



New Evidence that Mexico's Community Forests Protect the Environment, Reduce Poverty, and Promote Social Peace

A report from researchers at the Universidad Nacional Autónoma de México, the Centro de Investigación y Docencia Económica, CIIDIR-Oaxaca, Florida International University, University of California-Berkeley, and other national and international universities

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Mexico has two forests. The forest that appears in newspaper headlines is disappearing and degrading at a rapid rate, due to bad logging practices and clearing forest for pasture. The second is much less known and is not disappearing. It is actually growing, generating good income for rural families, and providing habitat for biodiversity from jaguars to rodents. That forest belongs to many Mexican communities who struggle to be modern stewards of their forests. These communities have learned the forest is a renewable resource that can be used without degrading it. Unfortunately, other communities still struggle with corruption and internal conflict and aren't taking care of their forests. But a surprising number are doing a world-class job, and there are more than enough of them to show it is not an accident.

For decades Mexico has been conducting a large experiment. What happens when you give poor communities forests and some training and equipment? Do they destroy them in the name of economic development? Or do they take care of them, using them to generate income now while keeping them as a resource for their children? Researchers working with Mexico's forest communities are now beginning to have some answers to these questions.

Previous reports showed Mexico's community forest enterprises are relatively profitable, no matter whether they sell their trees in the forest or first extract them and take them to sawmills, or run their own sawmills. The fact that communities collectively own their forests and manage forestry companies is unique, an innovative Mexican social invention that the rest of the world is only beginning to discover.

Well-managed community forests conserve forest cover as well or better than public protected areas or parks. Most community forest enterprises use carefully managed selective logging that has little impact on most wild plant and animal species. Mexican communities are showing they can use forests to advance their own welfare while still conserving animals and other environmental benefits. UNAM researchers have even found community forests in Quintana Roo provide good habitat for jaguars and their prey.

The Mexican communities' experience shows that people with limited initial education can operate complicated industrial operations, which in some cases have become internationally competitive, exporting boards and moldings to the US. Some use the profits to invest in the education of their children and there are cases where a new generation of university-educated community managers has emerged.

Community forest management for timber in Mexico is increasingly being recognized as a global model. Senior forestry officials in China have recently looked to Mexico as they undertake sweeping forestry reforms, while high level World Bank officials have identified the country as a major source of promising ideas for forest management.

This report summarizes some of the latest research on Mexico's community forestry. We report new findings on 1) the magnitude of community forestry, 2) its

impacts on deforestation, 3) its role in poverty alleviation and reducing government spending and 4) its contribution to peace in violent rural areas. This research has been carried out over the last five years by researchers from the Universidad Autónoma de México, the Centro de Investigación y Docencia Económica, CIIDIR-Oaxaca, Florida International University, University of California-Berkeley, and other national and international institutions. The research was carried out using satellite images, socio-economic surveys, research in government archives, interviews with forest technical service providers in a sample of ten important forest states, participant-observation, and economic and statistical analyses. Some research and analyses are ongoing, and we expect to have more complete results coming out over the next year. A selection of previously published research can be found in the bibliography of this report.

More Communities Manage Forests for Timber Than Previously Thought

Until recently, most experts thought that fewer than 1,000 Mexican communities managed their forests for timber. However, research has now established that 2,300 communities had logging permits between 1992 and 2002. Table I below represents the first effort to document and analyze logging permits in all Mexican states. The 2,300 communities who logged during the stated period included 1,867 ejidos and 433 comunidades. This means that more than 15% of Mexico's estimated 15,800 forest agrarian communities produce timber, either on an ongoing or occasional basis, and it is likely that the vast majority of the 85% who do not, do not have large enough forests to carry out sustained commercial logging. Seventy-seven percent of all permits were in just ten states: Durango, Michoacan, Chihuahua, México, Oaxaca, Puebla, Jalisco, Chiapas, Guerrero and Quintana Roo. As Table I indicates, the harvested land area under permits in the entire country was 2,707,112 hectares, representing an annual harvest volume of 9,945,930 cubic meters. Durango and Chihuahua alone concentrate 63% of the total national community harvest volume.

Table 1: Mexican Communities and private owners with Logging Permits (1992-2002)

| State | <i>Ejidos and Comunidades</i> | | | | |
|---------------------|-------------------------------|-------------------------|-------------|---------------------------------------|--|
| | Number of <i>Comunidades</i> | Number of <i>Ejidos</i> | Total FCE's | Land Area Authorized for Harvest (ha) | Authorized annual harvest volume (m ³) |
| Aguascalientes. | 0 | 2 | 2 | 2,270 | 3,298 |
| Baja California. | 0 | 0 | 0 | 0 | 0 |
| Baja California Sur | 0 | 10 | 10 | 15,030 | NA |
| Campeche | 0 | 62 | 62 | 142,076 | 155,359 |
| Chihuahua | 28 | 210 | 238 | 766,085 | 2,615,472 |
| Chiapas | 9 | 122 | 131 | 108,459 | 475,298 |
| Coahuila | 0 | 7 | 7 | 16,410 | 36,608 |
| Colima | 0 | 20 | 20 | 27,150 | 38,511 |
| Distrito Federal | 4 | 1 | 5 | 1,610 | NA |
| Durango | 65 | 236 | 301 | 622,397 | 3,662,131 |

| | | | | | |
|-----------------|------------|--------------|--------------|------------------|------------------|
| Guerrero | 18 | 109 | 127 | 84,126 | 600,888 |
| Guanajuato | 0 | 23 | 23 | 10,445 | NA |
| Hidalgo | 1 | 71 | 72 | NA | NA |
| Jalisco | 12 | 141 | 153 | 117,520 | 471,362 |
| México | 28 | 108 | 136 | 55,657 | NA |
| Michoacán | 54 | 192 | 246 | 126,035 | 546,215 |
| Morelos | 0 | 5 | 5 | 2,748 | 49,187 |
| Nuevo León | 0 | 38 | 38 | 17,558 | 44,828 |
| Nayarit | 23 | 25 | 48 | 17,402 | NA |
| Oaxaca | 172 | 43 | 215 | 34,848 | 603,120 |
| Puebla | 9 | 121 | 130 | 46,499 | 267,629 |
| Quintana Roo | 0 | 82 | 82 | 176,795 | 231,779 |
| Querétaro | 0 | 5 | 5 | NA | NA |
| San Luis Potosí | 0 | 22 | 22 | NA | NA |
| Sinaloa | 10 | 91 | 101 | 197,259 | NA |
| Sonora | 0 | 0 | 0 | 0 | 0 |
| Tabasco | 0 | 1 | 1 | NA | NA |
| Tamaulipas | 0 | 57 | 57 | 71,554 | 144,245 |
| Tlaxcala | 0 | 7 | 7 | 1,523 | NA |
| Veracruz | 0 | 45 | 45 | 23,038 | NA |
| Yucatán | 0 | 6 | 6 | 7,782 | NA |
| Zacatecas | 0 | 5 | 5 | 14,835 | NA |
| Total | 433 | 1,867 | 2,300 | 2,707,112 | 9,945,930 |

Source: National Survey database, SEMARNAT officials, SEMARNAT websites

All of this is striking evidence of the contribution that forest production communities can make to sustainable forest landscapes in Mexico.

The size and complexity of the community forest landscape requires a system to classify. Table II below classifies the communities with logging permits in a sample of ten important forest states into four types: Type 1 previously logged but don't log at present. Type 2 sell their trees "on the stump" in the forest. Type 3 use extraction equipment and/or trucks. Type 4 have sawmills and other advanced processing.

Table II. Distribution of forest communities with logging permits (1991-2002) by production type

| State | Production Type | | | | Not Classified | Total general |
|-----------|-----------------|--------|--------|--------|----------------|---------------|
| | Type 1 | Type 2 | Type 3 | Type 4 | | |
| Campeche | 20 | 4 | 32 | 1 | 6 | 63 |
| Chiapas | 31 | 41 | 26 | 1 | 32 | 131 |
| Chihuahua | 24 | 60 | 73 | 51 | 31 | 239 |
| Durango | 56 | 143 | 69 | 42 | 11 | 321 |
| Guerrero | 57 | 41 | 15 | 10 | 4 | 127 |
| Jalisco | 34 | 105 | 8 | 5 | 5 | 157 |

| | | | | | | |
|----------------------|------------|------------|------------|------------|------------|-------------|
| Michoacán | 40 | 164 | 21 | 12 | 9 | 246 |
| Oaxaca | 39 | 73 | 48 | 31 | 26 | 217 |
| Puebla | 25 | 3 | 107 | 3 | 9 | 147 |
| Quintana Roo | 30 | 6 | 37 | 7 | 2 | 82 |
| Total general | 356 | 640 | 436 | 163 | 135 | 1730 |

The data suggests only about 10 percent of communities have reached the point of having sawmills and other advanced processing equipment. However, the fact that 163 communities got that far is impressive. No other country has that many. It shows under the right conditions communities can achieve high levels of industrial sophistication.

Having a sawmill or other advanced equipment adds more value, but may not be appropriate for all communities since it takes lots of time and energy to get communities to the point where they can manage their own processing facilities. Many communities used to log but stopped due to internal problems. Others simply choose to only harvest every few years. The typology suggests that public policies may have to be differentiated as to the type of community. Clearly, the needs of Type I and Type II communities are going to be very different from Type IV communities.

The degree of vertical integration appears to be influenced by the size of the forest resource, as Table III indicates (the sample size is smaller than in Table III due to missing information). Type 4 communities have nearly three times as much forests as Type III communities. However, in the other three types, there appears to be no clear relationship between size of forest resource and vertical integration, suggesting that there may be potential to increase contributions of the forest to community welfare.

Table III: Industrial Vertical Integration and Forest Size for Ten-State Sample

| Production Type | Average Forested Area | N | SD |
|------------------------|------------------------------|----------|-----------|
| Type 1 | 4,948 | 281 | 14,738 |
| Type 2 | 3,555 | 471 | 8,135 |
| Type 3 | 5,454 | 365 | 10,293 |
| Type 4 | 15,193 | 120 | 27,012 |
| Total | | 1,237 | |

Finally, a detailed analysis of forest management plans for the ten states suggests that on average nearly half of the total community territory in these communities is forested. Evidence also suggest that they on average only log about one third of their forest areas. While it is likely that the non-commercial forests are dominated by difficult to market hardwoods like oak or are inaccessible, it also raises the issue of understanding the uses of these large areas of non-logged forests on community lands. Thus, community forest management may also represent a sound long-term in situ conservation strategy. The management of commercially productive forests protects

them and other community forests from wildfires and illegal harvesting, and may not be vulnerable to conversion to non-forest land uses.

Community forest management for timber often protects forests and biodiversity at similar rates to parks and biosphere reserves.

For years, public protected areas have been considered the only effective way to keep people from destroying forests. But a wave of recent studies suggests that under the right conditions community-controlled lands can also maintain forest cover and conserve biodiversity. That suggests both community forests and parks can protect forests.

Quintana Roo is in the lead in demonstrating that communities with approved management plans are conserving tropical forests, not destroying them. One earlier study reported that the deforestation rates in central Quintana Roo, where community forests dominate, were lower than in any other region in southeastern Mexico, including regions where protected areas dominate. Another study showed community forests in Quintana Roo and Guerrero compared against a national sample of 74 protected areas had similar and low rates of deforestation, with community forests showing more forest recovery.

More recently, researchers compared community forests and biosphere reserves in the Maya Forest of Mexico and Guatemala. The Maya Forest is a large forest mass that the two countries share with Belize, and is the second largest forest area in the Americas after the Amazon. The Maya Forest region has two of the most mature experiences in community tropical forest management for timber globally. In Quintana Roo, community logging has been underway since the mid-1980s. In Guatemala, community concessions began in the mid-1990s, in part inspired by the Mexican model. Under the Guatemalan policy, local communities were given 25-year forest concessions on public lands, but were required to manage their forests well and receive “green certification”. The tri-national Maya Forest also includes the “Maya Arch”, the second largest cluster of biosphere reserves in the Americas. The study analyzed two of the Arch’s five biosphere reserves: the Maya Biosphere Reserve in the Petén, established 1990, and the Calakmul Biosphere Reserve (CBR) in southern Campeche, Mexico, established in 1989.

In Mexico, the study compared the CBR with seven forest ejidos in Quintana Roo, selected based on the size of their forests and the volume of mahogany they produced. In Guatemala it assessed parks and the community forestry concessions within the Maya Biosphere Reserve. This reserve consists of a core area (composed of solely of parks), a multiple use zone (where community forest concessions were granted between 1994 and 2002), and a heavily deforested buffer zone. (See Figure I: Map of Maya Forest with Protected Areas and Community Forests Studied)

The averaged yearly deforestation rate for all the protected areas studied in the two countries was -0.327%, while for the community forests it was -0.163%. Thus, deforestation rates in community forests were only half that of protected areas. In Mexico, the average yearly deforestation rate for the seven forestry ejidos studied was -0.024%, about half that of the lightly inhabited Calakmul Biosphere Reserve, with a rate

of -0.043%. Thus, community forests had lower deforestation rates than protected areas across both countries, although the difference between the two was not statistically significant.

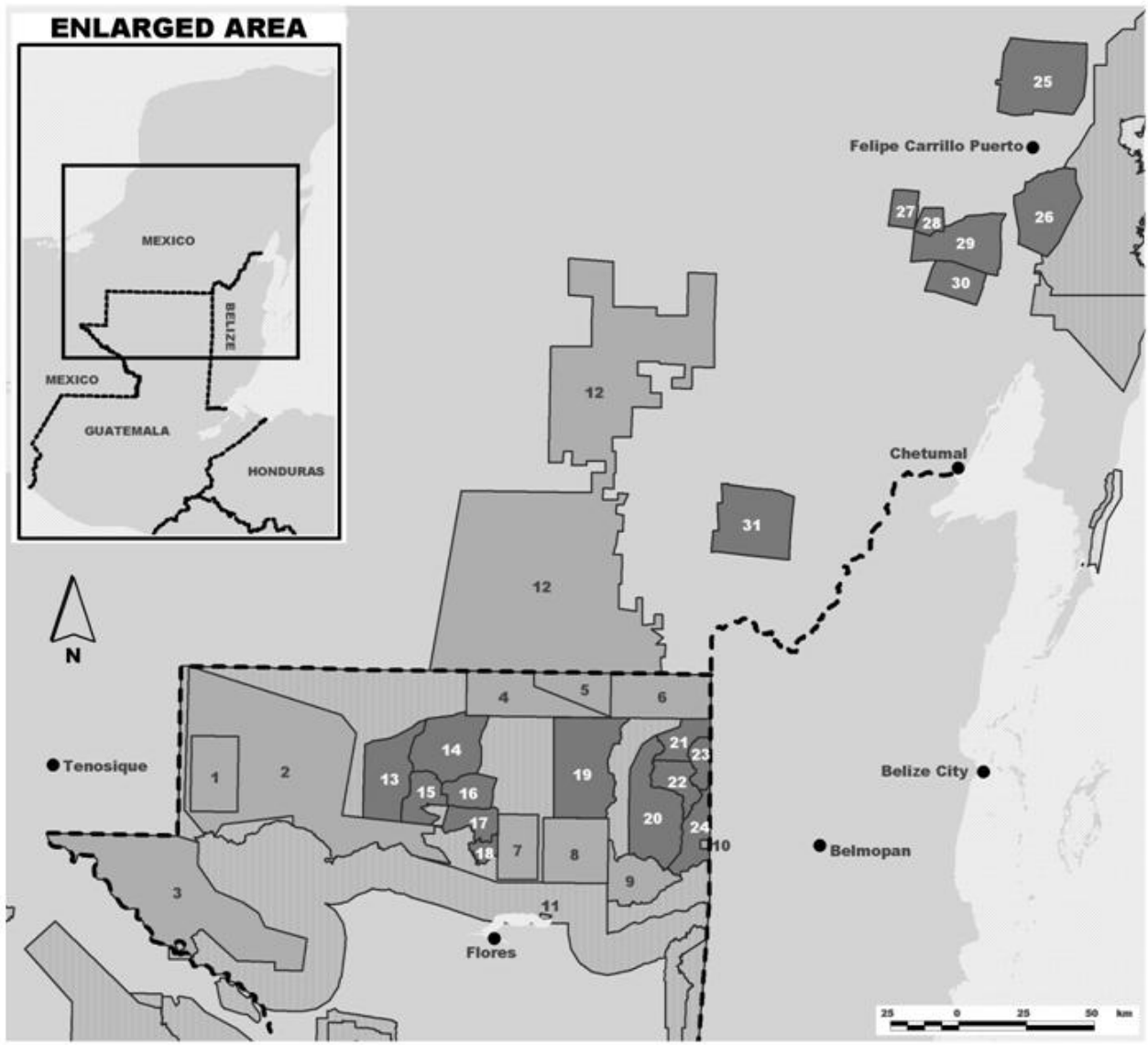
However, it is not enough to just look at whether a forest is a public protected area or community-controlled. One must also consider how dense the human populations are and how recently they go there. To evaluate these two variables researchers classified the parks in Guatemala into two groups, one that was largely uninhabited and one that had higher populations. The community forest concessions had to be classified into those that had been recently inhabited (~30 years), long inhabited (up to 100 years), and those that were uninhabited.

In Mexico, Calakmul was considered largely uninhabited (with small populations on the eastern boundary) while the forest ejidos were all long-inhabited. An important difference between the two countries was that in Mexico, large-scale tropical colonization in the region had ended by the early 1990s and never really affected central Quintana Roo, while in the Guatemalan Petén colonization by land-hungry small farmers continues to sweep over the forest

Two striking findings emerge from these comparisons, shown in Figure II. First, inhabited parks and recently inhabited community forests have almost the same deforestation rate, -0.694% and -0.716% , respectively. Since these two categories only exist in the Maya Biosphere Reserve one can attribute these results to the great pressure on forests there from agricultural settlers. Second, deforestation rates are both low and similar in uninhabited protected areas (present in both countries), uninhabited community forests (present only in Guatemala) and long-inhabited community forests (present in both countries). In all uninhabited protected areas the deforestation rate was -0.022%, in uninhabited community forests it was -0.003%, and in long-inhabited ones it was -0.023%.

Although some conservation organizations have argued that formal protected areas have proved to be the single most reliable instrument for protecting natural habitats from encroachment by farmers the evidence presented here for the Maya Forest suggests that this is not always the case. Where colonization pressures are low, as in Mexico, both protected areas and community forests can be effective at inhibiting deforestation, but community forests generate many more local benefits at lower costs to national treasuries. In the Petén, remoteness has protected both protected areas and community forests, but it appears that community forests may protect forests better than protected areas when faced with intense pressure for agricultural settlers. Figure III shows satellite images of how land use change processes are impacting the two different management regimes. Community concessions established by some recent settlers in Guatemala show similar deforestation rates to inhabited protected areas, but figures on population trends in inhabited parks and recently inhabited concessions suggest that immigration is better controlled in the community concessions. Evidence from both countries also suggests that long-inhabited forest communities are as effective as uninhabited protected areas at inhibiting deforestation, again, with much greater local benefits. This suggests that, *especially* in cases where agricultural encroachment pressures are strong community forestry can protect forests more effectively and

provide more local benefits at a lower cost to governments than protected areas, and the prospects are best in places where communities have been resident for long periods of time.



■ PROTECTED AREAS

■ FORESTRY MANAGEMENT

GUATEMALA

- 1 Laguna del Tigre - Río Escondido
- 2 Laguna del Tigre
- 3 Sierra del Lacandón
- 4 Mirador - Río Azul, West
- 5 Naachtun - Dos Lagunas
- 6 Mirador - Río Azul, East
- 7 San Miguel la Palotada - El Zotz
- 8 Tikal
- 9 Yaxhá - Nakum - Naranjo
- 10 El Pilar
- 11 Cerro Cahui

MEXICO

- 12 Calakmul Biosphere Reserve

■ OTHER PROTECTED AREAS

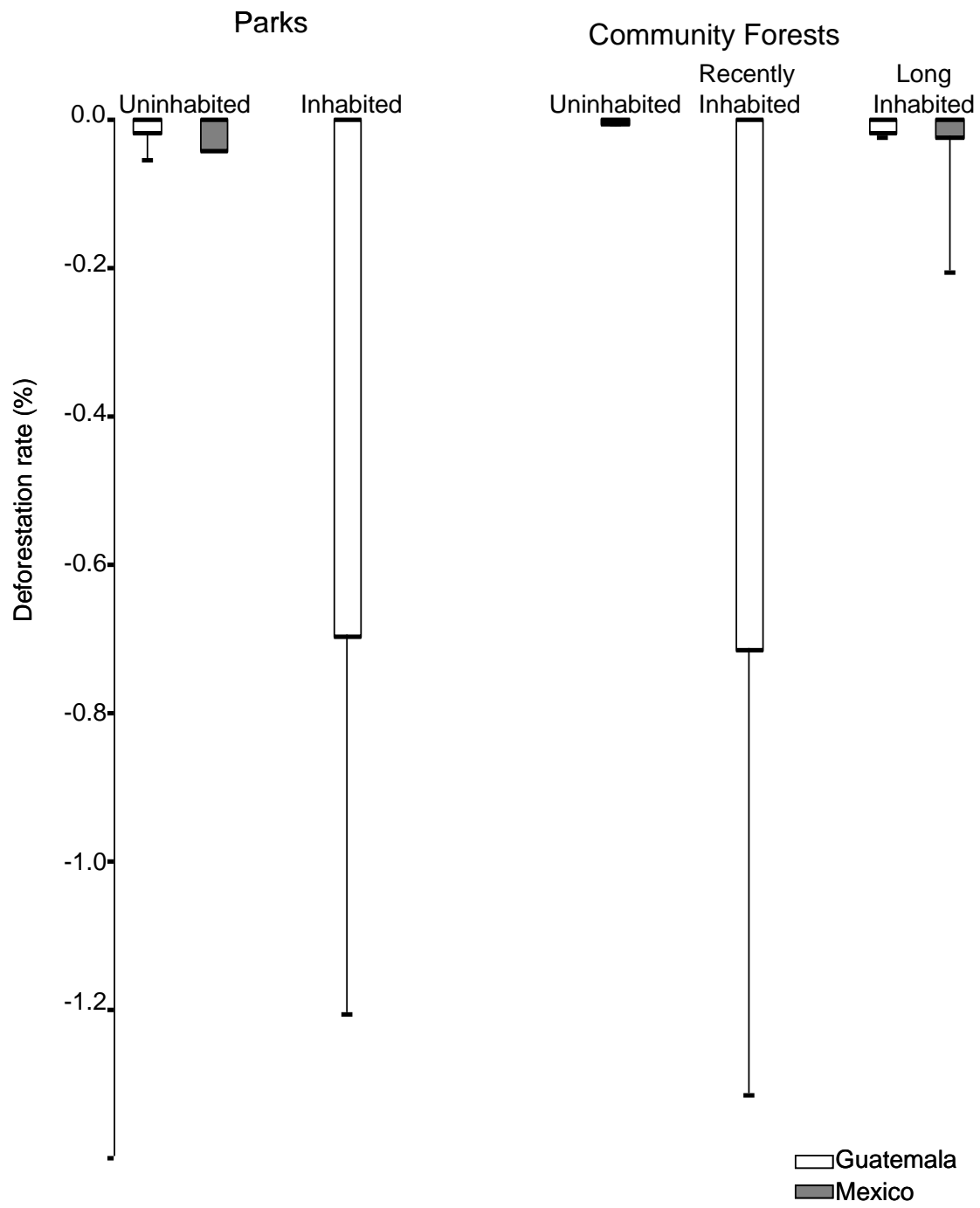
GUATEMALAN CONCESSIONS

- 13 San Andrés
- 14 Carmelita
- 15 La Colorada
- 16 Cruce a la Colorada
- 17 La Pasadita
- 18 San Miguel
- 19 Uaxactún
- 20 Arbol Verde
- 21 Chosquitán
- 22 La Unión
- 23 Río Chanchich
- 24 Yaloch

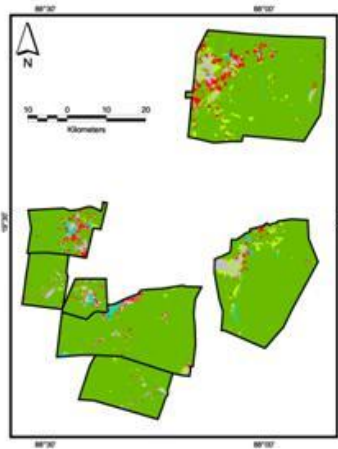
MEXICAN EJIDOS

- 25 Xmaben
- 26 Xhazil
- 27 Naranjal Poniente
- 28 Santa María Poniente
- 29 Petcacab y Polinkin
- 30 Noh Bec
- 31 Caobas

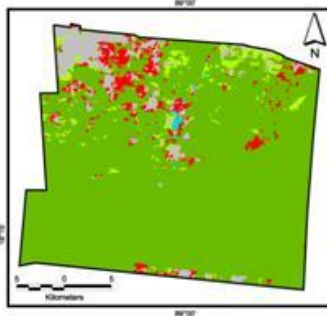
— INTERNATIONAL LIMITS



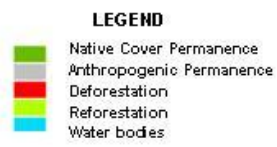
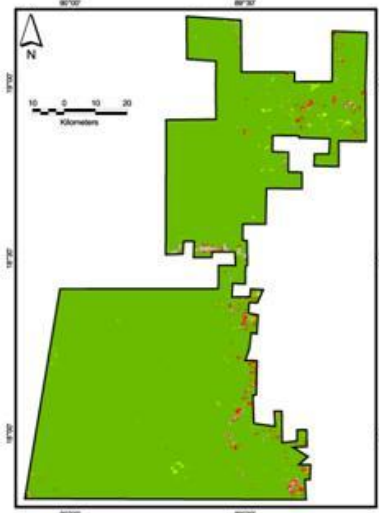
a) Six *Ejidos* - Mexico



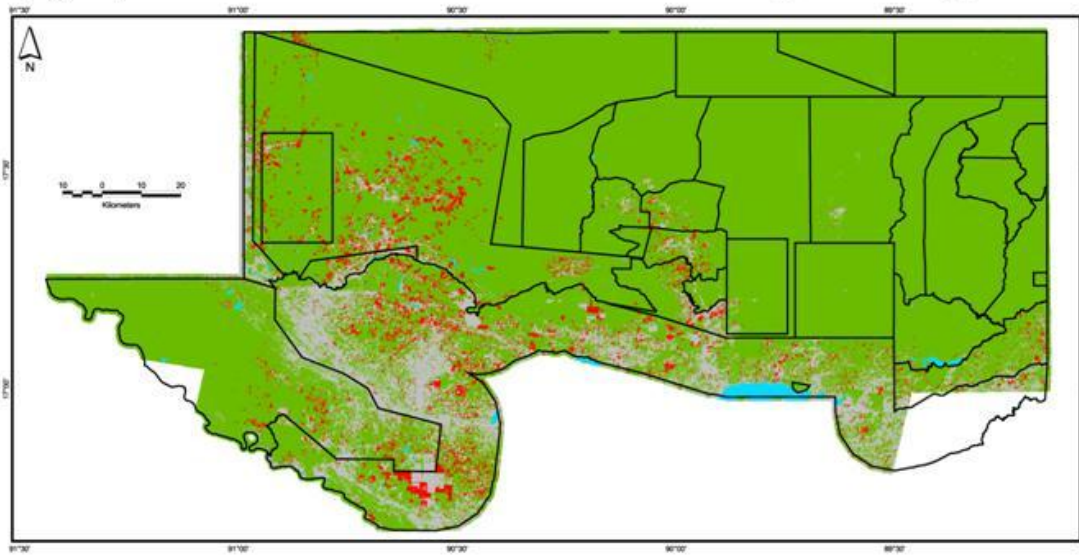
b) Caobas *Ejidos* - Mexico



c) Calakmul Biosphere Reserve - Mexico



d) Maya Biosphere Reserve - Guatemala



Community forests can lift families and communities out of poverty

In 2000, 60.7% of Mexico’s rural households were considered poor. To understand the impact of community forestry on poverty and household income, researchers took the Ministry of Social Development (SEDESOL)’s three poverty thresholds, based on how much it would cost to purchase a certain amount of goods and services compared to the resources the family has to buy them. To be below each threshold, is to be in successive degrees of poverty. The Nutritional Poverty Threshold, 15.4 pesos a day per person in 2000, allows families to meet their basic nutritional needs but little more. The Development Capacity Threshold, which also allows them to meet certain health and education needs, was 18.9 pesos a day per person. And the Asset Development Threshold, which would allow them to comfortably meet all basic needs, including housing and clothing, was 28.1 pesos a day per person.

The researchers studied 200 households in six communities in central and southern Quintana Roo that depended on forests to varying extents. These families lived in six communities, which were selected using a stratified sample that took into account how much mahogany they produced and their ethnicity (mestizo or Santa Cruz Mayan). The communities also differed in the fact that some had sawmills and others didn’t. Table IV below shows the results of a survey that sought information on all sources of cash income in the households

Table IV: Mean Cash Income per Person per Day- Six Quintana Roo Forest Communities Compared to Mexican Government Nutritional Poverty Line-2000, Classified by Ethnicity and Sawmill (in unadjusted pesos per person)

| High Timber Volume. | Mean Income Per Person Per Day in pesos (2002) | Nutritional Poverty Line | Development Capacity Poverty Line | Asset Poverty Line | Ethnicity | Sawmill |
|----------------------------|--|--------------------------|-----------------------------------|--------------------|-----------------------|---------|
| Noh Bec | 38 | 15.4 | 18.9 | 28.1 | Mestizo | Yes |
| Naranjal Poniente | 13 | 15.4 | 18.9 | 28.1 | Santa Cruz Mayan | No |
| Low Timber Volume | | 15.4 | 18.9 | 28.1 | | |
| Caobas | 22.5 | 15.4 | 18.9 | 28.1 | Mestizo | Yes |
| X-maben | 11.8 | 15.4 | 18.9 | 28.1 | Santa Cruz Mayan | No |
| No Timber Volume | | 15.4 | | 28.1 | | |
| Cuauhtemoc | 17.2 | 15.4 | 18.9 | 28.1 | Mestizo-Yucatec Mayan | Yes |
| Kampokolche | 10.2 | 15.4 | 18.9 | 28.1 | Santa Cruz Mayan | No |

- | | | | | | | |
|--|--|--|--|--|--|--|
| | | | | | | |
|--|--|--|--|--|--|--|
- SEDESOL, 2002

The results show some forest communities are out of poverty entirely or are among the better-off groups of poor people. Noh Bec, with an average daily income per person of 38 pesos, is well above the Asset Poverty threshold. Caobas, with 22.5 pesos per day, is well above the Development Capacity threshold. And while the study found that two of the six logging communities were quite poor, even those are probably able to meet their basic nutritional needs. Perhaps surprisingly, one of those communities, Naranjal Poniente, is poor despite the fact it has lots of mahogany. Neither of the two communities have sawmills, and both are Santa Cruz Mayans. The impact of ethnicity is not clear, although Santa Cruz Mayan households tend to have large households, reducing average income. But it is clear that having the processing capacity of a sawmill makes a crucial difference in poverty alleviation. Sawnwood brings twice the price of logwood mahogany and sawmills can generate substantial seasonal or year-round employment in the communities.

Interestingly, one of the communities, Cuauhtémoc, has almost reached the development capacity threshold even though it has no mahogany. That may be due to the fact that Cuauhtémoc's ejidatarios live in the same village as Noh Bec and may have been able to benefit from Noh Bec's wealth by selling things to Noh Bec ejidatarios.

One must be cautious when using these figures because the researchers used a different methodology to measure income than SEDESOL used when it prepared its national estimates. However, they likely suggest approximate trends. Based on the evidence, one can conclude that timber production, particularly when it includes processing, can not only generate income but actually lift families with rights to the common property out of poverty.

Community forestry reduces conflict in forested rural areas, and can produce MBAs rather than violence

The Costa Grande is famous for its violence connected to family feuds, conflicts between communities, drugs and illegal logging. Reports about violence linked to logging go back at least to the 1940s. Logging by private companies was one of Lucio Cabañas' guerrilla movement's main complaints in the 1960s and 1970s. More recently, the peasants massacred at Aguasblancas in the 1995 began by protesting logging in their community. During the same period Rodolfo Montiel's *campesinos ecológicos* movement in the Coyuquilla watershed in the Sierra of Petatlan was associated with many murders and severe tension around logging. The region has also been the scene of great environmental destruction.

The region's Tecpan watershed also had a history of great violence, which left many grieving widows and orphaned children. But by the 1990s researchers who visited

the region noticed something striking. The watershed is relatively tranquil, even though the Aguasblancas massacre took place just to the south and the *campesinos ecológicos* were active just to the north. Tecpan watershed communities had resolved disputes about their boundaries through negotiations, which in some cases led them to actually swapped portions of their territory. What was so different about Tecpan?

Researchers set out to compare the Tecpan watershed with the Coyquilla watershed, the site of the *campesinos ecológicos* movement. In the Tecpan watershed, communities had been organizing themselves since the 1980s, first through a farmers' organization called CIOAC, and later as the Unión de Ejidos Hermengildo Galeana (UEHG). Through a slow process in the 1980s and 1990s, the communities established community governance institutions that included regular community General Assembly meetings, functioning community forest enterprises, and an effective second-level organization.

In contrast, the communities in the Coyquilla watershed established their ejido union much later and it only focused on road maintenance, rather than forest management, and had many internal conflicts. A number of the General Assemblies in the Coyquilla watershed don't function well and the community forestry enterprises and second-level organizations were very weak. An examination of newspaper reports of violence in the two regions showed that while the Coyquilla watershed had 18 reported homicides between 1996 and 2002, the Tecpan watershed reported none.

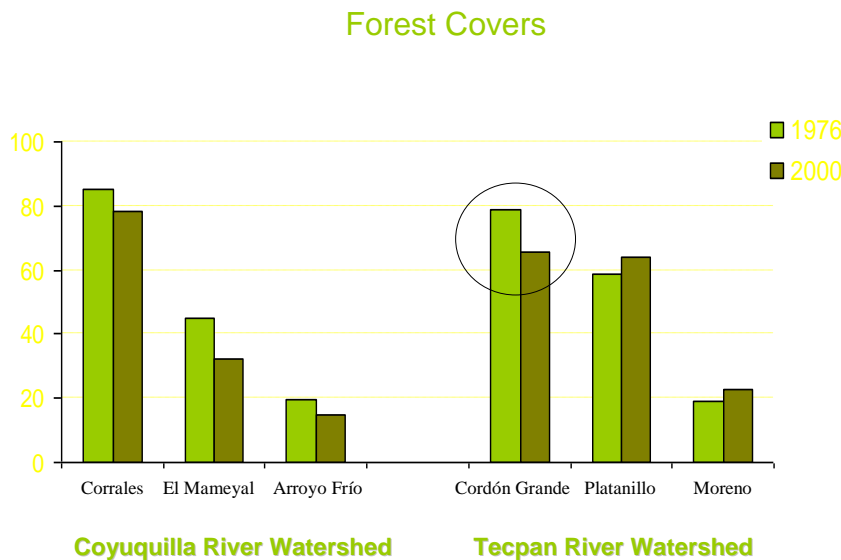
Looking at deforestation in the two watersheds, temperate forest cover only declined slightly in the Tecpan watershed over a 25-year period, from 51% to 49%, but in the Coyquilla watershed it declined somewhat more, from 50% to 42%¹. Tropical forest cover fell much more in both watersheds, as Table V below indicates. However, taking into account all forest conversion processes, the Tecpan watershed still has 67.5% forest cover while in Coyquilla it is reduced to 54.8% forest cover.

Table V: Land use Change in the Coyquilla and Tecpan Watersheds 1976-2000 (*Elvira-check figures*)

| | Coyquilla (59,335 ha) | | Tecpan (154,884 ha) | |
|---|--------------------------|------------------|------------------------|------------------|
| | 1976 | 2000 | 1976 | 2000 |
| Temperate Forests | 49.6 % (29,445) | 42.4 (25,184) | 51.2 (79,227) | 49.0 (75,875) |
| Tropical Forests | 22.8 (13,524) | 12.4 (7,372) | 36.6 (56,622) | 18.5 (28,619) |
| Crops, Pasture, early secondary succession (?) | 27.6 (16,367) | 45.1 (26,749) | 9.5 (14,761) | 29.3 (45,438) |

¹ An earlier study reported in the national and international press showed as much as of 40% forest loss in the Sierra Petatlán, but the figures are not trustworthy due to serious methodological deficiencies.

But these figures include the entire watershed, including the non-commercial dry and moist tropical forests on middle and lower parts of the watershed. To understand better what was happening in the commercial pine forests, researchers focused on comparisons between individual communities in the two watersheds. In one such comparison, they compared Mameyal, the birthplace of the campesinos ecologicos, with Platanillo, a community in the Tecpan watershed that was about the same elevation and had similar pine and oak forests. Mameyal had a history of conflict and weak community and inter-community. Platanillo had little conflict or violence in recent years, stronger community institutions, and a strong second-level organization, with lots of active participation. As figure XXX shows, Mameyal suffered much more deforestation than Platanillo. Mameyal lost about one quarter of its forest between 1976 and 2000, while Platanillo actually expanded its forest in that period. (*Elvira-puedes hacer una figura que demuestra mameyal y platanillo no mas?*)



Comparing watersheds it complex and it is difficult to fully establish the causes of different trends. Nonetheless, the evidence strongly suggests that strong community organizations, sustainable forest management, and dramatic reductions in civil violence have strong positive associations.

El Balcón, the largest ejido within the UEHG, is particularly notable because now all the top leadership of its community forest enterprise is made up of university-educated young adults from the community, who were able to study thanks to forest enterpriese. One of them is about to complete his master’s in business administration. Thus, improved educational levels and forest cover have both flourished in one watershed,

while in the rest of the Costa Grande poverty and forest violence is still the norm, even in the midst of rich pine forests.

Conclusions and Recommendations

It is true that many of Mexico's forests are being cleared and degraded, as the newspaper headlines shout. But there are some regions in Mexico where community management for timber production is a major presence on the forested landscape, where it protects forests as effectively as protected areas while generating more income, where poverty is alleviated, and where communities live in peace, free of the violence that plagues some areas of rural Mexico. However, most of the research presented here is incomplete or has only been carried out in some regions. More research is necessary both nationally and regionally to understand the real dimensions and contributions of community forest management, and how the continuing problems that plague some communities and regions can be addressed.

On the basis of this research, some recommendations can be made

- Fortalecer los programas de atención a silvicultores comunitario

Después de casi diez años de operar PROCYMAF y PRODEFOR, se ha aprendido que lo más importante es fortalecer las capacidades técnicas y organizativas, y el capital social en las comunidades. Esto no se logra si no existe un esquema de acompañamiento en el proceso de desarrollo de las comunidades cuando se canalizan los apoyos.

- Diferenciar los programas para los diferentes tipos

hay que PROCYMAFIZAR el PRODEFOR principalmente para comunidades 1 y 2. En este sentido, hay que tener una estrategia diferenciada para comunidades 1 y 2 donde el recurso maderable no tiene mucho valor comercial y donde debemos apoyar otras alternativas productivas como no maderables y el ecoturismo.

- Profundizar los programas de servicios ambientales

Las comunidades han logrado mucho en la producción de madera y otros productos, pero esquemas hasta más complicados requieren más apoyo. Hay que trabajar que los pagos del programa nacional sean más equitativos y lleguen a las comunidades que más los justifican. Otro tema importante aquí es la necesidad de bajar las experiencias a una escala local donde se puedan generar esquemas de cobro y pago más sustentables y en donde los actores locales sean los que paguen los servicios y no el gobierno federal.

- Desarrollo de mercados para productores comunitarios: este es un tema que nunca se ha acabado de aterrizar. tiene que ver con cadenas productivas pero también con el tema de acceso a nuevos nichos de mercados más especializados, donde las maderas mexicanas tendrían una mayor ventaja comparativa. También el tema de

las empresas integradoras o comercializadoras.

- La certificación verde.

apoyar a las comunidades para que alcancen los estándares de la certificación y que ésta no se convierta en una barrera de mercado para ellas, la certificación como un medio y no un fin para lograr el manejo forestal sustentable, apoyo a las organizaciones de productores ya certificados para que tengan mejor acceso al Mercado y compras de gobierno..

- Usos alternativos del bosque

A pesar de lo que se ha logrado con el tema de manejo de no-maderables y otros usos del bosque (ecoturismo, agua embotellada etc). No se ha desarrollado ninguna estrategia explícita en este tema ni ha evaluado la relevancia y replicabilidad de las experiencias existentes. Por ser de gran importancia para comunidades en bosques con poco potencial maderable y que además coinciden con las zonas más pobres del país, es necesario desarrollar más este tema (esto está vinculado a lo que comento en el primer punto).

México has achieved much in community forest management, and has made itself a global model, but much remains to be done to bring a greater measure of prosperity and conservation to Mexico's forest communities. Communities, government, and academics can work together to take them to the next level of national accomplishment

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