also as a way to reach a better position in society. These findings are similar to Colchester et al., 2003. In analyzing community forest enterprises in India, Indonesia and Nepal they have stressed the forest value perception was also diverse among the community-based forest management participants. Some "Indigenous Peoples" in these countries maintain a long historical relationship with a forest, which is currently changing due to accommodations to outsiders and to their own population growth (Colfer and Byron, 2001).

In the Pedro Peixoto Settlement, surely forest is not seen as a valuable asset. Most of the settlers come from the North-eastern or South-eastern regions of Brazil. They traditionally know and prefer to develop agriculture and cattle ranching activities. Amongst them, few people are born in Acre State. Only three families involved in the certified CFE have mentioned Brazilian nuts and rubber as alternative sources of income and they do not extract them regularly. Moreover, historically the settlers consider deforestation as a way to acquire better economic rights over the land. In the next section, this issue will be deepened.

3.3. The property rights security

As mentioned above, Barzel (1997) stressed the difference between 'legal property rights' and 'economic property rights'. The first ones are the rights assigned by the state to individuals or communities. They determine how a property or a good can be exploited. The second ones refer to individual's or communities' ability to use a good (or the services related to that good). In forested areas, where there is a conflict between users' legal property rights and the economic rights that users prefer or feel capacity to develop, forest management and certification goals can be jeopardized. The two case studies provide some examples of this conflict.

Legal property rights over forests resources in the Brazilian Amazon are established by the Brazilian Forestry Law and their regulations. Since the mid-1990, the regulations have changed in order to address deforestation issues. These modifications seem to have created more disincentives than incentives for sustainable forest management initiatives in agricultural settlements and extractive reserves. Moreover, it has led to different perceptions of economic property rights among the two projects' beneficiaries.

The rubbers tappers from Porto Dias project have showed more security and certainty of their legal and economic rights to use forest resources. As mentioned above, the Extractive Reserve is a distinctive category of Settlement. It was the ultimate outcome of a complex negotiation process among many actors (rubber tappers movement, environmental NGOs and governmental authorities) during the mid-1980s. The rules governing the use of such areas were previous negotiated between rubber tapper representatives and governmental

authorities. Even before the community-based forest management project and attempts to certify it, rubber tapper's families could manage the forest on their own and they have survived doing that for years. With larger forest areas to manage, at least 300 hectares, timber logging is more profitable. Moreover, they can cut and clear up to 30% of the total area for agriculture and cattle ranching. In addition, they can hunt inside the Reserve. However, in the last years, new contingents of persons have arrived at the Porto Dias Settlement. They are farmers coming from other settlements in the state of Acre as well as from other states in Brazil. They have abandoned their original settlements and migrated to Porto Dias in search of more productive lands. They have occupied empty pieces of land or parcels abandoned by rubber tappers. For traditional rubber tappers this fact represents a threat to the security of property rights over forest resources. The main problem is that new settlers lack forest management experience and prefer cattle ranching. Without help from government authorities, the traditional rubber tapper can not avoid land invasions or force new settlers to comply with the established rules to use forest resources inside the Agro-Extractivist Settlement. Monitoring costs are increasing. Thus, investment in forest management and certification becomes less attractive and more risky.

In Pedro Peixoto, settlers face other constraints to secure their property rights over land and forested areas. Within private properties, the forested areas are called Legal Reserves. Indeed, Legal reserves can be seen as a sort of 'shared property': The farmer has the legal property over the land, but the forests resources can be used only under certain rules. The rules are set up by the forest authorities. Until 2001, the Legal Reserve had to cover 50% of the property. This is the situation of the Pedro Peixoto's farmers that joined to the CFEs at the end of the 1990's. The surveys revealed that already few people were really willing to conserve and manage their legal reserves without the support of donors and NGOs. The circumstances became worst in 2002 when a provisional decree increased the size of the Legal Reserve from 50 % to 80 % of the property. In other words, the settlers were then allowed to use only 20 % of the property for cattle ranching or agriculture. To join the CFEs, if more than 80 % had already been deforested, settlers had to commit themselves in reforesting. This imposes high costs in a situation where the future gains of certified forest management remain unknown (see section 3.1). The new regulation has not been followed by any economic incentives to conserve the legal forest reserves or to manage them. It has rather created a disincentive for forest management among others settlers. It also fostered inequities among the members of the CFEs. In the Pedro Peixoto Settlement some settlers that joined to the CFE before 2002 were benefited from an agreement signed between the NGOs and forest authorities of Acre State. The agreement has allowed them to go on with only 50 % of the property in forest. They were not obliged to reforest 30% of the area. On the contrary, famers that joined the CFEs after the new regulation had to comply with the new regulation, bearing the reforestation costs when they had already deforested more than 80 %. The interviews revealed that even among CFEs members, the Legal Reserves continued to be suppressed.

This regulation change has contributed to worsen the perception of property rights security among Pedro Peixoto farmers. Agriculture and cattle ranching are the preferred economic even for the CFEs members. Opposed to the difficulties of forest management to secure income, cattle ranching provides secure return for many farmers. Anywhere on the

agricultural frontier, a producer can sell a cow for the same price he can get in the São Paulo market (Veiga et al., 2004). Hence, contrary to rubber tappers, traditional farmers can be favored if their legal reserves areas are cleared by fire. The degradation by fire or by illegal deforestation improves farmers' ability to implement their preferred use rights. For instance, once the forested area is degraded, it is possible to request an authorization to deforest. Even when the authorization is not granted, farmers use to convert the area into pastures. The preferred economic right (i.e. implementing cattle ranching instead forest management) is achieved despite a clear conflict with the regulation.

4. OTHER ISSUES AFFECTING CFES CERTIFICATION SUSTAINABILITY

4.1. The Dependence of external stakeholders

The dependence on NGO assistance and external donors is a serious problem with regards to the long term sustainability of CFEs certification. On the one hand, communities do not have the capacity to efficiently manage the project because of the settlers' and rubber tappers' low educational level. The certification process and legal forest management are complicated tasks which require a very well documented management system. These tasks require the ability to deal with state bureaucracy and to produce documented plans, maps, forest inventories, contracts and so on. A review of certified CFEs found that certification has invariably been externally driven by donors (Thornber and Markopoulos, 2000). Generally NGOs and donors pay technicians to transfer knowledge to the community. However, such technicians often get more involved than desired in day-to-day administration and transfer of knowledge to local partners is not always a priority. Donation can undermine sustainable commercial decision-making by community enterprises (Colchester et al., 2003). Moreover, the interviewed settlers and rubber tappers related that forest management requires so much that sometimes they do not even have the time for subsistence activities on their lands. Since gains from timber trade are so uncertain, many of the project participants do not carry out the forest management plan. They do not suffer losses since investment to implement the plan comes from the NGO involved and external financing. However, these conditions threaten the long term sustainability of the project.

In addition, the communities are not expected to pay forest management costs and certification fees in the early stages of the project. Thus, donors provide financial assistance to make the projects viable during the first years. However, communities gain little understanding about the costs involved. In general, NGOs technicians are responsible of the managerial and accounting of the project.

Despite the fact that there are some attempts to improve community skills to perform these tasks, there is little participation of the community members in these activities. For instance, the interviewees reported little knowledge of how much money had been spent to purchase some equipment necessary for forest management. They seldom had control over other costs involved, like fees they had to pay to the government to approve the Forest Management Plans. Consequently, community-based forest management projects in Brazil have a bad

performance (Markopoulos, 2003). Communities do not assume any financial risks. Such donations work against long term environmental and economic sustainability.

4.2. Market issues

The major part of certified wood from certified CFEs in the Brazilian Amazon is traded on the domestic market. According to recent studies (Sobral et al., 2002; Smartwood, 2003), in the state of São Paulo, the major internal market for timber in Brazil, the demand for certified wood can reach up to 1.2 million cubic meters, or around 20% of total wood consumed in this State. Considering this number, demand is much higher than the current production capacity.

Despite this increasing demand and despite that certification decreases transaction cost between sellers and buyers of higher quality wood, informational asymmetries and uncertainty along the timber chain remain strong.

For instance, in Porto Dias, the settlers sold their wood for the first time in 2001. No formal contract existed with buyers. One identified buyer came from southeastern Brazil. The settlers supplied sawn timber as informally set up, but finally the buyer decided not to buy it because he claimed that the wood did not have the required quality. Without any formal contract, the settlers could not reverse the situation. After this incident, NGOs involved in CFEs certification in Acre State decided to spend more time improving and guaranteeing market access.

In order to identify and engage new buyers in the certified wood chain, the international NGO Friends of the Earth has promoted the creation of an informal organization named "Group of certified timber buyers". Friends of the Earth has linked these buyers to CFEs sellers through a website where sellers can offer their products and buyers can communicate their interest.

In 2002, an organization named Acre Community Forest Producers Group was created. The Group joins representatives of all certified projects in the state of Acre. One of the Group's missions was to open new markets and negotiate better contracts. Discussions about price, quality and costs began not only among NGO experts, but among community members as well. The overall market access improved for the CFEs of Acre State. CFEs have also to some extent economized in transactions costs (i.e. costs to acquire information from buyers). Even though the mediation of the NGOs and the creation of the producers and buyers group have improved market access, they did not solve all the problems.

4.3. The productivity and quality problem

The two CFEs projects analyzed in this paper presented several organization problems, as quoted above. The low capacity to manage timber exploitation at different phases jeopardizes the final outcomes and in some cases, CFEs did not explore the necessary

quantities of timber to compensate the costs. In average, each CFE in the Acre State explore in total less than 300 cubic meters of rounded timber per year (Cooperfloresta, 2005).

Both CFEs analyzed has acquired mills in order to process round logs. The expectation was to sell sawn wood because market prices for certified sawn wood are more interesting than for round logs. But, nobody was aware that it was not quite easy to achieve the industry quality requirements. In the case of the Pedro Peixoto experience they have chosen to use a portable saw mill. The major problem is the processing yield. The portable saw mill is more adapted to saw eucalyptus, a soft timber. The production wastes are high. In addition, because it is not adapted to saw tropical timber, manutention costs are high. The Porto Dias rubber tappers have acquired an old saw mill model, which is very slow. Thus the financial returns of timber exploitation arrive very late.

For the furniture industry the sawn timber final quality is very important. The prior process of drying the timber is fundamental. But, none of CFEs in Acre State has acquired industrial stoves to dry the timber. The timber also can not present too many fissures. As a negative outcome of the lack of experience of the CFEs members in the production process control, some buyers have already rejected the final products. Others have accepted but they have warned that they will not continue to do so.

In order to try to solve these problems, an organization named Cooperfloresta was founded at the beginning of 2005. The Cooperfloresta is a cooperative joining all the certified CFEs of Acre State. Three persons are in charge to plan the exploration from inside the forest until market selling. It was an attempt to professionalize CFEs operations. The first large change was that the most part of the CFEs have stopped to saw timber. They have decided to deliver round logs to the cooperative. The price paid by the Cooperative is about US$ 125, 00 per meter cubic, around twice the price offered by the conventional buyers of round logs. The cooperative is also in charge of subcontracting professional saw mills to process the round logs to sawn timber. Another mission of the Cooperative is to find new buyers to expand CFEs products timber and non-timber products markets. The first Coopeerfloresta report issued at the end of 2005 points out that all the CFEs operations were still subsidized by external donors or governmental funds. To the eventual withdrawal of CFEs external subsidies would probably lead to serious problems (Coopefloresta, 2005). The capacity of this new institution to solve the organizational issues that jeopardize CFEs in Acre State is still uncertain, but, surely, its represents a step forward.

CONCLUSIONS

The successful of the CFEs in Acre State and they continued commitment to the FSC certification in the long term depends on the individuals and organizations capacity to face and solve the several issues discussed above. A negative perception of both economic property rights and legal property rights over forested lands play a crucial role in the decision of not joining CFEs. Different perceptions regarding forest value among farmers, traditional rubber tappers and a new generation of rubber tappers living inside Extractive Reserves are

also creating many difficulties on the initiatives performance. Dependency on NGOs and donors can undermine the existing projects in the long term and the internal organization problems of each CFE to achieve productivity and quality requirements and consequently, better markets to the timber, is also a major challenge.

Regarding property rights security, the Brazilian Forestry Law still imposes heavy costs on forest owners. The bureaucratic process to prepare and approve a Forest Management Plan makes CFEs more difficult. It explains why CFEs depend more and more on NGOs and funding agencies to implement forest management projects. Monitoring costs are also high. Smallholders and even rubber tappers have to bear the costs of protecting forest resources against invaders because of the lack of governmental surveillance. On the public side, government authorities need to decrease the discrepancy between laws and reality in the Brazilian Amazon. Governmental intervention is all the more essential to create incentives for legal logging and CFEs that cattle ranching and agriculture secure economic performance in the region allows farmers to secure their economic right whereas timber sustainable management does not. Certification can help in promoting more sustainable forest management in the Amazon, but clearly can not replace all required public interventions.
As stressed by Colchester et al.(2003) in reviewing ten years of community-based forest management in Asia, Africa and Latin American, the optimistic expectation that FSC certification would also open up political space for marginalized communities in national standard-setting and assessments of industrial operations has not been fully borne out. There are thus still doubts about whether certification will, in effect, provide a useful multiplier mechanism to secure community rights in forests. A detailed review of certification in Sweden and Indonesia, for example, concluded that certification cannot substitute the need for policy frameworks reforms and, where these frameworks are unsuitable, will only have a marginal effect until such changes occur. More recent reviews demonstrate how easily community voices, and even NGOs, can be marginalized in FSC processes, when the national policy framework is hostile and tenure rights are insecure. In these circumstances added vigilance is needed to ensure that certification provides real political space for reform rather than legitimizing the perpetuation of the status quo (Thornber and Markopoulos, 2000; Counsell and Loraas, 2002).

Besides these factors, both community projects analyzed are strongly dependent on NGO technical assistance and donor financing. In a situation of market uncertainty, financial assistance is necessary. However, interviews revealed that community members and donors have not discussed the issue of costs and management enough. CFEs members have not taken much responsibility for the projects´ success or failure, which can also question the projects sustainability in the long term.

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