

Institutional change and community forestry in the Mayan Biosphere Reserve Guatemala

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1. Introduction

The purpose of the larger study from which this paper draws, was to understand how the current tenure reforms underway in the lowland tropical forests of Guatemala are having an impact on improving or threatening forests and local livelihoods. The research project titled “Enhancing Livelihoods and Equity in Community Forestry” is being conducted in 10 countries in 30 sites across Latin America, Africa and Asia where recent tenure reforms – transferring rights to local peoples- are underway and expanding in the forestlands of the global south (White and Martin, 2002). While the scale of this process of devolution is considerable – the amount of forestland has more than doubled in less than 20 years (Sunderlin, et. al 2008)- how the transference of legal rights to local communities is playing out, is not yet well understood. Unraveling the way in which tenure rights can have an impact on the well being of local communities and forests is a complex and non-linear path of inquiry, reflecting a similar reality. We have chosen to concentrate the initial part of the research on understanding how the shift in the allocation of the ‘bundle of rights’ to communities and the state set the stage for reaching those dual goals. Differences in the nature of forest tenure reforms, in contrast to agrarian land reforms are also of particular interest to help explain the outcomes and have formed part of the larger study, from which this paper provides input and draws insight (Pacheco et. al. 2008).

The particular focus of this paper is on how the forest reform has redistributed tenure rights, formally held exclusively by the state, allowing for the creation of new institutions and organizations that in turn serve as the basis of sustaining a the reform itself. It understands tenure rights as a bundle of rights, made up of user and decision-making rights, held by a range of holders of those rights (Meinzen-Dick, 2004; **others**) and argues for the importance of understanding the range and complexity of rights and holders in the design of these reforms, as a part of the explanation for its success or failure in achieving the stated goals..

At the same time, it acknowledges that rights alone are not enough to guarantee access, based on those rights (Ribot and Pelusso, 2003). Ribot and Pelusso discuss the need to understand access as a function of the ‘power to act on the rights,’ which then forms a fundamental determinant for attaining tenure security. To gain or maintain access to forest resources, guaranteed property rights – be they temporarily, such as contracts for concessions, or permanently, such as land titles- rights are a necessary first step, but the power to act on those rights depends on the power to negotiate them and sustain the agreements in practice (Larson and Barry, 2008). As the perception of forest values change, and uses become contested, tenure security is increasingly attained through constant political struggle. Legitimacy of the claims and claimants, then become a central issue for tenure security. (Cousins, 2005,

Sikor and Lund 2008)

Thus, this paper departs from focusing on the importance of titling as the central element of land tenure security. Without negating its importance, we consider that the discussion of the virtues of titling have been based mostly on the analysis of agricultural lands and agrarian reforms¹ (). The authors (and colleagues in the larger project) have found that tenure reforms in the forest sector harbour some fundamental differences from agrarian reforms and stemming from those differences, the other elements mentioned become more important for determining forest tenure security (Pacheco et al., 2008).

First, in the cases of most agrarian reform, the state transfers the full set of property rights, including the right to alienate the land to the new owner(s). Land can be subdivided, rented and sold, thus allowing it to become a market commodity. On the one hand, by virtue of the state relinquishing the totality of its rights, its role is diminished. On the other, the market serves to allocate the change in ownership on the basis of its changing value in land markets. In the case of forest reforms, neither of these conditions are met.

In most of the current forest reforms, alienation rights are maintained by the state, and thus it continues to have an influence (real or theoretical) in regulating rights of access *writ large*. Secondly, these reforms focus on tenure rights to resources more than to land. Despite the fact that in some countries legislation makes reference to land, it is the access to forest resources that is at the center of the reform. Thirdly, collective property regimes² are the most frequently found type in forested landscapes, many with common property as an integral part of tenure arrangements.(CITE ???) Fourth, the collective and common property regimes imply the existence of social relations and institutions that govern – in one form or another - access to and use of the land and natural resources. It is this body, group or set of grouping that will need to be organized to be recognized, (somehow represented, become a legal entity, etc.) to receive these rights. Thus, the forest reform tends to be more complex in nature, given the multiple functions of forest resources for goods and services provision, and the wider range of actors who share rights to common resources. (Pacheco, et. al 2008)

In agreement with others (Meinzen-Dick DATE, Cousins, (Bromley, 2005:4; Broegard, 2005; Von Benda Beckman, (Meinzen-Dick, 2006, OTHERS) we see only a relative importance of formal titles in and of themselves for tenure security, noting that the combination of state power – the ability and will to back titles- local sources of legitimacy and the existence of internal institutions that can defend their rights, is far more important. If and when sharing the initial goals of improved livelihoods and forest conservation, successful forest tenure

¹ Much of the theory of evolution of property rights, from which analysis of forestland tenure borrows, stems from and is informed by the role of agricultural land as a commodity, analyzing how it evolves as an asset in the world of land and production markets. (Dementz, Fitzpatrick 2006., Lavigne-Deville, etc)

² We understand collective tenure to describe the overarching community right of control over (traditional) lands, including (where relevant) family houses, gardens, and common property regimes to describe joint use and access by community members of common pool resources. (Otsuka and Place, 2001:12)

reform will need to depend on some level of recognition of embedded social structures, their legitimacy, their ability to exclude outsiders. (Cousins, 2007, others)

The case presented below takes this view even further. Given that we are presenting relatively recent forest reforms (1985 – 2005) that are in the process of consolidation, - and many in highly contested areas- we place special emphasis on the importance of the legitimacy of the endeavour: of the state entity and of the local structures supporting and underpinning these reforms. (Sikor and Lund 2008:?)

The central dynamic we see is when people attempt to secure rights to natural resources by having their access claims recognized as legitimate property by some politico-legal institution. The process of recognition of claims as property simultaneously works to imbue the institution that provides such recognition with the recognition of their authority to do so.

The paper will present a brief history and evolution of a major forest tenure reform undertaken in the Peten region of Guatemala: the joint effort to establish the Mayan Biosphere Reserve and the system of community forest concessions in an area of over 350,000 hectares, drawn from this and previous work (Barry and Monterroso, 2007). It will be followed by a brief description of the methodological approach to the research project. The paper will then make a presentation and discussion of two different community concessions illustrating the shift in the bundle of rights and the emergent holders of those rights in each case. A discussion will compare the differences in the initial conditions and the organizational strategies determined the outcomes that followed from the tenure reforms and highlight the importance of the imposition of a timber management model influenced the results. Indicators of forest condition and local livelihoods will give the reader an idea of the final impacts of the reform on each community, which we argue, serve as the bases of legitimacy of the overall tenure reform and project for the larger region. .

The empirical work that forms the basis of most of this paper focuses on the application of the conceptual tool for interpreting tenure as 'bundles of rights.' In the practical application both axis have been 'opened up' allowing for more specific description of both the nature of the bundle of rights, and particularly the rights holders. A breakdown of the rights holders into specific actors reflecting greater differentiation of the institutions and organizations is important in order to better grasp the distribution of rights. As mentioned above, in contrast to agrarian reforms, where the norm is to transfer the entire bundle of rights to the single owner, in most forest reforms, the state maintains the 'ultimate property right' to reclaim the use or divide and sell the land. Thus, it is never 'out of the picture.' Also, given the 'youth' of these forest reforms, they tend to be implemented from the institutions belonging to several sectors: (forestry, environmental and even agricultural agencies, ministries or land boards etc.) the state is not a single actor, but often has many different 'faces' and does not act monolithically (Pacheco et. al. 2008 and maybe Mwangi and Dohrn – find out))

Secondly, understanding the changes that occur in the gamut of social institutions as the holders – or losers- of these multiple rights is equally important for gauging the trade-offs and possible conflicts being established, thus the underpinnings of ‘internal’ legitimacy. Forest resources and uses are many and the internal systems – within the perimeters of the ‘titled’ forestland- for managing those rights are often invisible to outsiders, including the state. These can run the range from clearly defined customary institutions to cultural or religious norms, or simply those constructed around patterns of natural resource dependence. It is important to register the differences between the individual, group and collective holders of different rights and even with claims on different resources within the forest.

Thirdly and intimately related to the above, it is this nature of the internal social structure to be recognized and that will become the interlocutor with the state. Titling itself and then the regulations often embedded in the tenure reform will need to recognize this structure or require the formation of a new one, in order to transfer these rights. An emerging body of literature, based mostly on cases in Africa helps to understand what have been the best practices for legal recognition of customary tenure (Fitzpatrick, 2005; Wily, FIND, Cousins, 2007) In the case presented here, we are not dealing with customary institutions, yet the analyses are also applicable to the de facto social institutions (understood as a system of rights and rules-in-use) found within the forest communities in the Peten.

The research results have also highlighted the importance of paying attention to the *process* of defining rights, the sources of legitimacy, and ability to maintain and exercise exclusion rights as fundamental for understanding tenure security and finally, who derives benefits from these reforms. What were the motivations and surrounding circumstances that provoked the reforms, who were the key actors and alliances made during the effort and what are the elements that maintain legitimacy?

The paper is organized as follows: in the second section we provide a series of contextual elements that are central to understand the process of establishing the Mayan Biosphere Reserve in Peten Guatemala and the consequent allocation of community concessions within the Multiple Use Zone. In section three we describe the approach and methodology used during the study, including a detailed description of the case study areas, where the results are organized identifying the major changes in the bundle of rights for each concession analyzed. Discussion focuses on analyzing major organizational strategies employed by community groups and the forms of access to resources. Finally, we analyze some of the principal indicators of benefits and improved forest conditions and the role of external actors and vested interests driving transformation in the ‘buffer zone’. The paper concludes by laying out implications of changes in tenurial arrangements for the future and challenges emerging for the concessions system.

II. SECTION TWO: Context: The emergence of the Mayan Biological Reserve

The Selva Maya (7,272,379 ha) is the second largest tropical forest reserve in Latin America, the most important in Mesoamerica, comprised of remote border regions of southern Mexico, western Belize and northern Guatemala. The largest area under a protection regime is located in Guatemala (2,082,900 ha) in the department of Petén. Before the 1990s this large forested area, with shallow clay and karstic soils was a harsh environment for sustained agricultural productivity and remained sparsely populated³. By the end of the 1920s, only 25,000 inhabitants lived in the region isolated politically and economically from the administrative center in Guatemala (Schwartz, 1990). The first official institution with physical presence in the Peten was established in 1959. The Enterprise for the promotion of development of Peten (Empresa de Fortalecimiento y Desarrollo de Petén FYDEP, acronym in Spanish), had the mandate to colonize the region, to allocate land titles and usufruct rights to forest resources (mainly access and extraction). FYDEP fulfilled the first objective by allocating collective titles to small groups of landless peasants, mainly through formation of agricultural cooperatives. During this period, over 74 peasant cooperatives were established in Peten. However, the more common practice was the allocation of large individual landholdings to those associated with the ruling elite and the military (Clark, 1998, Schwartz, 1990).

Access and extraction rights were allocated by FYDEP to industrial timber concessions for up to five-years, while other private enterprises -all associated with the military - managed gum tapping enterprises. Between the 1920s and 1950s gum (chicle) became one of the most important export product, setting off a “white gold” rush into the forest, that together with a ‘logging fever’ unleashed an influx of poor peasants, particularly from the southeast regions of Mexico and Guatemala looking for work and access to land. An unorganized and lawless local economy emerged, characteristic of the ‘wild west’ scenario of massive resource extraction and brought with it large, informal cash flows and unchecked investments.

The in-migration of families and communities providing the labor for these endeavors, established distinct patterns of settlement and resource use over a period of more than 80 years. Some were based on gum extraction (chicle), where family camps were located deep inside the forest, close to the gum trees. Others were linked to logging activities, both legal (under concession) and illegal. Still others were settled in the forest – under the colonization programs- with the professed intention of clearing it for agriculture and cattle raising. Many of these same families enjoyed *de facto* use rights to a range of non-timber forest resources (allspice, medicinals, palm).

By the 1980’s, the harsh physical conditions and the eventual decline of the price of gum in the international markets by the 1980s saw the profits wane, but not the population. The last census shows the population in this region has grown over twenty times its size within the past fifty years (Grandia, et al., 2001). According to Clark, since the 1970s, two booms of spontaneous colonization occurred in the Peten. The first one, after FYDEP disappeared in

³ It should be noted however, this same area supported a vast expanse of the Mayan forest-based agricultural system for hundreds of years (Schwartz, 1990)

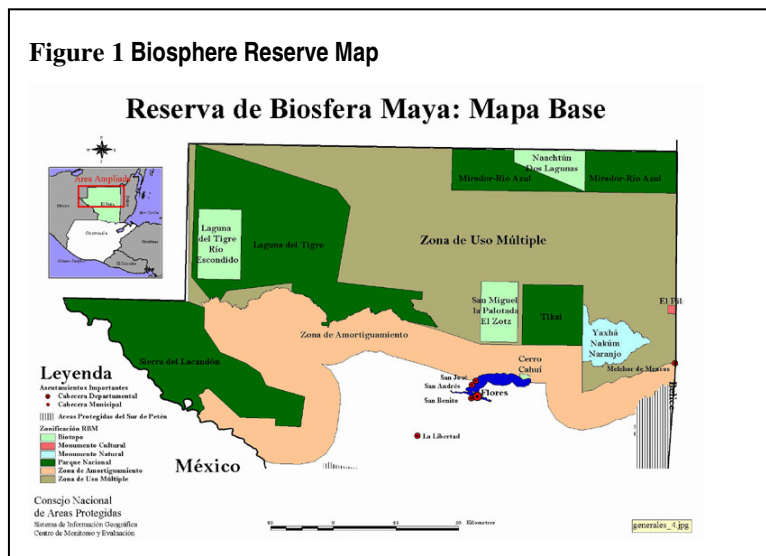
the late 70's, *de facto* land seizures called “agarradas” triggered a new legalization process attracting landless peasants into the southern region of the Peten.

The second, following the establishment of the Mayan Biosphere Reserve (1991-1996) in the forest reserve area of northern Petén, (and the finalization of a 32 yearlong war) was characterized as a major attempt to change the logic of forest values and use, introducing conservation as the overarching goal. The effort brought with it, the need to strengthen the newly created and still very weak government conservation agencies into the this region. By the 1990s the Peten, at once a major ‘ biodiversity hotspot, and eco-region’ in the eyes of the global conservation organizations, was considered the last agricultural, immigration and geopolitical frontier of Guatemala, suffering from significant pressure from population growth (5.68% annually – Census 2003). Over 50% of the population is dedicated to agricultural activities exerting pressure increasing pressure on these fragile forest ecosystems.

Establishment of the MBR and the concession system in Peten

As part of a global effort in recognition of the importance of forest biodiversity, the Guatemalan government, supported by international conservation organizations, established the Mayan Biosphere Reserve (MBR) in 1990 (National Decree 5-90, see Map No.) in order to preserve these fragile and threatened ecosystems. According to the 2001 Master Plan (2001) three

management zones were created within the MBR. The **core zone** (green) is a restricted area for the conservation of natural and archeological resources. This area is made up of five national (Source: SI-PETEN Database, 2001) parks and two protected biotopes. It represents 36% of the MBR. Only strict conservation activities are allowed



and no population settlements or productive activities are permitted. The **buffer zone** (pink) is a 15 kilometer strip that is located at the southern part of the MBR. It represents 24% of this protected area. Productive activities as well as population settlements are allowed under sustainable management plans. The largest portion of the MBR (represents 40%) was established as a **multiple use zone** (beige) as a way to promote sustainable activities but with no human settlements allowed. The original proposal was that this area be given out in concession to private timber industries held to commitments of strict sustainable management criteria.

However, despite initial government intentions to organize this dramatic shift in the land use regime through the legal establishment of the MBR and the promotion of conservation activities in the region, their efforts met with unexpected local resistance and eventual conflict between the project and the resident peasants and extractivist communities. In one fell swoop, long term resident communities had lost their historic settlement and land use rights granted under the previous regime and sanctioned by FYDEP. The conservation authorities and particularly the US conservation NGO's were seen as invaders, who, far from bringing the expected postwar reaffirmation of land rights, were undermining the very basis of their subsistence in the Peten.

By the mid 1990's with the civil war winding down, now under a tenuous process of implementing the Peace accords, the Guatemalan government faced -in the Peten- a new and somewhat unpredictable conflict. Evictions of the families living in what had now been delimited as the core protected areas and lack of clarity on how new regulations would infuriated many and kept communities prey to conjecture. Word spread like wildfire that this was only the beginning of a possible further disenfranchisement of local residents. In a region characteristically lacking normal channels of communication and minimal mechanisms for governance (to inform, discuss, deliberate, channels for legal recourse, etc), the conservation agencies made little visible effort to reach out to the distant and atomized community settlements throughout the vast forest area (Sundberg, 1998). However, local radio programs – listened to mostly by local residents- ricocheted fear, outrage and rejection of this externally imposed regime of conservation. Vehicles and offices in key areas were burnt down in anonymous protest. In a relatively short period of time, widespread polarization set in between communities and those associated with the MBR while a distant central government remained anxious to maintain peace. (Barry pers. Comm.)

The area had been previously logged under industrial concessions, which were no longer seen as an option under the new logic of forest conservation. (Tshinkel,1992; CONAP, 1993; Synnot 1994). And, it was clear that the political cost of removing communities from the region was too high. Some of the recently formed settlements were refugees, sympathetic to the guerrilla, and who could not return from exile to their original land in the highlands. A solution had to be found that could appeal to the interests of all the major interest groups involved. In order for it to work, it would have to recognize historic and recent settlement rights of these communities and at the same time address the underlying logic of the forest and biodiversity conservation agenda, while not totally alienating the timber industrial sector. In 1994 the government, with the strong backing of USAID,⁴ legalized a formal community concession system in the Multiple Use Zone (MUZ) of the Mayan Biosphere Reserve.

⁴ Large scale projects led by the international conservation organizations (Conservation International, TNC and WWF) supported state efforts to establish the MBR at the beginning of the 1990s. USAID, channeled close to US\$40 million between 1990 and 2000, while other international aid donors (including the European Union, GTZ, and others) supported with a similar figure, bringing to total amount of investment in the MBR project region to nearly \$100 million USD for the same period. Support targeted for the community concession amounted to approximately to US\$10. (Gómez and Méndez, 2005; Monterroso Regional Report)

With the establishment of these large forested areas given out under community forestry concessions where access and settlement rights were recognized, and management rights conferred on the basis of a heavily regulated scheme of certified timber production, the competing interests –between industry, conservation and communities - in these forest areas were transformed into a workable solution.

Certain characteristics make the concession model unique in comparison to other tenure reforms taking place in the region. First, the underlying logic behind the concession model emerges from conservation interests and not from forest decentralization or forest policy reforms per se. Indigenous and peasant land struggles that dominate the in other countries such as Brazil, Nicaragua or Bolivia (Pacheco *et al*, 2008; Larson, 2008) did not play out in this case. Second, despite the fact that communities were seen as an important beneficiary group under this model, originally community concessions were defined to be scattered forest small landholdings (largest were 7,000 hectares) adjudicated only to groups whose existing customary and *de facto* rights of permanence had been recognized (settlement before the MBR). From the perspective of the state (and powerful donor interests), these groups were seen primarily as local agents who should play the role of guardians and stewards, protecting these areas from incursion by landless peasants and illegal loggers.

Second, it is through a process of negotiations between the conflicted interest (government-peace ; USAID and NGO's- conservation, industry- profits; communities- livelihoods and improved incomes) that led to a reformulation of this original project. Communities 'push back' against the scale of the original concessions, understanding that their access rights will be significantly diminished, their interest is in maintaining informal rights to non-timber forest production. Donors and government agencies are looking for a model that will protect forest integrity, thus keep the industrial concessions and illegal loggers out. And industry is willing to take a smaller area, if they can get timber supplied to them by communities

The solution that emerged took the initial small areas proposed for communities to a significant and workable scale. Here we see that two important bases for the struggle to obtain concessions, one advocating for allocation of forest resource rights based on historical uses and recognition of informal forms of access to non timber forest resources, the willingness to embrace a model of community-based timber production at the same time. If exclusion rights to these larger areas were to be granted, the conditions for the dual function of guaranteeing the basis for livelihoods and the role of forest guardians could be met. While the first concession granted was allocated to a group for 7,000 hectares, the concessions analyzed in this study range from 50,000 to 60,000 hectares. In order to get concessions to scale, communities negotiated based on the use of maps calculating areas needed for livelihoods and incomes, based on projections for non-timber uses and sales (Cortave, Pasos and LaForge. pers comm).

This paper will analyze how the range of tenure rights was redistributed across

the principle rights holder and how this process helped shape the hybrid of governance and social institutions that emerged from this experience. It will argue that the process of granting tenure rights is one of mutually constituting the legitimacy of the rights granter and rights receiver, who together play a key role in maintaining the security of the larger tenure model being put in place: The Meso-American Biological Corridor and the community forest concession system as its 'buffer.'

III. SECTION THREE: **Approach and methodology used during the study**

Results presented in this study derive from research undertaken by the CIFOR project "Improving Equity and Livelihoods in Community Forestry" conducted in four countries in Latin America and seven other in Africa and Asia.⁵ The study examined the effects of tenure arrangements and formal and informal regulatory systems and institutions on the security of access, use, control and benefits derived from the forest tenure reforms in different regions of Latin America. To understand such effects, research focused on four aspects: tenure, credits and markets, regulatory framework and the role of community organizations as agents and beneficiaries. Central questions involved analyzing what are the effects of tenure change on existing community rights of access and decision-making in the forests? How do official regulatory frameworks broaden, enhance, inhibit or obstruct community access to resources, credit, markets and benefits from forest resources? How does the current structure of the market and market actors inhibit or enhance community access to forest benefits? How have community organizations increased resource access for community members and promoted (or not) equitable access within communities? This article focuses on presenting results derived from the analysis of changes in tenure arrangements⁶. We used a case study approach selecting two community concessions as our target. Criteria to select concessions were based on the location of the community settlements with respect to the forest management unit.

Carmelita, the first concession is physically located or settled within the forest management unit, while Arbol Verde is, but rather an association that allows individuals from nine different communities located along the Buffer zone to access a distant forest management unit inside the ZUM, through collective action, specifically by forming a community organization. Other aspects concerning the type of forest resource dependency or forest-based livelihood systems were also important criteria for selection; Carmelita is known to be a resource-extractor while people from the communities belonging to Arbol Verde have livelihoods based on agriculture and cattle ranching.

Information-collecting tools included quantitative and qualitative techniques. Questionnaires were used to gather information at the household level: 42 questionnaires, 65% of the total in Carmelita; 22 questionnaires in Ixlu, one of

⁵ The countries are: Brazil, Bolivia, Nicaragua, Cameroon, Ghana, Burkina Faso, Nepal, Philippines, India and Laos.

⁶ Detailed reports including a regional context analysis, case study reports and comparison reports exist for each study area.

the nine communities belonging to Arbol Verde addressed to both members and non-members of these concessionaire organizations. Questionnaires were divided into three sections, the first gathering information on family composition and socio-economic conditions, the second focusing on livelihood strategies and the third one gathering information on organizational and institutional aspects. Additionally, at the community level we used a guide that gathered information on population composition, public services, current community organizations, existing developing projects and major community problems and perceptions.

Qualitative techniques including semi-structured interviews (16 in Carmelita; 14 in Ixlu and 7 in El Naranjo communities which have members in Arbol Verde) with members and non-members of the concessionaire organizations; group interviews with concessionaires organizations (4 meetings with the Cooperative of Carmelita and 2 with the Association of Arbol Verde); one focus group with women was organized in Carmelita. Interview guidelines were structured following the general content of the research project and included tools to gather the community level perception of current conditions and issues, such as: state relationship of the interviewee with the concessionaire organization, gather the perception of major changes occurring since the establishment of the MBR and the concession system, and note the principal challenges and problems faced by the concessionaire organizations. Specific information on major products was obtained from the forests, identification of groups extracting resources from managed forest, rules and norms associated with access and extraction of major forest resources (timber and non-timber) perception of dependency on forest resources, perception of the major problems and conflicts within the community in relationship with the forest, perception of the role of external organizations in regards of the community and concessionaire organizations.

Interviews with NGO and government representatives, industrial concessionaries and research organizations and other community organizations were also carried out (30 interviews in total) to gather information about the regional context. Informants were selected among the principal actors involved in the establishment of the MBR and/or governance of the issue of community concessions in Peten. All interviews were conducted between March and November of 2007.

IV. SECTION FOUR: THE CASE STUDIES COMPARED

1.1 Site description: Community concessions of Carmelita and Arbol Verde

This case study is comprised of two community level sites; here presenting a description of the the initial conditions and current status related to three main elements: (1) community; (2) community concessionaire organization and (3) types of forest under management. Criteria for choosing sites were to test our research hypotheses, of which there are two principal ones.

(1) Community: previous history and livelihood strategies

Carmelita, the first case study, is a community established by gum tappers and xate palm collectors in the 1920's. It is a resident community, located within the Multiple Use Zone of the MBR, found at the very northern region of Guatemala, located 85 km away from Flores (unpaved road), the main rural town of Peten. According to old settlers, Carmelita was established by Mexicans and Guatemalans that emigrated towards Peten during the gum-tapping fever that started at the beginning of the 1930s. Gum production was organized from gum-tapping camps situated in the forests, surrounding the actual settlement/ village of Carmelita where the product was gathered and transferred to the capital city by air, using the landing strip (built in 1942) that connected this small community to Flores and to Guatemala City.

Today, in Carmelita there are 88 families that still subsist mainly from the extraction of natural resources: gum, xate palm and allspice collection. Over the last twenty years some families have begun to work in small-scale tourism, taking small groups to the Mirador Mayan monuments⁷ as part of an ecotourism project that enable them to obtain complementary income. In total, approximately 75% of the families in Carmelita obtain their income from forest extraction activities; other non-commercial, subsistence activities include hunting, fishing, and small-scale agriculture. About 30% of the families cultivate maize and beans (3,61 Ha/family).⁸

Public services in this community are very poor, even though 60% of the communities have drinkable water; there is no sewage system or electrical service available in the community. Carmelita has a health community center that provides assistance in case of emergencies. By 2001 the illiteracy rate had reached 41.2% of the total community.

The second site analyzed was Arbol Verde. In contrast to the first, Arbol Verde is an organization composed of individuals from nine different communities all located in the Buffer Zone of the MBR. All nine communities were established along the paved highway that connects Flores with Melchor de Mencos, a border city with Belize. The number of families within these nine community ranges from 52 to 311 in the largest community. Field work was done in two of this nine communities. El Naranjo which has 249 families (15% are represented in Arbol Verde) and Ixlu which has 300 families (28% of them belong to Arbol Verde). These communities were established recently some time after the 1960s (Shriar, 2006).

While livelihoods in Carmelita shows historic and higher rates of dependency on the extraction of natural resources, the livelihood base of those belonging to Arbol Verde (who emigrated to Peten for different reasons) were not based on forests, but on agriculture and raising cattle. More than 40% of community

⁷ Mirador is a Mayan city that is located 65 km from Carmelita. This is a pre-classic compound that has been said to have unique archaeological characteristics. It takes five days to arrive to Mirador. During the last five years there has been an increase number of tourism operators that control the tourist route to Mirador.

⁸ Karstic soils in Carmelita are very poor in nutrients; therefore agricultural yields here are very low. All of the households surveyed admit that including those that cultivate maize need to buy additional amounts of maize to fulfill their annual requirements.

members depend on agricultural and cattle raising activities, and plots are much larger than those found in Carmelita (15.28 Ha/family). Other important economic activity is trade (20% of families). In contrast to Carmelita, extraction of NTFP in Arbol Verde does not represent a relevant activity (less than 10%). Most of these communities have basic public services including water, sewage and electricity. Illiteracy rates are similar to those found in Carmelita (45%).

(2) Concessionaire organization: type of organization, history

By the mid 1990s, community residents of Carmelita organized themselves forming a cooperative; their claim was to guarantee use and management rights over forests where they resided and had been accessing informally for decades. Before, rights to extract timber forest products had been granted to industrial concessions under short term (between 5-10 years) contracts. Community members had informal or *de facto* usufruct rights for non-timber forest products but industrial concessions prohibited their access to timber. Now, through the community concession contract (1997) they were guaranteed the rights to access trees, extract and manage and sell them commercially and formalized their informal usufruct rights over non-timber forest products

Only 35 people from the community signed the concession contract in 1997. However the number of members has increased four-fold since then, there are now 144 (registered in 2007) including 75 men and 69 women. Initially, they received technical assistance from NGO's until 2001 when financial assistance from the conservation projects dwindled.

Arbol Verde in contrast, signed a concession contract with the Guatemalan Government in 2001, four years later than Carmelita. Though the organization' claims to manage forests in the MUZ were similar, individuals were dispersed across several community settlements, requiring a greater investment of time and effort to coalesce as a group. This explains the time-lag between the different community contracts signed. Thus, the members are non-residents of the forest area and gain access through collective action via the establishment of their community organization. During this time period, the Community Association of Forest Communities in Peten (ACOFOP, acronym in Spanish), was established as a secondary level association of community organizations, constituting an important step in mobilizing the collective claims for concessionaire status to the state and conservation NGOs.

Members of Arbol Verde established a Civil Society organization (Civil Society Arbol Verde) with little external technical assistance from NGOs or legal council. There are now 344 members (292 men and 52 women). The percentage of community members of Arbol Verde to their community of origin varies from 10%, membership to 64% as the highest..

The differences between the communities can be found in the conditions laid out in their concession contracts, particularly with respect to their rights and responsibilities in relation to the state. Some basic aspects of these contracts

such as the existence of grace periods and the need for performance bonds differ in both cases (see table 1). Contracts establish detailed guidelines to regulate access, use and control over timber resources. Here, it is important to point out that the reform of tenure rights via the concession were very general, focused almost exclusively on timber, which was highly regulated, while only superficially addressing the non-timber forest products that formed the basis of most of the livelihoods, previous to the reform.

Comparison of Concession contracts

General aspects of the contract	Payment terms and conditions	Payment system	Grace period	General Observations
Árbol Verde signed for the management of 64,973.37 Ha In 2001	The rate is Q7.50/Ha (US\$1.00)	(Q487,297.50) 22 annual payments of (US\$2,953)	Three-year grace period	<ul style="list-style-type: none"> The contract requires that after the grace period the community concession acquires the FSC certificate to be valid while the contract is in force. The contract requires a performance bond that equals 1% of the total value of the contract
Carmelita signed for the management of 53,797 Ha in 1997.	The rate is Q9.60/Ha (US\$1.28)	The contract requires a first payment that should cover 5% (US\$3,586.46) of the total amount of the contract and 23 annual payments of (US\$ 2962.73)	One-year grace period	<ul style="list-style-type: none"> This contract requires a performance bond; it does not specify the percentage. It establishes that this bond should be valid while the contract is in force. There is no reference to FSC certificate in this contract

Source: Contracts between the National Council of Protected areas and the organizations: Cooperativa Carmelita, 1997; Árbol Verde, 2001

(3) Forest quality and type (area)

The last aspect analyzed in both case studies was the forest quality and type. It has been argued that communities that manage forests face important challenges when forests allocated are of low quality. This is usually measured by the presence of a number of species with high commercial value or in terms of the extension of forestland granted. The number of variables that were used to assess forest conditions is listed in table 1. For both cases forests had been previously logged under 'selective logging methods', first by formal agreements between industrial concessions and FYDEP between 1960 and 1990, then illegally logged after the establishment of MBR when all contracts were revoked.

Forests in the Multiple Zone are classified as tropical broadleaf forests (Nations and Komer, 1984). They represent the largest remaining lowland forests in the country some of them seasonally flooded. In both cases, we observe that communities were allocated rights to large extensions of forests, although this is

not the norm for the rest of community concessions found within the MUZ of the MBR⁹. (Community concessions represent 46% of the total ZUM area, over 390,000 ha, average concessions range between 20,000 and 50,000 hectare) Not all of this forest area is assigned for timber extraction, according to their management plans, certain area should be classified under conservation status. This usually includes lowland forests, archeological sites and water sources where it is either difficult to extract or where there is ecological value in stronger regulation for conservation. Though the conservation area in Arbol Verde is smaller (10%) in comparison to the one set aside for that purpose in Carmelita (30%), conservation areas are usually allocated for management of NTFPs. Following concession norms, all community concessions should obtain Forest Stewardship Council FSC certification of timber management and production.

Table 1. Forest conditions in sites analyzed

	Arbol verde	Carmelita
Number of hectares under concession	64,973.37	53,797
Land use distribution	50% area under sustainable timber management plan 10% protected area 40% NTFP extraction	1.47% agriculture and pasture lands 0,19% urban area 63% area under sustainable timber management plan 30% protected area
Area under FSC certification	100% of the area under concession	98,34% of the area under concession
Annual management area(Ha)	900	450
Hardwood volume available per hectare (m ³ /Ha)	0.93	2.1
Number of trees extracted per hectare	0.6 y 3.2	1 y 3
Rotation period	30 years	40 years
Minimum diameter (DVH)	55 cm	60 cm

Source: Own calculations based on NPV (1999); Propeten (1997); CONAP (2007, unpublished data)

Each concession that is either under community or industrial contract prepares an annual management plan defining the area that will be used for timber production. Arbol Verde shows a higher annual area under management, which can be explained by the lower volume available per hectare of commercially valuable timber species (0.93 m³/ha) in comparison to the species of commercial value found in Carmelita (2.1 m³/ha). Such reports specify the average number of trees extracted per hectare for all species extracted. For both communities data presented in the table shows that for all species less than three trees are cut per hectare. Rotation periods, show that for both cases, this exceeds the duration of the 25-year contracts. Minimum diameters in both cases, surpassing 50 cm evidence a conservative measure that tries to account for complexity in regards of the functioning of tropical ecosystems.

From these indicators we can conclude that despite previous logging activities undergone in these areas, forests under these two community concessions have medium-high quality of the high-value commercial species. This includes

⁹ The community concession with the smallest area is 7000 ha while the largest is over 93000 ha. Together community concessions encompass more than 400,000 ha. Certified community forests surpass 350,000 ha.

mahogany *Swietenia Macrophylla*, cedar *Cederela odorata* and lesser know species such as Santa maria *Callophyllum brasillense* Pucté *Bucida buceras*, manchiche *Lonchocarpus castilloni*, Amapola *Pseudobombax ellipticum*. Additionally we can also say that management plans follow fairly conservative measures if we compare this with data from experiences under other tropical forest management systems. (Mexico, Noh Bec)¹⁰.

2 Results

This section aims to describe and analyze major changes in tenure arrangements occurring after the allocation of the community concessions for the sites under study. A series of questions were guiding the discussion: what were the major changes in tenure arrangements deriving from the allocation of concession rights to concessionaire organizations

2.1 Site One: “Tenure box” of the community of Carmelita

The geographical location of the community of Carmelita, away from the socio-economic and political centers of Peten has influenced the definition of land and resource rights under informal arrangements which have their social base on households and kinship networks. For instance, in resident communities, land use decisions around residential and agricultural cultivation areas are taken by individual and family. While rights over NTFPs of commercial value were usually allocated under the contractor system that will be later explored. When the concession contract is signed such arrangements did not change but two processes affect internal community dynamics.

The first process emerges from the establishment of a collective formal organization. The concession model ‘open up’ or allows for the recognition of a collective entity in large forest areas. The new legal framework in support of the model required the existence of a collective entity with legal recognition, to substitute the industrial firms previously playing this role. It is telling that most of the community groups adopted different legal figures, scrambling to adapt the bylaws and procedures to something that would allow them to become the legal interlocutor. Here, the ‘menu’ of existing options did not provide a legal figure that would easily allow for a community to be registered as an enterprise. This came as an afterthought, and was reflected in those who attained legal status later, as in the case of Arbol Verde.

. While other concessionaires chose the figure of civil association or society, Carmelita concessionaire members organized into a cooperative. In this community, through this collective entity, individual use rights around NTFP, hunting and fishing were recognized though not formally regulated. The collective entity that holds the concession right becomes the allocator and manager of those rights. However, in reality NTFP, agriculture and pasture activities are still managed under *de facto* agreements (shown in green). At the collective level, access to common property resources such as non-timber

¹⁰ Further information on ecological data that support this argument is available in detail in case study reports.

forest products are claimed by different subgroups, for instance gum tappers of xate-palm collectors.

The second important process is closely related to the previous one. With the new concessionaire organization established a relationship emerges based on membership status. This relationship is important taking into account that the transference of decision making rights from the state to the collective granted exclusive rights to the members of concessionaire organizations.

Results for the first site, figure 1, display a summary of the changes in tenure rights in Carmelita derived from this tenure reform. First, it shows the evolution from *de facto* individual rights of access, use and extraction, that were informal which, through the process of establishing the concession were brought under collective control. Second, it evidences the transference of decision making rights from the state to the concessionaire organization. A series of conflicts emerge from both changes.

In the first place, the concession served as an 'umbrella' for legitimizing, but not formalizing all of the forest related activities, except timber harvest, This is due, in part to the fact that except from gum (the gum tapping law was approved in 1977) NTFP's are not yet legally regulated.

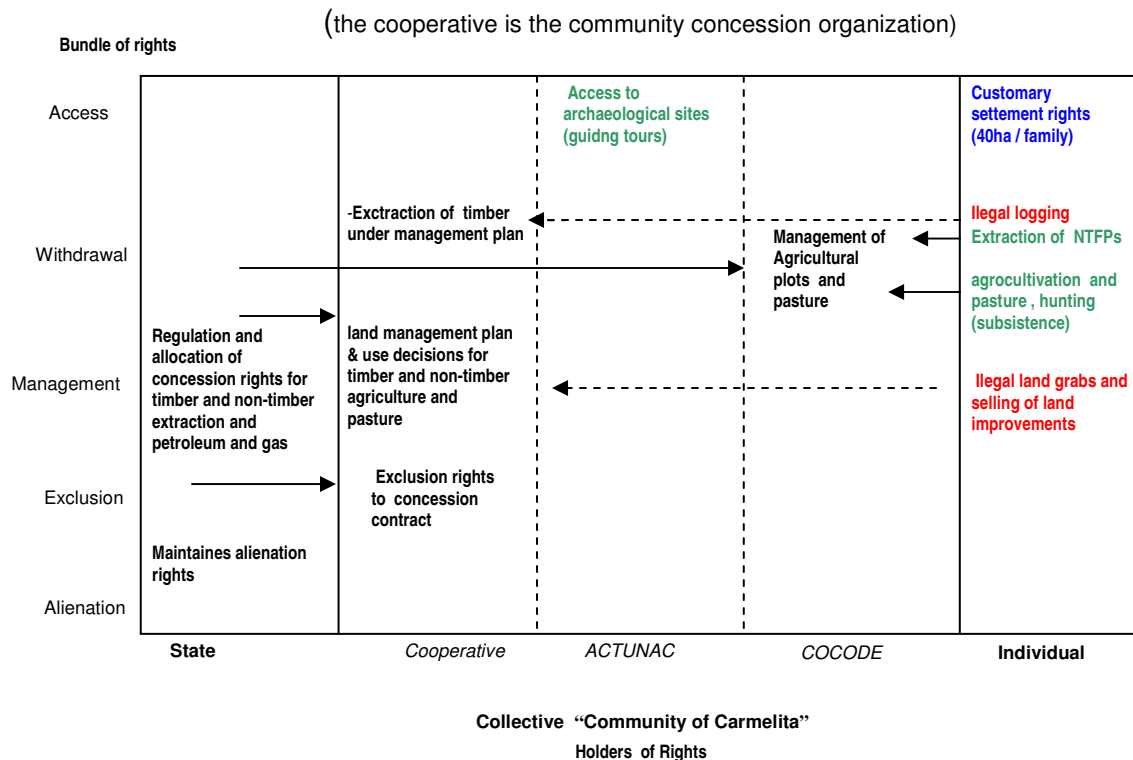
Recently, recognition of this regulatory gap has driven the government to move in the direction of regulating – with norms and rules similar to those of timber-access and management to NTFP. This would require the development of management plans and certification schemes. For the case of Carmelita this is an on-going process, the cooperative has a management plan for both xate and gum. The same applies in to the case of agriculture and pasture lands. While previously decisions over which areas should be used for these activities were taken at the household level, now the cooperative is organizing a land use plan. Land use decisions are particularly relevant in resident communities, such is the case of Carmelita, accounting for less than 2% of the total area under concession. Now, through the cooperative, there is a collective community process that incorporates these aspects of land use planning.

Planning and management of specific forest resources, such as xate palm, allspice and gum as well as tourism activities also requires collective action, allowing for sub-groups to organize within the larger concessionaire membership. In Carmelita there are three different community organizations that together represent the households in the community. ACTUNAC (Carmelita association for the promotion of community tourism) represents families that have no member relationship to the cooperative (concessionaire organization). Thus, they are excluded from the contract rights while the COCODE (Community Development Committee) is the local government figure and represents the community as a whole including members and non-members to the concession.

As mentioned above, access rights for permanent settlement in the forest for all community members is recognized as a customary right. Concession contracts ratifies this right under the contract and transfers overall or general

land use planning decisions to the local government figure, COCODE that represents claims of members and non-members of the concessionaire organization.

Figure 1. Distribution of the bundle of rights in the Community of Carmelita*



*Regulatory basis	
Ç	de jure
■	De facto
■	Customary
■	Illegal action

Source: Own elaboration based on fieldwork

Formal or *de jure* regulation was developed for the commercially valuable resources, mainly timber and gum, but without taking into consideration their relationship to other forest resources, much less the implications for sustainable management. No thought was given to the ways in which user rights of one group could affect those of others. For example according to the National Gum Tapping Law, states that all Guatemalan citizens are entitled to extract this resin within national borders. At the same time the community concession contracts give the cooperative exclusion rights to the concession, which are seen as basic for the additional responsibility of defending its perimeters, allowing for sustainable timber management within the unit. Strict environmental regulations are required to maintain forest certification, which means controlling outside access.

A series of conflicts emerge from this overlap. as a large number of gum tappers do not belong to the cooperative or even to the community of Carmelita, they emigrate during the tapping season (September-December) and do not follow informal or formal regulations established by the cooperative or the concession contract. In the case of Carmelita there have been informal responses to this conflict such as partnerships between immigrants and community collectors and contractors *contratistas*. The cooperative has tried to expand its informal system of regulations that aim to keep control of who is extracting gum, where and how. They do so by providing *avales* or guarantees, a written permission that establishes the camp from where activities will be organized and the number of days the collector will be staying in the camp.

While such informal regulations, such as the *avales* function also for xate-palm collection, a process of formalizing is underway while current practices are still organized based on *de facto* norms. Some community, non-cooperative members argue that timber activities have undermined the sustainability of non-timber forest product extraction. (Missing more detail here) We have argued elsewhere that variables affecting availability and quality of NTFPs is related to management practices and market constraints. In the case of Carmelita, conservation areas, have been assigned specifically for NTFPs extraction purposes. In these areas, no timber harvest occurs. As of yet, no discussion has emerged around how to treat other NTFPs and rights to environmental services, for instance carbon storage, biodiversity,

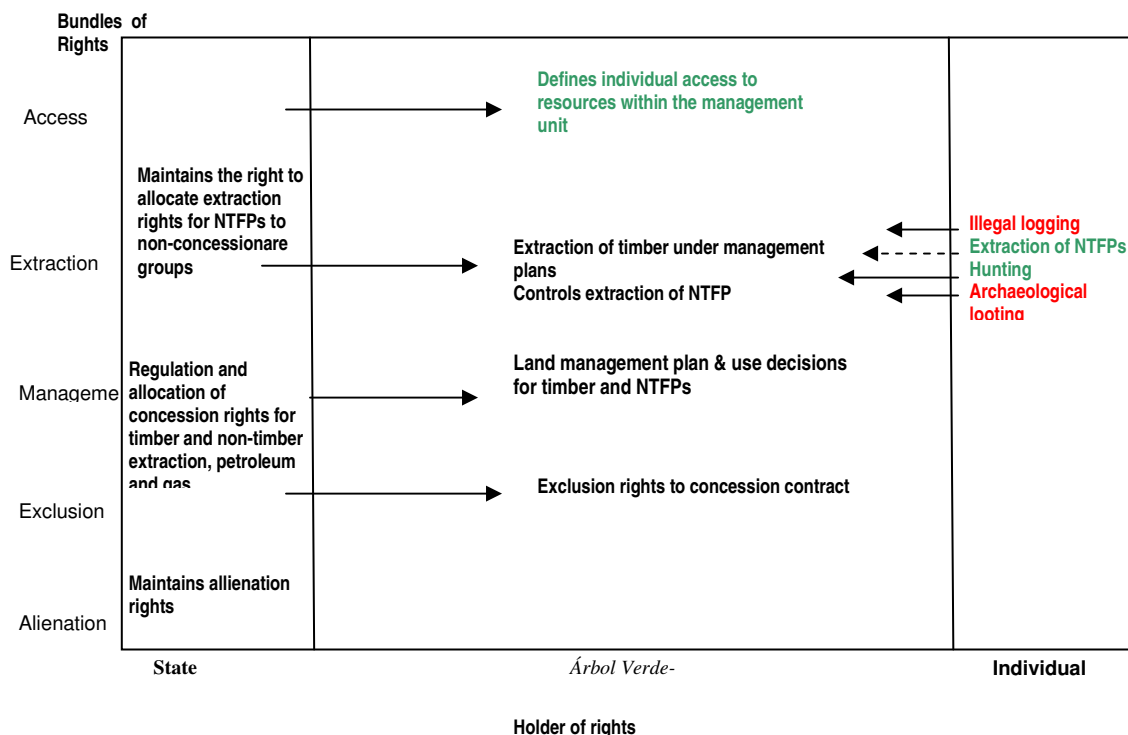
2.2 Site two: “Tenure box” of Arbol Verde

Results from the second site show a similar pattern of transference of rights for resource use and decision making to the collective, Arbol Verde. However there is a significant difference given that the concessionaire members are not residents in the MUZ. The community organization of Arbol Verde was attained through collective action, under the new legal framework that allowed members of communities to organize and form the Civil Association of Arbol Verde, to have decision making rights in this concession. This means that without the concession contract, Arbol Verde members would not have had access to the usufruct or management rights of timber and non-timber resources. As they are not forest residents, no agriculture and pasture activities

are permitted in this concession. Since Arbol Verde organized and has taken legal 'possession' of the concession area, the open-access conditions that favored illegal activities including logging and archaeological looting have been significantly reduced. With the legal exclusion rights transferred to Arbol Verde members, and they focused their initial organizational capacity to patrol and drive out transgressors, thus securing tenure rights. Concessionaire organizations are required under contract, to report any transgression to government agencies. However, while CONAP is the direct government agency responsible in the MUZ, there is no clarity for the legal procedure that should follow when reporting such activities. Reports should be presented in police departments. But, due to the lack of instructions in the penal code that sanction environmental transgressions, these efforts remain 'unpunished.' Rarely, does an environmentally related case find its way into the courts.

Another significant difference in the case of Arbol Verde is that other traditional users, not belonging to this concessionaire organization, which previously extracted NTFPs under *de facto* agreements in this area have lost their claims. This is particularly relevant especially over commercially valuable resources such as gum and xate-palm. Under such conditions, formal regulations establish that, in the case of gum, tappers can extract the resin from any area under public property and the state maintains the right to allocate extraction permits to non-concessionaire members. At the local level, in the case of Arbol Verde, as of 2003 non-members are prohibited, under *de facto* agreements, to extract any NTFP in the area under concession. This evidences conflict that derives from lack of coordination between formal regulations that allocate use rights over the same resource to two different groups.

Figure 2. Description of the bundle of Rights in the community forest concesión.



*Regulatory basis

de jure
De facto
Customary
Illegal

Source: own elaboration based on fieldwork

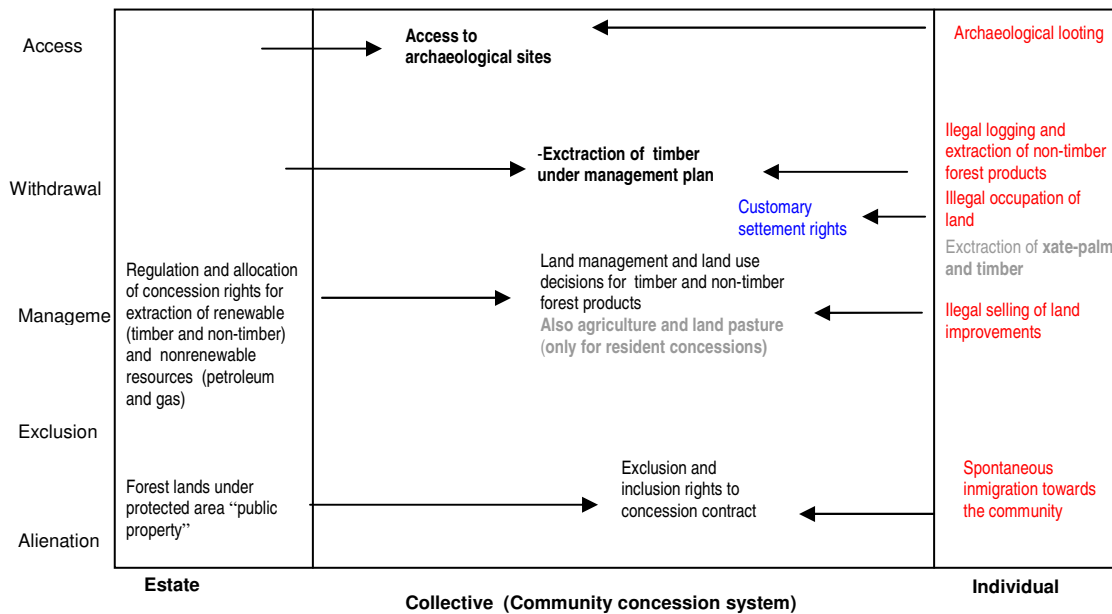
2.3 Identification of principal changes in the bundle of rights derived from the establishment of the concession system in the MUZ

An important difference between Carmelita and Arbol Verde comes from the residence status. In the case of Arbol Verde claims to manage forests did not emanate from a history of residency resource extraction. These were individuals from several communities, organized around the quest for acquiring the right to extract and manage natural resources to which they had no previous access. In the case of Carmelita, community members had been extracting mainly non-timber forest products for over 80 years. However they gained extraction and management rights over timber resources as well.

From the establishment of the concession a set of new social relationship emerges, one that derives from the status as a member in a collective organization. Additionally the relationship between these collective organizations and the state changes, as government agencies remain in the picture, playing a key role in the implementation of the regulatory framework, influencing day to day implementation of both the environmental (conservation) agenda and that of the concessionaire organizations. Certified timber harvesting becomes the entrepreneurial model at driving the tenure reform. It unveils itself to be at the center of the legal framework backing the community concessions. Non-timber harvesting and management takes a back seat, but does not disappear. While in Carmelita, NTFP harvesting continues to be managed under informal agreements, allocation of the management unit of Arbol Verde has implied the loss of traditional rights of NTFP users in this area. This conflict results from incongruence in the legal framework that recognizes extraction rights to different groups in the same territory. Additionally we see the necessity for non-recognition of traditional rights in management areas, as a strategy employed by Arbol Verde to guarantee their exclusion rights and guarantee control sufficient to qualify for certification of their timber production..

Here, the crucial role of the State is not fulfilled, as there is a lack of a system of sanctions and penalties backing up exclusion rights of communities. Neither have we seen an active role of State organizations in following up of the pressure when illegal activity is reported. (Here we see that relationships emerging between the individual and the collective (the concessionaire organization) through membership and non-membership status, between the collective and the state through the recognition, allocation but also compliance of rights are important in terms of governance schemes that favor sustainable conditions over resources.

Figura 3



*Regulatory basis	
	<i>de jure</i>
	<i>De facto</i>
	Traditional (Customary)
	Illegal action
	Applies only in the case of Carmelita

Evolution from individual *de-facto* open access situations to conditions in favor of the collective control of common property areas, via the community organizations highlights the role of common property under collective tenure in community concessions. This entails the establishment of a collective entity that served as the rights receiver figure for the transference of rights. The state, as the rights granter, remains in the picture with the important role of backing up the model furnishing the legal framework and guidelines. Here we see two important shortcomings. While the legal framework required the establishment of a formal organization, we observe in these two cases organizational forms chosen were inappropriate structures for timber and NTFP management and commercialization. Cooperatives in Guatemala are still agrarian-oriented organizations and civil associations are non-for profit figures. Another important shortcoming stems from the relationship of these organizations and the state. While the state focus on developing a regulatory framework center of timber harvest, transformation and commercialization, NTFP management remains under informal agreements. The concession figure legitimized traditional forms of access but rules around resource use and management remain under informal agreements. While is not necessarily bad, legal gaps and incongruence meant lost of traditional rights of groups in areas where extractors were not represented into the new collective entity. The framework dictated by the state, backed up also by external NGO funding, mobilized timber production and not NTFP uses until recently.

Finally, the graph illustrates the boundaries of the model; it shows that the State holds both alienation rights and usufruct rights over non-renewable resources (such as petroleum and gas).

Communities have the exclusive right to the concessions and are charged with excluding third parties/invasions. However, reports of illegal activities have little follow up from state organizations undermining exclusion rights of these organizations. While we see that some organizations like Arbol Verde invest in vigilance to maintain control of access routes, at the long run this represents an important pressure on tenure security..

IV. Section V:

Looking into the changes in tenurial arrangements is only one step towards understanding how the allocation, transference and shift of rights towards the community people in the MUZ through the community concessions, influence tenure security within the MBR. As it has been argued by other authors (Pacheco and ?????) the outcomes of the tenure reform in the case of community concessions will depend in a number of conditions other than just the formal recognition of rights. Such as the capacity of local social groups to develop institutional arrangements, their ability to respond to formal regulations and make alliances with other groups, their ability to link to markets and other structures such as credits to ensure benefits from gained access rights. We have argued here that responding to the claims for securing land and resource access in a pre-condition for building sustainable livelihoods based on forest resources. We have implied that ensuring rights over resources not only redefines livelihood strategies based on non-timber and timber forest products but also guarantees maintaining/gaining access to benefits of these resources ensuring their protection and sustainability. This section presents a discussion assuming this hypothesis, and selects two variables to explore current dynamics that are related to changes in tenure arrangements on forest resources¹¹, mainly looking at how community concessions have been able to stabilize deforestation dynamics within the MUZ vs. other management zones within the MBR. Second, we analyze impacts on income and job creation at the household level.

Community concessions in Peten are the resulting arrangement and negotiation among a series of actors, including conservation authorities, community concessionaires, the timber industry and local government. This is a rather unique experiment for Central America, or Latin America at that. Outside of Mexico, nowhere in Latin America had such a large bundle of rights to land and forest resources been transferred in such a short period of time, and at the same time –not without problems- received government and donor investment and support.

In terms of regional impacts across the concession areas, the initial benefits are clear and documented. The concession model applied to communities allowed them to secure their residence in the area for at least 25 years, renewable. Their members could now begin to exploit the forest resources under criteria for

¹¹ Again, we are aware that there are other variables that should be taking into account when assessing benefits derived from changes in tenurial arrangements in concessions. While this project develop individual indicators for issues such as changes in social and financial capital as well as forest conditions, here we have selected a number of variables that help us prove our initial hypotheses.

sustainable use, where standards and indicators were being elaborated for different resources, some developed on the basis of traditional practices and others developed by external scientific efforts (FSC). Emphasis has been made in the previous section that the positive results of the concession model are mostly related to timber management, where state has placed effort and focus to develop legal guidelines not recognizing traditional uses around NTFP until recently.

One major indicator of improved forest conditions can be found in the time series Landsat images and maps of the MBR showing that compared to the period before the community concessions, forest fire has been reduced significantly throughout the areas under community control in comparison to those in the protected areas or bordering the entire MBR. The difference is significant and sustained. (WCS, CONAP, FIPA 2001-2005, Bray, et.al. 2007)

Table X. Land use changes in Community Concession vs. other management zones within the MBR

			Land use changes (ha) 86-90	Land use changes (ha) 97-00	Land use changes (ha) 00-01	Land use changes (ha) 01-02	Land use changes (ha) 02-03	Land use changes (ha) 03-04	Land use changes (ha) 04-05
ZUM	Area	782117.2	342.6	666.9	824.9	809.9	3241.7	2093.5	
	%		0.04	0.09	0.11	0.1	0.41	0.27	
ZAM	Area	365057.8	2609.4	5266.8	4088	6951	8598.9	12614.7	
	%		0.71	1.44	1.12	1.9	2.36	3.46	
Total Community concession management units			115.2	144.2	529.7	384.7	1547.9	1079.9	
Land use changes in Carmelita (ha)			3.7	1.7	2.9	4	9.7	6.5	
Land use changes in Arbol Verde									

WCS et al, 2001-2005

Illegal logging and archaeological contraband (until recently) had diminished significantly. As it is highlighted in Table X, the maintenance of forest cover in the areas under community concession marks a stark contrast to the heavy deforestation occurring on the other side of the Mexican border and is relatively better than that of the protected areas themselves. (Bray, et.al. 2007) Between 1990 and 1999 the deforestation rate for this management zone is 0,17 while for the Buffer Zone it was 3.0 and the Core Zone are is 0..34 (Tattenbach et al., 2000:22). The community members themselves had been able to establish their own local governance systems, based on an expanded set of rights of access, use, decision-making over their natural resources. This included organizing for constant vigilance and patrol of the boundaries of the concessions as part of their responsibilities.

However, these significant changes rest upon a tenuous regulatory framework. Communities must meet the standards and comply with the regulations for timber production and gum extraction – on a yearly basis - in order to renew their concession rights. Another major issue is the inconsistency in the state’s backing their exclusion rights. Timber regulations are extremely complex, costly and time consuming, This becomes more problematic as the organizational and technical expertise of some community concession groups is

limited. Additionally, when matters require full collective support, communities require longer time for reaching consensus (if compared for instance with a private timber industry). This is more relevant in cases such as the processes required to export mahogany, to obtain the annual certification evaluations, not to mention that intentions to export non-timber forest products require for all products separate procedures (for certification and for development of management and annual operation plans as well).

From an economic perspective, community concessionaires have increased incomes notably as they reap the benefits of harvesting high value timber (over 33% including cedar *cederela odorata* and mahogany *swietenia macrophila*), and lesser known species on the international market (over 60% including timber species *bucida buceras*, *lonchocarpus castillo* and *calophyllum brasilienses*). Income benefits can be obtained directly either by creation of working places or distribution of benefits. While the first will encompass benefits for both members and non-members, distribution of benefits are distributed only among members of the concessionaire organization. Table X summarizes indicators around the distribution of benefits. It shows that for the year analyzed, dividends are considerably higher in the case of Arbol Verde than in the case of Carmelita. When looking into detailed accounting information, we observe that for this year Carmelita invests close to 75% in wood extraction and processing. By this year, their sawmill was recently acquired and considerable investments was required to hire machinery and external sawmill services.

Table x. Dividends Timber management activities provide over 50,000 work places in the region, involving directly 2,000 families and over 3,000 indirect beneficiaries. Detailed description of the number of work places created at the community level for both sites analyzed appeared in table X. Here we want to highlight two things, first that although members have exclusive rights to timber management, non-members are benefited by the creation of working opportunities. This is particularly relevant for both communities because both local groups had no previous experience either in working with timber nor having the access to benefits from this activity. In the case of NTFPs extraction, we see that job creation is more relevant in the case of Carmelita. It is important to note that working places here point to the number of jobs created at the concessionaire level and does not take into account the number of people involved in this activity that work in sub-groups or at the individual level.

Tabla 1 Man/Working days created

Activity	Carmelita		Árbol Verde	
	Members	Non-members	Members	Non-members
Extraction			924	127
Wood Processing			851	458
Certification			127	43
Vigilance			325	90
Comercialization			16	
Board of directors			486	
Annual			618	414

operations plan				
Total working places created	2000	250	1132	3462
%	90	10	74,4%	24,6%
Tourism	100	50	100	0
xate extraction	S/I	400	0	0
Gum-tapping	S/i	200	0	0

S/I = sin información

Further understanding of the benefits of this model and the lessons learned vary according to the reading of the reality of the Peten 'model.' There are different interpretations of the role of CONAP and other government agencies in the development and implementation of policy regulations. While some refer to the central role of NGO representatives played in the task of developing new rules in the management of the MBR, foreign aid representatives considered that government position was crucial in establishing the new legal framework (interview Tschinkel, 2007). Government agencies could either speed or slow the process. According to Tschinkel (personal communication, 2007) it was lack of clarity and slow processes for approving concessions norms that delayed the allocation process between 1994 and 1998 (Only three community concessions were allocated during this period).

Unfortunately local government had little participation in the process of defining the MBR and concessions, despite the importance it played in mediating local conflicts. External aid agencies and NGO's had a major influence on the role of government actors, project design and direction came mainly from the donor agency and its partner NGO's. Many consider that they substituted the Guatemalan institutions and thus stifled the option of building up local official capacity for long term governance in conjunction with the communities. The small efforts to capacitate local technicians led to their being hired off by the international NGO's that were able to provide better employment conditions (UAESPNN, 2004). With the end of international project funding, the consequence of this 'project' strategy has left weak national and local institutions behind.

Regardless of the perspective, all parties have agreed that for the last several years, the Peten has been transformed into a governable, workable territory with a population that is earning benefits from the forest while protecting it. Most of the evidence demonstrates that the forest under community concession is better off than the rest under other land use 'regimes', including the core protected areas themselves and the outlying agricultural farms and communities south of the MBR itself.

VI. SECTION FIVE : DISCUSSION

The cases presented above demonstrate that the tenure reform in the Peten made significant changes in the distribution of the bundle of rights across the actors. In reality, it actually went further than this. The intended reform – establishment of a biosphere reserve and system of protected areas, with traditional buffer zones- was transformed into a forest tenure reform that not

only recognized existing individual rights and collective action¹² broadly speaking, (community push-back against strict conservation on their traditional lands), but actively promoted collective organization for the management of forests as common property.

The arrows, demonstrating the direction of rights transference are clear, with the shift in several of the bundles of rights from both the state and individuals to the collective sphere. Thus, what was previously a tenure regime based on state forest lands, with informal rights at the individual household level and legal individual industrial concessions (use, extraction and management) to forest resources was dramatically altered to form a new and more inclusive constellation of rights.

First, the new model brought the state into the forest. The establishment of CONAP (and demise of FYDEP) required a significantly increased presence of this government agency *in situ*. Although its principle function was to provide the role of guardian of the protected areas, sanction trespassers, and monitor the evolution of the forest, effectively it began to play the role of accompaniment and mediator with respect to the community concessions. Conap and the concessionaire organizations worked hand in hand –the degree depending on the political administration of the moment- to defend the larger constellation of the MBR together. This is particularly relevant when looking into some recent conflicts concerning control of resources within the MBR such as the case of extension of park areas to promote tourism activities in El Mirador Archaeological site (ACOFOP-CIFOR, 2007). The goal was to prove that these large tracts of forest land, under the control of the community forest concessions (CFC) sustainably managing the forests surrounding the protected areas, would serve as a more effective ‘buffer’ than industrial concessions or other social land uses, such as agriculture. (Barry and Monterroso, 2007)

What is not as evident is that the reforms actively promoted the creation of collective entities, by requiring organized collectively to obtain legally recognition (personeria juridical) as a prerequisite for becoming the new holders of those rights. The cooperative in Carmelita and Arbol Verde itself became the principle vehicle and receptor of these rights. Similar situations existed for the other 12 concessions. Here, a policy framework that fostered the emergence of these collective entities strengthened this ‘realm’ of rights holders, the communities ‘rose to the occasion’ and managed to constitute a set of community organizations that became the community concessionaire system, in support of the larger MBR scheme. The existence of both the MBR and the CFCs and their intimate relation is necessary to understand the how the role of legitimacy plays out in assuring or undermining tenure security for communities.

What should not be left out is the fact that a large donor effort was put in place to support the emergence of this scheme. At first reluctant to recognize the importance of the concessions, AID later zeroed in on them as a key feature of

¹² Previous rights to access and harvest non-timber forest products, and the historic rights of settlement, that bring with them agricultural use of forest lands.

the larger project. Their funding went principally to the creation of an enabling environment: technical training of government officials, institutional strengthening of CONAP, monitoring and communications equipment, subsidizing of certification training and implementation. Little external funding went directly to concessionaire organizations (Monterroso, 2007).

In the process of transferring rights to community groups, timber stays at the center. Community organizations gain rights over a resource that had been reserve only for industries. Nonetheless, when looking into the process of how transference played out we see that legitimacy of the concession model was based on the promotion of timber harvest activities. Two actors play major although significantly different roles in this. The state, as rights granter establishes a sound regulatory framework that organize timber activities, the definition of detailed procedures to develop management plans, certification schemes and trade regulations for timber resources. International donors also play an important role ensuring technical skills, facilitating formation of community enterprises, strengthening timber commercialization skills and strategies. All of these activities meant to mobilize timber production activities. When looking into the outcomes of such activities, we see that the model based on timber management strategies and regulations has been successful in increasing economic benefits. It has also been successful in turning these communities into timber enterprises. While in this regard some concessionaire groups still face important challenges, indicators around the generation of income and job creation proved that the model has been successful for the two sites studied. Further can be said about the ability of State and other external actors in the ability to integrate in the model NTFP activities. While results from the lack of recognition of such aspects are easier to observe in resident communities where there is proven tradition of extraction of NTFP, we observe that not recognizing what were also part of claims when struggling for concessions may result in conflict around access to resources. This has resulted in that some groups have lost their traditional rights to resources.

Another important aspect that needs special attention is the recognition of the social embedded structures that result from the emergence of concessionaire figures, such as the membership status. Relationship between individual residents and the new collective entity are important when looking into representation and accountability issues. This is highly complex and differs among the two different concessions organization. Carmelita struggles to incorporate all community residents within the collective, enhancing participation and promoting distribution of benefits not only through the creation of jobs but also increasing cooperative investments at the collective level such as in promoting education. In the case of Arbol Verde the relationship between the collective entity and the nine communities diffuses given that this organization is only one of the many existing in the communities represented.

Finally, we would like to focus on what we consider to be the two of the most important elements of legitimacy that underpin tenure security for forest communities. First, the fact that a shared political acceptance of forest

conservation was at the heart of the reform, put another way, conservation was the underlying logic legitimizing the reform. The introduction and eventual transformation of the values of conservation of forests, from protection to producing forests- led by local forest dwellers- legitimizing the existence of the community concessions. The Guatemalan state, the national and international conservation organizations and the communities themselves (plus donors) placed their 'bet' that communities would manage the forests better than industrial concessions, and in thus doing, better protect the protected areas. It is important to note that all external actors (central government, donors, NGO's, etc) realized that without the inclusion of these forest communities, governance in the region would continue to decline (Barry and Monterroso, 2007). However lately renewed interests in the control of resources emerge from different development logics, such as tourism, petroleum, even agrarian interests. This places higher pressure not only on state organizations but also on communities to prove their outcomes not only in terms of improving livelihoods but also on the ability to maintain deforestation rates.

At the community level other elements come into play when discussing legitimacy and the elements that undermine tenure security. These come specially from the ability of organizations not only to increase economic benefits in terms of income and job creation, but also in the ability to create accountability mechanisms that ensure distribution of social and economic benefits among the serious of groups, including members and non-members of the collective concessionaire entity. Additional challenges emerge from the discussion of what it means to be a 'community enterprise', also related to equity issues.

Secondly, the CFC's became the specific artifact in legitimizing the overall tenure configuration. Outside the protected areas, the onus of good forest management and to some degree, the role of buffering external impact on the PAs was placed on the shoulders of the CFC's. How 'well' they fared would be the measure of success or failure of the model, and thus their tenure security. The larger scale indicators to be monitored were forest cover maintenance¹³, and livelihood improvement, although the first was the dominant. Forest management was not only highly regulated, but had a series of technical instruments –certification- that would closely bind communities to good forest management. This in turn, was purportedly required as the basis for renewal of their concessionaire contract. Certified board feet would become a measure of "success" at this level and would then legitimize the experiment and give credibility to the model.

Despite all the previous challenges discussed, it is highly accepted that community concession areas are those in best kept conditions, while protected areas have fallen prey to open access ravaging of the forest. Landsat images

¹³ Implicitly the comparison to the impact of the industrial concession model. However, industry remained in the picture with two small concessions and a large role in processing and commercialization.

and deforestation rate indicators shown in previous sections prove this point. Our findings contribute in the development of a more sound community concession model recognizing successes but also pointing out some weaknesses. Understanding how tenurial arrangements play out in reality and how other variables intervene in the process is important for developing more sound policy frameworks that approach gaps and incongruence in the system.

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